THE NAGALAND BUILDING BYE-LAWS 2012

GOVERNMENT OF NAGALAND
URBAN DEVELOPMENT DEPARTMENT
NAGALAND, KOHIMA

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INDEX

CHAPTER 1

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Whereas it is considered necessary to regulate the construction of buildings and to bring about a designed environment in the state.

Therefore, in exercise of the powers conferred by Section 479 read with the provisions of Section 481 of the Nagaland Municipal Act 2001 (Act No.10 of 2001), the State Government of Nagaland hereby makes the following bye-laws.

1. TITLE, EXTEND AND COMMENCEMENT

(i) These Bye-Laws shall be called the Nagaland Building Bye-Laws 2012.

(ii) These shall extend to

a) Master Plan Areas

b) Municipal Council/Town Council Areas as may be notified under the Nagaland Municipal Act, 2001.

c) Notified Areas under local bodies as may be constituted under any other laws in force

(iii) These shall come into force with effect from the date as the State Government, by a notification in the official gazette, may appoint.

2. DEFINITIONS

i) **Authority** shall mean the Municipal Councils/Town Councils constituted under Sections 8 or 20 of the Nagaland Municipal Act 2001 and shall also include a Local Authority or officer authorized under Sections 7 or 19 of the abovementioned Act or any other laws in force in this behalf

ii) **Appellate Authority** shall mean an authority appointed by the State Government in this behalf.

iii) **Building** means any structure of whatsoever purpose and of whatsoever materials constructed and every part therefore whether used as human habitation or otherwise and include foundations, plinth-wall, chimneys, drainage works, fixed platforms, verandas, balcony, cornice or protection, part of a building or anything affixed there to or any work, earth bank, fence or other construction enclosing or delimiting or intended to enclose or delimit any land or space. But structure of temporary nature like tents, hutment as well as shamianas erected for temporary purposes for ceremonial occasions, with the permission of the Competent Authority, shall not be considered to be "buildings". Boundary wall up to 1.5 metres is not considered as building.

iv) **“Material Alteration”** – means any modifications in any existing building by any way of addition or alteration including structural changes or any other change in the roof, window, door, compound, sanitary or drainage system. Materials alteration will also mean:-

(a) Change of use from that of dwelling house to shop, factory, godown, office, workshop, restaurants, hotel and vice versa.

(b) Construction in a wall adjoining any street or land not vested in the owner of the wall, a door or a window on such street or land or to permanently close, any door or window on such street or land or to permanently close, any door or window in an external wall.

v) **"Retaining wall"** – means works erected to retain the soil in the slope, either natural or formed by earth cutting and includes, dry masonry work, dry and cement masonry composite wall and wall constructed by stone and sausage with nets.

vi) **"Front"** as applied to a building means that portions facing the street. In case of a building not abutting a street, or abutting two or more streets, it may be determined by the Authority.

vii) **"Building unit"** shall mean a final plot or a part of a final plot or the combination of more than one final plot as approved by the Authority.

viii) **"Rear"** as applied to a building shall mean that portion which is on the opposite side of the "front".

ix) **"Auditorium"** shall mean an enclosure, covered or open where people can assemble for watching a performance given on the stage or screen.

x) **"Cinema"** shall mean a hall where performance is essentially given by projection on screen with or without the accompaniment of sound.

xi) **"Structure"** shall mean that which is built or constructed or edifice or building of any kind or piece of work artistically built up or composed of parts joined together in same definite manner.

xii) **"Habitable room"** shall mean a room constructed or intended for human habitation.

xiii) **"Setback"** shall mean the clear distance from the municipal boundary to the external plinth or wall line.

xiv) **"Drain"** shall mean the natural or manmade drain to channelise rainwater or runoffs from buildings.

3. BUILDING PERMIT

No person shall erect, re-erect or make alteration or demolition in building or cause the same to be done without first obtaining a separate building permit for each building from the authority.

4. PROCEDURE FOR OBTAINING BUILDING PERMIT

(A). **Notice to be given**

Every person who intends to erect, or make material alteration in any place in a building shall give notice in writing to the Authority of such intention in **Form – A** and the notice shall be accompanied by plans and statements in triplicate drawn or prepared in accordance with this Bye-Laws.

(B). **Plans Accompanying Notice**

Every person giving the notice referred to in Bye-Laws shall submit therewith the following:-

(a) A copy of the title deed of the site, on which the construction or reconstruction is proposed. In case of non-cadastral area only a certificate regarding the ownership of the site from competent Revenue Authority, may be submitted in lieu of the title deed.

(b) Receipt for having paid the application fee to be specified by the Authority.

(c) A site plan in triplicate drawn to appropriate scale and shall show:-

(i) The boundaries of the site with dimensions in metres/ft. Corner angles of the site to be indicated, if they are not 90°.

(ii) The position of the site in relation to neighbouring street(s). The approach road clearly marked on the site plan.

(iii) The exact location of the proposed building on site with dimensions showing distances from the boundary lines at front, rear and sides.

(iv) The name(s) if any of the neighbouring street(s).

(v) All existing building standing on the site together with distance from each other as well as from the proposed building.

(vi) For the sites situated on sloping ground, the slope shall be indicated either with contour lines or spot levels to facilitate convenience for graphical study of drainage pattern of the site.

(vii) The position of rainwater drains, wastewater drains from kitchen and bathroom, the soil pipe from tank to soak pit.

(viii) The Geographical north line.

(ix) The proposed use of the building. If more than one use is proposed a list of such uses together with floor area proposed for each category of use shall be given.

(x) The Authority may specify such other particulars as may be required from time to time.

(xi) Usage of adjacent plots to be mentioned

(d) The plans in triplicate of all floors of the building in mts/ft shall be drawn to scale of not less than 1:100 and will have the name and signature of the applicant. The front elevation and other elevation together with section drawn in the same scale as adopted for plans may also be submitted. The plan shall show:-

(i) All rooms with dimensions and proposed uses of each of them.

(ii) All doors and windows with schedule of openings.

(iii) (a) Water supply and Plumbing Lay-out

(b) Electrical Lay-out

(c) Fire escape

(d) Exact location service e.g. sink, bath and water closet.

(iv) Proposed method of drainage or disposal of rain water, waste water and tank effluent.

(e) For all frame structures, the plan and drawing as per Bye-Laws 4(A) and 4(B) shall be prepared by Architect(s) registered by the Council of Architecture, India. The structural components of such buildings should be designed by a certified structural engineer after conducting the various soil tests and should take into consideration all those loads that are going to act on the building during its life time and carry out the entire necessary test. For such buildings, separate drawing(s) is to be submitted with details of all structural members including foundation and to be signed by the Structural Engineer on Record. The Structural Engineer on Record shall submit a Structural Design Basis Report (SDBR) along with structural design and details.

(C). **Form of Application**

Every person who gives notice under relevant section of the Act shall furnish all information in forms and format prescribed herein and as may be amended from time to time by the Competent Authority. For multi-storey buildings more than 15 metres height and lifeline buildings even if less than 15 metres height, these provisions shall be made mandatory. The following particulars and documents shall also be submitted along with the application.

*Certificate of Undertaking: Certificate in the prescribed Form No. 1 by the "Owner, Developer, Structural Engineer on Record and Architect on Record", Form No. 2 by the "Architect on Record / Engineer on Record" and Form No. 3 by the "Structural Engineer on Record", Form No. 4 by the "Construction Engineer on Record" as prescribed in Appendix C.

*(*The regulations marked by asterisk under this sub-section may be waived till it is made mandatory at a later stage subject to approval of the State Government as deemed fit*)

(D). **Documents to be furnished with the Application**

(a) The forms, plans, sections and descriptions to be furnished under these Development Control Regulations shall all be signed by each of the following persons:

(i) A person making application for development permission under relevant section of the Act.

(ii) A person who has prepared the plans and sections with description who may be Architect on Record or Engineer on Record

(iii) A person who is responsible for the structural design of the construction i.e., a Structural Engineer on Record.

(iv) *A Construction Engineer on Record who is to look after the day-to-day supervision of the construction

(v) *A Developer, Promoter

(b) *A person who is engaged either to prepare plan or to prepare a structural design and structural report or to supervise the building shall give an undertaking in Form No. 1, Form No. 2, Form No. 3 and Form No. 4 prescribed under these Development Control Regulations.

(c) Approval of drawings and acceptance of any statement, documents, structural report, structural drawings, progress certificate, or building completion certificates shall not discharge the Engineer on Record, Architect on Record, Construction Engineer on Record, Structural Engineer on Record, Developer and Owner from their responsibilities imposed under the Act, the Development Control Regulations and the laws of tort and local Acts.

(d) The landowner shall he held responsible if any Unauthorised Construction, addition & alteration is done without prior permission of Competent Authority.

*(*Those regulations marked by asterisk under this sub-section may be waived till it is made mandatory at a later stage subject to approval of the State Government as deemed fit*)

5. REQUIREMENTS OF BUILDING SITE

No land shall be used as a site for the construction of building

i) If the site is found to be liable to liquefaction by the Competent Authority under the earthquake intensity of the area, except where appropriate protection measures are taken.

ii) If the Competent Authority finds that the proposed development falls in the area liable to storm surge during cyclone, except where protection measures are adopted to prevent storm surge damage.

6. DEMARCATION

The limit of the site shall be demarcated by boundary pillars or wall on the ground and shall be retained on a permanent basis.

7. NOTICE FOR ALTERATION ONLY

When the notice is only for a material alteration of the building, only such plans and statement as may be necessary shall accompany the notice.

i) The provision of these Bye-Laws shall apply in case where the use of the building is proposed to be changed to wholesale, commercial, godown, industry, and warehouse even if no material alteration of the building is proposed.

ii) Extension or alteration portion should be marked by red ink along with site plan.

8. REPAIRS

No notice for repairs e.g. plastering, painting, reflooring etc. in an existing building in accordance with bye-laws is required.

9. DECISION OF THE AUTHORITY

(A) **Grant of Permit or Refusal**

(i) On receipt of the application for Development Permission, the Sanctioning Authority may either sanction or refuse to sanction the plans and statement as may deem necessary and thereupon shall communicate the decision in **Form No.5** to the persons

giving the notice. The Development permission in **Form No.5** should be issued by an officer authorized by the Competent Authority in this behalf. The permission may be granted with or without conditions or subject to any general or special orders made by the State Government in this behalf. In the case of refusal the Authority shall quote the reasons and the relevant provisions with the plans contravened.

(ii) If within 30 days of the receipt of the notice, the Sanctioning Authority fails to intimate in writing to the person, who has given notice, of this refusal or sanction, the notice with its plans and statements shall be deemed to have been sanctioned provided nothing shall be construed to authorise any person to do anything in contravention of or against the terms of lease or titles of the land or against any other Bye-Law Rule or Act operating on the proposed site.

(iii) Once the plan has been scrutinised and objections have been pointed out, the owner giving notice shall modify the plan to comply with the objections raised and resubmit it. The Sanctioning Authority shall scrutinise the re-submitted plan and shall notify the result within 30 days of the receipt of the replies to the objections.

(iv) The decision of the Sanctioning Authority shall be communicated to the person giving the notice to his legally authorised agent in writing, within 30 days of the receipt of the notice and one set of the drawings and specifications duly endorsed shall be returned to him.

(B) Notwithstanding anything contained herein, if the structure contravenes any section, rule or bye-law or is adjudged structurally unsound, the person shall be deemed liable under these bye-laws.

10. VALIDITY OF SANCTION

The sanction once accorded shall remain valid for a period of three years during which period completion certificate from the qualified architect or engineer or owner as the case may be shall be submitted and if this is not done the sanction shall be revalidated before the expiry of this period and extension may be without any fee if applied for before the expiry of the period.

11. REVOCATION OR SUSPENSION OF PERMIT

(i) The Sanctioning Authority may revoke or suspend any permit issued under these provisions, wherever there has been any false statement or misrepresentation of any material fact in the application on which the permit was based.

(ii) The Sanctioning Authority may also suspend any permit for any separate construction which is not incidental, supplemental or consequential to such construction.

(iii) *Development permission granted under these provisions shall be deemed to be suspended in cases of resignation by any professional namely Architect on Record/ Engineer on Record, Structural Engineer on Record, and Construction Engineer on Record, till the new appointments are made. During this period construction shall not be carried out at the site. Any work at site during this time shall be treated as unauthorized development without any due permission

*(*Those regulations marked by asterisk under this sub-section may be waived till it is made mandatory at a later stage subject to approval of the State Government as deemed fit*)

12. DEVIATION DURING COURSE OF CONSTRUCTION

i) If during the course of construction of a building any substantial deviation from the sanctioned plan or any structural deviation is proposed to be made, prior approval of the sanctioning authority shall be obtained before the change is made. The revised (amended) plan showing the deviation shall be submitted and the procedure laid down for the original plan shall apply to all such revised (amended) plan.

ii) Minor alteration of the nature of shifting of doors and windows, pillars or fire-places, which do not conflict with these Bye-Laws may however, be made by the owner and stated in the completion report. The decision of the sanctioning authority as the case may be as to whether the alteration made are of minor or substantial nature shall be final.

13. COMPLETION REPORT

Every person erecting a building shall, within one month after completion of such building deliver or cause to be delivered or send notice to the Authority in writing of the completion of such building in **Form No.11**.

14. SERVICE CONNECTION

Permission for service connection such as Electricity, Water supply or sewer connection to the building shall be given in **Form - B**, only after the Authority inspect the building and is satisfied that the building has conformed to the requirement as laid down in the building bye laws.

15. OCCUPANCY CERTIFICATE

Within 15 days of receipt of the completion report, the Competent Authority shall inspect the building and after satisfaction shall issue permission to occupy the building. If within 30 days the inspection cannot be carried out, the applicant may occupy the building as if the permission to occupy has been granted.

16. MINIMUM SIZE

No building for residential purpose shall generally be constructed on any site having an area less than 55 square metres. The site should have proportionate length and breadth for construction of the building. In case of sites not having proportionate length and breadth, no construction shall be allowed.

17. SET BACK

The minimum width of open spaces to be left within the site shall be governed by the provisions made in Town Planning Schemes. However, for plots that are adjacent to National Highway, the set back shall be governed by National Highway Acts.

For downhill slope site the differential elevation of setback between the plot and the road shall be developed where the applicant / developer shall at his own cost protect the road by constructing toe wall or protection wall.

(Development Scheme):- In case of site situated in areas not covered by Town Planning Schemes the open space shall be covered by the following:

Sl. No.	(i) Area of Plots	Open space to be left rear sides				
		Residential areas			Commercial areas	
			Front	Back		Back
1	Minimum area 125 sq m		2.0 m	1.8 m		2.0 m
2	From 125 sq m to 500 sq m		2.0 m	2.0 m		2.0 m
3	From 501 sq m to 1000 sq m		3.0 m	3.0 m		3.0 m
4	More than 1000 sq m		3.0 m	5.0 m		3.0 m

Sl No	(ii) Road Width	Residential			Commercial		
1	Upto 5 m	1.5 m			1.0 m		
2	> 5 < 10 m	2.0 m			1.5 m		
3	> 10 < 15 m	3.0 m			2.0 m		
4	> 15 <20 m	5.0 m			2.5 m		
5	> 20 < 25 m	7.0 m			3.0 m		
6	> 25 m	9.0 m			4.5 m		

Notes:

For sites situated in hills the Authority may permit relaxation of the provision of front set back

(a) In such cases the Authority will draw a line on the site plan indicating the boundary of open space and beyond which no construction will be permitted.

(b) For site located on or near the street bends the Authority may prescribe greater width of open spaces to be left in front of the building indicated in Bye-Law 17.

(c) In case of building construction on road curves, the Authority reserves the right to maintain the sight distance in conformity with Indian Road Congress (IRC) Specifications.

18. MINIMUM BUILDING SPECIFICATIONS

i) The minimum height of a habitable room shall be 2.75 metres for hills and 3 metres for plains. i.e, floor to ceiling.

ii) a) The minimum size of habitable room shall be 2.4 x 2.4 m

b) The corridors or verandas shall be at least 1.3 m and 1.5 m for doubly loaded.

c) Over and beyond the allowable setback limits, projections or chajas at upper levels above the ground floor shall not be more than 0.6 m.

iii) a) Every room for human habitation shall have for admission of light and air at least one window opening directly to the external air or into an open verandah, the aggregate area, including frames of which shall be at least $1/10^{th}$ the floor area of the room.

b) All other rooms and verandah with minimum of 1.5 m in the shorter wall etc. shall have ventilation provision in addition to doors.

c) Tread shall not be less than 0.25m (10”) and risers not more than 0.2m (8”). Preferably not more than 12 risers in a flight. In no case will the width of a landing be less than width of the stair.

d) The minimum width of stairs or steps shall be 0.9 metres. In case of public buildings the minimum width shall be 1.25 metres. For cinema and Auditorium the minimum width shall be 1.5 metres.

19. WATER CLOSET AND SEPTIC TANK

(i) Every building shall have at least one water closet with septic tank, either attached or detached, within its site.

(ii) Every building to be used for dwelling purpose shall have at least one kitchen and one bathroom and one water closet with septic tank.

(iii) For building with more than 4 habitable rooms at least one water closet and one bathroom will be provided for every first 4 rooms and then additional water closet, additional bath (these may be combined) shall be provided at the part thereof. All water closet(s) shall be connected with septic tank(s).

(iv) Minimum volume of septic tank shall be 2.5 cum.

20. EFFLUENTS

(i) Effluents from the septic tank shall not be allowed to flow to rain water drains. The effluent shall be taken to soak pits for disposal.

(ii) The waste water from kitchen and bathrooms shall be taken by means of pucca drain and dropped in public drain. In case there is no public drain at proper level within 50 metres from the site the waste shall be carried through pucca drain for the first 30 metres than by kutcha drain to the nearest nulla or gorge or fallow land. While making such waste water drain outside the site, care shall be taken not to illegally encroach into others property. Provided that it will not be considered as encroachment if prior permission in writing of the owner of the affected land is obtained, a copy of which shall be submitted with the notice Section 4.

(iii) The rain water may also be disposed off by the waste water drain provided that in such case the drain shall be called rain water-waste combined drain and the first 50 metres from the building shall be pucca of minimum dimension constructed in stepped manner where it passes over ground with slope more than 1 in 5.

In all other respects the rain water-waste combined drain shall be guided by the provision of Bye-Law 20(ii)

(iv) If separate rain water drain is provided, it will be guided by the provision applicable to rain water-waste drain

21. EARTH CUTTING

For building proposed to be constructed on sloping site, the sanctioning Authority may prescribe such restriction on height of maximum earth cutting, width of terrace and also may direct owner to construct such protective measures like retaining wall etc. Building

permission will be refused if the owner does not agree with the direction issued by the Authority.

22. HEIGHT RESTRICTION

(i) Maximum height of building should depend on building plans accompanied by relevant structural designs and drawings depending on soil conditions, adoption of foundations duly certified by the Structural Engineer/Geo-technical Expert on Record. Restrictions can be imposed on certain areas where the Authority deems necessary to do so.

(ii) Notwithstanding anything contained in these Bye-Laws, the sanctioning Authority shall refer any proposal for construction above the prescribed height to the Structural Design Review Panel (SDRP) for approval.

(iii) For a building with height 12 ms or having 4 floors including the ground floor, at least one lift shall be made available.

(iv) Lift Machine room, staircase, parapet height shall not be included in the height of the building.

(v) Maximum height of parking floor shall be 2.7 ms measured up to soffit level of slab.

(vi) For a building constructed on stilt with provisions of ground level parking floor or semi-basement parking floor, the height of the building will be calculated by omitting the height of the parking floor up to a maximum of 2.7 ms for the purpose of building height subject to provision of exclusive parking in the ground floor with special earthquake resistance measures.

(vii) For building in the vicinity of airports/aerodromes, the maximum height of such building shall be subject to conformity with the height limitations prescribed by the Civil Aviation authorities from time to time and to this effect a no objection certificate issued by that authority shall be submitted by the applicant along with plans to the sanctioning authority.

(viii) Height exception:- the following appurtenant structure shall not be included in the Height of the building.

(a) Roof tanks and their supports not exceeding 1.5 m height

(b) Ventilating, air conditioning and lift rooms and similar service equipments, stair covered with roof up to 3.0 m in height, architectural features not exceeding 1.5 m in height.

23. DRAIN

Notwithstanding any of the provisions contained in these Bye-Laws, no building shall be allowed to be constructed, which will obstruct the natural flow of drain. The Authority shall have the power to cause the free flow of public drains.

24. PUBLIC BUILDING

Notwithstanding anything contained in other Bye-Laws the following shall apply in case of building proposed to be used in cinema, theatre or public hall.

(i) All doors meant for public use, except those of toilets shall be minimum 1.5 metres.

(ii) A car parking area shall be provided within the site, which shall be at the rate of 2 sq. metres of space for every 30 seats. Adequate parking space should be provided for residential / departmental building.

25. FACTORY BUILDING

In addition to the provision in any part of these Bye-Laws with suitable parking, loading and unloading space for lorries is to be provided within the site where building to be used for wholesale commercial trade, godown, warehouse is proposed to be constructed. If any existing building is to be modified or adopted for any of the above mentioned purpose, the provision of these Bye-Laws will apply in that case also.

Subject to the provisions contained in any other law and Bye-Laws and notwithstanding any provision contained in any part of these Bye-Laws, every factory, building or part thereof shall comply with the following:-

i) Location shall be restricted only to areas earmarked in Master Plan as industrial area.

ii) Adequate parking, loading and unloading facility within the site to be provided when directed by the Authority.

iii) A statement shall be submitted giving the following information:-

a) Nature and quality of waste products.
b) Nature (including probable chemical composition if asked by Authority) and quality of industrial effluent.
c) Proposed method of disposal of waste product and effluents.
d) The room height measured from floor to lowest point of ceiling shall not be less than 3.5 metres.
e) Any room of a factory shall be provided with more than one exit.

iv) After the Authority has ascertained the nature and toxicity of the waste product, necessary action for its treatment as per the recommendations of the Authority shall be incorporated in the plan before the building construction permit is issued.

26. BUILDING PERMIT FEE

No notice referred in bye-law 4 (A) shall be deemed valid until and unless the owner given Notice has paid the requisite building fees to the authority at the rate as may be prescribed by the State Government in this behalf and receipt of such payment attached with the notice.

27. FIRE PROTECTION

No permit shall be granted in respect of buildings for use by public, unless such building is planned, designed and constructed to ensure fire safety.

28. INSPECTION

The Authority or its officers authorised on its behalf shall carry out inspection works from the receipt of Notice of commencement to completion of various stages as to ascertain whether the work is proceeding as per the provision of the bye-law and sanctioned plan.

29. UN-SAFE BUILDING

All un-safe building shall be considered to constitute danger to public safety, hygiene, sanitation and shall be restored by repair, demolition or dealt with otherwise directed by the Authority.

30. PENAL ACTION

Any construction of building found not in conformity with the building permit shall have to be rectified by altering or demolition at the risk and cost of the owner in addition to any other action that may be taken under the law in force.

31. APPELLATE AUTHORITY

(i) The State Government shall appoint the appellate Authority to hear all appeals that may be prepared against the order of the Authority.

(ii) The appellate Authority shall be guided by the procedure provided under Chapter (VIII) of the Nagaland Town & Country Planning Act, 1966.

32. REPEAL

Repeal with effect from the date of commencement of these Byelaws, the Nagaland Building Byelaws 2001 shall stand repealed.

Provided that such repeal shall not affect anything done or suffered or omitted to be done under the repealed byelaws.

CHAPTER 2

Additional Provisions for providing barrier-free environment in the public buildings for persons with disabilities

33. DEFINITIONS

(i) **Non-ambulatory disabilities** : Impairments that regardless of cause or manifestation, for all practical purposes, confine individuals to wheelchairs.

(ii) **Semi-ambulatory disabilities** : Impairments that cause individual to walk with difficulty or insecurity. Individuals using braces or crutches, amputees, arthritis, spastics and those with pulmonary and cardiac ills may be semi-ambulatory.

(iii) **Hearing disabilities** : Deafness or hearing handicaps that make an individual insecure in public areas because he is unable to communicate or hear warning signals.

(iv) **Sight disabilities** : Total blindness or impairment affecting sight to the extent that the individual functioning in public areas is insecure or exposed to danger.

(v) **Wheel Chair** : Chair used by disabled people for mobility.

a) Size of Small Wheel Chair : 750 x 1050 mm
b) Size of Large Wheel Chair : 800 x 1500 mm

34. PROVISION OF FACILITIES IN PUBLIC BUILDINGS FOR DISABLED PERSONS

(A). **Scope** : These byelaws are applicable to all building, recreation areas & facilities used by public. It does not apply to private domestic residences.

i) Site planning: Level of the roads, access paths & parking areas shall be described in the plan along with specification of materials. Every building should have at least one access to main entrance/exit to the disabled which shall be indicated by proper signage. This entrance shall be approached through a ramp together with stepped entry. The ramp should have a landing after every 9 Metre run and in front of the doorway. Minimum size of landing shall be 1000 x 2000 mm.

ii) Access path/walk way: Access path from plot entry and surface parking to building entrance shall be minimum of 1800 mm wide having even surface without any step. Slope, if any, shall not have gradient greater than 5%. Selection of floor material shall be made suitably to attract or to guide visually impaired persons (limited to floor material whose colour texture is conspicuously different from that of the surrounding floor material or the material that emit different sound to guide visually impaired persons). Finishes shall have a non-slip surface with texture traversable by a wheel chair. Curbs wherever provided should blend to common level.

iii) Parking: For parking of vehicles of disabled people, the following provisions shall be made.

(a) Surface parking for two Equivalent Car Spaces (ECS) shall be provided near entrance for the physically handicapped persons with maximum travel distance of 30 metre from building entrance.

(b) The width of parking bay shall be minimum 3.6 metre.

(c) The information stating that the space is reserved for wheel chair users shall be conspicuously displayed.

(d) Guiding floor materials shall be provided or a device which guides visually impaired persons with audible signals or other devices which serves the same purpose shall be provided.

(B). **Building requirements**: The specified facilities for the buildings for disabled persons which shall be provided with Braille signage shall be as follows:

i) Approach to Plinth Level: Ramp shall be provided with non-slip material to enter the building. Minimum clear width of ramp shall be 1800 mm with maximum gradient 1:12 between top and bottom of the ramp. Length of ramp shall not exceed 9.00 metres having 800 mm high handrail on both sides extending 300 mm beyond the ramp. Minimum gap from the adjacent wall to the handrail shall be 50 mm. Minimum clear opening for the entrance door shall be 1000 mm. Threshold shall not be raised more than 12 mm. For stepped approach, size of tread shall not be less than 300 mm and maximum riser shall be 150 mm. Provision of 800 mm high handrails on both sides of the stepped approach similar to the ramped approach shall be made.

ii) Corridor connecting the entrance/exit for the handicapped: The corridor connecting the entrance/exit for the handicapped leading directly outdoors to a place

where information concerning the overall use of the specified building can be provided to visually impaired person 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 shall be 1500 mm.
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.

iii) Stair-ways: Stairways with open riser and provision of nosing are not permitted in such building.

iv) Lift: Whenever lift is required as per byelaws, provisions of at least one lift shall be made for the wheel chair user with the following car dimensions of lift recommended for passenger lift of 13 persons capacity by Bureau of Indian Standard.

Clear internal depth	-	1100 mm
Clear internal width	-	2000 mm
Entrance door width	-	910 mm

a) A handrail not less than 600 mm long at 900 mm above the floor level shall be fixed adjacent to the control panel.
b) The lift lobby shall be of an inside measurement of 1800 mm x 2000 mm or more.
c) The Braille signage will be posted outside the lifts.
d) Operational details of lifts shall confirm to the National Building Code (NBC) and will be the responsibility of designer as well as manufacturer.

v) Toilets: One special WC in a set of toilet shall be provided for the use of the handicapped with essential provision of washbasin near the entrance for the handicapped.

a) The minimum size shall be 1500 mm x 1750 mm.
b) Minimum clear opening of the door shall be 900 mm and the door shall swing out/sliding type.
c) Suitable arrangement for vertical/horizontal handrails with 50 mm clearance from wall shall be made in the toilet.
d) The WC seat shall be 500 mm from the floor.

vi) Drinking water: Drinking water facilities shall be made accessible for the disabled

(C). **Refuge**: An alternative to immediate evacuation of a building via staircases and/or lifts is the movement of disabled persons to areas of safety within a building. If possible, they could remain there until the fire is controlled and extinguished or until rescued by fire fighters. It is useful to have the provision of a refuge area, usually at the fire protected stair landing on each floor that can safely hold one or two wheel chairs.

(i) Have doorways with clear opening width of 900 mm

(ii) Have an alarm switch installed between 900 mm and1200 mm from the floor level.

CHAPTER 3

Additional provisions to promote energy efficient building design & for mandatory use of compact fluorescent lamp (cfl) in govt. buildings/govt. aided institutions/ boards, corporations

35. MANDATORY USE OF SOLAR WATER HEATING SYSTEMS

The use of solar water heating systems will be mandatory in the following categories of buildings, namely:-

(i) Industries where hot water is required for processing.

(ii) Hospitals and Nursing homes including Government Hospitals.

(iii) Hostels, Motels and Banquet Halls.

(iv) Jail Barracks, Canteens.

(v) Housing Complexes set up by Group Housing Societies/Housing Boards.

(vi) All residential buildings built on a plot of size 500 square yards and above, falling within the limits of municipal committees/corporations and Nagaland Urban Development Authority sectors.

(vii) All Government buildings, Residential Schools, Educational Colleges, Hostels, Technical/Vocational Education Institutes, District Institutes of Education & Training, Tourism Complexes and Universities, etc.

36. INSTALLATION OF SOLAR WATER HEATING SYSTEM

(i) (a) New Buildings: Clearance of plan for the construction of new buildings of the aforesaid categories shall only be given if they have a provision in the building design itself for an insulated pipeline from the rooftop in the building to various distribution points where hot water is required. The building must have a provision for continuous water supply to the solar water heating system. The building should also have open space on the rooftop, which receives direct sun light. The load bearing capacity of the roof should at least be 50 kg. per sqm. All new buildings of above said categories must complete installation of solar water heating systems before obtaining necessary license to commence their business.

(b) Existing Buildings: Installation of Solar Assisted Water Heating Systems in the existing building shall be made mandatory at the time of change of use to above said category provided there is a system or installation for supplying hot water.

(ii) Capacity: The capacity of solar water heating system to be installed on the building of different categories shall be decided in consultation with the local bodies. The recommended minimum capacity shall not be less than 25 litres per day for each bathroom and kitchen subject to the condition that maximum of 50% of the total roof area is provided with the system.

(iii) Specifications: The installation of Solar Assisted Water Heating Systems may be flat Plate Collector (FPC) or Evacuated Tube Collector (ETC) type. In case of FPC, the collectors shall conform to BIS specification IS 12933 and shall have the BIS Certification Mark. As regards ETC type, the systems will be installed as per specifications

approved by the Ministry of New and Renewable Energy (MNRE). Their performance should also conform to the standards laid down by MNRE including test reports.

(iv) Auxiliary System: Wherever hot water requirement is continuous, auxiliary heating arrangement either with electric elements or oil of adequate capacity can be provided.

(v) Nagaland Renewable Energy Development Agency will act as an approved source for supply and installation of solar water heating systems in the State to ensure the installation of optimally designed quality systems as per the specifications.

37. MANDATORY USE OF COMPACT FLUORESCENT LAMP (CFL) IN GOVERNMENT BUILDINGS/GOVERNMENT AIDED INSTITUTIONS/BOARDS/CORPORATIONS

(i) The use of Compact Fluorescent Lamp (CFL) will be mandatory in all new buildings/ institutions constructed in Government sector/Government Aided sector/Board and Corporation/Autonomous bodies.

(ii) In existing buildings, it will be mandatory that the defective incandescent lamps when replaced would be replaced by only compact fluorescent lamps (CFL)

38. PROMOTION OF ENERGY EFFICIENT BUILDING DESIGN

All the new buildings to be constructed in the Government/Government Aided sector in future will incorporate energy efficient building design concepts including Renewable Energy Technologies. All new building plans/drawings to be constructed in the Government/ Government Aided sector shall be examined by the Housing Department to examine to ensure that all features of the energy efficient building design concepts have been incorporated in these.

CHAPTER 4

Additional provisions for rain-water harvesting

39. RAIN-WATER HARVESTING

Roof Top Rain Water Harvesting: Unless otherwise stipulated specifically in a Town Planning Scheme, workable rooftop rainwater harvesting arrangements shall be included in the building plans of new buildings on plot size of 100 sq.ms and above. Provided that the rainwater harvesting arrangement is not mandatory for thatched roofed buildings.

i) The components of workable rooftop rainwater harvesting arrangement as stipulated above shall include:
   a) Roof catchment area
   b) Roof gutters
   c) Down pipe and first flush pipe arrangement
   d) Filter unit and
   e) Storage tank with provision for drawing water and spill over

ii) Rain Water harvesting structures shall be sited so as not to endanger the stability of building or earthwork and designed such that no dampness is caused in any part of the walls or foundation of the building or those of an adjacent building.

iii) The owner of every building mentioned in Bye-Law 38 above shall ensure that the Rain Water Harvesting structure is maintained in good repair for storage of water for non-potable purposes or recharge of groundwater at all times

40. RECYCLING OF WASTE-WATER

All buildings having a minimum discharge of 10,000 litres and above per day shall incorporate waste water re-cycling system. The recycled water should be used for horticultural purposes.

CHAPTER 5

Additional provisons for safety in natural hazard prone areas

41. INTRODUCTION

(i) Scope: This part deals with the development control rules and general building requirements to ensure health and safety of the public.

(ii) Savings: Not withstanding such modifications and revision, anything done or any action taken under the regulations in force prior to such modification shall be deemed to be valid and continue to be so valid, unless otherwise specified.

42. ADDITIONAL DEFINITIONS

(i) **"Unsafe Building"**: Definition of building shall also include "Unsafe Building" i.e. a building which
- is structurally unsafe,
- is insanitary,
- is not provided with adequate means of egress,
- constitutes a fire hazard,
- in relation to its existing use constitutes a hazard to safety or health or public welfare by reasons of inadequate maintenance, dilapidation or abandonment.

(ii) **"Natural Hazard"**: The probability of occurrence, within a specific period of time in a given area, of a potentially damaging natural phenomenon.

(iii) **"Natural Hazard Prone Areas"**: Areas likely to have moderate to high intensity of earthquake, or cyclonic storm, or significant flood flow or inundation, or landslides/mud flows/avalanches, or one or more of these hazards.

Note:

Moderate to very high damage risk zones of earthquakes are as shown in Seismic Zones III, IV and V specified in IS:1893; moderate to very high damage risk zones of cyclones are those areas along the sea coast of India prone to having wind velocities of 39 m/s or more as specified in IS:875(Part 3;) and flood prone areas in river plains (unprotected and protected) are indicated in the Flood Atlas of India prepared by the Central Water Commission, besides, other areas can be flooded under conditions of heavy intensity rains, inundation

in depressions, back flow in drains, inadequate drainage, etc. as identified through local surveys in the development plan of the area and landslide prone areas as identified by State Government \ Land surveys

(iv) **"Special Building"**: Those buildings housing large gathering at a time such as cinemas, theatres, meeting halls, assembly halls, lecture halls, town halls and the like.

(v) **"Lifeline Building"** shall mean those buildings which are of post earthquake importance such as hospital building, power house building, telephone exchange building and the like.

i) **"Retrofitting"** shall mean upgrading the strength of an unsafe building by using suitable engineering techniques.

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

iii) **"Quality Audit"** by a third party is a requirement for an independent assessment of the quality and seismic or cyclone resistant features of all the high-rise buildings in earthquake zone IV and V and coastal areas of the country. The quality audit report shall consist of conformance or non-conformance of structures with the technical specifications for earthquake and cyclone resistance and to suggest remedies/ rectification if any.

iv) **"Quality Assurance"** shall mean all planned and systematic actions necessary to ensure that the final product i.e. structure or structural elements will perform satisfactorily in service life.

v) **"Compliance"** shall mean the verification of the properties of construction materials based on test data and verification of the strength and structural adequacy for various components of buildings and structures.

(vi) **"Non-Structural Component"** shall mean those components of buildings which do not contribute to the structural stability such as infill walls in R.C. frame buildings, glass panes, claddings, parapet walls, chimneys etc.

CHAPTER 6

Additional provisions for structural safety in natural hazard prone areas

*(*The regulations marked by an asterisk under these sections shall be subject to the approval of the State Government at a later stage as and when deemed fit*)

43. *STRUCTURAL DESIGN

For any building under the jurisdiction of these regulations structural design/ retrofitting shall only be carried out by a Structural Engineer on Record (SER) or Structural Design Agency on Record (SDAR). Proof checking of various designs/ reports shall be carried out by competent authority as per Table-1 wherever applicable.

Generally, the structural design of foundations, elements of masonry, timber, plain concrete, reinforced concrete, pre-stressed concrete and structural steel shall conform to the

provisions of part VI Structural Design Section – 1 Loads, Section – 2 Foundation, Section – 3 Wood, Section – 4 Masonry, Section – 5 Concrete & Section – 6 Steel of National Building Code of India (NBC), taking into consideration the Indian Standards as given below:

For General Structural Safety:

(i) IS: 456:2000 “Code of Practice for Plain and Reinforced Concrete.
(ii) IS: 800-1984 “Code of Practice for General Construction in Steel.
(iii) IS: 801-1975 “Code of Practice for Use of Cold Formal Light Gauge Steel Structural Members in General Building Construction.
(iv) IS 875 (Part 2):1987Design loads (other than earthquake) for buildings and structures Part2 Imposed Loads.
(v) IS 875 (Part 3):1987Design loads (other than earthquake) for buildings and structures Part 3 Wind Loads.
(vi) IS 875 (Part 4):1987Design loads (other than earthquake) for buildings and structures Part 4 Snow Loads.
(vii) IS 875 (Part 5):1987Design loads (other than earthquake) for buildings and structures Part 5 special loads and load combination.
(viii) IS: 883:1966 “Code of Practice for Design of Structural Timber in Building
(ix) IS: 1904:1987 “Code of Practice for Structural Safety of Buildings: Foundation”.
(x) IS1905:1987 “Code of Practice for Structural Safety of Buildings: Masonry Walls
(xi) IS 2911 (Part 1): Section 1: 1979 “Code of Practice for Design and Construction of Pile Foundation Section 1

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

Part 1: Section 3 Driven Precast Concrete Piles

Part 1: Section 4 Based precast Concrete Piles

Part 2: Timber Piles

Part 3 Under Reamed Piles

Part 4 Load Test on Piles

For Cyclone/Wind Storm Protection:

(xii) IS 875 (3)-1987 "Code of Practice for Design Loads (other than Earthquake) for Buildings and Structures, Part 3, Wind Loads"
(xiii) Guidelines (Based on IS 875 (3)-1987) for improving the Cyclonic Resistance of Low rise houses and other building

For Earthquake Protection:

(xiv) IS: 1893-2002 "Criteria for Earthquake Resistant Design of Structures (Fifth Revision)"
(xv) IS:13920-1993 "Ductile Detailing of Reinforced Concrete Structures subjected to Seismic Forces - Code of Practice"
(xvi) IS:4326-1993 "Earthquake Resistant Design and Construction of Buildings - Code of Practice (Second Revision)"
(xvii) IS:13828-1993 "Improving Earthquake Resistance of Low Strength Masonry Buildings - Guidelines"
(xviii) IS:13827-1993 "Improving Earthquake Resistance of Earthen Buildings - Guidelines",

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

For Protection of Landslide Hazard:

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

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

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

(xxiii) IS 14496 (Part 2): 1998 Guidelines for preparation of landslide – Hazard zonation maps in mountainous terrains: Part 2 Macro-zonation.

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

44. *STRUCTURAL DESIGN BASIS REPORT

In compliance of the design with the above Indian Standard, the Structural Engineer on Record will submit a structural design basis report in the Proforma (Form 6) attached herewith covering the essential safety requirements specified in the Standard.

(i) The "Structural Design Basis Report (SDBR)"consists of four parts (Form No.6)

Part-1 - General Information/ Data

Part-2 - Load Bearing Masonry Buildings

Part-3 – Reinforced Concrete Buildings

Part-4 - Steel Buildings

(ii) Drawings and Documents to be submitted for approval of appropriate authorities shall include SDBR as detailed below:

Part - 1 Completed

Part - 2 (if applicable) – completed

Part -3 (if applicable) – undertaking that completed. Part 3 will be submitted before commencement of construction.

Part– 4 (if applicable) – undertaking that completed. Part 4 (if applicable) - undertaking will be submitted before commencement of construction.

(iii) SDBR as detailed below shall be submitted to the appropriate authority as soon as design of foundation is completed, but not later than one month prior to commencement of construction.

Part-1 - Completed

Part-2, Part-3 or Part-4 (if applicable) - Completed

45. *SEISMIC STRENGTHENING/RETROFITTING

Prior to seismic strengthening/ retrofitting of any existing structure, evaluation of the existing structure as regards structural vulnerability in the specified wind/ seismic hazard

zone shall be carried out by a RSE/RSDA. If as per the evaluation of the RSE/RSDA the seismic resistance is assessed to be less than the specified minimum seismic resistance as given in the note below, action will be initiated to carry out the upgrading of the seismic resistance of the building as per applicable standard guidelines.

Note: (a) for masonry buildings reference is to be made to IS: 4326 and IS: 13935 and

(b) for concrete buildings and structures reference to be made to BIS code on evaluation and seismic strengthening for retrofitting of RCC buildings under preparation at present.

46. *REVIEW OF STRUCTURAL DESIGN

(i) The Competent Authority shall create a Structural Design Review Panel (SDRP) consisting of senior SER's and SDAR's whose task will be to review and certify the design prepared by SER or SDAR whenever referred by the competent authority.

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

(iii) Table-1 gives requirements of SDRP for different seismic zones namely III, IV and V and for structures of different complexities

***TABLE – 1. Proof checking requirements for structural design**

SL NO	TYPE OF STRUCTURE	SUBMISSION FROM SER OR SDAR	TO BE PROOF-CHECKED
01	Buildings upto 7 storeys (RCC/Steel Framed Structure)	SDBR*	To be Checked
02	Buildings Greater than 7 Storeys (RCC/ Steel Framed Structure)	Preliminary Design	To be Checked
		SDBR*	To be Checked
		Preliminary Design	To be Checked
03	PUBLIC BUILDINGS (A) RCC/ Steel Structures	SDBR*	To be Checked
		Preliminary Design	To be Checked
		Detailed Structural Design and Structural Drawings	To be Checked
04	Special Structures	SDBR*	To be Checked
		Preliminary Design	To be Checked
		Detailed Structural Design and Structural Drawings	To be Checked

***SDBR- Structural Design Basis Report.**

Notes: *Public building means assembly of large number of people including schools, hospitals, courts etc.

*Special structure means large span structures such as stadium, assembly halls, or tall structures such as water tanks, TV tower, chimney, etc.

It will be seen from the table that there is a wide range of structure typology, and the requirement by the Competent Authority for third party verification will depend on the type of structure.

47. *CERTIFICATION REGARDING STRUCTURAL SAFETY IN DESIGN

Structural Engineer on Record (SER) or Structural Design Agency on Record (SDAR) shall give a certificate of structural safety of design as per proforma given in **Form-3** while applying for Building Development Permission and **Form 14** at the time of completion.

48. *CONSTRUCTIONAL SAFETY

i) Supervision: All construction shall be carried out under supervision of the Construction Engineer on Record (CER) or Construction Management Agency on Record (CMAR).

ii) Certification of structural safety in construction: CER/ CMAR shall give a certificate of structural safety of construction as per proforma given in **Form-13** at the time of completion.

49. *QUALITY CONTROL AND INSPECTION

i) Inspection: All the construction for high-rise buildings higher than seven storeys, public buildings and special structures shall be carried out under quality inspection program prepared and implemented under the Quality Auditor on Record (QAR) or Quality Auditor Agency on Record (QAAR) in seismic zones IV & V.

ii) Certification of safety in quality of construction: Quality Auditor on Record (QAR) or Quality Auditor Agency on Record (QAAR) shall give a certificate of quality control as per proforma given in **Form-15**. Quality Inspection Programme to be carried on the site shall be worked out by QAR/ QAAR in consultation with the owner, builder, CER/ CMAR.

50. *CONTROL OF SIGNS (HOARDINGS) AND OUTDOOR DISPLAY STRUCTURES AND PAGING TOWER AND TELEPHONE TOWER AND OUTDOOR DISPLAY STRUCTURES

Following provisions shall apply for telecommunication infrastructure.

i) Location: The Telecommunication Infrastructure shall be either placed on the building roof tops or on the ground or open space within the premises subject to other regulations.

ii) Type of structure

a) Steel fabricated tower or antennae's on M.S. pole.
b) Pre-fabricated shelters of fibre glass or P.V.C. on the building roof top/terrace for equipment.
c) Masonry Structure/ Shelter on the ground for equipment.
d) D.G. Set with sound proof cover to reduce the noise level.

iii) Requirement

a) Every applicant has to obtain/ procure the necessary permission from the "Standing Advisory Committee on Radio Frequency Allocation" (SACFA) issued by Ministry of Telecommunications.
b) Every applicant will have to produce the structural safety & stability certificate for the tower as well as the building from the Structural Engineer on Record (SER) which shall be the liability of both owner and SER.
c) Applicant has to produce / submit plans of structure to be erected.

iv) Projection: No Pager and/or Telephone Tower shall project beyond the existing building line of the building on which it is erected in any direction.

51. *STRUCTURAL REQUIREMENTS OF LOW COST HOUSING

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

52. *INSPECTION

The general requirement for inspection of the development shall also include the following regulation:

(A). General Requirements**:** The building unit intended to be developed shall be in conformity with Regulation on requirement of site. Generally all development work for which permission is required shall be subject to inspection by the Competent Authority as deemed fit.

The applicant shall keep a board at site of development mentioning the survey No, city survey No, Block No, Final Plot No., Sub plot No., etc. name of owner and name of Architect on Record, Engineer on Record , Developer, Structural Engineer on Record , Construction Engineer on Record.

(B). Record of Construction Progress

i) Stages for recording progress certificate and checking:-

a) Plinth, in case of basement before the casting of basement slab.
b) First storey.
c) Middle storey in case of High-rise building.
d) Last storey.

ii) At each of the above stages, the owner / developer / Builder shall submit to the designated officer of the Competent Authority a progress certificate in the given formats (Form No. 7-10). This progress certificate shall be signed by the Construction Engineer on Record.

iii) The progress certificate shall not be necessary in the following cases:

a) Alteration in Building not involving the structural part of the building.
b) Extension of existing residential building on the ground floor upto maximum 15 sq mt. in area.

iv) Completion Report

a) It shall be incumbent on every applicant whose plans have been approved, to submit a completion report in **Form No.11**.

b) It shall also be incumbent on every person / agency who is engaged under this Development Control Regulations to supervise the erection or re-erection of the building, to submit the completion report in **Form No.12, 13 and 14** prescribed under these Development Control Regulations.

c) No completion report shall be accepted unless completion plan is approved by the Competent Authority.

v) The final inspection of the work shall be made by the concerned Competent Authority within 21 days from the date of receipt of notice of completion report.

(C). Issue of Occupancy Certificate: The Authority issuing occupancy certificate before doing so shall ensure that following are complied with from consideration of safety against natural hazard.

i) Certificate of Lift Inspector has been procured & submitted by the owner, regarding satisfactory erection of Lift.

ii) The Certificate of Competent Authority and or fire department for completion and or fire requirements as provided in these regulations has been procured and submitted by the owner.

iii) If any project consists of more than one detached or semi detached building / buildings in a building unit and any building / buildings thereof is completed as per provisions of D.C.R. (Such as Parking, Common Plots, Internal Roads, Height of the Building, Infrastructure facilities, lift and fire safety measures), the competent authority may issue completion certificate for such one detached or semi detached building / buildings in a building unit.

The occupancy certificate shall not be issued unless the information is supplied by the Owner and the Architect on Record/ Engineer on Record concerned in the schedule as prescribed by the Competent Authority from time to time.

53. *MAINTENANCE OF BUILDINGS

In case of building older than fifty years, it shall be the duty of the owner of a building, to get his building inspected by a Registered Structural Engineer (RSE) within a year from the date of coming into force of these regulations. The Structural Inspection Report (**Form No.16**) shall be produced by the Owner to the Appropriate Authority. If any action, for ensuring the structural safety and stability of the building is to be taken, as recommended by SER, it shall be completed within five years. For other buildings, the owner shall get his building inspected after the age of building has crossed forty years. The procedure shall be followed as per above regulation.

54. *PROTECTIVE MEASURES IN NATURAL HAZARD PRONE AREAS

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

55. *REGISTRATION OF PROFESSIONALS

Presently, the legislation for profession of architecture is applicable in the country in the form of Architects Act 1973. Accordingly, the qualifications of architects, competence and service conditions followed in the profession of architecture are in accordance of the provision of the said Act and the rules made there under. Whereas, for other professions and professionals like engineers, developers/promoters for taking up the projects there is no legislative frame available/applicable in the country. In the absence of any such legislation, the appropriate qualifications, service conditions, professional fees and charges in the engineering profession etc. are varying and are not based on any uniform formula, therefore, the Committee, keeping in view that the responsibility of safety of development/projects, is that of the engineers, the Committee has worked out the detailed qualifications/responsibilities for different type of development which are given in Appendix 'B' under heading Registration, Qualifications and Duties of Professionals, and the professional fees are suggested in Section 56.

56. *PROFESSIONAL FEES FOR SER/ SDAR AND CER/ CMAR

Keeping in view that presently there is no Act regulating the services of engineers and to determine their professional charges, the committee felt that:

(a) Considering the responsibility of structural safety of a building falls on the shoulders of the "SER/SDAR" for its proper design and the "CER/CMAR" for proper construction, it is imperative that selection and appointment of these professionals is made carefully after verification of their antecedents and past experience.

(b) The fees to be paid to SER/SDAR for structural design may be specified by Government in the 'Nagaland PWD Schedule of Rates', keeping in view the size and complexity of the project which may vary based on the cost of the items of the structure enumerated below.

"Excavation, dewatering, diaphragm wall, piling, base concrete, waterproofing of basement and other underground structures, all grades of concrete, reinforcement, pre-stressing cables or tendons, structural steel, load bearing masonry, parts of structural glazing or curtain walls to be designed against earthquake and wind forces, clamps for stone cladding".

(c) Similarly, fees for construction management to CER/CMAR may be specified keeping in view the size and complexity of the project and the duration for which construction management services have to be provided on the basis of the total cost of the project.

(d) Proof checking: Fees for Proof checking where carried out may vary based on the cost of the structural items enumerated in (ii) above.

57. *APPOINTMENT OF PROFESSIONALS

The Owner/Developer shall appoint Town Planner on Record (TPR), Architect on Record (AR), Engineer on Record (ER), Structural Engineer on Record (SER), Structural Design Agency on Record (SDAR), Geotechnical Engineer on Record (GER), Construction Engineer on Record (CER), (CMAR), and Quality Auditor on Record (QAR) and Quality Audit Agency on Record (QAAR) as required. The detail of qualification and requirement of registration is given in Appendix B. A proper written agreement(s), in a standard format(s), should be entered upon with such professional(s) engaged.

CHAPTER 7

Conservation of heritage sites including heritage buildings, heritage precincts and natural feature areas

Conservation of heritage sites shall include buildings, artefacts, structures, areas and precincts of historic, aesthetic, architectural, cultural or environmentally significant nature (heritage buildings and heritage precincts), natural feature areas of environmental significance or sites of scenic beauty.

58. APPLICABILITY

This regulation shall apply to heritage sites which shall include those buildings, artefacts, structures, streets, areas and precincts of historic, architectural, aesthetic, cultural or environmental value (hereinafter referred to as Listed Heritage Buildings / Listed Heritage Precincts) and those natural feature areas of environmental significance or of scenic beauty including, but not restricted to, sacred groves, hills, hillocks, water bodies (and the areas adjoining the same), open areas, wooded areas, points, walks, rides, bridle paths (hereinafter referred to as 'listed natural feature areas') which shall be listed in notification(s) to be issued by the State Government / identified in Master Plan.

(A) Definitions

i) "**Heritage building**" means and includes any building of one or more premises or any part thereof and/or structure and/or artefact which requires conservation and / or preservation for historical and / or architectural and / or artisanary and /or aesthetic and/or cultural and/or environmental and/or ecological purpose and includes such portion of land adjoining such building or part thereof as may be required for fencing or covering or in any manner preserving the historical and/or architectural and/or aesthetic and/or cultural value of such building.

ii) "**Heritage Precincts**" means and includes any space that requires conservation and /or preservation for historical and / or architectural and/or aesthetic and/or cultural and/or environmental and/or ecological purpose. Walls or other boundaries of a particular area or place or building or may enclose such space by an imaginary line drawn around it.

iii) "**Conservation**" means all the processes of looking after a place so as to retain its historical and/or architectural and/or aesthetic and/or cultural significance and includes maintenance, preservation, restoration, reconstruction and adoption or a combination of more than one of these.

iv) "**Preservation**" means and includes maintaining the fabric of a place in its existing state and retarding deterioration.

v) "**Restoration**" means and includes returning the existing fabric of a place to a known earlier state by removing accretions or by reassembling existing components without introducing new materials.

vi) "**Reconstruction**" means and includes returning a place as nearly as possible to a known earlier state and distinguished by the introduction of materials (new or old) into the fabric. This shall not include either recreation or conjectural reconstruction.

59. RESPONSIBILITY OF THE OWNERS OF HERITAGE BUILDINGS

It shall be the duty of the owners of heritage buildings and buildings in heritage precincts or in heritage streets to carry out regular repairs and maintenance of the buildings. The State Government, the Municipal Council or the Local Bodies and Authorities concerned shall not be responsible for such repair and maintenance except for the buildings owned by the Government, the Municipal Council or the other local bodies.

60. RESTRICTIONS ON DEVELOPMENT / RE-DEVELOPMENT / REPAIRS ETC.

i) No development or redevelopment or engineering operation or additions / alterations, repairs, renovations including painting of the building, replacement of special features or plastering or demolition of any part thereof of the said listed buildings or listed precincts or listed natural feature areas shall be allowed except with the prior permission of the Chairperson, Municipal Council / Chairman, Development Authority. Before granting such permission, the agency concerned shall consult the Heritage Conservation Committee to be appointed by the State Government and shall act in according with the advice of the Heritage Conservation Committee.

ii) Provided that, before granting any permission for demolition or major alterations / additions to listed buildings (or buildings within listed streets or precincts), or construction at any listed natural features, or alteration of boundaries of any listed natural feature areas, objections and suggestions from the public shall be invited and shall be considered by the Heritage Conservation Committee.

iii) Provided that, only in exceptional cases, for reasons to be recorded in writing, the Chairperson, Municipal Council / Chairman, Development Authority may refer the matter back to the Heritage Conservation Committee for reconsideration.

However, the decision of the Heritage Conservation Committee after such reconsideration shall be final and binding.

61. PENALTIES

Violation of the regulations shall be punishable under the provisions regarding unauthorized development. In case of proved deliberate neglect of and/or damage to Heritage Buildings and Heritage Precincts, or if the building is allowed to be damaged or destroyed due to neglect or any other reason, in addition to penal action provided under the concerned Act, no permission to construct any new building shall be granted on the site if a Heritage Building or Building in a Heritage Precinct is damaged or pulled down without appropriate permission from the Chairperson, Municipal Council / Chairman, Development Authority.

It shall be open to the Heritage Conservation Committee to consider a request for rebuilding/ reconstruction of a Heritage Building that was unauthorizedly demolished or damaged, provided that the total built-up area in all floors put together in such new construction is not in excess of the total built-up area in all floors put together in the original Heritage Building in the same form and style in addition to other controls that may be specified.

62. PREPARATION OF LIST OF HERITAGE SITES INCLUDING HERITAGE BUILDINGS, HERITAGE PRECINCTS AND LISTED NATURAL FEATURE AREAS

The list of heritage sites including Heritage Buildings, Heritage Precincts and listed Natural Features Areas is to be prepared and supplemented by the Chairperson, Municipal Council / Chairman, Development Authority on the advice of the Heritage Conservation Committee. Before being finalized, objections and suggestions of the public are to be invited and considered. The said list to which the regulation applies shall not form part of this regulation for the purpose of Building Bye-laws.

The list may be supplemented from time to time by Government on receipt of proposal from the agency concerned or by Government *suo moto* provided that before the list is supplemented, objections and suggestions from the public be invited and duly considered by the Chairperson, Municipal Council / Chairman, Development Authority/ and/or State Government and / or the Heritage Conservation Committee.

When a building or group of buildings or natural feature areas are listed it would automatically mean (unless otherwise indicated) that the entire property including its entire compound / plot boundary along with all the subsidiary structures and artefacts, etc. within the compound/plot boundary, etc. shall form part of list.

63. ALTERATION / MODIFICATION / RELAXATION IN DEVELOPMENT NORMS

On the advice of the said Heritage Conservation Committee to be appointed by the Government and for reasons to be recorded in writing, the Chairperson, Municipal Council / Chairman, Development Authority shall follow the procedure as per Development Authority Act, to alter, modify or relax the Development Control Norms prescribed in the Master Plan, if required, for the conservation or preservation or retention of historic or aesthetic or cultural or architectural or environmental quality of any heritage site.

64. HERITAGE PRECINCTS / NATURAL FEATURE AREAS

In cases of streets, precincts, areas and (where deemed necessary by the Heritage Conservation Committee) natural feature areas notified, development permissions shall be granted in accordance with the special separate regulation prescribed for respective streets, precincts / natural feature areas which shall be framed by the Chairperson, Municipal Council / Chairman, Development Authority on the advice of the Heritage Conservation Committee.

Before finalizing the special separate regulations for precincts, streets, natural features, areas, the draft of the same shall be published in the official gazette and in leading newspapers for the purpose of inviting objections and suggestions from the public. All objections and suggestions received within a period of 30 days from the date of publication in the official gazette shall be considered by the Chairperson, Municipal Council / Chairman, Development Authority / Heritage Conservation Committee.

After consideration of the above suggestions and objections, the agency concerned**,** acting on the advice of the Heritage Conservation Committee shall modify (if necessary) the aforesaid draft separate regulations for streets, precincts, areas and natural features and forward the same to Government for notification.

65. ROAD WIDENING

Widening of the existing roads under the Master Plan of the City or Town / Zonal Development Plan or in the Layout Plan shall be carried out considering the existing heritage buildings (even if they are not included in a Heritage Precinct) or which may affect listed natural features areas.

66. INCENTIVE USES FOR HERITAGE BUILDINGS

In cases of buildings located in non-commercial use zones included in the Heritage Conservation List, if the owner / owners agree to maintain the listed heritage building as it is in the existing state and to preserve its heritage state with due repairs and the owner / owners / lessees give a written undertaking to that effect, the owner / owners / lessees may be allowed with the approval of the Heritage Conservation Committee within permissible use zone to convert part or whole thereof of the non-commercial area within such a heritage building to commercial/office use/hotel. Provided that if the heritage building is not maintained suitably or if the heritage value of the building is spoiled in any manner, the commercial / office / hotel use shall be disallowed.

67. MAINTAINING SKYLINE AND ARCHITECTURAL HARMONY

After the guidelines are framed, buildings within heritage precincts or in the vicinity of heritage sites shall maintain the skyline in the precinct and follow the architectural style (without any high-rise or multi-storeyed development) as may be existing in the surrounding area, so as not to diminish or destroy the value and beauty of or the view from the said heritage sites. The development within the precinct or in the vicinity of heritage sites shall be in accordance with the guidelines framed by the Chairperson, Municipal Council / Chairman, Development Authority on the advice of the Heritage Conservation Committee or separate regulations / guidelines, if any, prescribed for respective zones by Municipal Council / Development Authority.

68. RESTRICTIVE COVENANTS

Restrictions existing as imposed under covenants, terms and conditions on the leasehold plots either by the State Government or by Municipal Council of the city/town or by Development Authority shall continue to be imposed in addition to Development Control Regulations. However, in case of any conflict with the heritage preservation interest/environmental conservation, this Heritage Regulation shall prevail.

69. GRADING OF THE LISTED BUILDINGS / LISTED PRECINCTS

Listed Heritage Buildings / Listed Heritage Precincts may be graded into three categories. The definition of these and basic guidelines for development permissions are as follows:

Listing does not prevent change of ownership or usage. However, change of use of such Listed Heritage Building / Listed Precincts is not permitted without the prior approval of the Heritage Conservation Committee. Use should be in harmony with the said listed heritage site.

Grade-I	**Grade-II**	**Grade-III**
(A) Definition Heritage Grade-I comprises buildings and precincts of national or historic importance, embodying excellence in architectural style, design, technology and material usage and/or aesthetics; they may be associated with a great historic event, personality, movement or institution. They have been and are the prime landmarks of the region. All natural sites shall fall within Grade-I.	Heritage Grade-II (A&B) comprises of buildings and precincts of regional or local importance possessing special architectural or aesthetic merit, or cultural or historical significance though of a lower scale than Heritage Grade-I. They are local landmarks, which contribute to the image and identity of the region. They may be the work of master craftsmen or may be models of proportion and ornamentation or designed to suit a particular climate.	Heritage Grade-III comprises building and precincts of importance for townscape; that evoke architectural, aesthetic, or sociological interest through not as much as in Heritage Grade-II. These contribute to determine the character of the locality and can be representative of lifestyle of a particular community or region and may also be distinguished by setting, or special character of the façade and uniformity of height, width and scale.
(B) Objective: *HERITAGE GRADE-I RICHLY DESERVES CAREFUL PRESERVATION.*	Heritage Grade-II deserves intelligent conservation.	Heritage Grade-II deserves intelligent conservation (though on a lesser scale than Grade-II and special protection to unique features and attributes).
(C) Scope for Changes: No interventions be permitted either on exterior or interior of the heritage building or natural features unless it is necessary in the interest of strengthening and prolonging the life of the buildings/or precincts or any part or features thereof. For this purpose, absolutely essential and minimum changes would be allowed and they must be in conformity with the original.	*Grade-II(A):* Internal changes and adaptive re-use may by and large be allowed but subject to strict scrutiny. Care would be taken to ensure the conservation of all special aspects for which it is included in Heritage Grade-II. *Grade-II(B):* In addition to the above, extension or additional building in the same plot or compound could in certain circumstances, be allowed provided that the extension / additional building is in harmony with (and does not detract from) the existing heritage building(s) or precincts especially in terms of height and façade.	Internal changes and adaptive re-use may by and large be allowed. Changes can include extensions and additional buildings in the same plot or compound. However, any changes should be such that they are in harmony with and should be such that they do not detract from the existing heritage building/precinct.

(D) Procedure: Development permission for the changes would be given on the advice of the Heritage Conservation Committee.	Development permission for the changes would be given on the advice of the Heritage Conservation Committee.	Development permission for changes would be given on the advice of the Heritage Conservation Committee.
(E) Vistas / Surrounding Development: All development in areas surrounding Heritage Grade-I shall be regulated and controlled, ensuring that it does not mar the grandeur of, or view from Heritage Grade-I.	All development in areas surrounding Heritage Grade-II shall be regulated and controlled, ensuring that it does not mar the grandeur of, or view from Heritage Grade-II.	All development in areas surrounding Heritage Grade-III shall be regulated and controlled, ensuring that it does not mar the grandeur of, or view from Heritage Grade-III.

70. OPINION OF THE HERITAGE CONSERVATION COMMITTEE

Nothing mentioned above should be deemed to confer a right on the owner / occupier of the plot to demolish or reconstruct or make alterations to his heritage building / buildings in a heritage precinct or on a natural heritage site if in the opinion of the Heritage Conservation Committee, such demolition / reconstruction /alteration is undesirable.

71. APPROVAL TO PRESEVE THE BEAUTY OF THE AREA

The Heritage Conservation Committee shall have the power to direct, especially in areas designated by them, that the exterior design and height of buildings should have their approval to preserve the beauty of the area.

72. SIGNS AND OUTDOOR DISPLAY STRUCTURES / INCLUDING STREET FURNITURE ON HERITAGE SITES

The Chairperson, Municipal Council/ Chairman, Development Authority on the advice of the Heritage Conservation Committee shall frame regulations or guidelines to regulate signs, outdoor display structures and street furniture on heritage sites.

73. IMPLICATIONS OF LISTING AS HERITAGE BUILDINGS

The Regulations do not amount to any blanket prevention of demolition or of changes to Heritage Buildings. The only requirement is to obtain clearance from Chairperson, Municipal Council/ Chairman, Development Authority and Heritage Conservation Committee from heritage point of view.

74. OWNERSHIP NOT AFFECTED

Sale and purchase of Heritage Buildings does not require any permission from Municipal Council of the city/town/ Development Authority/or Heritage Conservation Committee. The Regulations do not affect the ownership or usage. However, such usage should be in harmony with the said listed precincts / buildings. Care will be taken to ensure that the development permission relating to these buildings is given within 60 days.

75. COMPOSITION OF HERITAGE CONSERVATION COMMITTEE

The Heritage Conservation Committee shall be appointed by the State Government comprising of:

(i)	Secretary (UD)	**Chairman**
(ii)	In charge Architecture, State PWD	Member
(iii)	Structural Engineer having experience of ten years in the field and membership of the Institution of Engineers, India	Member
	Architect having 10 years experience	
	A) Urban Designer	Member
	B) Conservation Architect	Member
(iv)	Environmentalist having in-depth knowledge and experience of 10 years of the subject.	Member
(v)	Historian having knowledge of the region having 10 years experience in the field	Member
(vi)	Natural historian having 10 years experience in the field	Member
(vii)	Chief Town Planner, Municipal Corporation	Member
(viii)	Chief Town Planner, Development Authority	Member
(ix)	Chief Architect, Development Authority	Member
(x)	Representative of State Archaeological Department	Member
(xi)	Director, Urban Development Department	**Member-Secretary**

(a) The Committee shall have the powers to co-opt upto three additional members who may have related experience.

(b) The tenure of the Chairman and Members of other than Government Department / Local Bodies shall be three years.

The terms of reference of the Committee shall inter alia be:

(i) to advice the Chairperson, Municipal Council/ Chairman, Development Authority whether development permission is to be granted under Building Bye-Laws No.60 and the conditions of permission (vide BBL No. 58);

(ii) to prepare a supplementary list of heritage sites, which include buildings artefacts, structures, streets, areas, precincts of historic, aesthetic, architectural, cultural, or environmental significance and a supplementary list of natural feature areas of environmental significance, scenic beauty including but not restricted to sacred groves, hills, hillocks, water bodies (and the areas adjoining the same), open areas, wooded areas, points, walks, rides, bridle paths etc. to which this Building Bye-Law would apply.

(iii) To advise whether any relaxation, modification, alteration, or variance of any of the Building Bye-laws;

(iv) To frame special regulations / guidelines for precincts and if necessary for natural feature areas to advise the Chairperson, Municipal Council/ Chairman, Development Authority regarding the same;

(v) To advise whether to allow commercial / office/ hotel use in the (name the areas) and when to terminate the same;

(vi) To advise the Chairperson, Municipal Council/ Chairman, Development Authority in the operation of this Building Bye-law to regulate or eliminate/erection of outside advertisements/bill boards/street furniture;

(vii) To recommend to the Chairperson, Municipal Council/ Chairman, Development Authority guidelines to be adopted by those private parties or public / government agencies who sponsor beautification schemes at heritage sites;

(viii) To prepare special designs and guidelines / publications for listed buildings, control of height and essential façade characteristics such as maintenance of special types of balconies and other heritage items of the buildings and to suggest suitable designs adopting appropriate materials for replacement keeping the old form intact to the extent possible.

(ix) To prepare guidelines relating to design elements and conservation principles to be adhered to and to prepare other guidelines for the purposes of this Regulation;

(x) To advise the Chairperson, Municipal Council/ Chairman, Development Authority/ on any other issues as may be required from time to time during course of scrutiny of development permissions and in overall interest of heritage / conservation;

(xi) To appear before the Government either independently or through or on behalf of the Chairperson, Municipal Council/ Chairman, Development Authority in cases of Appeals under Development Authority/Municipal Act in cases of listed buildings / heritage buildings and listed precincts / heritage precincts and listed natural feature areas.

APPENDIX A

PROTECTION AGAINST HAZARDS

A1. PROTECTION OF AREAS FROM EARTHQUAKES

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

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

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

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

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

Note : The protective action given under (b) to (e) will usually involve large amount of costs and should only be considered in the case of large and costly structures. For ordinary buildings the cost of improvement of the site will usually be uneconomical, hence bad sites should be excluded by Land Use Zoning.

A2. PROTECTION FROM CYCLONIC WIND DAMAGE

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

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

(c) In case the buildings, structures and infrastructures are founded on marine clay deposits it will be advisable to adopt either under-reamed or long piles which should penetrate the marine clay layer and rest on dense sand stratum, or individual column footing with a reinforced concrete beam located at the level of the ground, or a continuous reinforced concrete strip footing, using a very low bearing pressure not exceeding …..

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

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

A3. PROTECTION OF AREAS FROM FLOODS

This may require one or more of the following actions.

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

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

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

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

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

(f) Flood proofing works such as the following:

(i) Providing Quick Drainage facility, consisting of
- Revitalization of secondary and primary drainage channels after establishing the drainage blockage points;
- Provision of additional waterways;
- Clearing of clogged cross drainage works;

Providing Human and Animal Shelters for population living within embankments in the form of raised platform or use of available high ground.

(g) Anti-erosion actions in affected areas

(h) Any other suitable measure.

Note: 1. Similar protection methods could be used against flooding caused in cyclone prone areas by high intensity rains or by the storm surge.

2. The concept of land zoning should be kept in mind for areas where protection works are taken up to decide inter-se priority for location of structures considering possibility of failure of protection works during extreme disaster events.

APPENDIX B

REGISTRATION, QUALIFICATIONS AND DUTIES OF PROFESSIONALS

*(*The regulations under this Appendix shall be subject to the approval of the State Government at a later stage as and when deemed fit*)

B1. REGISTRATION OF PROFESSIONALS

B1.1 The competent Authority shall register Town Planners (RTP), Architects (RA), Engineers (RE), Structural Engineers (RSE), Structural Design Agencies (RSDA), Geo-technical Engineers (RGE), Construction Engineers (RCE), Construction Management Agency (RCMA), Quality Auditors (RQA) and Quality Audit Agencies (RQAA), Developers (RD), wherever applicable, till such time there is no legislative frame for the professionals like engineers and others similar to Architects Act 1973.

Application for registration shall be submitted by these professionals to the competent authority.

Registration shall be valid for a period of three years and shall be renewable.

B1.1 REGISTERED STRUCTURAL ENGINEER (RSE)

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

This registration shall be renewed every three years.

The registration may be cancelled permanently or for a specified period or unprofessional conduct.

GRADE-I

Scope of work: To prepare structural design and structural drawings of High rise buildings, Educational Institutes, Hospitals, Public buildings, Special structures, Lifeline Buildings and the likes.

Eligibility:

(i) B. E. Civil or equivalent with minimum 10 years experience (after attaining the degree) in structural design work at a responsible position as a structural designer OR

(ii) M. E. Structures/ Earthquake Engineering or Ph.D. in Structural Engineering with minimum 5 years of experience (after attaining the degree) in structural design work at a responsible position a structural designer

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

GRADE-II

Scope of work: To prepare structural design and structural drawings of various buildings having more than ground floor + 2 upper floors (Plinth area upto 5000 m2)

Eligibility:

(i) B. E. Civil or equivalent with minimum 5 years experience (after attaining the degree) in structural design work at a responsible position as a structural designer OR

(ii) M. E. Structures/ Earthquake Engineering or Ph.D. in Structural Engineering with minimum 3 years of experience (after attaining the degree) in structural design work at a responsible position a structural designer

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

GRADE-III

Scope of work: To prepare structural design and structural drawings of Low rise buildings excluding above mentioned structures for Grade-I and Grade-II.

Eligibility:

(i) B.E. Civil or equivalent with minimum 3 years experience (after attaining the degree) in structural design work at a responsible position as a structural engineer OR

(ii) M. E. Structures/ Earthquake Engineering or Ph.D. in Structural Engineering with minimum 1 years of experience (after attaining the degree) in structural design work at a responsible position as a structural engineerThe experience as stated above shall be under a Structural Engineer on Record. (*This requirement shall be waived for the first three years of the promulgation of these Regulations*)

B1.3 REGISTERED ENGINEER

Registered Engineers are those graduate Engineers who are registered by local bodies to submit drawings and other documents for obtaining development permission.

B1.4 REGISTERED CONSTRUCTION ENGINEER (RCE)

(A) The requirements for registration shall be:

(i) B.E. Civil or equivalent with five years experience in construction or

(ii) Diploma in Civil Engineering with seven years experience in construction

(iii) B. Arch or its equivalent with a degree or diploma in Construction Management and five years of experience in construction.

(iv) The experience as stated above shall be under one or more Construction Engineer on Record of under one or more reputed construction companies. Such company of companies established within of outside the area of jurisdiction of the competent authority shall be of minimum ten years of standing.

(B) The registration shall be renewed every three years.

(C) The registration may be cancelled for unprofessional conduct permanently or for a specified period.

B1.5 REGISTERED CONSTRUCTION MANAGEMENT AGENCY (RCMA)

(A) The requirement for registration shall be

(i) Owner of a proprietary firm shall be an RCE

(ii) Fifty per cent partners of a partnership firm shall be RCE

(iii) A designated officer of a limited company shall be RCE

(B) The registration shall be renewed every three years.

(C) The registration may be cancelled for unprofessional conduct permanently or for a specified period.

B1.6 REGISTERED QUALITY AUDITOR (RQA)

(A) The requirements for registration shall be:

(i) E. Civil or equivalent with five years experience in testing of building materials including concrete and/or experience in quality control work with a reputed construction agency.

(ii) M.E. (Civil) or equivalent with two years experience as above.

(iii) Arch or equivalent with a degree or diploma in Construction Management and five years of experience in quality control aspects of construction.

(iv) The experience as stated above shall be under one or more registered quality inspector/s of in quality work under one or more reputed construction agencies of minimum ten years of standing from within or outside the area of jurisdiction of the Competent Authority.

(B) Registration shall be renewed after every three years.

(C) Registration may be cancelled for unprofessional conduct permanently or for a specified period.

B1.7 REGISTERED QUALITY AUDIT AGENCY (RQAA)

(A) The requirements for registration shall be:

(i) Owner of a proprietary firma shall be QAR

(ii) Fifty percent partners of a partnership firm shall be QAR

(iii) A designated officer of a limited company shall be a QAR

(B) Registration shall be renewed every three years.

(C) Registration may be cancelled for unprofessional conduct permanently or for a specified period.

B1.8 REGISTERED GEO-TECHNICAL AGENCY (RGA)

For foundation work, where required as per Regulation services of a Geo-technical Agency on Record.

(A) The requirements for registration shall be:

(i) Owner of a proprietary firm shall be M.E. (or equivalent) in Geo-technical Engineering with minimum 10 years of experience

(ii) Fifty per cent partners of a partnership firm shall have educational qualifications as in (i) but a minimum 5 years experience.

(iii) A designated officer of a limited company shall have qualifications as (i)

(iv) The experience as stated above shall be under one or more Geo-technical Agency on Record. Such agencies established within of outside the area of jurisdiction of the competent authority shall be of minimum ten years of standing.

(v) The agency has a Registered Laboratory. Any individual possessing qualifications as in (i) and hiring services of either GAR or Registered Testing Laboratory shall also be eligible for registration.

(B) The registration shall be renewed every three years.

(C) The registration may be cancelled for unprofessional conduct permanently or for a specified period

B1.9 REGISTERED ARCHITECT (RA)

Qualification and Experience:-

The person/ firm/company acting as Architect shall be registered with Council of Architecture and shall be bind with the terms & conditions as prescribed under the professional rules by the Council of Architecture to render professional services.

B1.10 TOWN PLANNER ON RECORD (TPR)

The qualifications, responsibility and the professional charges shall be applicable as prescribed by the Institute of Town Planners, India for their members for rendering professional services.

B.2 APPOINTMENT OF PROFESSIONALS

B2.1 The Owner / Developer shall appoint the following professionals, out of the registered professionals described in B1.1 above for every project as required.

- Town Planner on Record (TPR)
- Architect on Record (AR)
- Engineer on Record (ER)
- Structural Engineer on Record (SER)
- Structural Design Agency on Record (SDAR)
- Geo-technical Engineer on Record (GER)
- Construction Engineer on Record (CER)
- Construction Management Agency on Record (CMAR)
- Quality Auditor on Record (QAR)
- Quality Audit Agency on Record (QAAR)

B2.2 The Owner / Developer shall submit a list of the appointed professionals on Record with the application for Development Permission to the competent authorities.

(Consent/undertaking from these professionals needed in the required format at the time of seeking Development Permission)

B2.3 In case the Owner / Developer change any of the professional on Record intimation to that effect shall be sent to the competent authorities, along with a no-objection certificate from the professional who is being changed.

B.3 GENERAL DUTIES AND RESPONSIBILITIES APPLICABLE TO ALL PROFESSIONALS

(i) Each Professional shall clearly indicate on every plan, document & submission, prepared by him the details of his / her designation with registration number and date, full name and his/her address below the signature for identification.

(ii) The Structural Engineer on Record and Architect on Record shall be responsible for adhering to the provisions of the relevant and prevailing 'Indian Standard Specifications'. They will not be held responsible for the severe damage or collapse that may occur under the natural forces going beyond the design forces provided in the above 'Indian Standard Specifications'

B3.1 STRUCTURAL ENGINEER ON RECORD (SER)

Duties and Responsibilities

(A) At the time of seeking permission from Competent Authority for starting construction, the Owner shall submit an undertaking from SER or SDAR that

(i) The SER / SDAR is agreeable to accept the assignment to prepare designs, drawings and specifications.

(ii) The designs shall be carried out according to relevant national codes and specifications and good engineering practice.

(iii) A structural design report giving salient features of the structure, loads and soil characteristics and capacity, etc. shall be submitted in the prescribed format

(B) In the case of high-rise buildings and Special Structures, SER/SDAR shall

(i) Prepare Preliminary Design of the structure in addition to the Report indicated in A (iii) above.

(ii) Get required soil (geo-technical) investigation done from an approved laboratory and submit the report concerning the same in prescribed format to the Competent Authority.

(iii) Get the Preliminary Design checked through third party verification by a member of Structural Design Review Panel and submit a certificate concerning the same to the Competent Authority. Provided that in case of high-rise buildings having seven or more structural floors and special structures detailed design verification of major structural components will be required.

(C) All Reports and other submissions to the Competent Authority by and on behalf of the SDAR shall only be signed by Registered Structural Engineer (SER) as a proprietor, partner or as a designated officer of the company.

(D) (i) To prepare a report of the structural design.

(ii) To prepare detailed structural design and to prescribe the method and technique of its execution strictly on the basis of National Building Code or relevant Indian Standard Specifications.

(iii) To prepare detailed structural drawings and specifications for execution indicating thereon, design live loads, safe soil bearing capacity, specifications of material, assumptions made in design, special precautions to be taken by contractor to suit the design assumptions etc whatever applicable.

(iv) To supply two copies of structural drawings to the supervisor.

(v) To advise the Owner/Architect/Engineer for arranging for tests and their reports for soil, building material etc. for his evaluation and design consideration.

(vi) To prepare the revised calculations & drawings in case of any revision with reference to the earlier submission of drawings & design in a particular case.

(vii) To inform in writing the Competent Authority within 7 days, if for any reason, he/she is relieved of his appointment/responsibilities as the registered Structural designer for the development.

B3.2 CONSTRUCTION ENGINEER ON RECORD (CER)

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

Duties and Responsibilities:

(i) To adhere strictly to the structural drawings, specifications and written instructions of the Structural Engineer on Record and Architect on Record / Engineer on Record

(ii) To follow the provisions of N.B.C. or I.S. specifications as regards materials, components, quality control and the process of construction.

(iii) To provide for safety of workers and others during excavation, construction and erection.

(iv) To provide safe and adequate temporary structure required for construction and erection.

(v) To bring to the notice of the structural designer and Architect/Engineer any situation of circumstances which in his opinion are liable to endanger the safety of the structure.

(vi) To deposit with the Competent Authority one set of working drawings of the works executed along with the progress certificates before proceeding with the next stage of the work.

(vii) He/she shall be in overall charge of the site and responsible for overall supervision of the work.

(viii) He/she shall ensure that all the work under his charge is carried out in conformity with the approved drawings and as per the details and specifications supplied by the registered Architect/Engineer.

(ix) He/she shall take adequate measures to ensure that no damage is caused to the work under construction and adjoining properties.

(x) He/she shall also ensure that no undue inconvenience is caused in the course of his/her work to the people in the neighbourhood.

(xi) He shall also ensure that no nuisance is caused to traffic & neighbouring people by way of noise, dust, smell, vibration etc. in the course of his/her work.

B3.3 CONSTRUCTION MANAGEMENT AGENCY ON RECORD (CMAR)

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

Duties and Responsibilities:

(A) At the time of seeking permission from Competent Authority for starting construction of a high-rise building or special structures, the Owner shall submit an undertaking from CMAR that

(i) The CMAR is agreeable to accept the assignment to execute the project as per designs, drawings and specifications

(ii) The CMAR shall install a Quality Assurance programme by retaining an independent Quality Audit Agency on Record (QAAR) and submit a certificate concerning the same to the Owner/Developer as well as to the Competent Authority. The appointed QAAR shall be acceptable to the Owner/Developer.

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

(B) Upon completion of the construction work of the high-rise building and Special Structures the CMAR shall intimate to the Owner/Developer that the work has been carried out according to the design drawings and specifications and written instructions of SDAR and as per guidance of the QAAR.

(C) The CMAR shall submit a report and certificate in the prescribed format from the QAAR that the quality assurance programme has been satisfactorily carried out on the construction work. This report and certificate shall be submitted to the Owner/Developer for final submission to the Competent Authority.

(D) All Reports and other submissions to the Competent Authority by and on behalf of the CMAR shall only be signed by Construction Engineer ON Record (CER) as a proprietor, partner or by as a designated officer of the company.

B3.4 QUALITY AUDITOR ON RECORD (QAR)

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

B3.5 QUALITY AUDIT AGENCY ON RECORD (QAAR)

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

(A) At the time of seeking permission from competent authority for starting construction of a high rise building of special structures CMAR shall submit an undertaking form QAAR that:

(i) The QAAR is agreeable to accept the assignment to implement the quality inspection programme. AND that the appointed QAAR is acceptable to the Owner/Developer.

(ii) The QAAR will get all the testing of building materials, concrete etc. done by an independent approved testing laboratory.

(B) During construction of a high rise building and special structures the QAAR shall carry out necessary testing of materials as well as non-destructive testing of structural components with the help of approved testing laboratory and submit to the CMAR and the owner/developer the reports as per quality inspection programme.

(C) Upon completion of the construction of high-rise building or the special structure the QAAR shall submit the report and certificate in the prescribed format based on the quality inspection programme. This report and certificate will be submitted to the CMAR and the owner/developer for final submission to the competent authority.

(D) All reports and other submissions to the CMAR by QAAR shall only be signed by Quality Auditor on Record (QAR) as proprietor, partner or as a designated officer of the company.

B3.6 GEO-TECHNICAL AGENCY ON RECORD (GAR)

All buildings described in Table-1 shall have, for foundation work, services of a Geo-technical Agency on Record.

Duties and Responsibilities:

(i) To carry out soil investigation at proposed locations as per specifications of Structural Engineer on Record (SER) of Structural Design Agency on Record (SDAR).

(ii) To recommend various type foundation for proposed structure and loading with supporting calculations

(iii) To enable SER or SDAR to take site decision in case strata different than soil investigation report is met with.

(iv) To list out precautionary measures so that there is no damage to adjacent property.

B.4 DEVELOPER

Duties and responsibilities**:** The responsibilities of developers shall be

(i) To obtain and submit to the Competent Authority, along with application for development permission, each progress report and application for occupation certificate.

(ii) To appoint an Architect on Record/ Engineer on Record and Structural Engineer on Record.

(iii) To obtain at relevant stages certificates from them, for submission to the Competent Authority, that in designing the real estate development and providing detailed drawings and specifications for it they have complied with requirements as laid out in the GDCR Regulations.

(iv) To appoint a registered CER as site supervisor.

(v) To obtain and adhere to the quality assurance procedure prepared by the registered site supervisor.

(vi) To adequately enable the site supervisor to carry out his responsibilities.

(vii) To certify along with the site supervisor that construction of the real estate development has been carried out as per the design, detailed drawings and specifications provided by the Architect on Record/ Engineer on Record and Structural Engineer on Record.

(viii) To obtain development permission from the Competent Authority prior to commencement of construction of the real estate development

(ix) To regularly submit progress reports and certificates as required by the Competent Authority.

(x) To inform in writing the Competent Authority within 7 days, if for any reason he ceases to be the developer or is relieved of his responsibilities as the developer of the real estate development

(xi) To inform in writing the Competent Authority within 7 days, if for any reason any of the registered professionals appointed by him have been relieved of their responsibilities or have resigned.

(xii) The appointment of the registered Architect/ Engineer on Record shall mean that he (the Developer) has authorized the Architect on Record / Engineer on Record to do all things necessary and to take all adequate measures for preparing the design, drawings and specifications for the project and to appoint on his behalf appropriate persons to act as registered, clerk of works site supervisor, required for the proper execution of the project and to retain on behalf of the owner any other specialist or expert required on the work of the project.

(xiii) He shall not cause or allow any deviations from the approved drawings in the course of the execution of the project against the instruction of Architect on Record /Engineer on Record /Site Supervisor on Record /Clerk of Works on Record / Structural Engineer on Record and shall bear all responsibility for any irregularity committed in the use and function of the building or its parts for which the approval has been obtained.

(xiv) When no registered construction contractor or site supervisor is required to be appointed and not appointed he shall be responsible for their duties and responsibilities under the Regulations.

(xv) He shall not commence the use of building or shall not give the possession to occupy the building to any one before obtaining the occupancy certificate from the Competent Authority.

(xvi) He shall provide adequate safety measures for structural stability and protection against fire hazards likely from installation of services like electrical installation, plumbing, drainage, sanitation, water supply etc. wherever required under the regulations.

(xvii) He shall exhibit the names of registered persons only, on site and no additional names will be exhibited/displayed.

(xviii) He shall explain the construction design and its intended use as per approved plan only, to the prospective purchaser of the premises under construction.

(xix) He shall make available copies of titles for the land, approved plans and all certificates issued to the Competent Authority under these Regulations.

B.5 OWNER

"Owner", in relation to any property, includes any person who is for the time being, receiving or entitled to receive, whether on his own account or on account of or on behalf of, or for the benefit of, any other person or as an agent, trustee, guardian, manager or receiver for any other person or for any religious or charitable institution, the rents or profits of the property; and also includes a mortgaging possession thereof.

B.6 BUILDER/CONTRACTOR

The minimum qualification and competence for the builder/contractor for various categories of building and infrastructural development shall be as decided by the Authority to ensure compliance of quality, safety and construction practices as required under the NBC.

Duties and Responsibilities:

(i) To appoint a Site Supervisor (Diploma) and Site Engineer (Civil) for site supervision.

(ii) To obtain and adhere to the quality assurance procedure including testing of materials for quality prepared by the registered Construction Engineer and to get the materials e.g. cement, steel, bricks, water, cement motar and cement concrete of every batch, tested from an approved lab and properly maintain the records.

(iii) To certify along with the RCE/Site Supervisor/Site Engineer that construction of the real estate development has been carried out as per the design, detailed working drawings and

specifications provided by the Architect on Record/Engineer on Record and Structural Engineer on Record.

(iv) To regularly submit progress report and certificates as required by the Competent Authority.

(v) To inform in writing to the Competent Authority within 7 days, if for any reason he ceases to be the Builder/Contractor or is relieved of his responsibilities of the real estate development.

(vi) To inform in writing to the Competent Authority within 7 days, if for any reason any of the professionals appointed by him have been relieved of their responsibilities or have resigned.

(vii) The appointment of the Site Engineer shall mean that he has authorized the him to do all things necessary and to take all adequate measures for construction as per architectural/Structural design, working drawings, quality of materials and workmanship for the project and to appoint appropriate persons to act as clerk of work/site supervisor, required for the proper execution of the project and to retain on behalf of him any other specialist or expert required on the work of the project.

(viii) He shall not cause any deviations from the approved drawings in the course of the execution of the project against the instruction of Architect on Record Construction Engineer on Record/Site Supervisor Clerk of Works Structural Engineer on Record unless a written permission is obtained by him and he shall bear all responsibility for any irregularity committed in this behalf.

(ix) He shall provide adequate safety measures for all labourers/technical, staff, material, timbering, scaffolding, shuttering and other stability and protection against fire hazards like from installation of services like electrical installation etc.,

(x) He shall submit the certificate for execution of work as per structural safety\ requirements and give written notice to the Authority regarding completion of work described in the permit.

(xi) Any other condition as per local laws of the authority

SCHEDULE-I

Proposed Fee Structure for determining the '*Building Permit Fee*' for various types of structure

Sl. No	Type	Rate
1	**Type I**: Assam Type pitched roof with corrugated sheets and timber framed structure OR Pitched roof with corrugated sheets and R.C.C or R.B column and brick wall	**Rs 500/-**
2	**Type II**: RCC Type structure having Plinth Area less than 3000 sq.ft	**Rs 2000/-**
3	**Type III**: RCC Type structure having Plinth Area more than 3000 sq.ft	**Rs 3000/-**
4	**Type IV**: All commercial and utility structures incl;uding filling stations, cinema, telephone towers, etc.	**Rs 5000/-**

FORMS

FORM – A

(See Regulation 4 of the Nagaland Building Bye-Laws)
(To be submitted in triplicate)

APPLICATION TO CONSTRUCT BUILDING OR EXECUTE ANY WORK

To,

_____
_____
_____

Sir,

I / We beg to apply for permission to construct / reconstruct / add / alter / repair of a building at plot No _____ Ward No _____ House No _____ according to building plans submitted herewith.

Description of Construction / reconstruction / add / alter / repair:

1. Ground Floor / First Floor
2. 2nd Floor
3. 3rd Floor
4. 4th Floor
5. Specifications, general and detail

I / We attach (a) Site Plan in Triplicate showing the position of the plot proposed to be built up (b) a certificate of Ownership from Revenue Authority (c) Three copies of plans, all elevations, sections and other details as specified in Regulation No. 4.

The plans have been prepared by: Licensed / Registered Architects / Engineers

Yours faithfully,

……
Signature of Owner(s)

Name of Owner(s)……..
Address……..

Dated……..

FORM – B

(see Regulation 14 of the Nagaland Building Bye-Laws)

SERVICE CONNECTION CERTIFICATE

To,

_____
_____
_____

With reference to your notice dated _____ I hereby:

1. Grant permission for the occupation of the said building
   or
2. Grant clearance for the water supply and electric connection in the said building.
3. Refuse permission for the occupation of the said building for the reason given below:

_____

_____

_____

Description of the building:

Building No. _____ Plot No. _____

Ward No. _____ Street Road No. _____

FORM NO 1

(see Regulation 4(iii) of the Nagaland Building Bye-Laws)
(Appendix A Para 2.3.1 and 2.3.2)

CERTIFICATE OF UNDERTAKING
FOR HAZARD SAFETY REQUIREMENT

To,

_____
_____
_____

REF : Proposed work of _____
(Title of project)
C.S.No./R.S.No. _____ Inward No. _____at

House No. _____ Ward No. _____ situated at _____ street/road

_____ Village/Town/City

1. Certified that the building plans submitted for approval will satisfy the safety requirements as stipulated under Building Regulation No. …and the information given therein is factually correct to the best of our knowledge and understanding.
2. It is also certified that the structural design including safety from hazards based on soil conditions shall be duly incorporated in the design of the building and these provisions shall be adhered to during the construction.

Signature of Owner with date _____

Name in Block Letters _____

Address_____

_____

_____

Structural Engineer on Record with date

Name in Block Letters _____

Address_____

_____

Signature of Developer
with date _____

Name in Block Letters _____

Address_____

_____

Signature of the Architect on Record/
Engineer on Record with date _____

Name in Block Letters _____

Address_____

_____

Note : The certificate of Undertaking shall be signed by person concerned as per the provisions of Paras 2.3.1 and 2.3.2

FORM NO. 2

(see Regulation 4(iii) of the Nagaland Building Bye-Laws)
(Appendix A Para 2.3.1 and 2.3.2)

CERTIFICATE OF UNDERTAKING OF ARCHITECT ON RECORD/ ENGINEER ON RECORD

To,

_____
_____

Ref : Proposal work of _____
(Title of the project)
C.S.No.R.S.No./F.P.No. _____ Inward No. _____at
House No. _____ Ward No. _____ situated at _____

_____ street/road

_____ Village/Town/City

For_____
(Name of Owner /Developer/Builder)
Address: _____
Tel.No.:_____

I am a member of Council of Architects/Institution of Engineers (India) and I am possessing current registration to act as registered Architect/Engineer.

I hereby certify that I am appointed as the Architect on Record / Engineer on Record to prepare the plans, sections and details as required under the provisions of the Act / Development control Regulations for the above mentioned project and that I have prepared and signed the same and that the execution of the project shall be carried out under my direction, and supervision of a Construction Engineer on Record, as per the approved drawings. I am fully conversant with the provisions of the Regulations, which are in force, and about my duties and responsibilities under the same and I undertake to fulfill them in all respects, except under the circumstances of natural calamities.

I also undertake to provide my guidance for the adequate measure to be taken by the owners for installation of plumbing, drainage, sanitation and water supply. The appointment of a Construction Engineer on Record, building contractor, plumbing contractor and electrical contractor shall be made at the appropriate stage by the owner before the relevant work commences.

Signature :

_____

Reg. No. _____ Date :

Name : _____

Address : _____
_____
Tel. No. : _____

FORM NO. 3

(see Regulation 4(iii) of the Nagaland Building Bye-Laws)
(Appendix A Para 2.3.1 and 2.3.2)

CERTIFICATE OF UNDERTAKING OF STRUCTURAL ENGINEER ON RECORD (SER)

To,

_____
_____
_____

Ref : Proposed work of _____
(Title of the project)
C.S.No./R.S.No./F.P.No. _____ Inward No. _____
at Village _____ Taluka _____
Scheme No. _____ of _____
(Village/Town/City)
Owner:_____
Address:_____
Tel. No.: _____

I am a Registered Structural Engineer (RSE). This is to certify that I have been appointed as the Structural Engineer on record to prepare the Structural design basis report, detailed structural design and detailed structural drawings for above mentioned project. I am fully conversant of my duties and responsibilities under the Regulations and assure that I shall fulfill them in all respects.

I have prepared and signed a structural design basis report (SDBR).

I undertake to carry out a detailed structural design and prepare detailed structural drawings of the proposed building as per the latest Indian Standard Specifications, and as indicated in the Structural design basis report.

I undertake to supply the owner and the supervisor the detailed structural drawings. If my services are terminated, I undertake to intimate the Authority in writing.

Signature :
_____
Reg. No. _____ Date :

Name : _____
Address : _____
_____
Tel. No. : _____

FORM NO.4

(see Regulation 4(iii) of the Nagaland Building Bye-Laws)
(Appendix A Para 2.3.1 and 2.3.2)

CERTIFICATE OF UNDERTAKING OF THE CONSTRUCTION ENGINEER ON RECORD

To,

_____
_____
_____

Ref : Proposed work of
.....
(Title of the work)
C.S..NO. /R.S.NO. /F.P.NO.....in word..... at village..... Taluka.....
Scheme NO.....at.....
Owner :
Address :
Tele. No.....
I possess a current Registration to act as Registered Construction Engineer.

I hereby certify that I am appointed as a Construction Engineer on Record on the above mentioned project and that all the works under my charge shall be executed in accordance with the drawings and specifications prepared for this project.

I am fully conversant with the provisions of the Regulations which are in force and about the Duties and Responsibilities under the same and I undertake to fulfil them in all respect.

* I undertake not to supervise more than ten works at a given time as provided in Development Control Regulations.
* I undertake not to supervise work simultaneously at one point of time on any other sites during my supervision of the execution of this work.

Signature:

Registration No.....Date.....

Name.....
Address.....
Tele.No.....

FORM – 5

(see Regulation 12 of the Nagaland Building BYE-LAWS)
(Appendix A Para 3.3.1)

DEVELOPMENT PERMISSION

Ref. No. _____ Date _____ dated _____
for the grant of approval to construct / add / alter / repair of a building specified _____ House No. _____
Ward No. _____ situated at _____
_____

Permission is hereby granted / refused under Section _____
to_____
(Name of the person)
for_____
(Description of work)
on the following conditions / grounds Conditions:
(in case of grant)
subject to the following conditions:

1. Prior permission for commencement of the building should be sought for on **Form A** obtainable from the Competent Authority.
2. The construction should be as per the approved plan and permissible without prior permission.
3. There should be enough provision for good sanitation and drainage system.
4. The land vacated in consequence of the reinforcement of the set back limit shall form part of public street.
5. No new building or part therefore shall be occupied of allowed to be occupied or used or permitted to be used by any person until permission has been granted in that behalf.
6. The excavated earth from the site shall not be dumped in public street, road, gully, etc.
7. Dumping of construction materials / spoils shall be made on any public places roads.

(in case of refusal)
a) Documents / N.O.C. etc.: -
Following documents / plans / N.O.C/ undertakings as mentioned in form no. ----- (application for Development permission) are not submitted.
b) Site Clearance: -
(i) Site is not cleared as per the provisions of Development Plan with respect to
- Road line
- Reservations
- Zone
- Other (specify)

(ii) Site is not cleared as per the provision of T.P. Scheme …… with respect to
- Road

- Reservation
- Final plot
- Other (specify)

(iii) Proposed use is not permissible according to the width of road as per the provision No……

FORM NO. 6

(Appendix A Para 4.2)

STRUCTURAL DESIGN BASIS REPORT

1. This report to accompany the application for Building Development Permission.
2. In case information on items 3, 10, 17, 18 and 19 can not be given at this time, it should be submitted at least one week before commencement of construction.

Part 1	General Data		
S.No.	**Description**	**Information**	**Notes**
1	**Address of the building** • Name of the building • Plot number • Subplot number • TPS scheme a. Name b. Number • Locality/Township • District		
2	Name of owner		
3	Name of Builder on record		
4	Name of Architect/Engineer on record		
5	Name of Structural engineer on record		
6	Use of the building		
7	Number of storeys above ground level (including storeys to be added later, if any)		
8	Number of basements below ground level		
9	**Type of structure** • Load bearing walls • R.C.C frame • R.C.C frame and Shear walls • Steel frame		
10	**Soil data** • Type of soil • Design safe bearing capacity		IS: 1893 Cl. 6.3.5.2 IS: 1904
11	**Dead loads (unit weight adopted)** • Earth • Water • Brick masonry • Plain cement concrete • Reinforced cement concrete • Floor finish • Other fill materials • Piazza floor fill and landscape		IS: 875 Part 1

12	**Imposed (live) loads** • Piazza floor accessible to Fire Tender • Piazza Floor not accessible to Fire Tender ♥ • Floor loads ♦ • Roof loads		IS: 875 Part 2
13	Cyclone / Wind • Speed • Design pressure intensity		IS: 875 Part 3
14	Seismic zone		IS:1893 2002)
15	Importance factor		IS:1893 (2002) Table 6
16	Seismic zone factor(Z)		IS:1893 Table 2
17	Response reduction factor		IS: 1893 Table-7
18	Fundamental natural period - approximate		IS: 1893 Cl. 7.6
19	Design horizontal acceleration spectrum value (A_h)		IS: 1893 Cl. 6.4.2
20	♠ Expansion / Separation Joints		

♥ Enclose small scale plans of each floor on A_4 sheets

♦ Incase terrace garden is provided, indicate additional fill load and live load

♠ Indicate on a small scale plan on A_4 sheet

FORM NO. 6 (Continued)

Part 2	Load bearing masonry buildings				
S.No.	Description	Information			Notes
1	Building category				IS:4326 Cl. 7 read with IS: 1893 Zone / Bldg: II III IV V Ordinary: B C D E Important: C D E E
2	Basement Provided				
3	Number of floors including Ground Floor (all floors including stepped floors in hill slopes)				
4	Type of wall masonry				
5	Type and mix of Mortar				IS:4326 Cl. 8.1.2
6	**Re: size and position of openings (See note No.1)** • Minimum distance (b5) • Ratio $(b_1+b_2+b_3)/l_1$ or $(b_6+b_7)/l_2$ • Minimum pier width between consequent opening (b_4) • Vertical distance (h_3) • Ratio of wall height to thickness4 • Ratio of wall length between cross wall to thickness				IS:4326 Table 4, Fig.7
7	**Horizontal seismic band**	**P**	**IP**	**NA**	(see note no.2)
	• at plinth level	☐	☐	☐	
	• at window sill level	☐	☐	☐	IS:4326 Cl. 8.4.6
	• at lintel level	☐	☐	☐	IS:4326 Cl. 8.3
	• at ceiling level	☐	☐	☐	IS:4326 Cl. 8.4.2
	• at eave level of sloping roof	☐	☐	☐	IS:4326 Cl. 8.4.3
	• at top of gable walls	☐	☐	☐	IS:4326 Cl. 8.4.3
	• at top of ridge walls	☐	☐	☐	IS:4326 Cl. 8.4.4
8	**Vertical reinforcing bar**				
	• at corners and T junction of walls	☐	☐	☐	IS:4326 Cl. 8.4.8
	• at jambs of doors and window openings	☐	☐	☐	IS:4326 Cl. 8.4.9

9	Integration of prefab roofing/flooring elements through reinforced concrete screed	☐	☐	☐	IS:4326 Cl. 9.1.4
10	**Horizontal bracings in pitched truss** • in horizontal plane at the level of ties • in the slopes of pitched roofs	☐ ☐	☐ ☐	☐ ☐	

Notes

1. Information in item 6 should be given on separate A4 sized sheets for all walls with large number of openings.
2. P indicated **"Information Provided"**
   TP indicates **"Information to be Provided"**
   NA indicates **"Not Applicable"**
   Tick mark one box

Part 3	Reinforced concrete framed buildings		
Sl no	Description	Information	Notes
1	**Type of Building** • Regular frames • Regular frames with Shear walls • Irregular frames • Irregular frames with shear walls • Soft storey		IS: 1893 Cl. 7.1
2	Number of basements		
3	Number of floors including ground floor		
4	**Horizontal floor system** • Beams and slabs • Waffles • Ribbed Floor • Flat slab with drops • Flat plate without drops		
5	**Soil data** • Type of soil • Recommended type of foundation - Independent footings - Raft - Piles • Recommended bearing capacity of soil • Recommended, type, length, diameter and load capacity of piles • Depth of water table • Chemical analysis of ground water • Chemical analysis of soil		IS: 1498
6	**Foundations** • Depth below ground level • Type ▪ Independent ▪ Interconnected ▪ Raft ▪ Piles		
7	**System of interconnecting foundations** • Plinth beams • Foundation beams		IS: 1893 Cl. 7.12.1
8	Grades of concrete used in different parts of building		
9	Method of analysis used		
10	Computer software used		
11	Torsion included		IS: 1893 Cl. 7.9

12	**Base shear** a. Based on approximate fundamental period b. Based on dynamic analysis c. Ratio of a/b		IS: 1893 Cl. 7.5.3
13	Distribution of seismic forces along the height of the building		IS:1893 Cl. 7.7 (provide sketch)
14	The column of soft ground storey specially designed		IS:1893 Cl. 7.10
15	**Clear minimum cover provided in** • Footing • Column • Beams • Slabs • Walls		IS: 456 Cl. 26.4
16	**Ductile detailing of RC frame** • Type of reinforcement used • Minimum dimension of beams • Minimum dimension of columns • Minimum percentage of reinforcement of beams at any cross section • Maximum percentage of reinforcement at any section of beam • Spacing of transverse reinforcement in 2-d length of beams near the ends • Ratio of capacity of beams in shear to capacity of beams in flexure • Maximum percentage of reinforcement in column • Confining stirrups near ends of columns and in beam-column joints a. Diameter b. Spacing • Ratio of shear capacity of columns to maximum seismic shear in the storey		IS: 456 Cl. 5.6 IS:13920 Cl. 6.1 IS:13920Cl. 7.1.2 IS: 456 Cl. 26.5.1.1(a) IS:13920 Cl. 6.2.1 IS: 456 Cl. 26.5.1.1(b) IS:13920 Cl. 6.2.2 IS: 13920 Cl. 6.3.5 IS: 456 Cl. 26.5.3.1 IS: 13920 Cl. 7.4

General Notes

1. A certificate to the effect that this report will be completed and submitted at least one month before commencement of Construction shall be submitted with the application for Building Development Permission.
2. In addition to the completed report following additional information shall be submitted, at the latest, one month before commencement of Construction.

2.1 Foundations

- 2.1.1 Incase raft foundation has been adopted indicate K value used for analysis of the raft
- 2.1.2 Incase pile foundations have been used give full particulars of the piles, type, dia, length, capacity
- 2.1.3 Incase of high water table indicate system of countering water pressure, and indicate the existing water table, and that assumed to design foundations.

2.2 Idealization for Earthquake analysis

2.2.1 Incase of a composite system of shear walls and rigid frames, give distribution of base shear in the two systems on the basis of analysis, and that used for design of each system.

2.2.2 Indicate the idealization of frames and shear walls adopted in the analysis with the help of sketches.

2.3 Submit framing plans of each floor

2.4 Incase of basements, indicate the system used to contain earth pressures

Part 4	Buildings in Structural Steel		
1	Adopted method of Design	O Simple O Semi-rigid O Rigid	IS: 800; Cl. 3.4.4 IS: 800; Cl. 3.4.5 IS: 800; Cl. 3.4.6
2	esign based on	O Elastic analysis O Plastic analysis	IS: 800; Section-9 SP: 6 (6)
3	Floor Construction	O Composite O Non-composite O Boarded	
4	Roof Construction	O Composite O Non-composite O Metal O Any other	
5	Horizontal force resisting system adopted	O Frames O Braced frames O Frames & shear walls	*Note: Seismic force As per IS: 1893Would depend on system*
6	Slenderness ratios maintained	Members defined in Table 3.1, IS: 800	IS: 800; Cl. 3.7
7	Member deflection limited to	Beams, Rafters Crane Girders Purlins Top of Columns	IS: 800; Cl. 3.13
8	Structural members	O Encased in Concrete O Not encased	IS: 800; Section-10
9	Proposed material	O General weld-able O High strength O Cold formed O Tubular	IS: 2062 IS: 8500 IS: 801, 811 IS: 806
10	Minimum metal thickness Specified for corrosion protection	O Hot rolled sections O Cold formed sections O Tubes	IS: 800, Cl. 3.8 Cl. 3.8.1 to Cl. 3.8.4 Cl. 3.8.5 Cl. 3.8.5
11	Structural connections	O Rivets O C T Bolts O S H F G Bolts O Black Bolts O Welding-Field	IS: 800; Section-8 IS: 1929,2155,1149 IS: 6639, 1367 IS: 3757, 4000 IS: 1363, 1367

		Shop (Specify welding type proposed) O Composite	IS: 816, 814, 1395, 7280, 3613, 6419 6560, 813, 9595
12	Minimum Fire rating Proposed, with method	O Rating ---------- hours O Method proposed- - In tumescent Painting - Spraying - Quilting - Fire retardant boarding	IS: 1641, 1642, 1643

FORM NO 7

(Appendix A Para 4.10.2 b)

PROGRESS CERTIFICATE

Plinth Stage/In case of basement casting of basement slab

Reference No.
Owner's Name: Location:
Submitted on: Received on:

To,

_____
_____
_____

Sir,
We hereby inform you that the work of execution of the building as per approved plan, working drawing and structural drawings has reached the Plinth Level and is executed under our supervision.

We declare that the amended plan is not necessary at this stage.

Yours faithfully,

Signature of the Construction Engineer on Record	Signature of the Owner/ Developer/ Builder
Date:_____	Date: _____
Name in block letters: _____ Address:_____ _____ _____	Name in block letters_____ Address _____ _____ _____

FORM NO. 8

(Appendix A Para 5.10.2 b)

PROGRESS CERTIFICATE - FIRST STOREY

Reference No.

Owner's Name: Location:
Submitted on: Received on:

To,

_____
_____
_____

Sir,

We hereby inform you that the work of execution of the building as per approved plan, working drawing and structural drawings has reached the first storey level and is executed under our supervision.

We declare that the amended plan is not necessary at this stage.

Yours faithfully,

Signature of the
Construction Engineer on Record

Date:_____

Name in block letters: _____
Address: _____
_____
_____

Signature of the
Owner/ Developer/ Builder

Date: _____

Name in block letters_____
Address_____
_____
_____

FORM NO. 9

(Appendix A Para 5.10.2 b)

PROGRESS CERTIFICATE - MIDDLE STOREY IN CASE OF HIGH-RISE BUILDING

Reference No.

Owner's Name: Location:
Submitted on: Received on:

To,

_____
_____
_____

Sir,

We hereby inform you that the work of execution of the building as per approved plan, working drawing and structural drawings has reached _____ storey level and is executed under our supervision.

We declare that the amended plan is not necessary at this stage.

Yours faithfully,

Signature of the
Construction Engineer on Record

Date:_____

Name in block letters: _____
Address: _____
_____
_____

Signature of the
Owner/ Developer/ Builder

Date: _____

Name in block letters_____
Address_____
_____
_____

FORM NO. 10

(Appendix A Para 5.10.2 b)

PROGRESS CERTIFICATE - LAST STOREY

Reference No.

Owner's Name: Location:
Submitted on: Received on:

To,

_____
_____
_____

Sir,

We hereby inform you that the work of execution of the building as per approved plan, working drawing and structural drawings has reached _____ storey level and is executed under our supervision.

We declare that the amended plan is not necessary at this stage.

Yours faithfully,

Signature of the
Construction Engineer on Record

Date:_____

Name in block letters: _____
Address: _____
_____
_____
_____

Signature of the
Owner/ Developer/ Builder

Date: _____

Name in block letters_____
Address_____
_____
_____

FORM NO. 11

(see Regulation 13 of the Nagaland Building Bye-Laws)
(Appendix A Para 4.10.2.4 d)

COMPLETION REPORT

Reference No.

Owner's Name: Location:
Submitted on: Received on:

To,

_____
_____
_____

Sir,

I / We hereby give notice that I / We have completed the construction / reconstruction of the building in Plot No. _____ House No. _____ Ward No _____ in pursuance of the approval granted vide No. _____ Date _____

The work of erection/re-erection of building as per approved plan is completed under the Supervision of Architect/Construction Engineer who have given the completion certificate which is enclosed herewith.

We hereby declare that the plan as per the building erected has been submitted and approved.

Any subsequent change from the completion drawings will be our responsibility.

Yours faithfully,

(Developer's / Builder's Signature) **(Owner's Signature)**

Name of Developer / Builder **Name of Owner**

Date:

Address:

Encl: Completion Certificate

FORM NO. 12

(Appendix A Para 4.10.2.4 d)

BUILDING COMPLETION CERTIFICATE BY ARCHITECT ON RECORD

Reference No.

Owner's Name : Location :
Submitted on : Received on :

To,

_____
_____
_____

Sir,

1. The building/s has/have been constructed according to the sanctioned plan.
2. The building/s has /have been constructed as per approved plan and design as per detailed architectural drawings and specifications prepared by Architect on Record.
3. Construction has been done under our supervision / guidance and adheres to the drawings submitted.

Signature of the Owner
Date

Name in block letter:

Address : _____
_____
_____

Signature of Architect on Record
Date

Name in block letters:

Address: _____
_____
_____

FORM NO. 13

(Appendix A Para 4.10.2.4 d)

BUILDING COMPLETION CERTIFICATE BY CONSTRUCTION ENGINEER ON RECORD

Reference No.

Owner's Name : Location :
Submitted on : Received on :

To,

_____
_____
_____

Sir,

1. The building/s has/have been constructed according to the sanctioned plan.

2. The building/s has / have been constructed as per - the detailed structural drawings and structural specifications prepared by the Structural Engineer on Record - the detailed Architectural drawings and Architectural specifications prepared by the Architect on Record. - detailed drawings and specifications of all services

3. All materials used in the construction have been tested as provided in specifications and a record of test reports has been kept.

Signature of the Owner

Date

Name in block letter:

Address : _____
_____
_____

Signature of Construction Engineer on Record

Date

Name in block letters:

Address: _____
_____
_____

FORM NO. 14

(Appendix A Para 4.10.2.4 d)

BUILDING COMPLETION CERTIFICATE BY STRUCTURAL ENGINEER ON RECORD

Reference No.

Owner's Name : Location :

Submitted on : Received on :

To,

_____
_____
_____

Sir,

This is to certify that detailed structural drawings of the buildings/s has / have been prepared on the basis of a detailed analysis and a detailed design carried out according to relevant previsions of the latest Indian Standard Codes, National Building Code and as indicated in the structural design basis report.

Signature of the Owner

Signature of Structural Engineer on Record

Date

Date

Name in block letters:

Name in block letters:

Address: _____
_____
_____

Address: _____
_____
_____

FORM NO. 15

(Appendix A Para 4.7.1)

MODEL PROFORMA FOR TECHNICAL AUDIT REPORT

(Quality inspection program to be carried out by Quality Auditor on Record (QAR) or Quality Auditor Agency on Record (QAAR) for high-rise buildings higher than seven storeys, public buildings and special structures in seismic zones IV & V).

1. Design

		COMMENTS
1.1	Design/Drawings available?	Y/N
	Design category Type design? Specific design ?	 Y/N Design to be collected to refer to Design Consultant/H.O.
	Drawings prepared/checked by competent Authority?	Y/N
	Design Drawings/details Structural detailed included Earthquake/cyclone resistant features included?	 Y/N Y/N
	Design verified/vetted by Dept./Govt. approved agency/competent authority?	Y/N
	Design changes approved by dept./govt. approved agency/competent authority?	Y/N

2.	**Foundation**	
2.1	Foundation used	Existing/New
2.2.1	**If existing foundation used**	
2.2.1	Depth of foundation below ground	: <50cm/50-70/>70cm
2.2.2	Type of masonry	: Stone/Bricks/PCC Blocks
2.2.3	Thickness of masonry (above ground)	: 23cm/35/>35
2.2.4	Mortar used	: Cement-Sand/Lime/Mud
2.2.5	Mix of cement mortar	: 1:4/1:6/Leaner
2.2.6	Height up to Plinth	: _____ cm
2.2.7	If stone masonry	
	2.2.7.1 Through Stones	: Yes/No, if Yes Adequate/Inadequate
	2.2.7.2 Corner Stones	: Yes/No, if Yes Adequate/Inadequate
2.3	If new foundation used	
2.3.1	Depth of foundation below ground	: _____ <50/50-70/>70cm
2.3.2	Type of masonry blocks	: stone/bricks/PCC
2.3.3	Thickness of Masonry above plinth	: 23 cm/35/>35cm
2.3.4	Mortar used	: Cement – sand/lime/mud
2.3.5	Mix of cement mortar (1:4)	: Yes/No
2.3.6	Height up to Plinth	: <60/>60cm
2.3.7	If stone masonry	
2.3.7.1	Through Stones	: Yes/No, if Yes Adequate/Inadequate
2.3.7.2	Corner Stones	: Yes/No, if Yes Adequate/Inadequate
2.4	Verticle reinforcement in foundation	: Yes/No

3 **Walling**

3.1	Type of masonry	: Stone/Brick/PCC Blocks
3.2	Mortar used	: Cement – Sand/Lime/Mud
3.3	Mix of cement mortar	: 1:4/1:6/Leaner
3.4	Thickness of wall	: >23cm/23cm/23cm
3.5	Mixing of mortar	: OK/Not OK
3.6	Joint Property filled	: OK/NOT OK
3.7	Wetting of bricks	: Good/ Medium/ Poor
3.8	If stone masonry	
	3.8.1 Through Stones	: Yes/No
	3.8.2 Corner Stones	: Yes/No
3.9	Overall workmanship	: Good / Medium / Poor

4 **Roofing**

4.1	Type of roof	: Flat/Sloping
4.2	If sloped	: Morbid tiles/ A.C. sheet/ G.I. sheet
4.3	Purlins	: Angle-Iron / Timber / NA
4.4	Truss type	: _____
4.5	Anchorage with wall	: Adequate/ Inadequate/ NA

5 **Materials**

5.1	Cement	
	5.1.1 Source	: Authorised Dealer/ Market
	5.1.2 Type of cement	: OPC/PPC/PSC
	5.1.3 If OPC	: Grade (33/ 43/ 53)
5.2	Sand	
	5.2.1 Type of sand	: River sand / Stone dust
	5.2.2 Presence of deleterious materials	: Mild / Moderate/ High
5.3	Coarse Aggregates	
	5.3.1 Type coarse Aggregates	: Gravel/ Crushed Stone
	5.3.2 Presence of deleterious material	: Mild/ Moderate / High
5.4	P.C.C. Blocks (Applicable for onsite production)	
	5.4.1 Type of P.C.C. Blocks	: Solid blocks/Hollow blocks
	5.4.2 Ratio of concrete in blocks	: _____
	5.4.3 Interlocking feature	: Yes/No
	5.4.4 Course aggregates used	: Natural/ Crushed stone
5.5	Bricks Blocks, Stone etc.	
	5.5.1 Strength (field assessment)	: Low/Medium/High
	5.5.2 Dimensional accuracy	: Yes/No
5.6	Concrete	
	5.6.1. Mix of concrete	: (1:1 ½:3)/ (1:2:4)/Design Mix
	5.6.2 Batching	: Weigh batching/Volume batching
	5.6.3 Compaction	: Vibrators/Thappies and rods
	5.6.4 Workability	: Low / Medium / High
	5.6.5 Availability of water	: Sufficient / Insufficient
	5.6.6 Curing	: Satisfactory/Unsatisfactory.
5.7	Reinforcing Steel	
	5.7.1 Type of Steel	: Plain mild steel/HYSD bars
	5.7.2 Source	: Authorised Dealer/Market
	5.7.3 Whether IS marked	: Yes/No
	5.7.4 Conditions of bars	: Clean/Corroded
	5.7.5 Fixing of reinforcement as per drawing	: Yes/No
	5.7.6 Suitable cover	: Yes/No
	5.7.7 Spacing of bars	: Regular/Irregular
	5.7.8 Overlaps as per specifications	: Yes/ No

5.8 Form Work

5.8.1 Type of Form Work : Timber / Plyboard/ Steel

5.8.2 Use of mould oil : Yes/No

5.8.3 Leakage of cement slurry : Observed/Not observed

5.9 Source

5.9.1 Cement

5.9.2 Sand

5.9.3 Coarse Agg.

5.9.4 Bricks

5.9.5 PCC blocks.

6 **Seismic resistance features**

6.1 Masonry Structures

6.1.1 Provision of bands at

	Provided	Adequate
6.1.1.1 Plinth level	Yes/No	Yes/No
6.1.1.2 Sill level	Yes/No	Yes/No
6.1.1.3 Lintel level	Yes/No	Yes/No
6.1.1.4 Roof level (if applicable)	Yes/No	Yes/No

6.1.2 If sloped Roof, whether seismic bands are provide at

6.1.2.1 Gable wall top	Yes/No	Yes/No
6.1.2.2 Eaves level	Yes/No	Yes/No

6.1.3 Provision of vertical steel in masonry at

	Provided	Adequate
6.1.3.1 Each corner	Yes/No	Yes/No
6.1.3.2 Each T-junction	Yes/No	Yes/No
6.1.3.3 Each door joint	Yes/No	Yes/No
6.1.3.4 Around each window	Yes/No	Yes/No

6.1.4 Openings

6.1.4.1 Total width of openings : <50%/50*-60%/>60%
(*-42% for double storey)

6.1.4.2 Clearance from corner : OK/Not OK

6.1.4.3 Pier width between two openings : OK/Not OK

6.2 Framed Structures

6.2.1 Ductile detailing

6.2.1.1 Spacing of stirrup : OK/Not OK

6.2.1.2 Sizes of members : OK/Not OK

6.2.1.3 End anchorage : OK/Not OK

6.2.1.4 Lapping (length, location etc.) : OK/Not OK

6.2.1.5 Angle of stirrup hook : 90 / 135 degrees

6.3 Any testing carried out by Owner/Engg. Supervisor on

	Testing done	Testing results
6.3.1 Water	Yes/No	OK/Not OK
6.3.2 Cement	Yes/No	OK/Not OK
6.3.3 Bricks/PCC blocks/Stones	Yes/No	OK/Not OK
6.3.4 Aggregate	Yes/No	OK/Not OK
6.3.5 Mortar	Yes/No	OK/Not OK
6.3.6 Concrete	Yes/No	OK/Not OK
6.3.7 Reinforcement	Yes/No	OK/Not OK

FORM NO. 16

(Appendix A Para 4.11)

STRUCTURAL INSPECTION REPORT

(This form has to be completed by registered Structural Designer after his site Inspection and verification regarding compliance of all recommendation by the owner, which in the opinion of the registered structural designer are necessary for safety of the structure. In case of building older than fifty years, the Structural Inspection Report shall be submitted to the Appropriate Authority within a year from the date of coming into force of these regulations.)

I. Description by title and location of the property including T.P.No., F.P.No. etc.:

II. Name of the present owner :

III. Description of the structure :

Class I or Class II (Briefly describe the property in general and the structure in particular)

(a) Function	(b) Framed construction							
	Reside-nce (with or without shops	Apart-ments (with or withou t shops	Office Bldg.	Shoppi ng Centre	School, College	Hostel	Audit-oria	Factory
	1	2	3	4	5	6	7	8
A. Load bearing masonry wall construction								
B. Framed structure								
Construction and structural materials	Critical load bearing element	Brick	RCC	Stone	Timber	Steel		
	Roof Floor	RCC	Timber	RBC	Steel	Jack-arch		

IV. Year of construction

Year of subsequent additions or rectification's (Please describe briefly the nature of additions or rectification's).

V. Date of last inspection report filed : Last filed by whom

(This does not apply to the first report).

VI. Soil on which building is founded :

i) Any change subsequent to construction :

ii) Nearby open excavation :
iii) Nearby collection of water :
iv) proximity of drain :
v) underground water-tank :
vi) R.W. Pipes out-lets :
vii) Settlements :

VII. The Super-structure (R.C.C. Frame structure)

I) Crack in beam or column nature and extent of crack probable causes. :
ii) Cover spell :
iii) Exposure of reinforcement :
iv) subsequent damage by user for taking pipes, conduits, hanging, fans or any other fixtures, etc. :
vi) Crack in slab :
vii) Spalling of concrete or plaster of slab :
viii) Corrosion of reinforcement :
ix) Loads in excess of design loads :

VIII The Super-Structure
(Steel Structure)
I) Paintings
ii) Corrosion :
iii) Joint, nuts, bolts, rivets, welds, gusset plates :
iv) Bending or buckling of members :
v) Base plate connections with columns or pedestals :
vi) Loading :

IX. The Super-Structure (Load bearing masonry structure)
Cracks in masonary walls)
(Please describe some of the major cracks, their nature, extent and location, with a sketch, if necessary.

X. Recommendations if any :

This is to certify that the above is a correct representation of facts as given to me by the owner and as determined by me after Site Inspection to the best of my ability and judgment.

The recommendations made by me to ensure adequate safety of the structure are compiled with by the owner to my entire satisfaction.

(Signature of the Registered Structural Engineer
Date:_____

Name of the registered structural Engineer:

Registration No. Address: