

**ACTION PLAN FOR ENSURING BUILDINGS IN DELHI CANTONMENT ARE
SEISMICALLY COMPLIANT : DELHI CANTONMENT BOARD**

Delhi is located in Zone - 4 which is considered to be having high seismicity where is general occurrence of earthquakes is considerable and earthquake of magnitude of over 6 of rector scales anticipated as such Delhi lies among high-risk area.

2. The Hon'ble High Court of Delhi W.P. (C) No.4354/2015 titled as "Arpit Bhargava & Another versus North DMC and others", has directed the Govt. of NCT of Delhi and Municipal Corporations to prepare and submit an action plan for making buildings seismic compliance as per National Building Code 2005 for seismic Zone - 4.

3. The Ministry of Defence, Govt. of India vide SRO No.DCB/4/Building Bye Laws dated 08.06.2002 have notified building bye laws applicable to Delhi Cantonment. The existing building bye laws applicable to Delhi Cantonment have adequate provisions for earthquake resistance structure, complying to following IS code provisions:

- i. IS : 1893-1984 "Criteria for Earthquake Resistant Design of Structures (forth revision)" June 1986.
- ii. IS : 13920-1993 " Ductile detailing of Reinforced Concrete Structures subject to Seismic Forces - Code of Practice" November 1993.
- iii. IS : 4326 - 1993 "Earthquake Resistant Design and Construction of Buildings - Code of Practice (Second Revision)" October 1993.
- iv. IS : 13828 - 1993 "Improving Earthquake Resistance of Earthen Residence of Earthen Buildings - Guidelines", October 1993.
- v. IS : 13985 - 1993 "Repair and Seismic Strengthening of Buildings Guidelines" November 1993.

4.(i) Section 4(a) of the Building Bye Laws provides that "Every person who intends to erect any building or to make any addition or alteration has to submit a site plan before the Chief Executive Officer in the format prescribed in Appendix A of the Bye-laws, 2002.

(ii) Appendix A - The applicant has to forward the following plans signed by him and his Architect/ Engineer/ Structural Engineer/ Superior:

- a) Key Plan (location plan).
- b) Site Plan
- c) Sub Division/ Layout plan
- d) Building Plan
- e) Ownership title deed
- f) Clearance certificate of tax arrears
- g) No objection certificate where required.

Further, the applicant is also required to furnish the following two certificates:-

First Certificate - to certify that the building plans submitted for approval satisfy the safety requirement as stipulated under Para 51 and the information given therein is factually correct. The Para 51 is reproduced below:-

"Structural Design- the structural design of foundation elements made of masonry, timber, plain concrete, reinforced concrete, prestressed concrete and structural steel, shall be carried out in accordance with part VI, structural design, sectional loads, section2-Foundation Section3, Wood section 4-Masor, Section 5- C Concrete, Section 6- of required stairways as to enclosure capacity and limiting dimensions Ramps shall be surfaced with approved non-slipping materials"

Second Certificate - to certify that the structural design including safety from natural hazards is duly prepared by qualified structural engineer.

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(iii) Bye-laws No.68 stipulates as 'Responsibility for quality and workmanship' - Every one who shall undertake construction work in a building shall be responsible that the building material used are sound, of the good quality and properly put together so as to ensure safety. The responsibility for the structural stability of a building rests with the applicant.

5 (a). 1st Phase :

Under Phase - I, Govt. building are proposed to be taken up for structural safety audit, priority to be given as per risk matrix. Accordingly, top priority shall be given to Govt. building and Pvt. Building falling in high risk matrix like Schools, hospitals, institutional buildings, multi-storied buildings etc. and those identified as unsafe for human habitation for which a survey shall be undertaken and will be completed in three months time w.e.f. 01.07.2020. Thereafter, the buildings with moderate, low and very low risk shall be undertaken. Qualified Structural Engineer shall be empanelled to undertake these services. In Delhi Cantonment several buildings of Army, Air Force, Navy, Airport Authority of India and other Central Govt. and State Govt. agencies are co-located which are maintained by different agencies viz. Central Public Works Department (CPWD), Public Works Department (PWD) and Military Engineering Services (MES). The proposed survey of Govt. buildings shall be carried out by the department/ agency concerned which owns the buildings.

(b) As regards buildings under occupation of Pvt. Persons/ entities, the top priority is to be accorded to a buildings which will be found unsafe for human habitation during survey of building as mentioned hereinabove. However, the structural safety audit of buildings in occupation of Pvt. Persons/ entities will be prioritized for such building falling in high risk matrix and where public congregation is maximum. For this purpose a Public Notice through print media shall be given, advising the owner of all such buildings to furnish structural safety certificate after getting the structures evaluated from Structural Engineer. All Pvt. entities would be required to submit the timeframe within which they proposed to carry requisite strengthening/ retro-fitting of the structures where such structures are found lacking seismic resistance as per applicable provisions of NBC-2005. Further, the Pvt. parties shall be required to submit a certificate after completing the requisite strengthening/ retro-fitting of the structures from the qualified/ empanelled Structure Engineer certifying that the building is now, compliant to the seismic guidelines.

(c) The onus would lie on the occupier of the existing buildings to get their buildings evaluated within stipulated timeframe, from empanelled Structural Engineer and subsequently carry out the upgradation/ strengthening/ retro-fitting, if required as per evaluations of the building concern. For any building located in Cantonment limits and found in ruinous state, a special provision exists in the Cantonments Act, 2006 for rendering such building safe, the provisions of the Act contained in Section 297 are reproduced hereunder:

"297. Power to require buildings, wells, etc., to be rendered safe. - Where in a cantonment any building, or wall, or anything affixed thereto, or any well, tank, reservoir, pool, depression, or excavation, or any bank or tree, is in the opinion of the Chief Executive Officer, in a ruinous state or, for want of sufficient repairs, protection or enclosure, a nuisance or dangerous to persons passing by or dwelling or working in the neighbourhood, the Chief Executive Officer, by notice in writing may, require the owner, or part-owner or person claiming to be the owner or part-owner thereof, or, failing any of them, the occupier, thereof, to remove the same or may require him to repair, or to protect or to enclose, the same in such manner as he thinks necessary; and, if the danger is, in the opinion of the Chief Executive Officer, imminent, he shall forthwith take such steps as he thinks necessary to avert the same."

(d) As large number of properties in Delhi Cantonment would required structural audit, it is proposed to engage/ empanel maximum qualified Structural Engineer. For empanelment of Structural Engineer, a Public Notice shall be given in the local Newspapers by 25.06.2020 having wide circulation inviting Structural Engineer to get themselves empanelled. The CPWD, PWD, MES and other organizations would also be requested to engage Structural Engineer for structural audit of the buildings held under their charge. The names and full details of the Structural Engineer empanelled for the purpose of structural audit would also be notified on the Cantonment Board website i.e. www.cbdelhi.in for public information and awareness.



(e) In addition to above, the name and contact numbers of responsible officials of Engineering department of Cantt. Board shall be placed on the website, who can be approached by the citizens for information and queries as regards to securing structural stability certificates.

(f) Similarly, the names and the contact number of the responsible officers from the CPWD, PWD, MES and other related department shall also be placed on the website, who can be approached by the citizens for information and queries with respect to structural safety audit.

(g) There are several high rise building having height more than 15 mtr. The evaluation of the high rise buildings would be given priority under Phase – I.

(h) If the occupiers of the buildings do not get their property evaluated from the Structural Engineer as per the requirement and do not make the necessary compliances, if require as per the recommendations of the Structural Engineer, the suitable action may be taken against such persons including disconnection of water supply, electric connection, determination of lease (where applicable) etc. The electricity department of State Govt./ DISCOMS, water supply department of Cantt. Board Delhi and Sub-Registrar of Govt. of NCT of Delhi can also be linked for taking necessary action against such property. Further in case of non-compliance of the provisions a criminal liability may be fixed to the occupiers of the property.

(i) The efforts shall be made to ensure that there should be some uniformity in fees structure to be charged by the empanelled Structural Engineer so that, no harassment to be done to the general public.

(j) That the time limit shall be fixed for each category of the building with regard to the evaluation as well as further retro-fitting/ strengthening of the building as per recommendations of the Structural Engineer.


(k) The buildings can also be classified on the basis of year of construction i.e. very old, old and new and their evaluations can be done accordingly, phase wise respectively.

(l) The evaluation of structural stability of buildings shall be comprehensively started immediately after approval of the action plan, phase-wise after approval of Delhi Cantonment Board in its next meeting scheduled to be held within next 10 days time. The clear timelines for the assessment of buildings may also be fixed by considering the facts like quantum of work, ground reality, number of technical persons available and field situations. It is proposed that the structural safety audit of high rise building, belonging to both Govt. as well as Private to be completed in two years time and thereafter, the buildings falling in moderate and lower risk matrix shall be taken up. The time limit of these areas shall be three years.

6. **2nd Phase :**

(a) In the second phase, the buildings coming under the lower risk matrix as well as those falling in the jurisdiction of unauthorized/ village abadie shall be taken up. The methodology shall be the same as for building occupied by Private entities falling in the higher risk matrix as mentioned hereinabove i.e. the onus shall be asked to get the structural safety audit done themselves and submit report to the Cantt. Board, Delhi.

Dated: 12.06.2020


Chief Executive Officer
Delhi Cantonment
(Puspendra Singh)