O/C

MCHI - CREDAI

Ref. No. MCHI/PRES/12-13/136

May 8, 2013

To,
Hon'ble Shri Jayant Banthia (I.A.S.)
Chief Secretary
Government of Maharashtra
1st Floor, Main Bldg.,
Mantralaya,
Mumbai – 400032

मुख्य सचिवांचे कार्यालय
दिनांक RBS 10.5.13

Respected Sir

Format For High Rise Buildings Approval

"Technical Study Group" is set up for scrutinizing various proposals, to review the present arrangement and to make recommendations for the construction of High-rise Buildings in MCGM Jurisdiction"

Pursuant to the meeting of Wednesday, April 17, 2012 held in your chamber, and the formation of the "Technical Study Group" MCHI-CREDAI submits that for additional scrutiny of high rise buildings should be specific to the **Structural Stability and Geotechnical parameters of design of High Rise Buildings.** This point has already been discussed & agreed by all the concerned several times in previous Chief Secretary's as well as Urban Development Secretary's meetings & MCHI CREDAI's meeting with Hon'ble Chief Minister.

We strongly recommend that there is no need of any new additional Committee to scrutinize this Structural stability but proof checking of parameters attached in Annexure A could be done by IIT, VJTI or experienced, competent Structural consultants/professionals. As thorough proof checking of 40 analysis & design parameters, takes at least 4 to 6 weeks, with interaction between structural designers & proof checkers. Creating new or additional high rise committee will only add, if we may say so, one more layer of a scrutinizing setup, which would take many months and as a result our proposals/projects would get stalled and affected adversely. As far as we in MCHI CREDAI are concerned we are prepared to get our proposals examined and scrutinized minutely and exhaustively by competent, structural engineers who possess adequate knowledge and experience to deal with the structural aspects of high rise buildings. This will be acceptable to us as we are also keen to create a safe & stable structure from all angles.

I would like to inform that as a matter of fact the then Municipal Commissioner, Shri Subodh Kumar's letter dtd 26th Mar 2012 and Municipal Commissioner, Shri Sitaram Kunte's letter dtd 9th October 2012 *(copy enclosed)* concurs with our point of view and mention clearly that there is no need of "High Rise Committee (which is

MCHI-CREDAI (ISO 9001:2008)
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Website : www.mchi.net

advisory in nature and has no statutory status under any act or law) for advising Municipal Commissioner regarding the feasibility of such development proposals".

The process to be prescribed would take into account the height of the proposed High Rise Buildings structure, as under:

Height of Structure	**Process of Approval**
1) 120 Mtrs.	Peer Review Str. Engineer
2) 120+ Mtrs. to 200 Mtrs.	Review by VJTI, IIT Expert, or Experienced Structural Design Consultant
3) 200+ Mtrs.	Experienced International Consultants.

International Practice:

There is no regulatory requirement in place, internationally for high-rise projects, per se. Internationally, the prevailing practice is to consider the experience of the Structural Consultant. In, USA Structural Engineer with at least 10 years of design experience & design experience of 5 tall buildings is allowed to design high rise Buildings .But, there is no High Rise Committee being formed anywhere in the world as in MCGM. However, we are trying to collect relevant info/data from outside nations and that would be submitted as soon we obtained

Thus we request that for High Rise Building design scrutiny, it is imperative to thoroughly check all analysis & design parameters mentioned in our Annexure A. HRC cannot give justice in half an hour to check such complex earthquake / wind analysis & design .This can only be done through proof checking by competent institutions such as IIT, VJTI or competent Structural / Geotechnical engineers.

Thanking you

With Best Regards,

For MCHI-CREDAI

Paras Gundecha
President

Mobile : 9821092439

SR NO. 2

Copy forward to:

1) Metropolitan Commissioner, MMRDA, Mumbai

2) Municipal Commissioner, MCGM, Mumbai

3) Principal, Secretary, Housing Department, Mantralaya, Mumbai

4) Secretary, Department of Environment, Mantralaya, Mumbai

5) Secretary, Public Works Department, Mantralaya, Mumbai

6) Director, (Engineering Services and Projects), MCGM, Mumbai

7) Director, Town Planning, Maharashtra State, Pune Sent by Courier

8) Director, Fire Safety Service, Maharashtra State, Worli, Mumbai

9) Chief Fire Officer, MCGM, Mumbai

10) Head of Departmental, Structural Engineering, I.I.T., Powai, Mumbai

11) President PEATA, Mumbai Sent by Courier

12) Principal Secretary, Women & Child Devp Dept. Mantralaya, Mumbai.

लिपीक,
(महानगर आयुक्त कार्यालय).
13/5/13

10/5/13

SR NO. 4
पर्यावरण विभाग
मंत्रालय, मुंबई-३२

SR NO. 6
बृ. मु. म. पालिका
अभि. सेवा व प्रकल्प)
यांचे कार्यालय
10 MAY 2013
9/10/5/13

Directorate of Maharashtra Fire Services,
State Fire Academy,
Vidyanagari, Hans Bhugra Marg,
Santacruz-East, Mumbai-400 098.
13/5/13.

स्वीय सहायक
सचिव, महिला व बालविकास विभाग
मंत्रालय, मुंबई

SR NO. 12

14/5/13

SR NO. 3

P. A. to Principal Secretary to the Government of Maharashtra
Housing Department
Mantralaya, Mumbai 400 032
10/5/13

प्रमुख अग्निशमन अधिकारी
यांचे कार्यालय
13 MAY 2013
वडाळा, मुंबई - ४०० ०३१.

BODH KUMAR
I. A. S.
Municipal Commissioner

MUNICIPAL CORPORATION OF GREATER MUMBAI
बृहन्मुंबई महानगरपालिका

No. MGR/4561 / GEN 406 / DP

Date 26 MAR 2012

18/4/2012

Sub:- Modification to certain Provisions of the Development Control Regulations in respect of parking spaces, fire protection measures etc.

Dear Shri Benjamin,

The Government in Urban Development Department has sanctioned modification to Development Control Regulations for Greater Mumbai. U/No.CMS 4311/452/CR-58/UD-11 on 6th January 2012.

Pursuant to the said notification , representations are received praying for relaxation in some of the modified D.C. Regulations, on the grounds of planning constraints faced on the small plots in suburbs and in view of necessity of modified plans due to introduction of concept of Compensatory fungible FSI. The general perception among the developers is that the regulations discriminate against suburbs, in respect of open space requirements etc.

After due consideration of the matter, it is felt that certain relaxations (as detailed in the accompanying annexure) need to be given in order to overcome genuine constrains/ difficulties faced in the implementation of modified D.C.Regulations. The amendments to be carried out are appended as annexure-A. The salient features of the proposed modifications in the D.C.Regulations are as follows:

1. The definition of the multistoried buildings and special buildings needs to be revised since refuge area requirement arises only for the buildings having height more than 30 mts.
2. The parking requirement as per reg. 36, is based on carpet area of tenements. Since some of the areas hereto free of FSI will now be calculated in FSI, total carpet areas increases, even though the

(213)

useable area remains the same. The ten percent balcony area which was earlier free of FSI is now counted in FSI. This increase in carpet area will unnecessary increase the requirement of parking. It is therefore proposed to increase the built-up areas in reg. 36 Table 15 by about 30 percent in case of residential buildings and 20 percent in case of hotels.

3. Similarly, the amended provisions of D.C. Regulation No. 43(1) in respect of firefighting requirements for such high rise buildings require reconsideration, in view of difficulties faced in provision of open spaces The 9.0 mt open space requirement on at least one side can be relaxed to 6.0 mt. considering that most of redevelopment of existing buildings/society have plot sizes smaller than 1000.00 sq.mts.
4. Increase in total height of podiums from 24.0 mt to 30.0 mt, so as to meet the mandatory parking requirements as per D C Regulations. Further, restrictions of total podium height of 9.0 mts if provided with car lifts, is proposed to be removed.

The copy of the proposed modifications to the relevant D.C.Regulations as prepared is enclosed herewith. Since these amendments are required to be implemented expeditiously, it is requested that the Govt. may issue the suitable directives so as to give immediate effect to the above amendments.

With regards,

Yours Sincerely

(Subodh Kumar) 26/3/12

Shri T.C. Benjamin
Principal Secretary (UD1),
Urban Development Department,
Govt. of Maharashtra,
Mantralaya,
Mumbai-400032.

MUNICIPAL CORPORATION OF GREATER MUMBAI

Proposed modifications in D.C.R. Annexure "A"

Sr no	D.C. Regulation No.	Existing provision	Proposed modification	Reasoning
1	2(3)(11) (*i*)	Multi-storeyed Building or High Rise Building means a Building of height 24 meters or more above average surrounding ground level.	Multi-storeyed Building or High Rise Building means a Building of height **30 meters** or more above average surrounding ground level. **Note: Notwithstanding anything contained in these regulations, wherever height of building is stated as 24 mt. in these regulations it shall be read as "30 mt"**	To facilitate redevelopment of buildings on small plots.
2	2(3)(11) (m)(v)	Special Building means A residential hotel building or centrally air-conditioned building which exceeds (a) 15 m in height or (b) A total built up area of 600 sq mt	**Special Building means Educational, Institutional** and **residential hotel building or centrally air-conditioned building** which exceeds (a) 15 m in height or (b) A total built up area of 600 sq mt	While changing definition of high rise from 24 m to 30 m, educational and institutional bldg needs wider access of 9m.
3	35(2)	New Regulation (xxvii) to be added	New:-xxvii) Area covered by D G set room to an extent of **0.2% of gross built up area.** Provided, **it may be housed on ground floor or 1st podium level,** where there is no habitable area or in 1st basement.	To facilitate alternate power supply for fire lift and fire protection system
4	36 (2) Table 15	Note to be added in Table 15 in the sr.no, 1(i) in column 3 at the bottom.	**Notwithstanding anything contained in these regulations, at the option of the owner / developer, parking spaces may be provided for plot areas less than 1500.00sq.mts with the following modification in Table 15 , sr.no. (i) (A) & (B) below "22.5 sq.mt shall be read as 30 sq.mt** **35 sq.mt shall be read as 45 sq.mt** **45 sq.mt shall be read as 60 sq.mt** **70 sq.mt shall be read as 90 sq.mt'** **100 sq.mt shall be read as 130 sq.mt'**	
5	36 (2) Table 15 sr.no. (1)(ii) column 3	One parking space for every 60 sq. mt of total floor area	**One parking space for every 75 sq. mt of total floor area**	

Sr no	D.C.Regulation No.	Existing provision	Proposed modification	Reasoning
6	36(2) Table 15	Note to be added in Table 15 in the sr.no. 1(iv) in column 3 at the bottom.	**Notwithstanding anything contained in these regulations, at the option of the owner / developer, parking spaces may be provided for Grade I, II and III Hotels with following modification in Table 15, sr.no. (iv) (a) & (b) below** **"60 sq.mt' shall be read as 75 sq.mt'** **12.5 sq.mt in (a) shall be read as 15 sq.mt** **40 sq.mt in (b) shall be read as 50 sq.mt "**	
7	35(2)(vi)	Area of covered parking spaces as provided in sub-Regulation (5) (a) of Regulation No.36. Provided, however, the additional parking to the extent of 25% of the required parking may be permitted with permission of the Commissioner without payment of premium. Provided further in non-residential building, where entire parking is proposed by mechanical / automatic means, additional parking to the extent of 10% of the required parking shall be permitted free of FSI as vehicle holding area.	Area of covered parking spaces as provided in sub-Regulation (5) (a) of Regulation No.36. Provided, however, the additional parking to the extent of 25% of the required parking may be permitted with permission of the Commissioner without payment of premium. **Provided further where parking is proposed by mechanical / automatic means, additional parking to the extent of 10% of the required parking shall be permitted free of FSI as vehicle holding area.**	
8	36(5)(a)	Parking Spaces: Where to be accommodated-The parking spaces may be provided,- (a) underneath the building, in basements, podiums, within its stilted portion, or on upper floors if exclusively used for mandatory parking. Note: (i) The deck parking inclusive of car lifts & passages thereto shall be counted in FSI.	Parking Spaces: Where to be accommodated-The parking spaces **including by mechanical/automated means** may be provided,- (a) underneath the building, in basements, podiums, within its stilted portion, on upper **parking** floors **or in a separate structures** if exclusively used for mandatory parking Note (i) The deck parking inclusive of car lifts & passages thereto shall be counted in FSI.	

Sr no	D.C.Regulation No.	Existing provision	Proposed modification	Reasoning
		(ii) Additional parking floor in excess of required parking shall be counted in FSI subject to the provision of D.C.R.35(2)(vi). (iii) In non-residential building, where entire parking is proposed by mechanical / automatic means, additional parking to the extent of 10% of the required parking shall be permitted free of FSI as vehicle holding area.	(ii) Additional parking floor in excess of required parking shall be counted in FSI subject to the provision of D.C.R.35(2)(vi). **(iii) Where parking is proposed by mechanical / automatic means, additional parking to the extent of 10% of the required parking shall be permitted free of FSI as vehicle holding area.**	
9	*38 (34)*	Podium i. A podium may be permitted in plot admeasuring 1500 sq.mt or more. ii. The podium provided with ramp may be permitted in one or more level, total height not exceeding 24 m above ground level. However, podium not provided with ramp but provided with two car lifts may be permitted in one or more level, total height not exceeding 9 mt above ground level. iii. The podium shall be used for the parking of vehicles. iv. The recreational space prescribed in D.C.Regulation 23 may be provided either at ground level or on open to sky podium. v. Podium shall not be permitted in required front open space.	Podium:. i. A podium may be permitted in plot admeasuring 1500 sq mt or more. **ii. The podium may be provided with one or more levels, restricted to meet the mandatory parking requirements as per D C Regulations and total height not exceeding 30 mt.** **In case of podium parking without ramps , the number of car lifts shall be provided as below:** **i) upto 200 parkings - minimum two car lifts** **ii) for each 100 parking or part thereof , beyond 200 parkings – one car lift** iii. The podium shall be used for the parking of vehicles. iv. The recreational space prescribed in D.C.Regulation 23 may be provided either at ground level or on open to sky podium. v. **Podium may be extended beyond building line up to 3.6 m at front side, provided required front open is available, beyond podium line.**	i. To meet the mandatory parking requirements as per D C Regulations

Sr no	D.C.Regulation No.	Existing provision	Proposed modification	Reasoning
		vi. Such podium may be extended beyond the building line in consonance with provision of D.C.Regulation 43(1) on one side whereas on other side and rear side it shall not be less than 1.5 m from the plot boundary. vii. Ramps may be provided in accordance with D.C.Regulation 38(18). viii. Adequate area for Drivers rest rooms and sanitary block may be permitted on podiums by counting in FSI.	vi. Such podium may be extended beyond the building line in consonance with provision of D.C.Regulation 43(1) on one side whereas on other side and rear side it shall not be less than 1.5 m from the plot boundary. vii. Ramps may be provided in accordance with D.C.Regulation 38(18). viii. Adequate area for Drivers rest rooms and sanitary block may be permitted on podiums by counting in FSI.	
10	43(1)	General:- The planning design and construction of any building shall be such as to ensure safety from fire. For this purpose, unless otherwise specified in these Regulations, the provisions of part IV: Fire Protection Chapter, National Building Code, shall apply. For multistoried, high rise and special buildings, additional provisions relating to fire protection contained in Appendix VIII shall also apply, (A) For proposal under regulations 33(7) and 33(10), In case of rehabilitation / composite buildings on plots exceeding 600 Sq.Mts. and having height more than 24 m, at least, one side other than road side, shall have clear open space of 6 m at ground level, accessible from road side. Provided, if the building abuts another road of 6m or more this condition shall not be insisted.	General:- The planning design and construction of any building shall be such as to ensure safety from fire. For this purpose, unless otherwise specified in these Regulations, the provisions of part IV: Fire Protection Chapter, National Building Code, shall apply. For multistoried, high rise and special buildings, additional provisions relating to fire protection contained in Appendix VIII shall also apply, **(A) For proposals under reg. 33(7)&33(10)** In case of rehabilitation / composite or non- composite buildings on plots exceeding 600 sq mtrs and having height more than **30 m**, at least one side other than road side, shall have clear open space of 6 m, at ground level, accessible from road side. Provided, if the building abuts another road of 6 m or more, this condition shall not be insisted.	Change is proposed in definition of high rise building. Change is proposed in definition of high rise building. To meet the requirement of drive way at podium level.

Sr no	D.C.Regulation No.	Existing provision	Proposed modification	Reasoning
		Provided further that in case of redevelopment proposals under DCR 33(7) , for plot size upto 600 sq.mt. , 1.5mt open space will be deemed to be adequate.	**Provided further that, for plot size upto 600 sq mt, 1.5 mt open space will be deemed to be adequate.**	
		(B) For the proposals other than (A) above (a) Buildings having height more than 24 m upto 70 m, at least one side, accessible from road side, shall have clear open space of 9 m at ground level.	**(B) For proposals other than (A) above,** (a) Buildings having height more than 30 m up to 70 m, at least one side, accessible from road side, shall have clear open space of 6 m at ground level. **Provided, if the building abuts another road of 6m or more this condition shall not be insisted.**	
		Provided, however, if podium is proposed it shall not extend 3m beyond building line so as to have clear open space of 6m beyond podium.	Provided, however, if podium is proposed, it shall not extend **3.6m** beyond building line at **front side and 6mt open space side, accessible from road side** . This, side clear open space of 6 mt shall be available beyond the podium line.	
		Provided, further, where podium is accessible to fire appliances by a ramp, then above restriction shall not apply.	Provided, further, where podium is accessible to fire appliances by ramp, then above restrictions shall not apply.	
			Provided further that, in case of redevelopment / development proposals, for plot size upto 600 sq mt, 1.5 mt open space will be deemed to be adequate	
		(b) Buildings having height more than 70 m, at least two sides, accessible from road side, shall have clear open space of 9 m at ground level.	**(b) Buildings having height more than 70m, at least one side, accessible from road side, shall have clear open space of 9m.**	
		Provided, however, if podium is proposed it shall not extend 3m beyond building line so as to have clear open space 6m beyond podium.	**Provided , if the building abuts another road of 9 mt or more , this condition shall not be insisted.**	

Sr no	D.C.Regulation No.	Existing provision	Proposed modification	Reasoning
			Provided, however, if podium is proposed, it shall not extend 3.6m beyond building at front side and 9mt open space side accessible from road side. This, side clear open space of 9 mt shall be available beyond the podium line.	
		No ramps for the podium shall be provided in these side open spaces. Provided, further, where podium is accessible to fire appliances by a ramp then above restriction shall not apply.	No ramp shall be provided in these side open spaces. Provided, further, where podium is accessible to fire appliances by ramp, then above restriction shall not apply.	
		(c) Courtyard / ramp / podium accessible to fire appliances shall be capable of taking the load up to 48 tonnes.	(c) Courtyard / ramp / podium accessible to fire appliances shall be capable of taking the load up to 43 tonnes.	
		(d) These open spaces shall be free from any obstruction & shall be motorable.	(d) These open spaces shall be free from any obstruction & shall be motorable.	
11	Appendix VIII (Reg 43)	11(5)(d) Transformer – They shall not be housed on upper floors.	Transformer – They shall not be housed on upper floors. Provided, however, if transformer is dry type, it may be provided at stilt or 1st podium floor if there is no habitable area and shall conform to fire safety requirements of Chief Fire Officer.	To facilitate protection to transformers from flooding in low lying areas and where space constraint is there at ground floor.
12	Appendix VIII (Reg 43) (13)(2)	Table 24 – Fire fighting installations requirements	Table 24 – Fire fighting installations minimum requirements.	Change is proposed in definition of high rise building.

Bhale 22/3/12

Chief Engineer
(Development Plan)

SITARAM KUNTE
I. A. S.
Municipal Commissioner

MUNICIPAL CORPORATION OF GREATER MUMBAI
बृहन्मुंबई महानगरपालिका

No. MGC/F/8912/DP
Date : 09.10.2012

Sub:- Amending the terms of reference of Technical Committee for High Rise Buildings.

Dear Shri Srivastava,

1) This note on the aforesaid subject is submitted pursuant to a discussion between MCHI & Hon. Chief Minister on 18th September,2012 at Sahyadri Guest House. The high rise buildings started coming up due to increase in F.S.I. under various regulations of D.C.Regulations,1991. This gave rise to protest from some sections of the Society, who strongly objected to the high rise buildings on grounds of environmental degradation, endangering the structural stability of the adjoining buildings and adverse impact on aesthetics. Accordingly, a PIL was filed by Tardeo Haji Ali Residents Welfare Association and Ors. in Mumbai High in the year 2003 against the approval of one of the High Rise Building Project in the City.

2) The State Govt. vide Resolution No.TPB-4303/49/CR-4/03/UD-11 dt.10.1.2003 decided to examine the issues related to the side effects of high rise building in depth & therefore, has appointed a Study Group under the Chairmanship of Hon. Chief Secretary, Govt. of Maharashtra. The Study Group decided that the height of the buildings should be restricted to 70 mt. for scrutiny as per normal and routine course. However, development proposals having height of the buildings more that 70 mts. need to be scrutinized by a Committee of Experts. As per the recommendations of the Study Group submitted on 29.5.2003, State Govt. had decided to appoint the Technical Committee for Scrutiny of the proposal of high rise buildings having height more than 70 mt.

3) Govt. of Maharashtra vide Resolution No.TPB-4303/49/CR-4/03/UD-11 dt.28.07.2004 had constituted first Technical Committee for High Rise Buildings of Experts under Chairmanship of Shri Ashok Agarwal, former Chief Justice. The tenure of the Committee was three years.

4) After completion of tenure of the first Committee, Govt. of Maharashtra under Resolution No.TPB-4307/1024/CR-155/07/UD-11 dt.27.7.2007 had

Municipal Head Office, Mahapalika Marg, Mumbai - 400 001.
Tel. No. : 9122-2262 05 25, Fax. No. : 9122-2265 59 27 E mail : mc@mcgm.gov.in

constituted the second Committee under the Chairmanship for Shri B.V.Chavan, Former Justice, High Court, Bombay.

5) After completion of tenure of the second Committee, Govt. of Maharashtra under Resolution No.TPB-4303/49/CR-4/03/UD-11 dt.3.9.2010 had constituted the third Committee under the Chairmanship for Shri S.S.Parkar, Former Justice, High Court, Bombay.

A) Terms of References of the Committee.

i) The Committee shall be of advisory nature and it will advise the Municipal Commissioner regarding the feasibility of the development proposals that might be referred to it by the Commissioner.

ii) It will be open for the Commissioner to overrule the recommendations of the Committee, after giving a proper and reasonable justification in writing. Such powers will not be delegated to any subordinate officer.

iii) In specific cases, if the Chairman desires, any expert from other fields may be invited for the meeting of the Committee.

B) The Building Proposals to be referred to the Committee.

i) All new building proposals where the height of the proposed buildings, exceeds 70 mt. shall be referred to the Committee.

ii) Apart from (1) above, any new building proposal, in the opinion of the Commissioner, which inter alia involves major disturbance of and/ or intervention to the existing natural land formation and profile as also substantial reclamation may also be referred to the Committee.

iii) In cases where the Corporation has issued IOD/ approved amended plans for height above 70 mt. before issue of this resolution, then such cases need not be referred to the Committee.

6) <u>Procedure:</u>

The procedure adopted by the Technical Committee for High Rise Buildings for scrutiny of proposals is as follows:-

After receipt of a proposal for High Rise Building, the site is visited by Technical Members of the Committee and after the site visit, the proposal is taken up before the Committee for discussion. During discussion, the Project Proponent, Architect, Structural Consultant, Environment Consultant, Geotech

Consultant, etc. of the proposal attend the meeting for presentation and to discuss the proposal with the Committee Members. After submission of revised drawings/ structural calculations, if any, etc., the Committee processes the proposal further for approval or otherwise. The letter is thereafter issued to the concerned Architect communicating NOC of the Technical Committee for High Rise Buildings after obtaining approval of M.C. The time taken for the clearance of the proposal depends upon the compliance of submission of revised drawings/ structural calculations/ environmental reports, if any, as per the suggestions/ recommendations of the Technical Committee for High Rise Buildings from the Project Proponents/ Architect/ Consultants.

7) Generally one day site visit (4 to 5 sites) and one day meeting for presentation of the proposal per month is conducted by the Technical Committee for High Rise Buildings for the clearance of the proposals.

Scrutiny fee of Rs.50,000/- per proposal is collected at the time of submission of proposal.

8) <u>Present Committee</u>:

At present the 3rd Committee is appointed on 3.9.2010. Presently it is chaired by Retd. Justice, Mumbai High Court, Shri S.S.Parkar.

The members of the committee are:

1)	Shri S.S.Parkar, Retd.Justice, High Court, Bombay	Chairman
2)	Ch.Eng.(D.P.)	Member Secretary
3)	Prof. R.S.Jangid, Professor, Deptt. of Civil Engineering, IIT Bombay, Powai.	Member (Structural Engineering Expert)
4)	Dr.Mrs.M.A.Chakrabarti, Head of Soil Mechanics Engineering Department, VJTI, Matunga	Member (Soil Mech./ Geotech Expert)
5)	Dr.Rakesh Kumar, Director Gr.Scientist & Head, NEERI Regional Center,	Member (Environmental Expert)
6)	C.F.O. of M.C.G.M.	Member

9) While examining the proposals, the Committee generally goes into the following points:-

A. <u>Architectural Points:-</u>

i) Clear width of access available.

ii) Location, width & No. of staircase.

iii) Natural ventilation to staircase and common lobby.

iv) Whether benefit of D.C.Rule 33(24) is availed?

v) The minimum net plot size for High Rise proposal is prescribed as 1000 Sq.Mts.

vi) Depth & Nos. of the basement.
vii) Area & location of the refuge floors.
viii) Open spaces, podiums, etc.
ix) Two wheeler & four wheeler parking provisions in the building.
x) Width of common lobby & ventilation.

B. Structural & Geotechnical Points:-

i) Soil Report indicating soil strata, depth of the hard rock, etc.
ii) Type of foundation i.e. pile foundation or raft foundation or open foundation.
iii) Design Base Report (D.B.R.) for the proposal.
iv) Various type of tests carried on site i.e. wind tunnel test.
v) Gust factor & deflection.
vi) Details of the rock anchors, if any provided for basement.
vii) Details of the soil retaining methods.

C. Environmental Points:-

i) Shadow Analysis.
ii) Wind Analysis.
iii) Heat Analysis.
iv) Traffic Study & Traffic Management.
v) Ecological Study (Tree Plantation, Green area, etc.).
vi) Disaster Management Plan.
vii) Total Water Requirement.
viii) Total waste water sewage generated & disposal (Design of Sewerage Treatment Plant).
ix) Effect of the construction material on environment.
x) Rain Water Harvesting & Storm Water Management.
xi) Air environment in construction & operation phase.
xii) Solid Waste Management.
xiii) Energy conservation techniques.

D. Fire Safety issues:-

i) Height of first refuge floor from ground floor and also height of subsequent refuge floors.
ii) Location of refuge area.
iii) Whether refuge area is cantilever.
iv) Clear open space along with turning radius for movement of fire tender around the building.
v) Width & gradient of ramp (one way or two way) leading to podium.
vi) Alternate provision for fighting the fire from ground.

vii) Driveway for fire tender movement on paved R.G.

viii) Height of underpass in case fire tender moving below building.

ix) Podium line should be flush with building line on refuge facing area.

x) Number of staircase and width of staircase.

xi) Distance between two staircases, through common lobbies/ passages.

xii) Natural ventilation through sidewalls of basements.

xiii) Compartmentalization of the basements.

10) <u>Areas of duplication:-</u>

i) In the High Rise Committee meeting proposal is discussed from the C.F.O. & fire safety point of view. However, before approving the plans, C.F.O. NOC is also insisted by Building Proposal Department. Prima facie, there is the duplication of the exercise as regards fire safety.

ii) It has been observed that more than 90% proposals of the High Rise Buildings, which are submitted in the High Rise Committee have a built up area of more than 20000 Sq.Mtrs. In these cases clearance from Environmental Committee of Govt. of Maharashtra i.e. E.C. clearance is required. This is in addition to clearance of High Rise Committee N.O.C. Thus in such cases, there appears to be a duplication. However, in respect of buildings having built up area of less than 20000 Sq.Mtrs., there is no duplication between High Rise Committee and Environment Committee.

iii) On inquiry with the Consultants, it is learnt that duplication exercise of following chapters/ points in both the N.O.Cs. is required to be carried out.

a) Ecological Study (Tree Plantation, Green area, etc.).

b) Total waste water sewage generated & disposal (Design of Sewerage Treatment Plant).

c) Rain Water Harvesting.

d) Energy conservation techniques.

e) Solid Waste Management.

It is, therefore, suggested that the terms of reference of High Rise Committee be suitably modified to remove the aforesaid duplication.

11) <u>MCHI's grievance regarding clearing height above 70 mtrs.</u>

A) It may be pointed out that in the year 2008, the High Rise Committee had observed that "in many of the ongoing projects, the developers have obtained IOD/ C.C. for height less than 70 mts., started construction and thereafter they have come to High Rise Committee for construction of floors

above 70 mts. It has created problems for the Committee on many issues, from structural point of view as well as from the point of view of environment. The Committee, therefore, suggests that in order to avoid such situation, the directions be given that all proposals where it is intended to have height above 70 mts., the proposals should be put up before High Rise Committee before issue of IOD/ C.C. for even construction of lesser height".

In view of the observations of the Committee, wherever the proposed development exceeds height of 70 mts. (for full consumption of F.S.I.), project proponents are required to submit their proposals to High Rise Committee for clearance. Part development upto 70 mts. is not permitted till clearance from the High Rise Committee is obtained by the project proponent.

B) The MCHI had represented that they may be allowed to proceed with the work upto 70 mt. height. In case, the proposal submitted by them to High Rise Committee is rejected, they will restrict the height upto 70 mt. only and they are ready to give undertaking to that effect. They have further agreed that they will not present the High Rise Committee with a fait accompli to insist on clearance on as is basis. It is for the Government to consider the suggestion of MCHI.

12) <u>Proposal submitted to Urban Development Department</u>:

As per opinion of the then Municipal Commissioner in his letter dated 17.11.2011 addressed to Urban Development Department, "the city of Mumbai has witnessed the construction of larger number of high rise buildings in the last decade or so. The Structural Engineers now possess adequate expertise & experience to deal with the structural safety aspects of high rise buildings. The height threshold for high rise scrutiny should be increased to 120 mt. It is, therefore, felt that there is no need of High Rise Committee (which is of advisory nature and has no statutory status under any Act or Law) for advising Municipal Commissioner regarding the feasibility of such development proposals". Therefore, Ex. Municipal Commissioner has suggested the following for building proposals in respect of tall buildings.

i) For building upto 120 mt. No scrutiny.

ii) For building having height above 120 mt. upto 200 mt.: Peer review of structural design may be insisted from reputed Institutions like I.I.T./ V.J.T.I., etc.

iii) For building having height above 200 mt.: Peer review may be insisted from specific International Institutes.

The further decision from Urban Development Department is awaited.

Conclusion:

In order to ease the bottleneck arising out of delays in scrutiny of proposals for High Rise Buildings, the following alternative may be considered by the Govt.

i) Modification to the terms of reference of the High Rise Committee to avoid/ remove duplication, or

ii) to prescribe new norms as suggested by the former Municipal Commissioner vide his letter dtd.17.11.2011

iii) in the meantime, Govt. may give suitable direction whether to consider MCHI's suggestion on giving IOD/ C.C. upto 70 mtrs.

Regards,

Yours sincerely,

8/10/12

(Sitaram Kunte)

Shri Manu Kumar Srivastava,
Principal Secretary,
Urban Development Department-I,
Govt. of Maharashtra,
Mantralaya, Mumbai-400032.

Annexure 'A'

Check List for the Main Structural Consultant:-

The main structural consultant is required to submit following information-

1. Provide Design Basis Report.
2. Provide description of Sub-structure and Super- structure as per the format given in the Appendix enclosed.
3. Provide brief Description of structural system with sketches, image of drg. Etc. with specific focus on 'Lateral load resisting system'
4. Provide brief note on modeling, software used etc. Clearly mentioned whether infill/ partion wall is idealized as part of lateral load system?
5. Provide following EQ loading details.
   - a) Zone Factor
   - b) Importance factor
   - c) Response Reduction factor
   - d) Soil Type
   - e) % LL considered in seismic analysis
   - f) Time Period in the horizontal X-direction (from empirical formula in code
   - g) Time Period in the horizontal Y-direction (from empirical formula in code
   - h) Total Seismic weight (W) of building (in kN)
   - i) Base shear in horizontal X-direction based on empirical formula in code- V_{bxa}
   - j) Base shear in horizontal Y-direction based on empirical formula in code- V_{bya}
   - k) Base shear in horizontal X-direction based on dynamic analysis of structure- V_{bx}
   - l) Base shear in horizontal Y-direction based on dynamic analysis of structure- V_{by}
   - m) Scaling factors-
     1. V_{bxa} / V_{bx}
     2. V_{bya} / V_{by}
   - n) Base-shear (V_{bxa}) in X-direction as % of W
   - o) Base-shear (V_{bya}) in Y-direction as % of W
   - p) Vertical distribution of scaled up base shears in both directions- graphical representation

q) Max. point deflection at roof level in both directions

r) Max. inter-storey drift in both directions

6. Provide following Wind loading details.

a) Category of terrain

b) Class of building

c) Basic wind speed in m/sec

d) Probability factor (k_1)

e) Terrain, height, & structure size factor (k_2) (for maximum considered height)

f) Topography factor (k_3)

g) Maximum wind pressure (p_z)

h) Force coefficient

i) Wind Base-shear in the horizontal X-direction

j) Wind Base-shear in the horizontal Y-direction

k) Gust factor calculations

l) Details of wind –tunnel force data (if applicable)

m) Max. point deflection at roof level in both directions

n) Max. inter storey drift in both directions

7) Provide following data from Dynamic Analysis

Modes	Frequency	Time Period	X-participation	Y-participation
Mode 1				
Mode 2				
Mode 3				
Mode 4				
Mode 5				
Mode 6				
Mode 7				
Mode 8				
Mode 9				
Mode 10				
		Summation-->		

8) Provide Table for lateral deflection at Terrace Level in the following format.

Load Case	Dx-max	H/Dx	Drift-x	Dy-max	H/Dy	Drift-y
DL						
DL + LL						
EQx						
EQy						
Wx						
Wy						

9) Provide, if applicable, following data regarding Floating Columns.

a) Total gravity load on floating column (provide table if there are multiple floating columns)

b) Size and span of Girders supporting floating columns

c) Number of floors supported by floating columns

d) Deflection of Girders under column (from model)

e) Deflection of Girders under column (from s/s action)

f) Specific details about floating columns on cantilever Girders

g) Stiffness modifiers for girders supporting floating columns (if adopted)

h) Maximum induced shear stress in girders supporting floating columns

10) Provide, if applicable, following data regarding soft storey effect.

a) Stiffness of lower floor

b) Stiffness of upper floor

c) Relative stiffness ratio (upper/ lower)

d) Level of soft storey

e) Number of floors above soft storey

11) Provide, if applicable data for critical cantilever.

a) Cantilever span

b) Structural system

c) Nature of usage

d) Maximum elastic deflection under gravity loads

12) Typical design calculations for footings

13) Typical design calculations for RCC columns (Or Composite Columns)

14) Typical design calculations for RCC walls

15) Typical design calculations for RCC beams (or Steel Beams)

16) Typical design calculations for Steel Bracings (if applicable)

17) Wind tunnel studies shall be conducted for all buildings with heights above 200m from natural ground level. The report from study shall be submitted to the high-rise committee.

18) Provide a note on special provisions suggested for the building (like outriggers, belt trusses, dampers etc.)

APPENDIX

DESCRIPTION OF SUB-STRUCTURE

No. of basements		
Minimum clearance between outermost basement retaining wall and compound wall		
Has a shoring system been installed? Submit sectional detail of the shoring system		
Give details of methodology used to resist uplift pressure due to ground water for tower portion as well as the portion outside the tower.	Bottom Level of Raft w.r.t. ground level in mts. Total downward load of self weight of raft + Counter weight over raft + Rock Anchors if any(for raft spanning between columns) Water level assumed for uplift calculation	
Description of the foundation for the tower block		
Nature of Foundation	Piles, Spread Footings, Combined Raft, Piled Raft, etc.	
SBC assumed T/sq.mt.		
Sub-grade Elastic Modulus		
Retaining wall types & Sequence of backfilling	Whether propped cantilever, Cantilever Supported between Buttresses / Counter forts, etc.	
Intended Use of basements		
If rock anchors are used, are they grouted after installation and stressing?		
Is structural steel used in the construction of the sub-structure?		

If yes, what are the measures taken for its fire proofing and corrosion resistance?		
Whether Expansion/Separation joints are provided? Whether expansion joint/separation joint continues through basement? If yes, detail at Basement level & retaining wall junction		

DESCRIPTION OF STRUCTURE

No. of Floors	
Maximum plan dimension in either direction in m	
Ratio of plan dimension	
Typical Floor to floor height in m Maximum floor to floor height in entire height of building in m	
Aspect ratio (Height of building till Terrace/ Minimum Dimension of Building)	
Type of floor slab	
Whether columns are RCC, Composite or in structural steel	
Use of floor at different levels (Residential / Commercial / industrial)	
Is there any Transfer level? If yes, depth of Transfer Girder	
Whether expansion/separation joint is provided? If yes, what is the maximum plan dimension in m	
Whether seismic separation joint is provided? If yes, provide width of joint in m	