

Review of Model Building Bye-Laws 2016

By

Diversity and Equal Opportunity Centre (DEOC)

For

**National Centre for Promotion of Employment for Disabled
People (NCPEDP)**

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Background of Model Building Bye-Laws and Context

In 2003, the Ministry of Urban Development (MoUD) desired that the Model Building Bye-Laws (MBBL) be prepared, in view of Bhuj Earthquake that occurred in 2001, so as to focus on the structural safety of buildings and for the guidance of State Governments. Accordingly, MBBL 2004 incorporated the provisions of structural safety and other provisions like rainwater harvesting and waste water recycling, solar assisted heating, barrier-free public buildings and fire safety. The Bye-Laws were circulated to all State Governments and Union Territories (UTs) and out of 36 States and UTs, 22 States and UTs undertook a comprehensive revision of their respective Building Bye-Laws since 2004.

In 2015, it was further desired by the Ministry of Urban Development (MoUD) that the Model Building Bye-Laws, 2004, need to be revised and updated keeping in view emerging issues like Norms for Rooftop Solar PV Installation, Segregated sanitation facilities for visitors in public buildings, Additional provisions in Building regulations for natural hazard prone areas, Conservation of heritage sites including heritage buildings, heritage precincts and natural feature areas, Bye Laws for safe use of glass, barrier free environment for disabled, children and old persons and Mitigation of the effects of electromagnetic radiation on built spaces. A draft was prepared and it was widely circulated to concerned Ministries such as Culture, Consumer Affairs, Food and Public Distribution, Housing and Urban Poverty Alleviation, Power, Water Resources and River development and Ganga Rejuvenation and Civil Aviation.¹ The relevant comments received from all the concerned Ministries were incorporated in the Model Building Bye Laws (MBBL)2016.

Following are the contents of the Model Building Bye-Laws 2016:

1. Definitions
2. Jurisdiction / applicability and building documentation procedures
3. Development codes
4. General building requirements and services
5. Provisions for high rise development
6. Provisions for structural safety

¹Note: It didn't include Ministry of Social Justice and Empowerment.

7. Special requirements for occupancy/land development and other
8. Provisions for differently-abled, elderly and children
9. Rainwater harvesting
10. Green buildings and sustainability provisions
11. Fire protection and fire safety requirements
12. Conservation of heritage sites including heritage buildings, heritage precincts and natural feature areas
13. Streamlining of building plan approvals
14. Climate resilient construction: integration of environmental clearances with sanction
15. Appendices to MBBL 2016
16. Annexure I: Guidelines for mitigation of effects of E M R in Built spaces
17. Annexure II: Technical Aspects and Options of RWH in built and open spaces

NCPEDP commissioned the review of the MBBL 2016 to DEOC, a social enterprise specialising in the area of accessibility.

Our broad observations on the MBBL 2016 were that:

- The MBBL 2016 is largely based on the National Building Code (NBC), 2005. Hence, the standards are outdated.
- There is a separate chapter on barrier-free environment. However, the other chapters do not provide a cross reference to this chapter, which should be an absolute requirement for all public buildings and group housing.
- The content in the chapter on barrier-free environment is totally inappropriate. Just to give an example, they have listed the buildings that need to be made barrier-free under the following categories: 'Buildings to be designed for Ambulant Disabled People', 'Buildings to be designed for Non Ambulant Disabled People' which is further divided into for those using small wheelchairs and large wheelchairs! The content is not in line with any of the existing guidelines.

There have been two major developments with regard to accessibility of persons with disabilities in the recent past which are listed below:

- The Rights of Persons with Disabilities (RPWD) Act was passed by the Indian Parliament in December 2016 and is now the law of the land. Clause 44 in the Act mandates that: “(1) No establishment shall be granted permission to build any structure if the building plan does not adhere to the rules formulated by the Central Government. (2) No establishment shall be issued a certificate of completion or allowed to take occupation of a building unless it has adhered to the rules formulated by the Central Government.” It is therefore crucial that the procedures necessary for providing approvals and completion certificates for buildings are modified suitably in the Building Bye-Laws.
- The National Building Code (NBC) 2016 was released by the Bureau of Indian Standards (BIS) in March, 2017. NBC 2016 includes the latest guidelines for accessibility and usability for people with disabilities. Hence, it is important that the Model Building Bye-Laws are revised and updated as per the norms given in NBC 2016.

This review document provides recommendations for the Model Building Bye-Laws, to not only bring it in line with the accessibility standards for persons with disabilities given in NBC 2016, but also to facilitate the implementation of the mandates of the RPWD Act.

Observations and Recommendations

Prelude

Observations/Current text	Recommendations
<p>It is stated that one of the salient features of the MBBL 2016 is, “Barrier Free Environment: Provisions for Differently abled, Elderly and Children including Site development.”</p>	<ul style="list-style-type: none"> • The phrase, “Provisions for Differently abled.....” should be changed to “Accessibility and usability of buildings for people with disabilities, elderly people and children.” • Add information about the Rights of Persons with Disabilities Act (RPWD) 2016 and the importance of adhering to the standards for accessibility.

1. Definitions

Observations/Current text	Recommendations
<p>There is no mention of any accessibility related terminologies.</p>	<ul style="list-style-type: none"> • Add the definitions related to accessibility. The same should be taken from Clauses 13.2.1 to 13.2.45, Part 3, Volume 1, NBC 2016. • Also add the following definitions as given in the RPWD Act 2016: <ul style="list-style-type: none"> ❖ “public building” means a Government or private building, used or accessed by the public at large, including a building used for educational or vocational purposes, workplace, commercial activities, public utilities, religious, cultural, leisure or recreational activities, medical or health services, law enforcement agencies, reformatories or judicial foras, railway stations or platforms, roadways bus stands or terminus, airports or waterways. ❖ “public facilities and services” includes all forms of delivery of services to the public at large, including housing, educational and vocational trainings, employment and career advancement, shopping or marketing, religious, cultural, leisure or recreational, medical, health and rehabilitation, banking, finance and insurance, communication, postal and information, access to justice, public utilities, transportation.

2. Jurisdiction / Applicability and Building Documentation Procedures

This Chapter includes, documentation procedures and clearances/sanctions/certifications. As per the Clause 44 (1) of the RPWD Act 2016, “no establishment shall be granted permission to build any structure, if the building plan does not adhere to the standards”. Also, Part 2 of NBC 2016, under the section, ‘Application for Development / Building Permit’, provides for periodic physical inspection by a team of multi-disciplinary professionals, which includes checking for compliance with accessibility standards. Hence, the documentation procedures for issuing building permits and NoCs should be modified to give effect to the above-mentioned mandates.

Section/Clause	Observations/Current text	Recommendations
2.9 Procedure for obtaining building permit	In this section, the list of Documents required to be attached are mentioned. For example, Approval from Chief Fire Officer, No Objection Certificate from the Civil Aviation Department wherever required etc.	Add to the list of documents: No objection certificate from an Access Auditor.
2.10 All Plans	In the section, a list of plans to be submitted for approval is given. This includes key plan, site plan, building plan, layout plan, landscape plans. None of these plans mention accessibility features. Devoid of these being explicitly highlighted in these plans, chances of these features being missed are high.	Add in the following plans: Site plan, building plan, building plans for multi-storeyed /special buildings, services plans, water supply provisions, layout plan and landscape plan that "Accessibility features like ramps, tactile indicators along pathways, reserved car parking for persons with disabilities, unisex accessible restrooms etc. should be highlighted."
2.14 Sanction	<ul style="list-style-type: none"> • This section details the sanctioning process. It includes planning permission norms with respect to the master/development plan, grant of permit or refusal, duration of sanction/revalidation, qualification and competence, penal action, etc. For instance, clearance from the Chief Fire Officer; clearance of an Urban Art Commission etc. is mentioned under grant of permit or refusal. • In section 2.14.1 b), it states, "Sanction by Empanelled Professionals: Competent Professionals (as per Appendix 'E') empanelled with the Authority, under the rules, shall 	<ul style="list-style-type: none"> • Under the sanction process, add the following: Clearance from Accessibility and Universal Design Specialist. • Add in Appendix E (Empanelled Professionals): Accessibility and Universal Design Specialist.

Section/Clause	Observations/Current text	Recommendations
	be authorized to issue building permit subject to the various provisions of the said rules."	
2.16 Notice of Completion	It states, "Every Owner shall submit a notice of completion of the building (prescribed in Appendix 'A-12') to the Authority regarding completion of the work described in the building permit. The notice of completion shall be submitted by the Owner through the engaged Competent Professional for building plan design (as per Appendix 'E') as the case may be who has supervised the construction, in the proforma given in Appendix- 'A-12' accompanied by three copies of the completion plan (as in case of sanctioned plan including one cloth mounted copy) and the following documents along with the prescribed fee: i) Copy of all inspection reports of the Authority. ii) Clearance from Chief Fire Officer, whenever required. iii) Clearance from Chief Controller of Explosives, Nagpur, wherever required. iv) Clearance from Electricity Department (Municipal Council / Corporation for areas falling in the jurisdiction of Municipal Council / Corporation) regarding provision of transformers / sub-station / ancillary power supply system etc. wherever required. v) Structural stability certificate duly signed by the Structural Engineer. vi) Certificate of fitness of the lift from concerned Department wherever required."	Add: Clearance from Accessibility and Universal Design Specialist.
2.17 Completion and Permission for Occupation	This section mentions the topic of inspection of works in order to check for deviations etc. For instance, it is stated that the occupancy certificate shall be issued by the Authority only after the clearance from Chief Fire Officer regarding the completion of work from the fire protection point of view. But there is no mention of compliance /	Add the following: Occupancy certificate shall be issued by the Authority only after the clearance from Accessibility and Universal Design Specialist confirming compliance with the

Section/Clause	Observations/Current text	Recommendations
	adherence to accessibility standards. As per Clause 44 (2) of the RPWD Act, it is mentioned that no establishment shall be issued a certificate of completion or allowed to take occupation unless it has adhered to the Standards.	accessibility standards given in 13 and Annexure B of Part 3, Volume 1, NBC 2016.

3. Development Codes

Section/Clause	Observations/Current text	Recommendations
3.2 Development norms and standards for hill towns	A list of factors is given which have to be considered, such as Exposure to sunlight, Degree of slopes and accessibility in the form of distance traveled. There is no mention here of considering people with disabilities.	Add to the list: Accessibility of people with disabilities.
3.3 Parking standard: Table 3.1 Parking standards, and 3.3.2 Multi storeyed parking	There is no mention of accessible car parking.	Add the following in the parking standards: Required number of Designated Accessible Parking Spaces and its Dimensions and other requirements as per the norms given in B 3.2, Part 3, Volume 1, NBC 2016.
3.4 Residential, Group Housing, 3.5 Non-residential premises (Guest houses, hostels,	These sections provide specifications for various types of buildings, Group Housing, Low income Housing, Resettlement and Slum in-situ upgradation, Guest House, Boarding House and	Add a common point that: All these buildings have to mandatorily be made accessible as per Clause 13

Section/Clause	Observations/Current text	Recommendations
etc.), 3.6 Commercial, 3.7 Industrial plot, 3.8 Transportation, 3.9 Aerodromes, 3.10 Public - Semi-public, 3.11 Educational Facilities, 3.12 Security Services, 3.13 Post and telegraph office, head post office	Lodging House, Hostel, Hotel, School, Police Station, etc. There is no mention of accessibility in these sections.	and Annexure B, Part 3, Volume, 1, NBC 2016.
3.10.4 Health Services and 3.16 Socio – cultural facilities	This section highlights the parking space to be provided for different types of developments like residential and commercial centers, socio cultural and public spaces etc. Parking norms do not take into account the parking standards/reserved car parking for persons with disabilities.	Add the following: Required number of Designated Accessible Parking spaces and mention the dimensions as per the norms given in B 3.2, Part 3, Volume 1, NBC 2016.
3.16.1 Creche/Day Care facilities	There are a few guidelines listed here. For instance, it is stated here that there should be a minimum of one toilet and one hand wash basin for every 10 children over the age of two years.	Add a point stating that: The facility should be made accessible for children with disabilities as per the standards given in B 9, Part 3, Volume 1, of NBC 2016.

4. General Building Requirements and Services

Section/Clause	Observations/Current text	Recommendations
4.2.1 Plinth	This section mentions the plinth for buildings, interior courtyards and covered parking. The same should be raised as per norms - 450 mm and 150 mm respectively. However, there is no mention of provision of ramps and steps to surmount these level differences.	Add the following: Ramps and steps should be provided/ designed as per standards given in B 6.2, Part 3, Volume1, NBC 2016.
4.5 Bathrooms and Water-Closet	This section details the height, size and other requirements needed for bathrooms and water closets. However, there is no mention of accessible toilets.	Add a sub-section on Unisex Accessible toilets and bathrooms with dimensions being as per the standards given in B 9, Part 3, Volume 1, NBC 2016.
4.7 Mezzanine Floor	This section lays down the norms for Mezzanine Floors. Often it is seen that a staircase is the only means of access to the Mezzanine Floor.	Add: Access to the mezzanine floor should be ensured through an elevator/ platform lift where applicable. The standards for the same are as given in B 6.4 and B.6.6, Part 3, Volume 1, NBC 2016.
4.9 Garage	<ul style="list-style-type: none"> • In the section 4.9.2, the sizes of garages are given. 	<ul style="list-style-type: none"> • Modify the dimension of a private garage as per B 3.5, Part 3, Volume 1, NBC 2016. • Appendix A 1, should include the requirement for reserved

Section/Clause	Observations/Current text	Recommendations
	<ul style="list-style-type: none"> ❖ Private Garage: The dimensions given are 3.0 m × 6.0 m minimum, which is not sufficient. ❖ Public Garage: "Based on the number of vehicles parked by ECU (in Appendix A-1)". However, there is no mention of reserved car parking for persons with disabilities. 	<p>car parking as per the standards.</p>
4.17 Staircase/Exit Requirements	<p>The dimensions given are not consistent with the Accessibility standards in NBC 2016. Moreover, there is no mention of continuous handrails/railings, tactile markings, colour contrast and visual warning, guards along stairs, lighting, materials and finishing. These are crucial from an accessibility standpoint.</p>	<p>Modify the standards for staircases as per B 6.3, Part 3, Volume 1, NBC 2016.</p>
4.23.1 Swimming Pool	<p>There is no mention about swimming pools being accessible to persons with disabilities.</p>	<ul style="list-style-type: none"> • Add: Accessibility standards for the swimming pools as given in 19, Part 9 Section 1, Volume 2, NBC 2016. • Add a section on Accessible showers and bathrooms as per the recommendation given here: "Each shower and toilet block provided per pool must have a unisex accessible shower, dressing cum toilet facility for persons with

Section/Clause	Observations/Current text	Recommendations
		<p>disabilities. Design specifications of this accessible facility must be as per standards given in B-9.14, Part 3, Volume 1, NBC 2016.”</p>
<p>4.24 Means of access (including Fire Safety- Ref Chapter 11)</p>	<ul style="list-style-type: none"> • This section does not have much on accessibility for people with disabilities, except a few mentions. They have mentioned Ramps (4.24.7.1) but the dimensions given there do not comply with accessibility standards. • In point, 4.24.4, ‘Number and size of Exits’, it is mentioned that, “At least one entrance usable by individuals in wheelchairs shall be on a level that would make the elevators accessible.” This would become very restrictive. 	<ul style="list-style-type: none"> • Add in this section that: Accessibility should be ensured for approach roads, pathways, ramps, doorways as per standards. • Add the following references: <ul style="list-style-type: none"> ❖ Walkways and Pathways: B-2.2, Part 3, Volume 1, NBC 2016. ❖ Kerb Ramp/Dropped Kerb: B-2.3, Part 3, Volume 1, NBC 2016.
<p>4.30 Lighting and ventilation of rooms</p>	<p>This section has given references to IS codes used for industrial and functional lighting but has not included cross references for lighting levels needed for ensuring accessibility for people with disabilities.</p>	<p>Add the following standard: Clause 33, Lighting, ISO standards, 21542 – 2011.</p>
<p>4.31 Building Services</p>	<p>In this section, a reference to the various Parts of NBC 2005 has been given. It states, “The Planning design and</p>	<p>Add specifically that: Accessibility should be ensured for persons with disabilities. For more details</p>

Section/Clause	Observations/Current text	Recommendations
	<p>installation of electrical installations, air conditioning, installation of lifts and escalators can be carried out in accordance with Part-VIII Building Services, section-2 electrical installation, section-3 air conditioning and heating, section-5 installation of lifts and escalators of National Building Code of India. Likewise, cross-referencing is given for Plumbing and Sanitary Services to Part-9: Plumbing Services, Section-I Water supply, Drainage and sanitation (including Solid Waste Management) and Section-2 Gas supply of NBC, 2005.” However, NBC 2005 does not take into account accessibility features in any of these parts. The new NBC 2016 would be a better reference.</p>	<p>refer the respective Parts in NBC 2016 for above mentioned Building services, like plumbing, lifts and escalators, etc. and also refer to 13 and Annexure B of Part 3, Volume 1, NBC 2016.</p>
<p>4.32 Plumbing and Sanitary Services</p>	<p>They have referred to Part 9 of NBC 2005. NBC 2005 does not mention accessibility of persons with disabilities.</p>	<ul style="list-style-type: none"> • Explicitly mention accessibility here. • Provide cross references to Annexure B, Part 3, Volume 1, NBC 2016
<p>4.33.6 Norms for differently-abled within segregated toilets</p>	<p>These norms are very basic and do not explicitly mention the details of unisex accessible restrooms.</p>	<ul style="list-style-type: none"> • The term differently abled should be deleted. Instead say, Norms for unisex accessible toilets and toilet cubicle in male and female

Section/Clause	Observations/Current text	Recommendations
		<p>toilets designed for persons with ambulatory disabilities.</p> <ul style="list-style-type: none"> • Modify the norms as per B 9, Part 3, Volume 1, NBC 2016.
<p>Table 4.9 Sanitation requirements for Shops and Commercial Offices, Table 4.10 Sanitary Requirements for Hotels, Table 4.11 Sanitation Requirements for Educational Occupancy, Table 4.12 Sanitation Requirements for Institutional (Medical) Occupancy- Hospital, Table 4.13 Sanitation Requirements for Institutional (Medical) Occupancy- (staff quarters and Hostels), Table 4.14 Sanitation Requirements for Governmental and Public Business Occupancy and Offices, Table 4.15 Segregated sanitation facilities for Visitors in Public Building, Table 4.16 The recommended enclosure-sizes for different facilities at visitors' toilets, Table 4.17 The recommended areas for different facilities at visitors' toilets, Table 4.18 Sanitation Requirements for Assembly Occupancy Buildings (Cinema, Theatres, Auditoria. Etc.), Table 4.19 Sanitation</p>	<p>Accessible toilets are not mentioned in any of the Tables.</p>	<p>It should be mentioned very clearly that: All these public places should compulsorily have unisex accessible toilets in every toilet block and one toilet cubicle in male and female toilets designed for persons with ambulatory disabilities as per the standards given in B 9, Annexure B, Part 3, Volume 1, NBC 2016.</p>

Section/Clause	Observations/Current text	Recommendations
Requirements for Assembly Buildings (Art, Galleries, Libraries and Museums), Table 4.20 Sanitation Requirements for Restaurants, Table 4.21 Sanitation Requirements for Factories, Table 4.22 Sanitary Requirements for Large Stations and Airports, Table 4.23 General Standards/Guidelines for Public Toilets in Public Area, 4.34 Construction Site, 4.35 Temporary Camp Toilets, 4.36 Special / Contingency Toilets		

5. Provisions for High Rise Development

Section/Clause	Observations/Current text	Recommendations
5.1.2 Means of access	This section describes the roads and means of access to a building but misses out on crucial details such as an accessible pedestrian walkway with a minimum standard width, tactile markings, kerb ramps, resting places, wheelchair crossing areas etc.	Add: Standards for pedestrian walkways should be as per B-2.2 Walkways and Pathways, Part 3, Volume 1, NBC 2016.

Section/Clause	Observations/Current text	Recommendations
5.3 Parking Spaces	This section does not mention the need for reserved car parking for persons with disabilities and its standards.	Mention reserved car parking and its standards for persons with disabilities as per B 3, Part 3, Volume 1, NBC 2016 for standards.
5.4 Building components	This section details out standards for the following: 5.4.1 Doorways, 5.4.2 Revolving Doors, 5.4.3 Stairways, 5.4.4 Lifts, 5.4.5 Basements, 5.4.7 Ramps, 5.4.8 Corridors, 5.4.9 Glass Façade/ Service Ducts/Shafts/Refuge Area/ Vents. However, none of these take into account accessibility features.	<ul style="list-style-type: none"> • Add that: All the building components should explicitly mention accessibility standards. • Provide a reference to the following sections in Annexure B, Part 3, Volume 1, NBC 2016. <ul style="list-style-type: none"> ❖ Doorways: B-5.3, Part 3, NBC 2016. ❖ Add under the section 'Revolving doors', as per NBC 2016, that: Each revolving door shall be provided with a hinged door in the same wall within 3 m thereof, with the same exiting capacity. ❖ Stairways: B-6.3, Part 3, NBC 2016. ❖ Lifts: B-6.4, Part 3, NBC 2016. ❖ Basements: Ramps shall be counted as one of the means of escape wherever permitted in National Building Code 2016. They should comply with accessibility standards. ❖ Ramps: B-6.2, Part 3, NBC 2016. ❖ Corridors: B-5, Part 3, NBC 2016. ❖ Glass Façade/ Service Ducts/Shafts/ Refuge Area/Vents: B-5.3.13, Part 3, NBC 2016.
5.5 Building Services	This section details out standards for the following: 5.5.1 Staircase and Corridor Lighting, 5.5.2 Electrical Services, 5.5.3 Alternate Source of Electric Supply, 5.5.4	Add cross reference to relevant parts of NBC, 2016 and also Clause 13 and Annexure B, Part 3, NBC 2016 for accessibility standards.

Section/Clause	Observations/Current text	Recommendations
	Air-conditioning, 5.5.6 Gas supply, 5.5.7 Boiler Room, 5.5.8 Helipad, 5.5.9 Disaster Management / Fire Safety, 5.5.10 Sustainable Environment and Buildings. These do not include any information on accessibility of persons with disabilities.	

7. Special Requirements for Occupancy/ Land Development and Other

Section/Clause	Observations/Current text	Recommendations
7.1 Industrial Building, 7.2 Educational Building (School/Colleges), 7.3 Assembly Building (Cinema, Theaters, etc.), 7.4 Petrol filling station, 7.5 Burial and cremation grounds, 7.6 Building in mining area, 7.7 Poultry farms, 7.10 Resettlement and Slum in situ upgradation	These sections have cross-references to other chapters, like Part 4, 8 etc. of NBC 2005 but not to the accessibility standards in Part 3 of NBC.	Reiterate in all the sections, that: All public buildings (including those owned privately) and group housing should be accessible to people with disabilities and should comply with the standards given in 13 and Annexure B, Part 3, Volume 1, NBC 2016.
7.9 Provisions in the public buildings for handicapped persons	This section states, "The building to be designed for handicapped persons need special treatment and the provisions for site	<ul style="list-style-type: none"> As mentioned above, it should be clearly stated that all public buildings should be accessible to people with disabilities.

Section/Clause	Observations/Current text	Recommendations
	planning, building requirements etc. are given in Appendix- 'G'".	<ul style="list-style-type: none"> • Add reference to accessibility standards given in 13 and Annexure B, Part 3, Volume 1, NBC 2016.
7.11 Rules for development of land	This section briefly mentions that norms and regulations formulated by Authority should be applied. It does not mention the accessibility norms to be applied.	It should be stated as a sub point that: All the regulations for Master planning/development plan should ensure that accessibility features are adhered to for all spaces be it parks/open areas, housing, roads or community facilities. These norms should be based on 13 and Annexure B Part 3, Volume 1, NBC 2016.
7.13 Penal action for violation of Master Plan/Zonal plan regulation/bye- laws	It is mentioned that, "The Authority under the provisions of their respective Acts shall take action for violation of Master Plan/Zonal Plan/regulations."	Add a section on RPWD Act 2016 as given: Clause 44 of the Rights of Persons with Disabilities Act 2016 mandates accessibility of public buildings. (1) No establishment shall be granted permission to build any structure if the building plan does not adhere to the rules formulated by the Central Government under section 40. (2) No establishment shall be issued a certificate of completion or allowed to take occupation of a building unless it has adhered to the rules formulated by the Central Government.

Section/Clause	Observations/Current text	Recommendations
7.13 Signs and outdoor display structures	It is stated that, "The standards specified in Part X in Signs and outdoor display structures of National Building Code of India published by Indian Standards Institution, shall be applicable."	Add cross reference to: B-24, Part 3, Volume 1, NBC 2016.

8. Provisions for Differently-Abled, Elderly and Children

Observations/Current text	Recommendations
<ul style="list-style-type: none"> • The content given in the chapter is totally inappropriate. • This section talks about the buildings that are to adopt the accessibility standards for ambulant and non ambulant disabilities separately, linking it with the size of wheelchairs - small and large. This is not relevant and the standards should be applicable to all buildings irrespective of the size of wheelchair and type of disability. • The standards given are also quite vague. Though they have mentioned that the Harmonised Guidelines have been referred to but the content given here does not reflect that. Some examples given below further highlights the inappropriateness of the content in this section. <ul style="list-style-type: none"> ❖ "8.7.1 Provision of special W.C. shall be made on all floors for buildings designed for ambulant 	<ul style="list-style-type: none"> • The entire content needs to be redrafted. • Add the relevant provisions given in the RPWD Act 2016. • State clearly that accessibility standards apply to all types of public buildings, including group housing. • Add the following definitions as given in the RPWD Act 2016. <ul style="list-style-type: none"> ❖ "public building" means a Government or private building, used or accessed by the public at large, including a building used for educational or vocational purposes, workplace, commercial activities, public utilities, religious, cultural, leisure or recreational activities, medical or health services, law enforcement agencies, reformatories or judicial foras, railway stations or platforms, roadways bus stands or terminus, airports or waterways;"

Observations/Current text	Recommendations
<p>disabled persons. For buildings designed for non-ambulant disabled special W.C. shall be provided at Ground Floor. Size of W.C. shall depend on the type of wheelchair used by the disabled.”</p> <ul style="list-style-type: none"> ❖ “8.9 Drinking Water: Suitable provision of drinking water shall be made for the differently abled near the special toilet provided for them.” ❖ 8.8 In the section, “Designing for Children”, it mentions Guiding / Warning Floor Material and does not have any relevant information. 	<ul style="list-style-type: none"> ❖ “public facilities and services” includes all forms of delivery of services to the public at large, including housing, educational and vocational trainings, employment and career advancement, shopping or marketing, religious, cultural, leisure or recreational, medical, health and rehabilitation, banking, finance and insurance, communication, postal and information, access to justice, public utilities, transportation;” ❖ The standards given here should be consistent with 13, and Annexure B, Part 3, Volume 1, NBC 2016.

11. Fire Protection and Fire Safety Requirements

Section/Clause	Observations/Current text	Recommendations
<p>11.7.3 Exit Requirement, 11.8 Fire escape or external stairs, 11.8.3 Ramps, 11.9, Lifts, 11.9.2, Fire Lift, 11.19.1 First aid/fixed fire fighting/ fire detection system and other facilities, 11.23 Fire alarm system,</p>	<p>There is no information relating disability and accessibility in the entire chapter. They have given cross references to Part 4 of NBC 2005 standards which does not include accessibility standards.</p>	<ul style="list-style-type: none"> • Add accessibility standards in all these sections with appropriate cross reference to Annexure B, Part 3, NBC 2016. • Further add provisions for: Accessible Communication systems, refuge areas, evacuation lifts, evacuation chairs, visual strobes, sounders, accessible way finding, signages, etc. Reference should be given of Part 3 NBC 2016 and ISO 21542.

Section/Clause	Observations/Current text	Recommendations
11.24 Control Room 11.25 Fire Drill and Fire orders		<ul style="list-style-type: none"> Also add section on: Training of personnel, development of individualised evacuation plans and inclusive fire drills.

12. Conservation of Heritage Sites including Heritage Buildings, Heritage Precincts and Natural Feature Areas

Section/Clause	Observations/Current text	Recommendations
12.12 Grading of the listed buildings / listed precincts; Table 12.1 Grading of Listed heritage	Section (c) Scope for Changes, mentions the changes that are allowed/not allowed on the exterior or interior of the heritage buildings or natural features. Here, it addresses only the conservation aspect. However, it does mention the changes that would be needed for improving accessibility as per the ASI policy, which mandates all heritage sites should be made accessible, and RPWD Act 2016.	Mention in the Scope for Changes in all grades of heritage buildings that: Changes done in order to make heritage buildings accessible to people with disabilities is allowed. Add a cross reference to 13 and Annexure B of Part 3, Volume 1, NBC 2016.
12.15 Signs and outdoor display structures / including street furniture on heritage site	It does not mention disability or accessibility.	Add a cross reference to B 24.2 for accessible signage and graphical symbols and B 5.2.5 for resting benches and seats.

13. Streamlining of Building Plan Approvals

Section/Clause	Observations/Current text	Recommendations
13.2 Clearances at Master Plan level; Table 13.2 Timelines of clearances from various agencies	The Table provides the various clearances required and the approving authorities for the same. It also mentions the stage at which clearances should be taken and the time lines.	Add a row and include the following details: NOC for accessibility of persons with disabilities; Approving authority: Ministry of Social Justice and Empowerment; Stage/s: All stages (pre, during and post construction).
13.4 Options for reducing the timelines for approvals: (d) Creating a Cell in ULB/Development Authorities	The text mentions, "There is a need for creating a specialized cell in Authority which is manned by qualified personnel conversant with the procedures and the interpretation of development regulations. The Cell should be headed by a qualified Town Planner who should lead a team of Architects, Engineers, Environment Specialist and Legal Experts among others."	Add in the list of professionals in the Cell: Accessibility and Universal Design Specialist.
13.4 (f) Integration of agencies outside the ULBs for online clearances	It is mentioned that "Various agencies like AAI, NMA, SUAC, Fire Services, Department of Industries, Ministry of Defense, Metro Rail etc grant NOC clearance to the building plans in certain specific cases."	Add Access Board here, which could be established under direct purview of Ministry of Social Justice and Empowerment and scrutinize drawings for accessibility feature.

Section/Clause	Observations/Current text	Recommendations
	There is no mention of approval/NOCs, needed for accessibility.	

Annexures and Appendices of MBBL 2016

Annexure/Appendix	Section/Clause	Observations/Current Text	Recommendations
Annexure B I, II and III	Fire Protection Requirements for Buildings	This annexure has the List of fire protection requirements are given for different building types.	<ul style="list-style-type: none"> • Add to the list: Visual strobes, Evacuation lift, Evacuation chair, Accessible communication systems, tactile indicators leading to safe assembly, accessible evacuation maps, accessible signage. • Add a note that: These should be provided in all public buildings and group housing.
Annexure D	Questionnaire for High Rise Buildings/Other Buildings (Fire	<ul style="list-style-type: none"> • This annexure has a list of questions with respect to Fire Safety. Some questions that need modification are listed below. 	<ul style="list-style-type: none"> • Following are the recommendations for modifying the questions (the numbers here correspond to the questions given in the questionnaire):

Annexure/ Appendix	Section/Clause	Observations/Current Text	Recommendations
	Service Headquarters)	<ul style="list-style-type: none"> ❖ Question 27. Have manual call boxes been installed in the building for raising an alarm in the event of outbreak of fire? If so, please give details. ❖ Question 28. Has public address system been installed in the building with loudspeaker on each floor with talk back facility? ❖ Question 29. Has an intercom system been provided between the various floors and the fire control room in entrance lobby? ❖ Question 34 f). Has communication system been installed in the lift car? ❖ Question 42. Have all exits and direction of travel to each exit been sign-posted with illuminated signs? ❖ Question 47. Please indicate the number and type of fire extinguishers provided at various locations and the arrangement for 	<ul style="list-style-type: none"> ❖ Question 27. Add the following phrase at the end, "including the height of the box and if the signage is accessible". ❖ Question 28. Please modify the question to ask if there is an accessible two-way communication system. ❖ Question 29. Please modify to state that if there is an accessible intercom facility (where one could have video-chat/ message) apart from calling/speaking. ❖ Question 34 f). Replace the term 'communication system' to 'accessible two-way communication system'. ❖ Question 42. Modify the question to check if the signs are compliant with accessibility standards. ❖ Question 47: Add in the question that height at which the extinguisher has been installed should be mentioned.

Annexure/ Appendix	Section/Clause	Observations/Current Text	Recommendations
		<p>the maintenance of the extinguishers.</p> <ul style="list-style-type: none"> ❖ Question 49. Whether the refugee area has been provided? If so, the floor on which provided and the total area provided floor-wise. ❖ Question 50. Are the occupants of the building systematically trained in fire prevention, use of fire extinguishers and emergency procedures? If so, please give details. 	<ul style="list-style-type: none"> ❖ Question 49. Add in the question if the refuge area meets accessibility standards and if the area has accessible two-way communication system, evacuation chair, etc. ❖ Question 50: It should also be asked if the occupants are trained to support people with disabilities. • Add the following new questions in the questionnaire: <ul style="list-style-type: none"> ❖ Are there accessible warning /alerting systems (visual strobes, hooters, alarms, etc) installed in all areas? ❖ Are the fire exits designed as per accessibility standards? ❖ Is the route from the exit to safe assembly area meet accessibility standards? ❖ Are wheelchairs and evacuation chairs provided that could be used in case of fire evacuation? ❖ Is there an evacuation/fireman's lift that could be used during emergency evacuation?

Annexure/ Appendix	Section/Clause	Observations/Current Text	Recommendations
			<ul style="list-style-type: none"> ❖ Are the fire exit plans in accessible format (Braille/tactile/audio) and mounted at accessible heights? ❖ Is there a system to create a personal emergency evacuation plan for people with disabilities? Give the details of the procedure followed. ❖ Do you maintain a database of people who need support during emergency? How is the information collected and maintained?
Appendix A-1 (Bye laws 2.9.1)	Statement of the Proposal and Certificate	There is a table for the parking space allocation. This does not mention reserved car parking for persons with disabilities.	Add in the table: Reserved car parking for persons with disabilities. The same should comply with accessibility standards (B 3, Part 3, Volume 1, NBC 2016)
Appendix A-2 (Bye laws: 2.10.9)	Form for Specifications of Proposed Building	The architect has to fill information regarding the number of latrines, urinals, kitchens, baths to be provided, the	Add the following in the Form: Specifications and materials used, for all the common areas (toilets, kitchens, rooms, shower/bath, pathways, floors,

Annexure/ Appendix	Section/Clause	Observations/Current Text	Recommendations
		materials to be used in construction for walls/columns/foundations/roof/ floors	parking, accessible entrance, reception, staircase, lifts, exits, signages and recreation areas) should pertain to accessibility standards as per 13 and Annexure B of NBC 2016.
Appendix A-5 (Bye laws: 2.9.4 viii)	Affidavit-cum-Undertaking	This is an affidavit filled by the Architect stating that the building plan has been prepared strictly in accordance with the Building Bye-Laws rules, regulations and practice of the department and no misinterpretation on inference of provision of Building Bye-Law has been done while preparing the plans.	Add the following in the Affidavit: The building plan and proposal is in conformance with accessibility standards as listed in 13 and Annexure B, Part 3, Volume 1, NBC 2016.
Appendix A-6 (Bye laws: 2.14.2)	Building Permit/Sanction.	This is a sanction letter issued by the authority for erecting/re-erecting/adding to/alteration. Some important points are reiterated in the sanction.	Add the following point: The owner should ensure that the building shall adhere to the accessibility standards in 13 and Annexure B, Part 3 Volume 1, NBC 2016.

Annexure/ Appendix	Section/Clause	Observations/Current Text	Recommendations
Appendix A-13 (Bye laws: 2.16)	Form for Certificate of Architect/Engineer/Supervisor	This form is submitted by the Architect along with the notice of completion.	Add: Certified that the building(s) incorporates the provisions of accessibility of persons with disabilities as specified in 13 and Annexure B, Part 3, Volume 1, NBC 2016.
Appendix A-14 (Bye laws: 2.17.1)	Completion-cum-Occupancy Certificate	The certificate mentions that the building has been inspected with reference to building bye-laws in respect to the structural safety, fire safety, hygienic and sanitary conditions and proposed rainwater harvesting systems....	Please add: Accessibility of persons with disabilities.
Appendix E (Bye laws: 2.12.5 & 6.3.6)	Qualification and Competence of Technical Personnel for Preparations of Schemes for Building Permit and Supervision	This has a list of registered professionals to carry out different activities, like fire consultant, architect, urban designer, plumber etc. It provides their qualification and functions.	Add a professional: Access auditor. The professional/agency should be empanelled by the Ministry of Social Justice and Empowerment. The access auditor should be involved at the project proposal/design stage, sanction stage and completion stage of a project, conducting access audit

Annexure/ Appendix	Section/Clause	Observations/Current Text	Recommendations
			for proposed as well as completed constructions.
Appendix F (Bye laws: 7.12.1)	Penal Action for violation of provisions of Development Code of Master Plan, Zonal Regulation and Building Bye-laws.	This appendix is about the deviations in FAR, setbacks, parking norms etc. categorized into non-compoundable items.	Add to the list of non-compoundable items: Accessibility of persons with disabilities for all areas (building exteriors and interiors).
Appendix G (Bye laws: 7.9 & 8.12)	To Provide Facilitates in the Public Building excluding Domestic Buildings for Differently-abled Persons	<ul style="list-style-type: none"> • The title of this appendix itself is inappropriate. <ul style="list-style-type: none"> ❖ Facilitates should be replaced by facilities. ❖ Excluding domestic buildings would mean excluding group housing. ❖ They have used the term "Differently abled". 	Appendix G should be deleted. The standards should be based on 13 and Annexure B of Part 3, Volume 1, NBC 2016.

Annexure/ Appendix	Section/Clause	Observations/Current Text	Recommendations
		<ul style="list-style-type: none"> This two page annexure is totally inappropriate. They have differentiated buildings to be made friendly for ambulant and non ambulant people with disabilities. Further they have differentiated buildings that need to be made friendly for people using small and large wheelchairs! 	
Appendix H (Bye laws: 7.10)	Regulations for Resettlement and Slum In-situ Upgradation	This appendix is about regulations pertaining to resettlement and Slum In-situ upgradation in terms of pathways, staircase, water closet, flushing system etc. However, there is no mention if the above should be accessible.	Add: A common point that accessibility should be ensured while designing the pathways, staircase, water closet, flushing as per standards given in 13 and Annexure B, Volume 1, NBC 2016.

Conclusion

Based on the review, the Model Building Bye-Laws (MBBL) 2016 needs to be revised, both in terms of the approach and the content vis-a-vis accessibility for persons with disabilities. Bye-Laws govern the construction activity in a particular area/municipality. Any building plan that does not adhere to the Bye-Laws is not approved for construction/occupancy by the sanctioning authority. Compliance to building Bye-Laws is mandatory.

It is mentioned in the RPWD Act 2016 that no establishment shall be granted permission to build any structure/issued a certificate of completion/allowed to take occupation of a building unless it has adhered to the standards. The Building Bye-Laws therefore need to explicitly mention the RPWD Act by name and procedures for sanctions/approvals should be modified to ensure implementation of the mandates given in the Act. NBC 2016 has included accessibility standards in the various relevant chapters. The same approach should be followed in the Bye-Laws. Part 3 of NBC 2016 has detailed the accessibility standards. They are quite comprehensive. The Bye-Laws should provide references to the relevant sections in the NBC 2016.

The Model Building Bye-Laws once revised, should be widely circulated to States and Union Territories across India for its adoption. It is then that the mandate of the RPWD Act 2016 shall be fulfilled.