INDIAN RAILWAY
STATIONS DEVELOPMENT
CORPORATION LIMITED

03a

Manual of Form Based Controls for Station (Re) development

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Preface

The Development Control plays an important role in guiding and facilitating the physical Development. Since the commercial development along with station redevelopment in the railway land is to be done under Section 11 of the Railways Act 1989, there was a need to have set of Manuals/Guidelines to guide the entire development. In fact the Union cabinet has approved (in terms of communication received from Ministry of Railways, GOI vide letter No. 2011/LMB.WCS/22/07/25 Pt.1 dated 17.10.2018) that 'Railways/RLDA/IRSDC shall consult urban local bodies/other statutory authorities while approving its plans in terms of powers conferred to it under Section 11 of the Railways Act 1989 so that the development in Railway Land is harmonious with surrounding development, generally following National Transit Oriented Development (TOD) Policy. No change in Land Use is required pan India by Railways for developing railway land for commercial use.' It is further approved that IRSDC shall be the Nodal Agency and the main Project Development Agency for redevelopment/development of all stations. MoHUA has also conveyed the approval of Union Cabinet to Chief Secretaries of All States/UTs to incorporate suitable provisions in the local byelaws/ development control norms in congruence with the National TOD Policy as well as relevant provisions of the Railways Act to facilitate Railways/RLDA/IRSDC to proceed with their development plans in consultation with local bodies/other statutory authorities, at the earliest.

Accordingly as the Nodal Agency for station redevelopment, IRSDC took upon the responsibility, on behalf of Railways/RLDA besides for guiding its own work for station redevelopment along with commercial development, to produce a series of Manuals/Guidelines to guide the Architects/Developers/Concessionaires as well as the Authority on the Procedures, Dos & Don'ts in preparing development plans and submitting the applications for approval of Layout Plans and Building Plans of the commercial development to IRSDC.

IRSDC aims to transform the railway stations and the adjoining land into a "RAILOPOLIS" - a Mini Smart 24/7 City Centre where one can live, work, play and ride while putting the land resources to optimal use following the National Transit Oriented Development Policy norms. The aim is to facilitate developments by streamlining policies and making the Manuals/Guidelines as transparent as possible to promote ease of doing business. The Manual on Form Based Codes explains various developments such as buildings set back, ground coverage, FAR, heights etc. while Manual on building plan approval and commercial assets covers the process for the approval of building plans. The Manuals are mandatory while the Guidelines are Recommendatory and the Development Agreement/Concession Agreement or any other legal agreement between IRSDC (Authority) and Developments/Concessionaires shall prevail over and above the guidelines.

The advantage of the Manual on Form Based Codes is that it facilitates flexibility in development of mix use (horizontal and vertical mixing) to make the development sustainable, user friendly and market responsive while most of the local building byelaws restrict mixing which is essential for development of TOD. The guidelines propose good practices related to Construction Standards that promote and protect health, safety and general welfare of the occupant and environment across its life cycle while permitting dynamic building use.

These "Manuals for Station (Re)development including Commercial Development" is a comprehensive set of documents which provide standards and guidelines in the following order of decreasing priority-

1. Safety Standards, (like fire safety, earthquake related controls, etc.)
2. Passenger and user comfort and convenience.
3. Environmental Conservation (Natural and Man-made)
4. Heritage Conservation
5. Design and aesthetic in harmony

These Manuals and Guidelines have been prepared over a period, after research, site visits, case studies, best practices, study of other similar national, international designs, National TOD Policy and Form Based Codes (as advised by MoHUA), National Building Codes, UBBL-2016 and Environment Management Guidelines issued by MoEF&CC. Some of these have also been applied and tested on the on-going projects of IRSDC.

PUBLIC CONSULTATIONS: The (draft) Manuals and Guidelines were posted on IRSDC's website. These documents are available for reference at- www.irsdc.in.The stakeholder consultation was held via six (6) national webinars during April 2021- July 2021. The attendees were provided with a brief overview of salient features of the Manual, Guidelines, etc. Over 1300 participants, which included about 25 Government Agencies, Educational Institutions, Professional Bodies, Centres of Excellence, and senior professionals, attended, and shared their valuable feedback during the Webinars and over emails.

These Manuals and Guidelines have now been adopted for Station Redevelopment Works after incorporating relevant feedback and other suggestions by all the stakeholders. Further, final draft Manuals and Guidelines were discussed in the Plan Sanctioning and Monitoring Committee (PSMC) where subject experts were also invited as

special invitees in July 2021. IRSDC's Board of Directors (BOD) has also deliberated on this subject in August 2021 for adoption and application to the program of (re)development of Railway Stations along with Commercial Development. These Manuals and Guidelines are expected to transform the railway area around stations into model development as envisaged also by MoHUA and spur similar development in surrounding area.

STRUCTURE OF THIS MANUAL OF FORM BASED CODES FOR STATION (RE)DEVELOPMENT

Sl. No.	Chapter	Content
1	Introduction	Background and Intent of this manual
2	Sub-Plot Development Control Norms	Empowerment, Definitions, Development Control Norms applicable at Plot level, Layout Plan Guidelines
3	Layout Regulating Plans	Layout Plan Application Requirements, Step by Step Process for Layout Plan Application, Format for Layout Regulating Plan, Urban Design and Planning Vision, Schedule of Other Documents to be submitted
4	Parameters for Property Development Card	Form Based Codes Parameters for Property Development Card (Buildable Volume Card Parameters, Street Regulation Card Parameters, Open Space Regulation Card Parameters, Heritage Regulation Card Parameters)

The manuals and guidelines are intended to be comprehensive for promoting balance and orderly development of railway stations and surrounding city area. Manuals and Guidelines inter-alia provide the framework, necessary technique, norms and standards, and development promotion techniques. Conditions may vary from place to place and accordingly these manuals and guidelines may be applied to all situations and places by adopting to local conditions. These manuals and guidelines fulfil the need for a planning process which facilitate efficient and dynamic station development in overall urban framework.

The manuals and guidelines are also intended to be a possible reference for various aspects of urban planning and design by State Governments, Development Authorities, Private Sector and Planning Organizations.

(Sanjeev Kumar Lohia)
Managing Director and Chief Executive Officer
Indian Railway Stations Development Corporation Ltd.

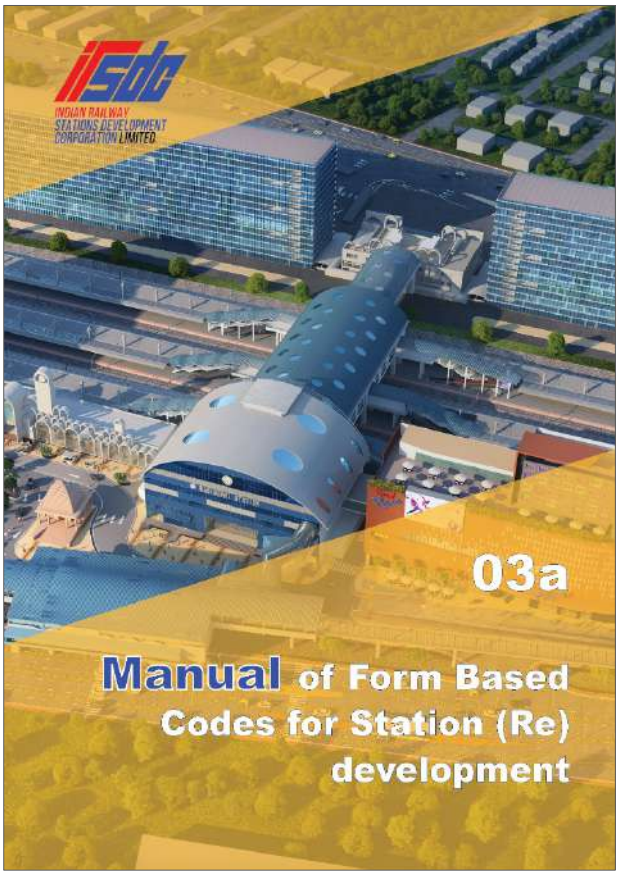
Section 0.1: About this Manual

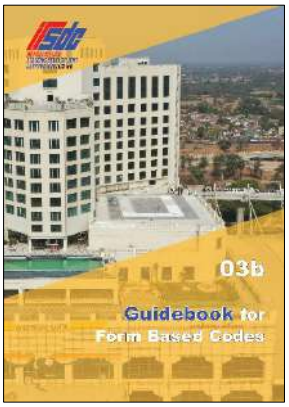
These Form Based Codes (FBCs) contain the Development Control Norms applicable to Station Redevelopment including Commercial Development, formats for Layout Regulating Plans and Parameters for Property Development Card.

The Development Control Norms section of this document are minimum mandatory requirements for Station (Re)development. Remaining part of this document provides formats for Layout Regulating Plans and Parameters for Property Development Card which allows flexibility in actual use of Sub-Plot -- subject to applicability of all safety requirements stipulated by other regulations, like local Fire Department, Airport Authority, etc. The local Bye-Laws shall generally apply to the complete Railway land and get reflected in these Layout Plans, while the Sub-Plots would follow the Property Development Card (PDC). This would ensure that the application of local Bye-Laws are not duplicated on both, the complete Railway Land parcel and the carved out Sub-Plots.

This document introduces a new Regulatory Tool, i.e. Property Development Card (PDC) unique Card with minimum mandatory Form Based Codes applicable for respective Sub-Plots.

The PDC shall ensure that all minimum mandatory regulatory requirements for development of Sub-Plots are provided to Developers, thereby enhancing the returns from land. This would ensure that the Developers are aware about the minimum mandatory requirement of the Sub-Plots at the time of bidding for the project, by minimizing ambiguity due to interpretation of various Bye-Laws and Codes. This also upholds the spirit of Ease of Doing Business and Public Private Partnership.

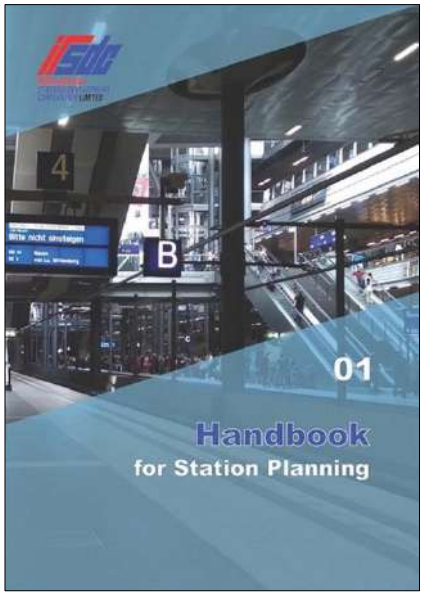




Guidebook for Conservation of Railway Heritage Assets assists in preparation of Layout Regulating Plans and Property Development Card.

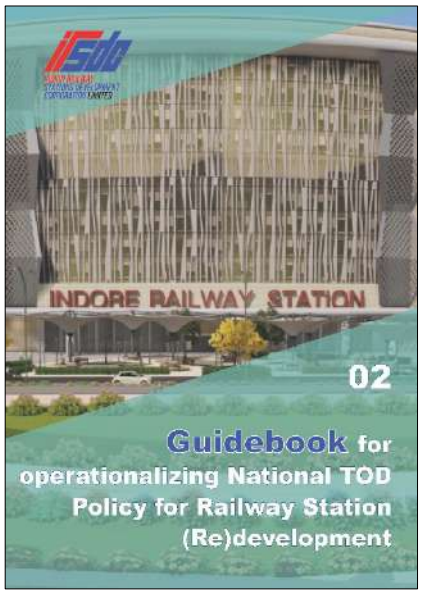
Table 1: Schedule of remaining parts of the Manuals for Station Redevelopment including Commercial Development

Handbook for Station Planning (for internal use only)



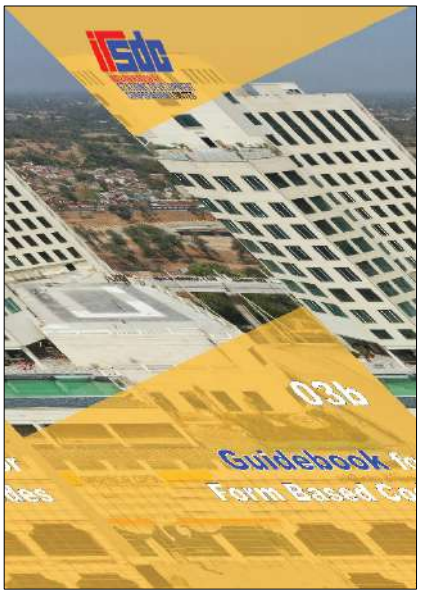
This document contains Norms, Standards and Tools for Design of Station Operational Areas.

Guidebook for operationalizing National TOD Policy for Railway Station (Re)development



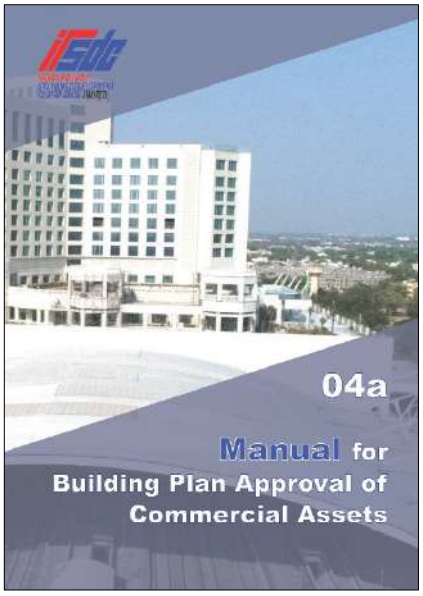
This document contains Tools and Processes for Layout Planning within the Railway Land, with the intent of 'Land Value Capture' for optimum monetization.

Guidebook for Form Based Codes



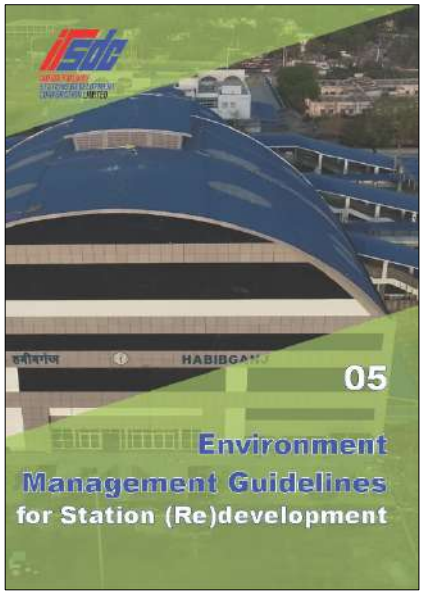
This document assists in preparation of Layout Regulating Plans and Property Development Card.

Manual for Building Plan Approval of Commercial Assets



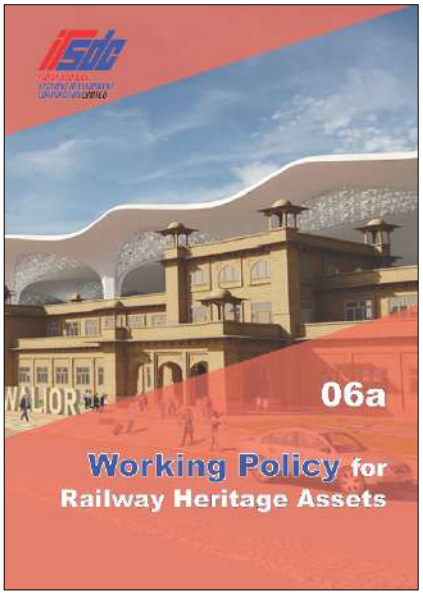
This document contains the procedures and parameters for the approval of Building Plan of Commercial Assets.

Environment Management Guidelines for Railway Station (Re)development



This document contains guidelines for integrating provisions of Environment Management during Layout Planning and is based on the recommendations issued by MoEF&CC, NGT and other statutory bodies.

Working Policy for Railway Heritage Assets



This document contains Working Policy for the desired response to Railway Heritage Assets.

Section 0.2: Abbreviations

1.	AAI	:	Airports Authority of India
2.	ARHCs	:	Affordable Rental Housing Complexes
3.	ARZ	:	Architectural Response Zone
4.	ASI	:	Archaeological Survey of India
5.	BOD	:	Board of Directors
6.	BVC	:	Buildable Volume Card
7.	c/c	:	Centre-to-centre
8.	CCZ	:	Construction Control Zone
9.	CIF	:	Chief Inspector of Factories
10.	CPCB	:	Central Pollution Control Board
11.	CSP	:	Community Service Personnel
12.	ECBC	:	Energy Conservation Building Code
13.	ECS	:	Equivalent Car Space
14.	EWS	:	Economically Weaker Sections
15.	FAR	:	Floor Area Ratio
16.	FSI	:	Floor Space Index
17.	GOI	:	Government of India
18.	GRIHA	:	Green Rating for Integrated Habitat Assessment
19.	HA	:	Heritage Asset
20.	HCC	:	Heritage Conservation Committee
21.	HCL	:	Height Control Line
22.	HCZ	:	Height Control Zone
23.	HRC	:	Heritage Regulation Card
24.	IR	:	Indian Railways
25.	IRC	:	Indian Road Congress Codes
26.	IRSDC	:	Indian Railway Stations Development Corporation
27.	MCA	:	Model Concession Agreement
28.	MFZ	:	Multi-Functional Zone
29.	MoEF&CC	:	Ministry of Environment, Forest and Climate Change
30.	MoHUA	:	Ministry of Housing and Urban Affairs
31.	MoR	:	Ministry of Railways
32.	MOS	:	Marginal Open Spaces
33.	MPP	:	Mandatory Pedestrian Passage
34.	MSSR	:	Manual for Standards and Specifications for Railway Stations
35.	MUZ	:	Multi Utility Zone
36.	MVP	:	Mandatory Vehicular Passage
37.	NBC	:	National Building Code
38.	NGT	:	National Green Tribunal
39.	NMA	:	National Monuments Authority
40.	NMT	:	Non-Motorised Transport
41.	NOC	:	No Objection Certificate
42.	NTOD	:	National Transit Oriented Development
43.	ORC	:	Open Space Regulation Card
44.	PDA	:	Project Development Agency
45.	PDC	:	Property Development Card
46.	PMAY	:	Pradhan Mantri Awas Yojana
47.	PSMC	:	Plan Sanctioning and Monitoring Committee
48.	RHA	:	Railway Heritage Asset
49.	RLDA	:	Rail Land Development Authority
50.	RoW	:	Right of Way
51.	SRC	:	Street Regulation Card
52.	SWM	:	Solid Waste Management
53.	TC	:	Technical Consultant
54.	TOD	:	Transit Oriented Development
55.	UBBL	:	Unified Building Bye-Laws
56.	URDPFI Guidelines	:	Urban and Regional Development Plans Formulation and Implementation
57.	UTTIPEC Centre Street Design Guidelines	:	Unified Traffic and Transportation Infrastructure Planning and Engineering

Chapter 1: Introduction

Section 1.1: Background

The **Manuals for Station (Re)development including Commercial Development** is a comprehensive set of Manuals and Guidebooks drafted to regulate Station Redevelopment Works. The Chapter on Parameters of Property Development Card contains mandatory and recommendatory parameters for development of Form Based Codes (FBCs) applicable to the Sub-Plots of the Railway land. These parameters are derived from a study of the following regulatory documents (countries in brackets):

- National Building Code of India (NBC) (IN)
- Model Building Byealws-2016 (MBBL) (IN)
- Unified Building Bye Laws (UBBL) of Delhi-2016 (IN)
- Manual for Standards and Specifications for Railway Stations (IN)
- Urban and Regional Development Plans Formulation and Implementation Guidelines (IN)
- Unified Traffic and Transportation Infrastructure Planning and Engineering Centre Street Design Guidelines (IN)
- Indian Road Congress Codes (IN)
- Master Plan of Delhi (IN)
- Master Plan for Chennai Metropolitan Area, 2026 (IN)
- Municipal Corporation of Delhi, Ease of Doing Business (IN)
- Real Estate (Regulation and Development) Act, 2016 (IN)
- Building Regulations in the United Kingdom (UK)
- The Councillor's Guide to Urban Design (UK)
- Colorado Urban Design Standards and Guidelines (USA)

Section 1.2: Intent

- As envisaged, Technical Consultants (TC) appointed for preparation of Master Plans and Layout Plans for Station (Re)Development works shall prepare their respective Station Area Layout Plans as per provisions of the Manual of Standards and Specifications for Railway Stations, 2009, the Handbook for Station Planning, the Guidebook for operationalizing National TOD Policy on Railway Land and the Chapter 2: Development Control Norms of this document. After finalization of the respective Layout Plans in consultation with concerned Railway Agencies, the Layout Plans have to be submitted in the formats provided in Chapter 3: Layout Regulating Plans of this document. The TC shall prepare a unique Property Development Card (PDC) for each Sub-Plot as per Chapter 4: Parameters for Property Development Card in this document.
- The Developer[1] appointed for Station (Re)development or any Sub-Plot/Project Area emerging from the approved Railway Station Layout Plan shall adhere to the **Development Control Norms** and concerned **Property Development Card.**

[1] 'Developer' shall be an individual or entity appointed to develop Subject Sub-Plot.

Chapter 2: Sub-Plot Development Control Norms

Section 2.1: Empowerment

2.1.1. Vide letter no 2011/LMB/WCS/22/07/25 Pt 1 Dated 17.10.2018, Union Cabinet has approved IRSDC as the nodal agency and main Project Development Agency (PDA) for redevelopment/development of all stations and further approved that 'IRSDC shall consult urban local bodies/ other statutory authorities while approving its plans in terms of powers conferred to it under Section 11 of the Railways Act 1989 so that the development in Railway Land is harmonious with surrounding development, generally following National Transit Oriented Development (TOD) Policy. No Change in Land Use is required pan India by Railways for developing railway land for commercial use.'

2.1.2. Vide gazette notification no. 13/1/2017-INF dated 17-10-2017, Ministry of Finance (Department of Economic Affairs) has included "Railway terminal infrastructure including stations and adjoining commercial infrastructure" in the Harmonised Master List of Infrastructure Sub-sectors.

2.1.3. Ministry of Environment and Forests, vide their letter no 19-172/2018-IA.III Dated 28.05.2020 have clarified that: "Projects in land appurtenant to "railway", identified for commercial development in and around railway stations shall be exempt from seeking prior environmental clearance under the provision of the EIA notifications, 2006...".

2.1.4. Using the powers conferred to it, IRSDC has specified that while granting approvals at layout/ building level, following order of priority of provisions shall be followed:
- 2.1.4.1. Approved Layout Plan of the Railway Plot
- 2.1.4.2. Schedule-B Annexure IV of Concession Agreement
- 2.1.4.3. Terms of NOC/ clearances from other Statutory bodies
- 2.1.4.4. Local Bye-laws
- 2.1.4.5. Other applicable controls such as NBC, GRIHA, ECBC, etc.

2.1.5. The Layout Plan shall be approved by IRSDC/ RLDA as plan approving authority in consultation with local bodies.

2.1.6. The Concessionaire shall prepare a detailed layout plan for Sub-Plot(s) in compliance with the approved Layout Plan of the Plot, Architectural design principles laid down in Schedule-J and Development Control Norms provided in this Schedule, and get the same approved from IRSDC before the building plans are proposed. The Concessionaire can propose alterations to the approved Layout Plan to suit his scheme for which necessary applications shall be made to IRSDC as per laid down procedure. The Concessionaire shall also prepare necessary Buildable Volume Cards or detailed building plans for the whole/part of the Sub-Plot, following the principles and norms enumerated in Sections below, in compliance with the Approved Layout Plan for the Plot.

2.1.7. Building Plans shall be approved by IRSDC/ RLDA as per applicable Manuals.

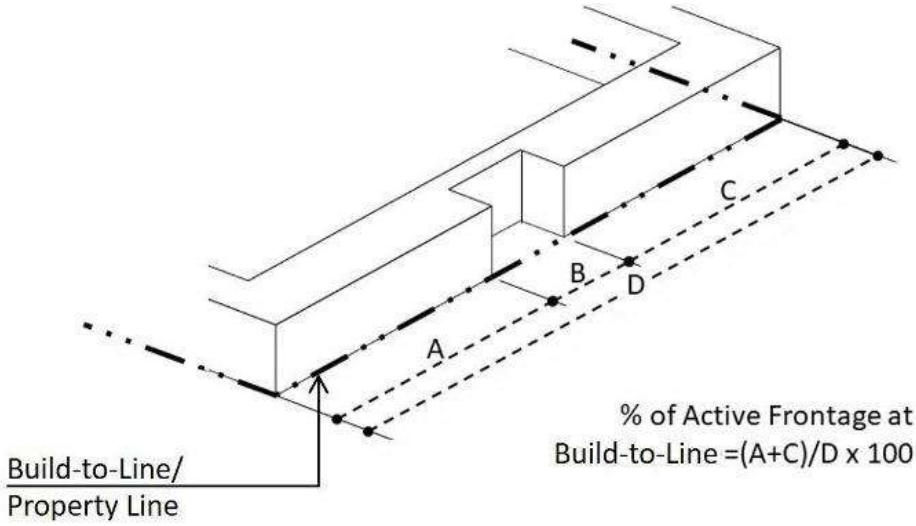
Section 2.2: Definitions

2.2.1. For this Manual, the following words and expressions shall have the meaning assigned to them except where the context otherwise requires

2.2.2. "Agreement" shall refer to the Development Agreement or Concession Agreement or Lease Agreement etc. entered into with any Developer/Contractor for development. In the tendering stage, the term Agreement shall refer to any Request for Proposal or tender or offers sought by the Authority from Developers/Contractors along with all corrigenda/addenda issued thereto.

2.2.3. "Active frontage" shall refer to any edge of a Sub-Plot specified so in the relevant Buildable Volume Card(s) where it is mandatory to ensure that the façade of buildings touch the Build-to-Line of a Sub-Plot, up to a desirable 80% but minimum 50% frontage length at ground floor level, figuratively shown in Figure 1 below.
- 2.2.3.1. The methodology for computation of percentage of Active Frontage is shown in Figure 1 below.
- 2.2.3.2. Active Frontage may have any of the following features: shop-fronts, arcades/ colonnades, doorways, entry/exit/access points, transparent windows, verandahs/balconies providing direct visual connection with the adjoining Street. (Refer Figure 1 below.)
- 2.2.3.3. Commercial frontages shall be considered as Active Frontage only if these have minimum 50% transparency (un-tinted) between 1m and 3m height from the street.

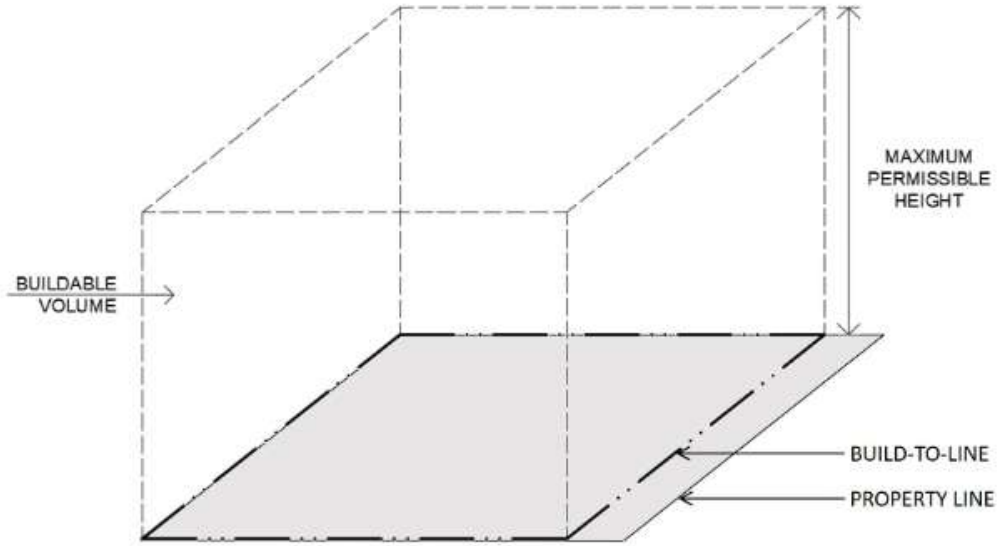
Figure 1: Active Frontage along Build-to-Line and Formula for Computation of percentage of Active Frontage



2.2.4. "Build-to-Line" shall refer to a line within or overlapping the Sub-Plot edge, which demarcates the edge of the buildable volume permitted in that Sub-Plot up to which the facade of buildings are permitted to be built. For ample clarity, Build-to-Line is the line beyond which no chhajas, Facade or other parts of buildings are permitted on a Sub-Plot, except Permitted Projections.

2.2.5. "Buildable Volume" shall mean the three-dimensional space defined by the vertical planes along the Build-to-Lines of all edges of a Sub-Plot, and the horizontal planes at the permissible height of superstructure above normal ground level and the permissible depth of underground structure below normal ground level of a Sub-Plot, within which any structure is permitted to be built on a Sub-Plot except for any permitted projection(s). (Refer Figure 2).

Figure 2: Buildable Volume on Sub-Plot



2.2.6. "Buildable Volume Card" shall refer to the drawing that provides the Form Based Code parameters applicable to the Sub-Plot number(s) mentioned in the drawing to which all Development in the Sub-Plot(s) must conform.

2.2.7. "Building Plan" shall refer to the detailed plan of a building prepared for the purpose of establishing the compliance of the plan with the Development Control Norms, approved Layout Plan and the terms of Agreement for the purpose obtaining the approval before construction is taken up. Necessary compliance with other statutory provisions including fire safety is required to be ensured. It is clarified that this is distinct from the structural plans or MEP plans prepared for the purpose of designing the structure.

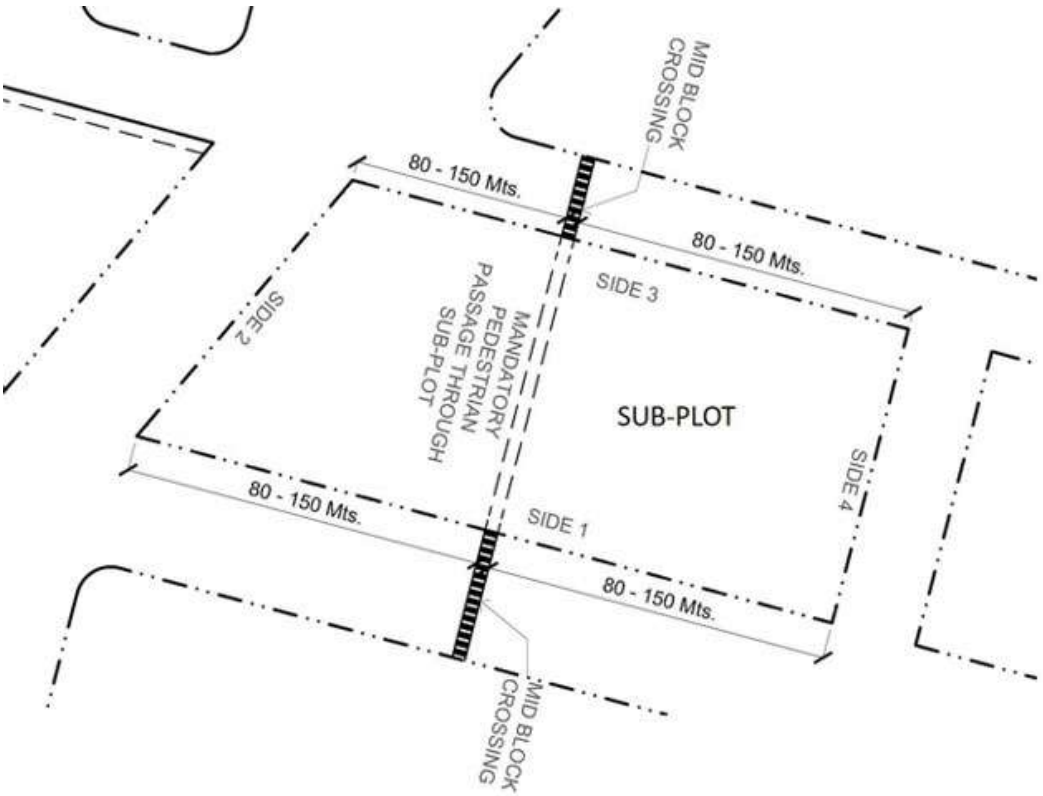
2.2.8. “Common Areas” shall mean all those areas available for everyone (Common) to use irrespective of ownership, and may include streets, plazas, parks, public buildings, facilities, public amenities, infrastructure elements, etc.

2.2.9. “Layout Plan” shall mean a plan prepared for the complete Plot for the purpose of establishing that the planning is in conformance with the Architectural Design given in Schedule - J and is compliant with Development Control Norms specified in this Chapter for the purpose of obtaining the approval before Building Plans can be approved. Necessary compliance with other statutory provisions including fire safety is required to be ensured.

2.2.10. “Lessee” shall refer to any agency who has the rights or has procured the rights from Railway/IRSDC/RLDA on the Plot or Sub-Plot or part thereof on leasehold basis or license basis and includes the terms such as Concessionaire, Licensee, Developer, Facility Manager mentioned in the Agreement.

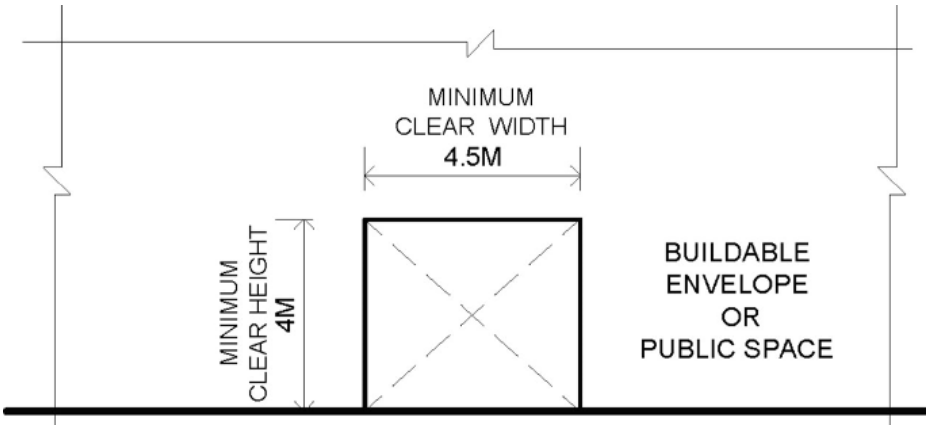
2.2.11. “Mandatory Pedestrian Passage (MPP)” shall refer to any mandatory passage required through any Sub-Plot which is demarcated in the Buildable Volume Cards and Layout Plan (Refer Figure 3). MPP shall have hard non-slip paving and shall have permanent roof or building above and shall be a Common access that provides barrier-free movement and protection against climatic vagaries to the pedestrians. Minimum clear width and height of the Mandatory Pedestrian Passage shall not be less than 4.5 m and 4 m respectively, exclusive of all structural elements and any encumbrances (Refer Figure 4). The MPP shall align with the pedestrian movement paths outside the Sub-Plots so that there is a continuity (Refer Figure 5). All MPPs shall preferably be lined with Active Frontages.

Figure 3: Mandatory Pedestrian Passages through Sub-Plots shall align with Mid-Block Crossings



2.2.12. “Mandatory Vehicular Passage (MVP)” shall refer to any mandatory multi-modal public Right of Way (RoW) required through any Sub-Plot which is demarcated in the Buildable Volume Cards and Layout Plan (similar to Figure 3). MVP may be open or covered, including the Built-up Area above it, may be lined with Active Frontages and may also be used to meet the requirements of fire norms and set-backs, etc. Minimum clear width and height of the MVP shall not be less than 6 m and 5.5 m respectively, exclusive of all structural elements and any encumbrances. The MVP shall align with the junctions and road networks outside the Sub-Plots so that there is a continuity of vehicle movement. MVP shall be designed, constructed and maintained as per IRC provisions.

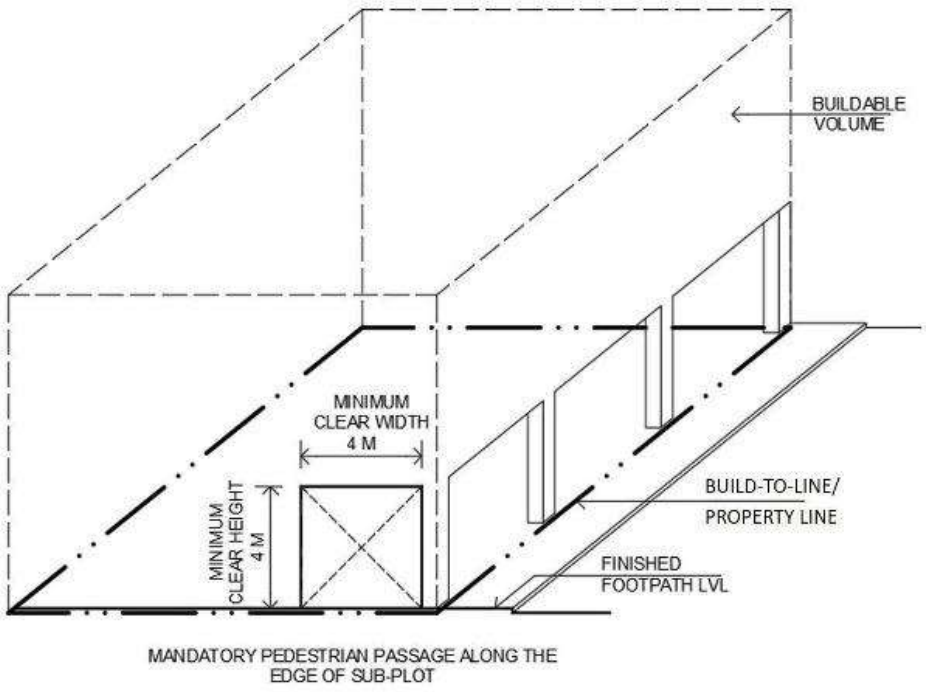
Figure 4: Typical cross-section of a Mandatory Pedestrian Passage through a Sub-Plot



2.2.13. "Marker Element" – is a special architectural feature which is prominently visible and distinguishable from a distance, owing to its height, aesthetic treatment (material/ colour/ design), or location, such that it would either frame or anchor a view corridor and also assist in way-finding. Such elements could also include signage indicating the location/ direction of the Railway Station. The width, height and location of the element need to be suitably adjusted to a View cone of 15°, depending on the specified viewing Distance of the Marker Element specified in the Buildable Volume Card.

2.2.14. "Pedestrian Colonnade" In case the Mandatory Pedestrian Passage (MPP) is touching a Property Line, the edge of MPP on Property Line shall provide barrier-free pedestrian access for common use. Such a passage may also be referred to as a Pedestrian Colonnade (Refer Figure 5).

Figure 5: Typical Mandatory Pedestrian Passage along edge of a Sub-Plot



2.2.15. "Permitted Projection" refers to any Built-Up Area projecting beyond the Buildable Volume of a Sub-Plot, constructed solely for the purpose of connecting the construction in Sub-Plot with construction and/or common areas outside subject to necessary clearances over the adjoining RoWs. Any Permitted Projection must have prior fire clearance and the Built-Up Area in any such projection shall be chargeable. Permitted Projections can only be provided after obtaining No-Objection certificate from the owners of adjoining Sub-Plot/ Plot and their construction/ use will be subject to any terms and conditions of such owners.

2.2.16. "Plot" refers to complete railway land shown in the Approved Layout Plan.

2.2.17. “Property Line” shall mean the line defining the boundary of a Sub-Plot (Refer Figure 1).

2.2.18. “Sub-Plot” shall mean individual land parcels identified for Development in the Layout Plan.

2.2.19. “Super Structure” shall mean all permanent constructions above Plinth Level.

2.2.20. “Underground Structure” shall mean all permanent constructions below Plinth Level.

Section 2.3: Development Control Norms applicable at Plot level

The following general Development Control Norms at Plot level (Railway Land) shall be as per local byelaws (for information purposes) for concerned cities where Station (Re)development works are undertaken (template provided below):

a.	Maximum permissible Height	
b.	Setbacks/ Marginal Open Spaces (MOS)	
c.	FAR/FSI	
d.	Ground Coverage	
e.	Community open spaces	

Section 2.4: Layout Plan Guidelines

The Layout Plan shall be compliant with the following:

2.4.1. **Permissibility of uses:** All uses shall be permitted within the sub-plots with the exception of highly polluting and hazardous industries as per the Revised Classification of Industrial Sectors by the Central Pollution Control Board Delhi (February 29, 2016) and any other uses also designated as non-permissible by the State Govt./ local body. This may include, but not be limited to various uses such as Residential, Shops, Services apartments, hostels, Retail, Offices, hotels, hospitals, offices, shops, hotels, shopping malls, theatres, co-working spaces, studio/ serviced apartments, rental housing, for-lease housing, etc. Mixing of uses can be done within the same Sub-Plot and in the same building footprint provided compatibility is ensured through suitable design measures.

2.4.2. **Maximum permissible Footprint Area**: Within the Sub-Plots, footprint area shall be flexible subject to maximum permissible Built-up Area and Height prescribed.

2.4.3. **Facilities for persons with disabilities (Divyangjan):** All public spaces, roads, Green Public Open Spaces, parking areas, buildings, etc. within the Plot shall have barrier free universal access as per Harmonised Guidelines and Space Standards for Barrier Free Environment for Persons with Disability and Elderly Persons issued by the Ministry of Housing and Urban Affairs, March 2016 and Harmonised guidelines for standards of accessibility & provision of facilities for Persons with Disabilities (Divyangjan) in Indian Railways of Ministry of Railways. (For Heritage Stations, additional Guidelines are provided in 06b: Guidebook for Conservation of Railway Heritage Assets).

2.4.4. **Green Common Open Space:** All Sub-Plots shall provide a minimum of 10% area as green open space for common use.

2.4.5. **Conservation of Trees:** Efforts shall be made to cut the minimum possible number of trees for the redevelopment. In addition, transplantation of trees should also be planned wherever possible to save the trees.

2.4.6. **Parking Standards:**

2.4.6.1. All use premises within sub-plots shall be permitted with the parking requirements as per proposed use, subject to minimum of 0.75 Equivalent Car Space (ECS) per 100 sq.m. of floor area.

2.4.6.2. Off-street parking should be equipped with charging infrastructure for electric vehicles in line with local bylaws and GOI directives/ policies.

2.4.6.3. Parking may be consolidated between Sub-plots;

2.4.6.4. The standards given in Equivalent Car Space (ECS) shall include parking for all types of vehicles i.e. cars, scooters, cycles, light and heavy commercial vehicles, buses etc.

2.4.6.5. Parking may be planned in any form such as surface parking, multi-level parking, underground parking, stacked parking, etc. Secure cycle parking facilities (mandatory part of the ECS requirement) should be provided in a dispersed manner, approx. every 50-100 m.

2.4.6.6. Lessee may also provide priced 'public parking' facilities within Sub-Plots.

2.4.6.7. Parking spaces for differently-abled to be provided as per Bureau of Indian Standards, National Building Code of India 2016, IRC:SP:12:2015 and MoHUA's Harmonized Guidelines and Space Standards for Barrier Free Built Environment for Persons with Disability and Elderly Persons, 2016.

2.4.6.8. For at-grade parking, no boundary wall shall be permitted around parking lots though permission may be given for fencing or cordoning off with low height plantation, so that visual connection between parking lot and adjacent footpath is maintained.

2.4.6.9. Only permeable materials to be used for surface parking.

2.4.7. **Social Infrastructure/ Amenities and Facilities:**

2.4.7.1. Public washroom complexes shall be provided (at least one) within 500m of each other within the development.

2.4.7.2. Necessary social infrastructure for residential population shall also be provided by the Lessee as per local byelaws.

2.4.7.3. Economically Weaker Sections (EWS) / Affordable Rental Housing Complexes (ARHCs) housing shall be provided by the Lessee in accordance with the provisions of local Bye-Laws (in terms of total numbers and max size of units) or PMAY guidelines or any other relevant national policies with the document mentioned first taking priority over the document mentioned later in the list. EWS units may be provided as housing for Community Service Personnel (CSP)/hostels/ dormitories/ rental housing or any other type of housing. The rights and responsibilities for disposing these units through lease/rent under the rights available in terms of the Agreement shall rest with the Lessee. Preference shall be given to staff working within the Station Area for which a policy may be prepared by Lessee and got approved from Authority.

2.4.8. **Site drainage** and run-off shall be taken care of in compliance with IRC-SP:50 and IRC-SP:119. Additional guidelines pertaining to Environment Management as per MoEF&CC, NGT and other statutory bodies are provided in 05: Environment Management Guidelines for Station (Re)development.

2.4.9. **Solid Waste Management Plan** shall be prepared by the Lessee as per SWM Guidelines 2016. Solid waste management centres shall be provided within the basements of buildings and no open-air waste-sorting facilities shall be permitted. Additional guidelines pertaining to Environment Management as per MoEF&CC, NGT and other statutory bodies are provided in 05: Environment Management Guidelines for Station (Re)development.

2.4.10. **Water conservation:**

2.4.10.1. Wastewater generated on the site shall be fully recycled as per CPCB norms and recycled water generated shall be used for non- potable uses e.g., toilets, gardens etc.

2.4.10.2. Only recycled water shall be used for toilet flushing, road washing, footpath washing and gardening. Permission to be taken for use of drinking water for this purpose.

2.4.10.3. Recycled water shall not be diluted by the Lessee by adding rainwater or drinking water.

2.4.10.4. Promote rain-water percolation and harvesting, measures shall be taken such as integration of landscape for water percolation, filtration of water meant for harvesting, surfacing of

footpaths/parking etc. with permeable materials and ensuring that no construction like parking, basements etc. is done under green spaces.

2.4.10.5. Features like Infiltration trenches, bioswales, sand filter, wet ponds, stormwater wetlands, wet vaults, storage tanks, recharge structures shall be planned (as applicable) to ensure natural storm water management.

2.4.10.6. Additional guidelines pertaining to Environment Management as per MoEF&CC, NGT and other statutory bodies are provided in 05: Environment Management Guidelines for Station (Re)development.

2.4.11. **Public road/ pedestrian network:** Roads/streets/passages for public use shall be provided as per the following norms:

2.4.11.1. Road networks to be planned with a vehicular route network of approximately 250m c/c and pedestrian network of approx. 100m c/c.

2.4.11.2. Based on ground conditions, the street grid (i.e. c/c spacing between RoWs) requirement may be relaxed up to a maximum of 10%.

2.4.11.3. Wherever required, public passages shall be provided to meet the objectives of planning.

2.4.11.4. Public movement networks for pedestrians accessing the Station at any level shall be kept open to the public at all times and lined with active frontages, have adequate lighting and active surveillance facilities at all times.

2.4.11.5. Bridging over public RoWs shall be permissible, subject to requisite NOCs.

2.4.12. **Parking Design Guidelines:** To the extent possible, the following guidelines shall be complied:

2.4.12.1. Parking shall not obstruct the access and vistas of the station building.

2.4.12.2. The ground floor of all parking structures / podiums or stilts shall be lined with Active Frontage facing the main streets.

2.4.12.3. Surface parking, if provided, shall be hidden behind buildings and not provided between the footpath and building frontage.

2.4.12.4. Only permeable materials to be used for surface parking.

2.4.12.5. For at-grade parking, no boundary wall shall be permitted around parking lots though permission may be given for fencing or cordoning off with low height plantation, so that visual connection between parking lot and adjacent footpath is maintained.

2.4.12.6. Shared parking i.e. using same parking space for different uses having different peak hours of activity - may be used to reduce net demand of parking spaces; For example, parking requirements for offices may be shared with the parking spaces for cinemas, residences, etc.

2.4.12.7. Each on-street parking space shall be approved and marked physically on ground, to enable enforcement. The same shall also be notified to IRSDC before commissioning.

2.4.13. **Parking Pricing Guidelines:** In order to meet the objectives of National TOD Policy and National Urban Transport Policy, the parking pricing guidelines shall be framed and approved separately for station area and for other uses. The following shall be permitted:

2.4.13.1. Dynamic pricing and penalties may be levied by concessionaire for effective parking management and to reduce parking demand and congestion during peak hours.

2.4.13.2. Station Parking shall be designated separately for exclusive use of Railway passengers.

2.4.14. **Sustainability Standards** are provided in 05: Environment Management Guidelines for Station (Re)development, based on guidelines issued by MoEF&CC, NGT and other statutory bodies.

2.4.15. **Other optional Form Based Codes,** like that for open spaces, streets, junctions and Heritage Assets may be prepared and adhered based on Chapter 4: Parameters for Property Development Card.

2.4.16. **Green Building Passport**: The lessee shall conduct annual self-audits of Buildings and areas leased to it as per suitable Green Building Rating System and submit it to IRSDC for records. IRSDC may conduct surprise visits to verify the submitted self-audits. Compilation of all such self-audits shall be referred to as Green Building Passport.

2.4.17. **For Heritage Asset,** the Conservation, Maintenance & Management, etc. shall be planned and adhered to as per 06a: Working Policy for Railway Heritage Assets and 06b: Guidebook for Conservation of Railway Heritage Assets. Approvals to be taken from the Competent Authority.

Chapter 3: Layout Regulating Plans

3.1.1. Railway Station Layout Plans shall be prepared based on the Guidebook for Operationalizing National TOD Policy on Railway Land, Manual of Standards and Specifications for Railways (MSSR), 2009 published by the Ministry of Railways (MOR), Form Based for Commercial Development on Railway Land and other guidance documents issued by IRSDC from time to time.

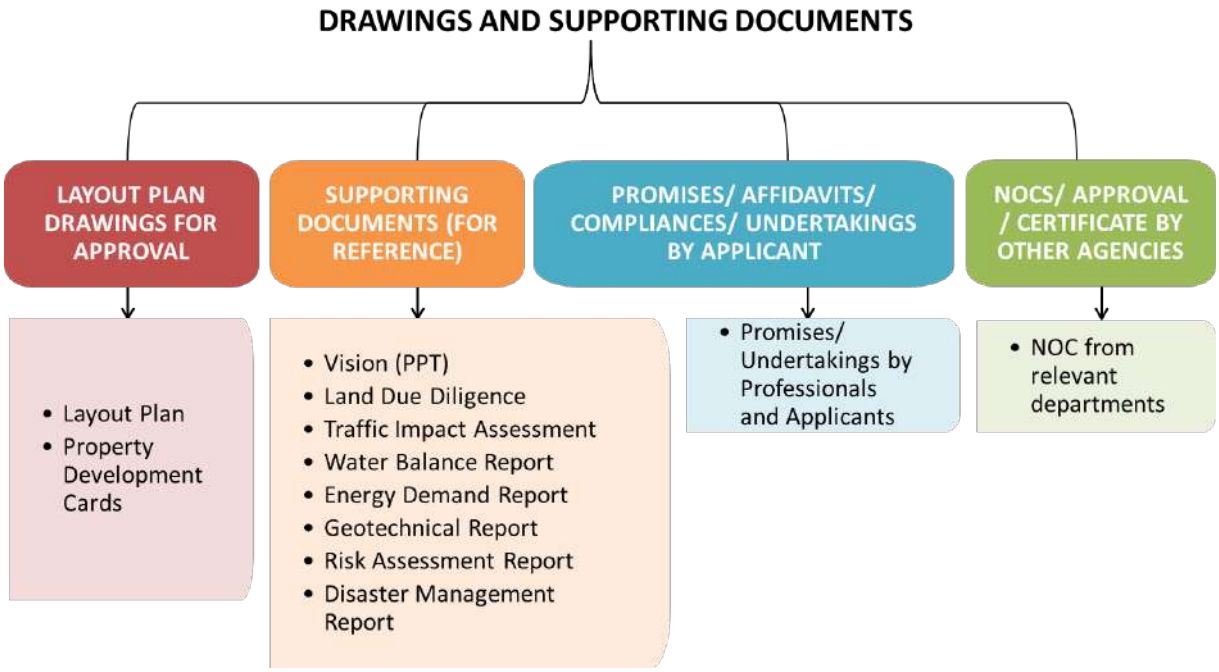
3.1.2. Approved Layout Plans shall be a regulatory document for the concerned land parcel.

3.1.3. The Layout Plan regulates and comprises the following:
3.1.3.1. Layout Plan Application Requirements;
3.1.3.2. Layout Plan Approval Process; &
3.1.3.3. Layout Plan Approval Criteria[2].

Section 3.2: Layout Plan Application Requirements

The drawings and supporting documents required for approval of the Layout plan can be categorized into four groups as shown below.

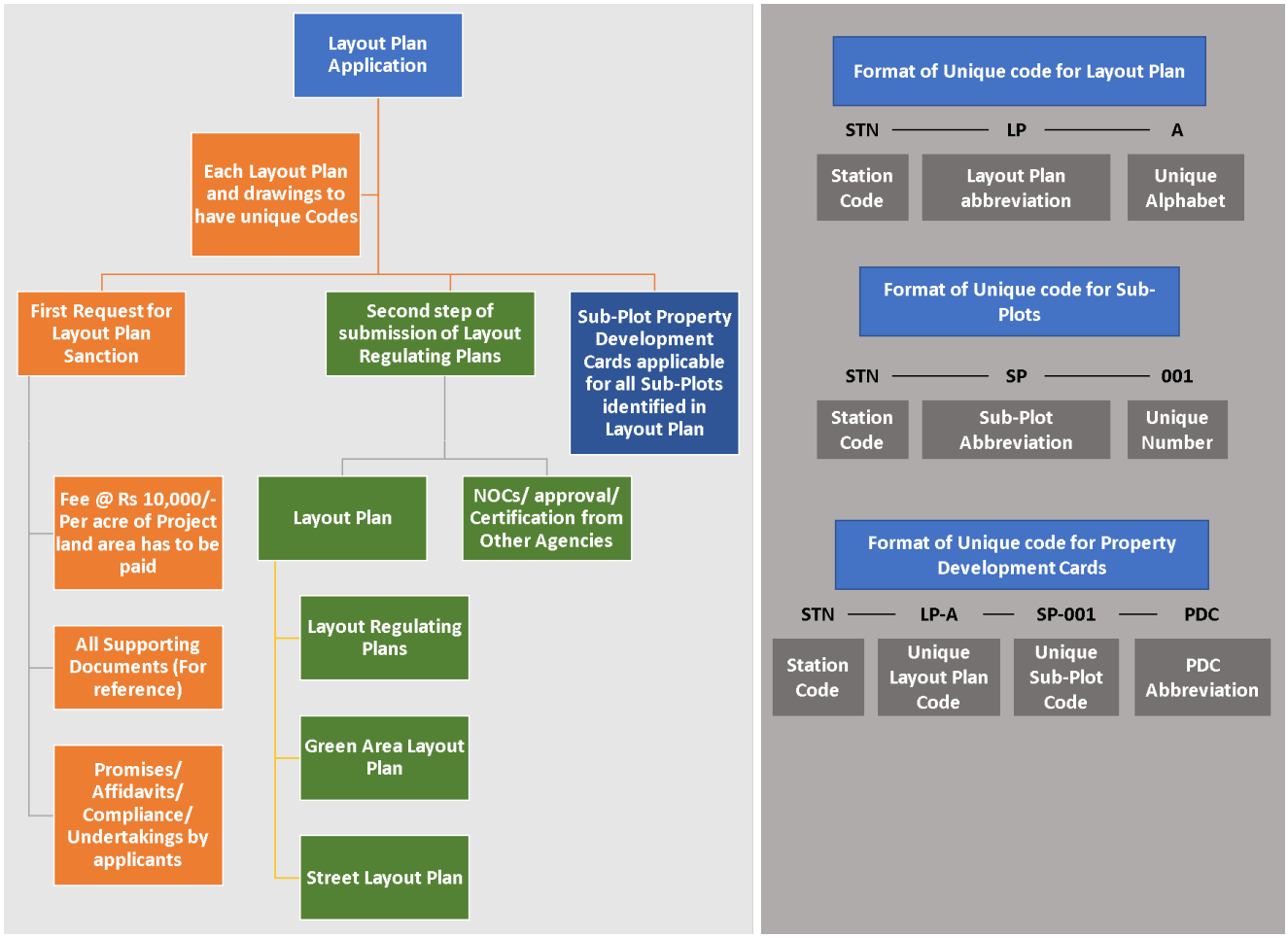
Figure 6: Layout Plan Approval - Application Requirements



[2] Criteria for evaluation and approval of Layout Plan by the Authority based on information provided by IRSDC.

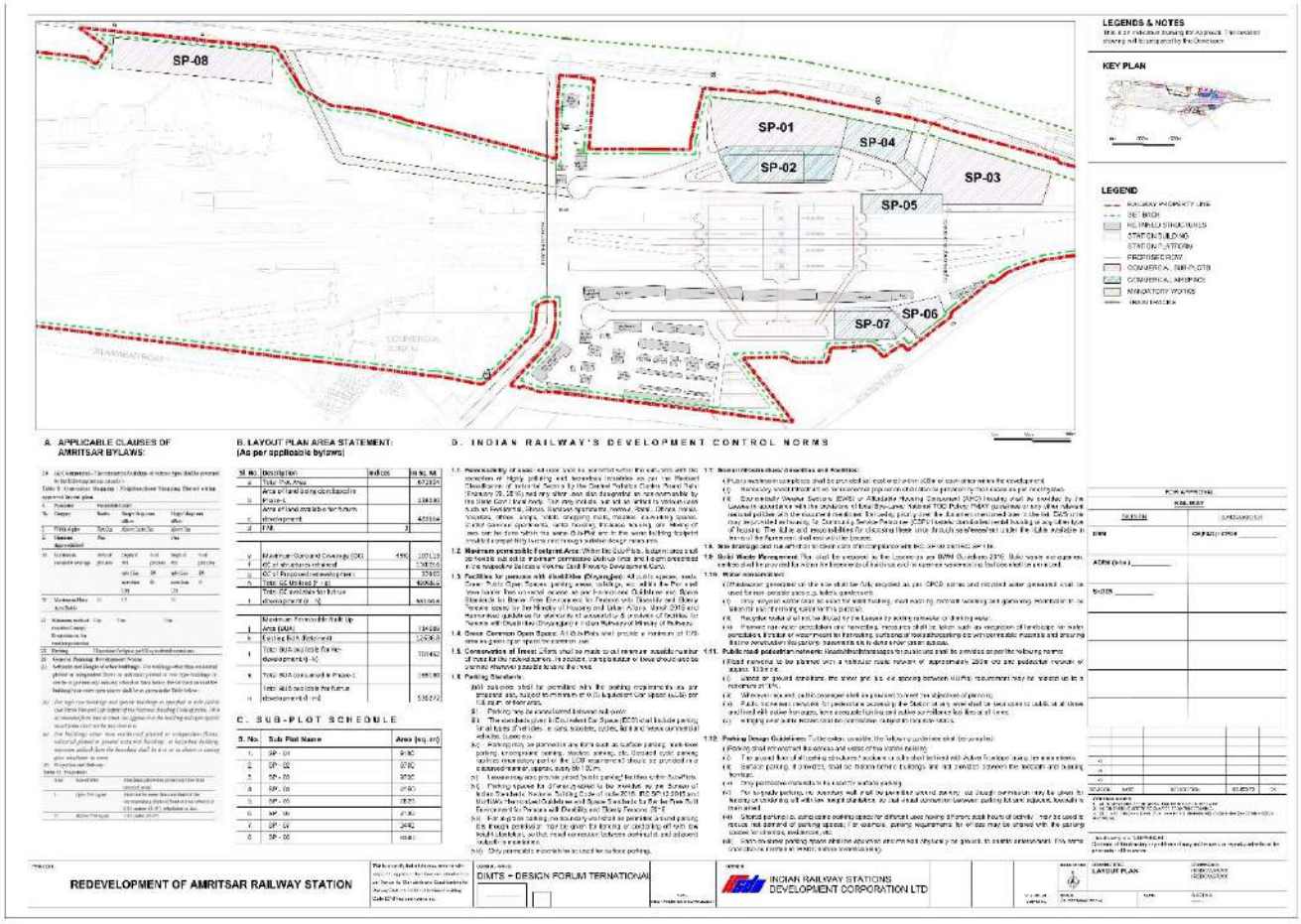
Section 3.3: Step by Step Process for Layout Plan Application

Figure 7: Layout Plan Application Process



Section 3.4: Format for Layout Regulating Plan

Figure 8: Sample Layout Regulating Plan



Layout Regulating Plan shall replicate the following three component parts with suitable details as per requirements of Competent Authority-

A. Applicable clauses of Amritsar Bylaws
B. Layout Plan Area Statement (As per applicable bylaws)
C. Sub-Plot Schedule with Sub-Plot names and respective areas.
D. Layout Planning Development Control Norms

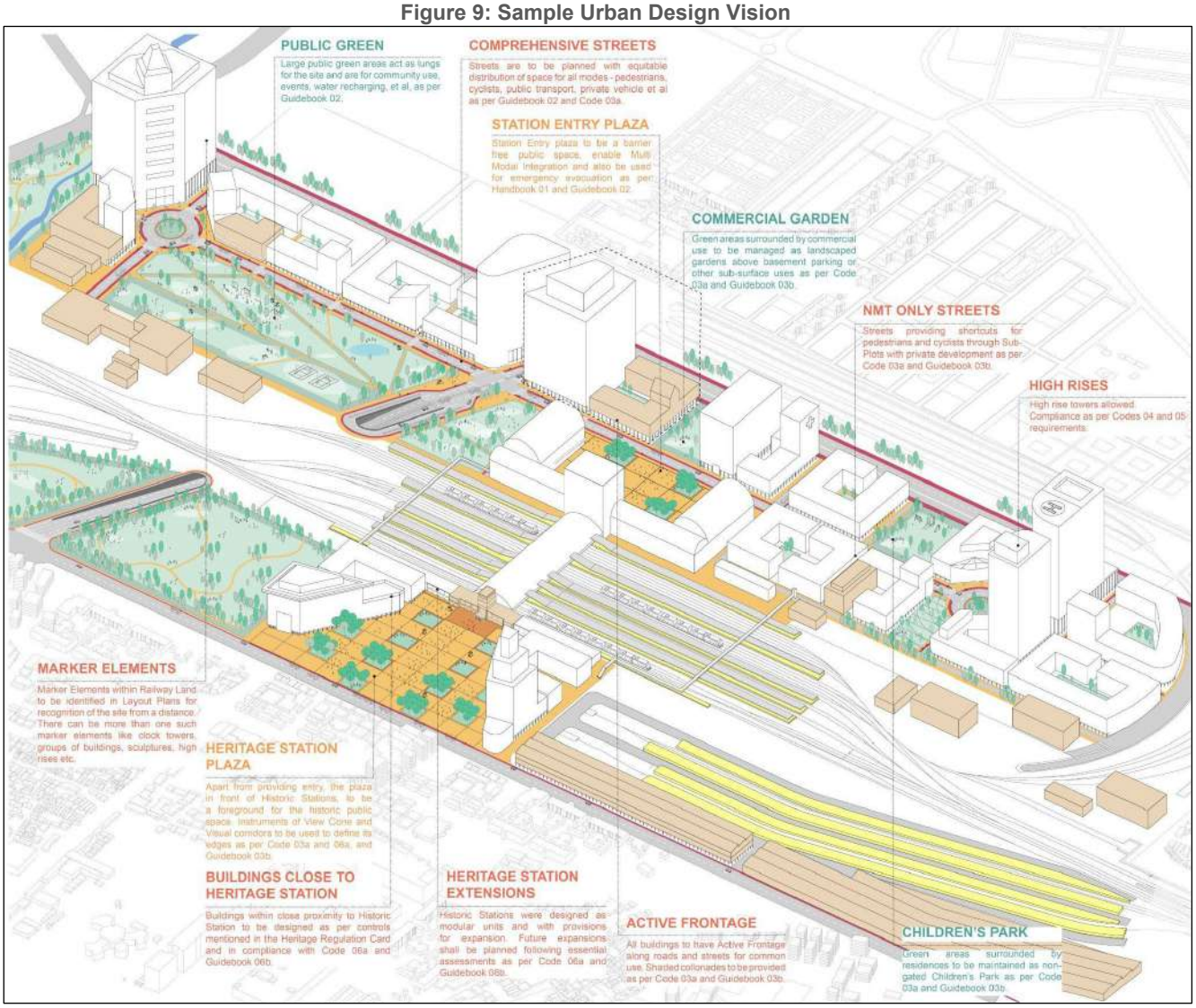
Section 3.5: Urban Design and Planning Vision

Urban Design and Planning Vision shall reflect all approved components of the Layout Plan and show all the applicable parameters of the Property Development Cards in a single 3-Dimensional massing view.

It shall contain at least the following-

1. Station and its operational areas
2. All Sub-Plots and their Buildable Volumes
3. All Built Masses reflecting the corresponding parameters of the PDC. For ex- Pedestrian Colonnades, Mandatory Pedestrian passage, Mandatory Vehicular Passage, etc.
4. All streets, green areas, water bodies and other open spaces for common use.
5. Urban design features and their functions.

Figure 9: Sample Urban Design Vision



Section 3.6: Schedule of Other Documents to be submitted

3.6.1. Supporting Documents for Reference

- Vision (in a presentation format)
- Land Due Diligence
- Traffic Impact Assessment
- Water Audit (Water Balance Report)
- Energy Audit (Energy Demand Report)
- Geotechnical Report
- Risk Assessment Report
- Disaster Management Report

3.6.2. Promises/ Affidavits/ Compliances/ Undertakings by Applicant

- Tree Laws/Norms of the Forest Department
- Pollution Control Committee Norms
- Distribution Company (DISCOM) Norms (Signed by Team Lead)
- Water Supply Utility Entities Norms
- Airports Authority of India (AAI)
- National Monument Authority (NMA) Norms (if needed)
- Archaeological Survey of India (ASI) Norms (if needed)
- Chief Inspector of Factories (CIF) Norms (if needed)
- Metro Rail Corporations Norms (if needed)
- Environmental Clearance Norms (if needed)
- Other Statutory Authorities Norms (as per requirement

3.6.3. NOCs/ Approvals/ Certificates by other Agencies

- Fire Services
- Forest Department for Tree Cutting Permission
- Pollution Control Committee
- Distribution Company (DISCOM)
- Jal Board/Water Supply Utility Entities
- Storm Water Department
- Other Statutory Authorities (if needed)
- Airports Authority of India (AAI) (if needed)
- Heritage Conservation Committee (HCC) (if needed)
- Archaeological Survey of India (ASI) (if needed)
- Chief Inspector of Factories (CIF) (if needed)
- Metro Rail Corporations (if needed)
- Environment Management Plan
- Green Building Rating Certificate
- National Monument Authority (NMA) (if needed)

Chapter 4: Parameters for Property Development Card

Development of Sub-Plots within Station (Re)development Project shall comply with the Property Development Card (PDC) provided in the concerned Schedules of Development Agreement prepared based on this document and signed between the Developer and IRSDC. The PDC shall outline the Form Based Codes for respective Sub-Plots, while synchronizing the provisions with approved Layout Plan. By averting duplication and multi-window operations, it shall ensure the Ease of Doing Business and Transparency of the Development Process. Filling the PDC is the responsibility of the Agency/Consultant preparing the Layout Plan. Adhering to the PDC is the responsibility of the Developer and its Architect.

PDC upholds the principles of National TOD policy, adopts the Form Based Codes approach and prioritizes safety and comfort for users in the upgraded station areas. Some of the characteristic features of a Redeveloped Railway Station Area shall be: Active Frontages, Build-to-Line development, Equitable Street design, Multi-modal integration, Shared public spaces, etc. These are envisaged as 24x7 zones with safe, convenient, and comfortable passage, and last-mile connectivity.

Each Sub-Plot of the Layout Plan shall have its unique PDC, with Buildable Volume Card (BVC) (Mandatory for all Sub-Plots), Street Regulation Card (SRC) (Optional and to be prepared as per need), Open Space Regulation Card (ORC) (Optional and to be prepared as per need), and Heritage Regulation Card (HRC) (Mandatory for Sub-Plots in the vicinity of Heritage Assets and optional for all others). Together, these shall provide a minimum mandatory Form Based Codes for each Sub-Plot.

Description of Sub-Parts of the PDC

a) **Buildable Volume Card (BVC)**: Definition provided in Chapter 2.

b) **Street Regulation Card (SRC)**: These determine the Form Based Codes for Streets within the Project Area, and can be shared between various Sub-Plots adjoining the streets to establish a coherent network.

c) **Open Space Regulation Card (ORC)**: These determine the Form Based Codes for Open Spaces within the Project Area, and can be shared between various Sub-Plots adjoining the Open Spaces to establish a coherent network.

d) **Heritage Regulation Card (HRC)**: These determine the applicable regulations for Sub-Plots in the vicinity of Listed or Unlisted Heritage Structure(s) and/or space(s).

In the following sections, Property Development Card parameters are of following three categories:

a) Parameters with suffix **'M'** in the parameter number **are mandatory for all Sub-Plots**.

b) Parameters with suffix **'M(H)'** in the parameter number **are mandatory for all Sub-Plots in the vicinity Heritage Assets**, while these may also be adopted for other Sub-Plots based on the need as per approved layout plan.

c) Parameters with suffix **'R'** in the parameter number **are optional and can be adopted for Sub-Plots** based on the need as per approved layout plan.

Form Based Codes Parameters for Property Development Card

(As specified for the Assets by IRSDC being the Approving Authority under Section 11 of The Railway Act 1989)

Section 4.1: Buildable Volume Card Parameters

Buildable Volume Card is a mandatory requirement of Property Development Card and shall comply with the provisions in Chapter 2.

Section 4.2: Street Regulation Card Parameters

Street Regulation Card is an optional requirement of Property Development Card, which can be prepared and included as a mandatory part, as per requirements of the Approved Layout Plan.

4.2.1.**R**. Street Alignment means a line dividing the lands comprised in, and will be forming part of the street from the adjoining land

4.2.2.**R**. Street Length is to be measured along road centerline, from center of Starting Junction to center of End Junction.

4.2.3.**R**. Street Parts shall mean parts of the street from the center of one junction to another junction.

4.2.4.**R**. Junction shall mean the junction of two or more streets.

4.2.5.**R**. Primary street means a street which is meant for taking the primary movement load in a street network plan.

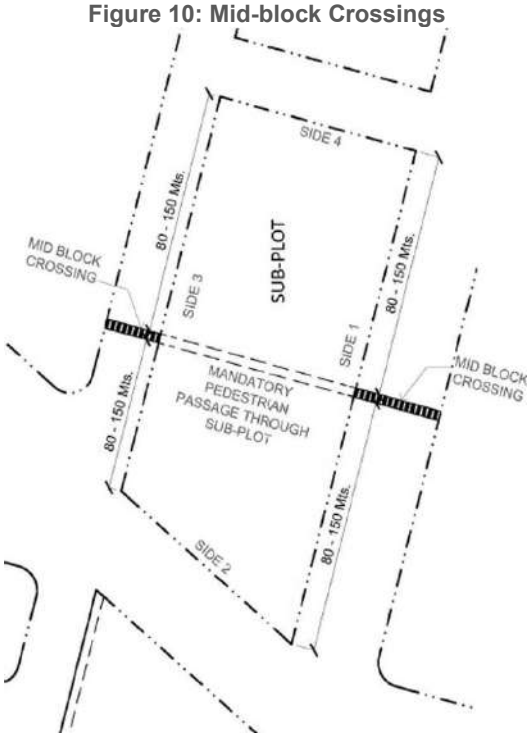
4.2.6.**R**. Secondary street means a street which is meant for taking the secondary movement load in a street network plan.

4.2.7.**R**. Tertiary street means a street which is meant for taking the tertiary movement load in a street network plan.

4.2.8.**R**. NMT Only Street shall mean a street which is meant for taking the movement load of only Pedestrians and Non-Motorised Transport (NMT) -- like bicycles, cycle rickshaws, wheelchairs etc.

4.2.9.**R**. Mid-Block Crossing shall mean crossing only for pedestrians and cyclists with relevant traffic calming, traffic signals, median cuts, zebra crossings, kerb ramps/ tabletops, signage etc. as per the Manual. (Refer Figure 10)

Figure 10: Mid-block Crossings



4.2.10.**R**. Footpath shall mean a portion of Right of Way (RoW) of the road used for the movement of pedestrian traffic. It shall include the mandatory pedestrian zone, multi- utility zone and Dead Width in front of the adjoining Sub-Plot within the ROW. Minimum Widths of Footpaths shall comply with the latest IRC Provisions.

4.2.11.**R**. Dead Width shall mean the extra space of minimum 1m width, required in addition to footpaths within the Road ROW and demarcated separately in the Street Regulation Cards (SRCs).

4.2.12.**R**. Multi-Functional Zone (MFZ)/Multi Utility Zone (MUZ) shall mean the space within Street Alignments reserved for accommodating various street infrastructure components -- like Tree, Natural Storm Water Management systems, Auto-rickshaw Stands, Cycle-rickshaw Stands, Hawker Zones, Paid Car Parking, Street Furniture, Bus Stops, Traffic Police Booths, MTNL boxes, Fire hydrants, Junction boxes, Street lights/Pedestrian lights, etc. Any space from MUZ left after the Street Design, and along pedestrian zones, shall be constructed and maintained as a part of the Pedestrian Zone.

Section 4.3: Open Space Regulation Card Parameters

Open Space Regulation Card is an optional requirement of Property Development Card, which can be prepared and included as a mandatory part, as per requirements of the Approved Layout Plan.

4.3.1.**R**. Location and Size: Open Space is an area, forming an integral part of the site, left open to the sky. As part of this parameter, the location and size of the open space must be shown on a suitable scaled drawing.

4.3.2.**R**. Use and Treatment: As part of this parameter, we permitted activities within the open spaces, their treatment (hard and softscape) must be shown on a suitable scaled drawing.

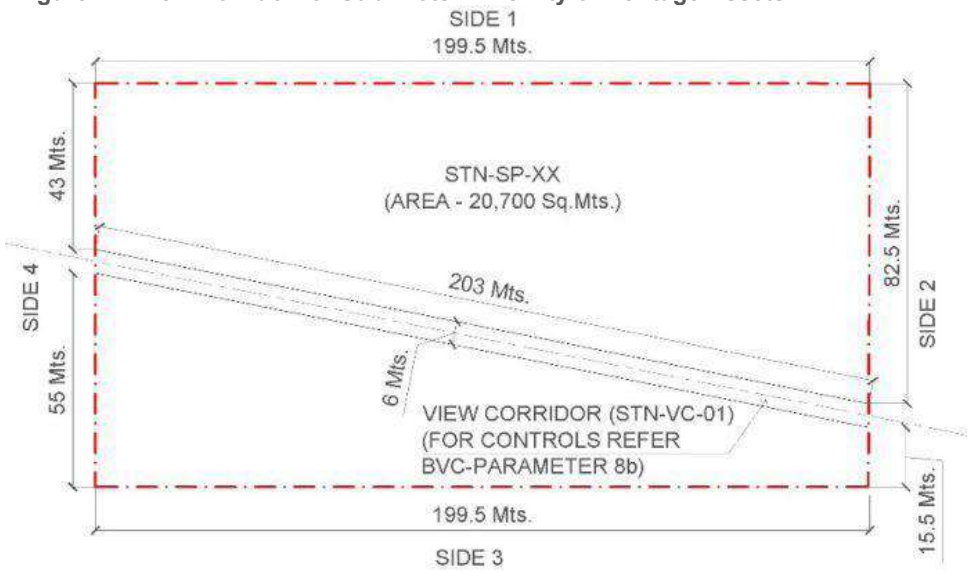
4.3.3.**R**. Enclosure Property of Public Space is defined as the proportion of the width of the Public Space and heights of the adjoining buildings. Enclosure Property must be shown on suitable scaled drawings (Plan and Section).

Section 4.4: Heritage Regulation Card Parameters

Heritage Regulation Card is a Mandatory part of the Property Development Card of Sub-Plots in the vicinity of Heritage Assets. For other Sub-Plots, this is optional and can be included in PDC as per requirements of the Approved Layout Plan.

4.4.1.**M(H)**. **View Corridor** shall mean the visual axis or passage from which the heritage structure shall be visible without any obstruction. The alignment of the View Corridor is non-negotiable. If the Visual Corridor is part of the original site planning, then it is to be retained as such – and where not, it shall be identified by the technical consultants. (Refer Figure 11)

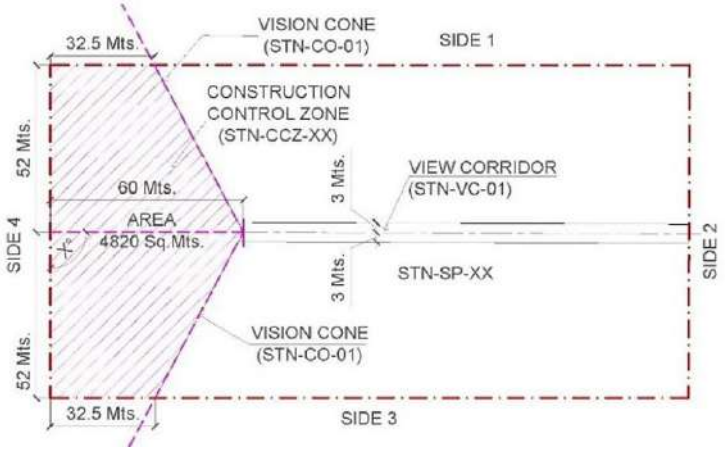
Figure 11: View Corridor for Sub-Plots in vicinity of Heritage Assets



(Dimensions shown in the figure above are only for illustration purpose and will vary from case to case)

4.4.2.**M(H)**. **Vision Cone** shall mean the Zone in relation to a heritage structure which is required to be maintained as an open foreground. Vision Cone is non-negotiable for Heritage Railway Stations. Land area bound by the Vision Cone and Property Lines shall be treated as the Construction Control Zone. (Refer Figure 12)

Figure 12: Vision Cone for Sub-Plots in vicinity of Heritage Assets



(Dimensions shown in the figure above are only for illustration purpose and will vary from case to case)

4.4.3.**M(H)**. **Architectural Response Zone (ARZ)** is the zone in close proximity to the heritage structure, where new construction shall be allowed with responsive architectural language. (Refer Figure 13)

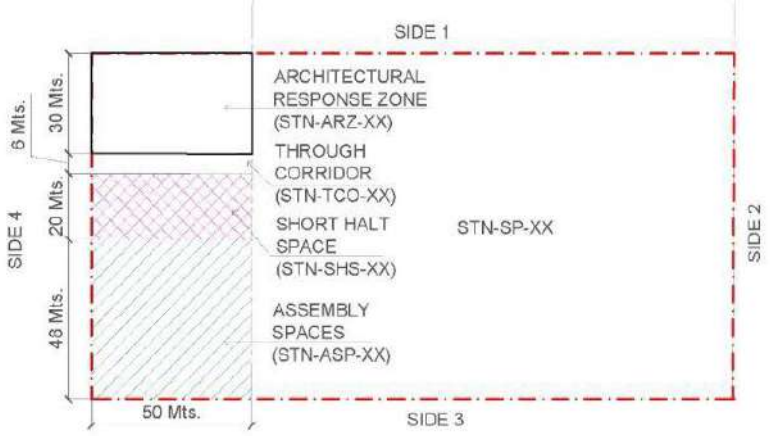
4.4.4.**M(H)**. **Construction Control Zone** shall mean the Open Space near a heritage structure where no permanent construction shall be allowed above the ground, and permissible construction shall be allowed only as per the relevant controls. **Construction Control Zone can be of the following three types:**

a) **Through Corridor** shall mean the unobstructed movement space in front of the architectural response zone. Minimum width of Through Corridor adjoining a heritage structure shall be 9m. (Refer Figure 13)

b) **Short Halt Space** shall mean the space required in front of a heritage building designed to encourage Short Halts -- and discourage assembly/gatherings. Width of Short Halt Space shall be upto 30m from the façade of the heritage building. Minimum width of Short Halt Spaces near a heritage structure shall be 15m. (Refer Figure 13)

c) **Assembly Spaces** shall mean the spaces required in front of a heritage building designed to allow public assembly/ gatherings. These shall be a minimum of 30m - 50m from the Façade of the Heritage Building as per availability of space. The actual depth of assembly spaces shall be based on the space required for emergency evacuation. (Refer Figure 13)

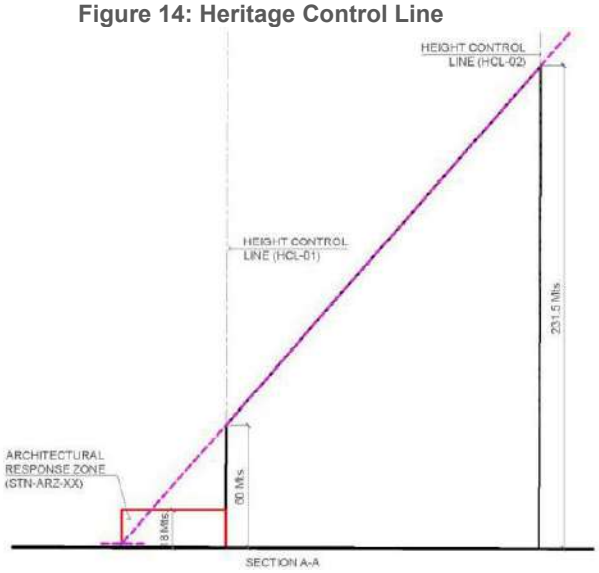
Figure 13: Architectural response and Constructional Control Zones



(Dimensions shown in the figure above are only for illustration purpose and will vary from case to case)

4.4.5.**M(H)**. **Height Control Line (HCL)** shall mean the line limiting the maximum height for the buildable volume beyond the Architectural Response Zone. The area bound within the HCL shall be the **Height Control Zone (HCZ).** (Refer Figure 14).

Figure 14: Heritage Control Line



4.4.6.**M(H)**. **Integrity** is a measure of the wholeness and intactness of the natural and/or cultural heritage and its attributes.

4.4.7.**M(H)**. **Structural Safety** of the heritage building is defined as the retrofitting measures undertaken to ensure the safety of the users and longevity of the building.

4.4.8.**M(H)**. **Façade Proportions & Offsets-** Proportions of the building are based on the building parts that define mass-volume correlation of the heritage building. Proportions of the heritage building are based on the inherent modularity of the original design of the historic structure.

4.4.9.**M(H)**. **Unifying Features:** In certain cases, the combination of colour, material and mass-void correlation is embedded in collective memory. These help the landmark stay a landmark and enhance interest in its surrounding area.

1) **Mass-Void Correlation** is defined as the correlation between a solid enclosure limiting the void space, and simultaneously, the void defining the solid mass. Spatial forms of void can be: Balconies, terraces, entrances, atriums, galleries, courtyards, open grounds, gardens etc.

2) **Colour Dynamic, Colour Tectonics and Colour Imagery:**

   a. **Colour Dynamic** describes the visual hierarchies that use figure and background in diagrams, thus influencing the relationships or interactions based on the context

   b. **Colour Tectonics** refers to the potential of colour to define and clarify the three-dimensional shape.

   c. **Colour Imagery** deals with colours in architectural experiences that convey materiality, physical context, cultural context, symbolism and the emotional response.

4.4.10.**M(H)**. **Symbolism** accounts for the meaning given by the combination of tangible and intangible values of recognizable components. It represents the functions these Railway stations and their associated parts have played in socio-economic-political history since their existence.

4.4.11.**M(H)**. **Functionality** is defined as the intended use and performance of the Heritage Asset, so as to generate a specific outcome.

4.4.12.**M(H)**. **Material Palette** is a selected combination and placement of material compatible with the original materials of the Heritage Asset.

4.4.13.**M(H)**. **Colour Palette** is a selected combination and placement of colours that accentuates features, lines, construction, and architectural and ornamentation system of the original building.

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