

In-Building Solutions for Common Telecommunication Infrastructure (CTI)

It is important to ensure quality telecom services inside a building – in residential, multi-story building, commercial complex, hotel or airport, police/ Government offices/ buildings etc.

The buildings are to be constructed in such a way that they are 'Digital Infrastructure deployment' / 'Digital Connectivity' ready. The digital access paths to access buildings from outside should invariably be part of the Common Telecommunication Infrastructure (CTI), which could be used by Telecommunication Service Providers(TSP)/ IP-1s for laying/ deploying digital infrastructure including cables. While approving the building plans, it has to be ensured that plan for creation of CTI including the common duct to access the common space used as telecom room inside the building is also prepared and separate set of drawings showing the inter / intra connectivity access to the building with distribution network need to be furnished.

Occupancy-cum-Completion certificate of offices, shopping malls, hospitals, multi-story buildings, group housings, education institutions and other large buildings having multiple-users to be granted only after ensuring that the CTI as per the prescribed standards is in place and an undertaking by the Architect or Engineer to be insisted to certify that building has ensured common access to all digital infrastructure to all Service providers in accordance with plan of creation of CTI.

I. At Layout Level

While developing Greenfield cities/towns, the layout plans should clearly indicate the telecom as Utility infrastructure lines.

Telecommunication cables should be placed in a duct that can be accessed at frequent service points with sufficient spare capacity to enable scaling and future expansion, and empty pipes (large size hume pipes / HDPE pipes) should be laid before planting trees in order to accommodate additional infrastructure.

Digital Asset repository which will ensure Proper planning and mapping of utilities through GIS is necessary especially when the alignments of telecommunication cables are identified. Design criteria and standards Utilities should meet the following criteria:

- Telecommunication cables should ideally be placed below the parking area or service lane, which may be dug up easily without causing major inconvenience. Where this is not possible, the cables may be placed at the outer edge of the right-of-way.
- There is a need to reduce conflicts with pedestrian movements is to place telecom boxes in easements just off the right-of-way. Where this is not possible, they should be placed within parking or landscaping areas. If cables have to be located in the pedestrian path, a space of at least 2m should be maintained for the through movement of pedestrians. Telecom boxes should never constrain the width of a cycle track.
- In order to minimize disruptions, cables should be installed with proper maintenance infrastructure.

II. At Building Plan Level:

1. While preparing the building plans **of offices, shopping malls, hospitals, multi-story buildings, group housings, education institutions and other large buildings having multiple-users**, it is mandatory to properly demarcate sections within buildings and on rooftops for housing Broad Band / digital connectivity infrastructure / antenna. These areas should have access to power supply for reliable, always-on services.
2. Access to building as well as CTI facilities inside the building should be available on a fair, transparent and non- discriminatory manner to all Service Providers/ IP1's.
3. The Service Providers/ IP1's should have unrestricted access for maintenance work.
4. The permission to in-building access and/or CTI facilities inside the building should not be seen as a source of revenue generation for builder(s)/ RWA(s) but as a means for facilitating penetration of broadband access and thereby helping in socio-economic growth of all the residents.

III. Other procedures for setting up In-Building Solution (IBS)/ Fiber Networks

There is a need to promote installation of In-Building Solution (IBS) / Smart Connectivity infrastructure, where there is a poor connectivity in terms of weak signal strength inside the office, shopping mall, hospitals, multi-story building, **group housings, education institutions and other large buildings having multiple-users**, the objective has to be to strengthen quality of service of the voice

& data of mobile and Fiber broadband network and access to digital services being offered by TSP And IP1's.

A) Procedures during approval of Layouts, Building Plans and Completions:

While submitting the **proposed Layouts, Building Plans or completions** of office, shopping mall, hospitals, multi-story building, **group housings**, education institutions and **other large buildings having multiple-users** for seeking approval from the relevant sanctioning Authority, applicant shall also submit:

- i. A complete Service Plan for IBS-infrastructure along with required specifications **duly vetted by the consultant.**
- ii. An undertaking that such IBS Infrastructure, when constructed shall be available for sharing by various TSPs/IP-Is.

B) Provision of IBS components in building premises: (as per NBC)

For any necessary detailing of building components and service installations with respect to common Telecom/Digital connectivity Infrastructure, architects/ developers and other service consultants involved in preparing building and service drawings may refer *Part 8 – Section 6: Information and Communication Enabled Installations of Volume 2* of the National Building Code as amended from time to time.