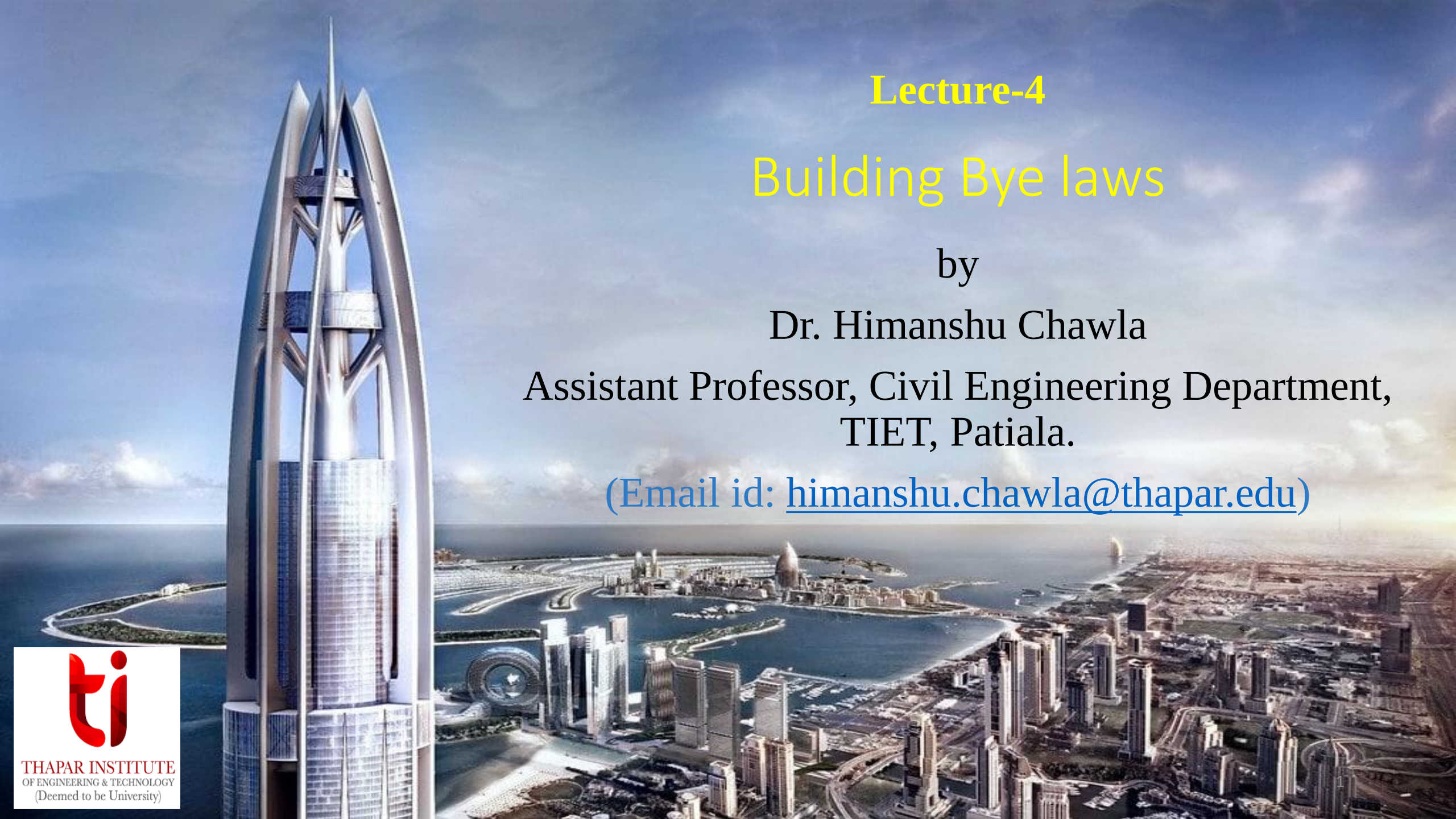

Lecture-4

Building Bye laws

by

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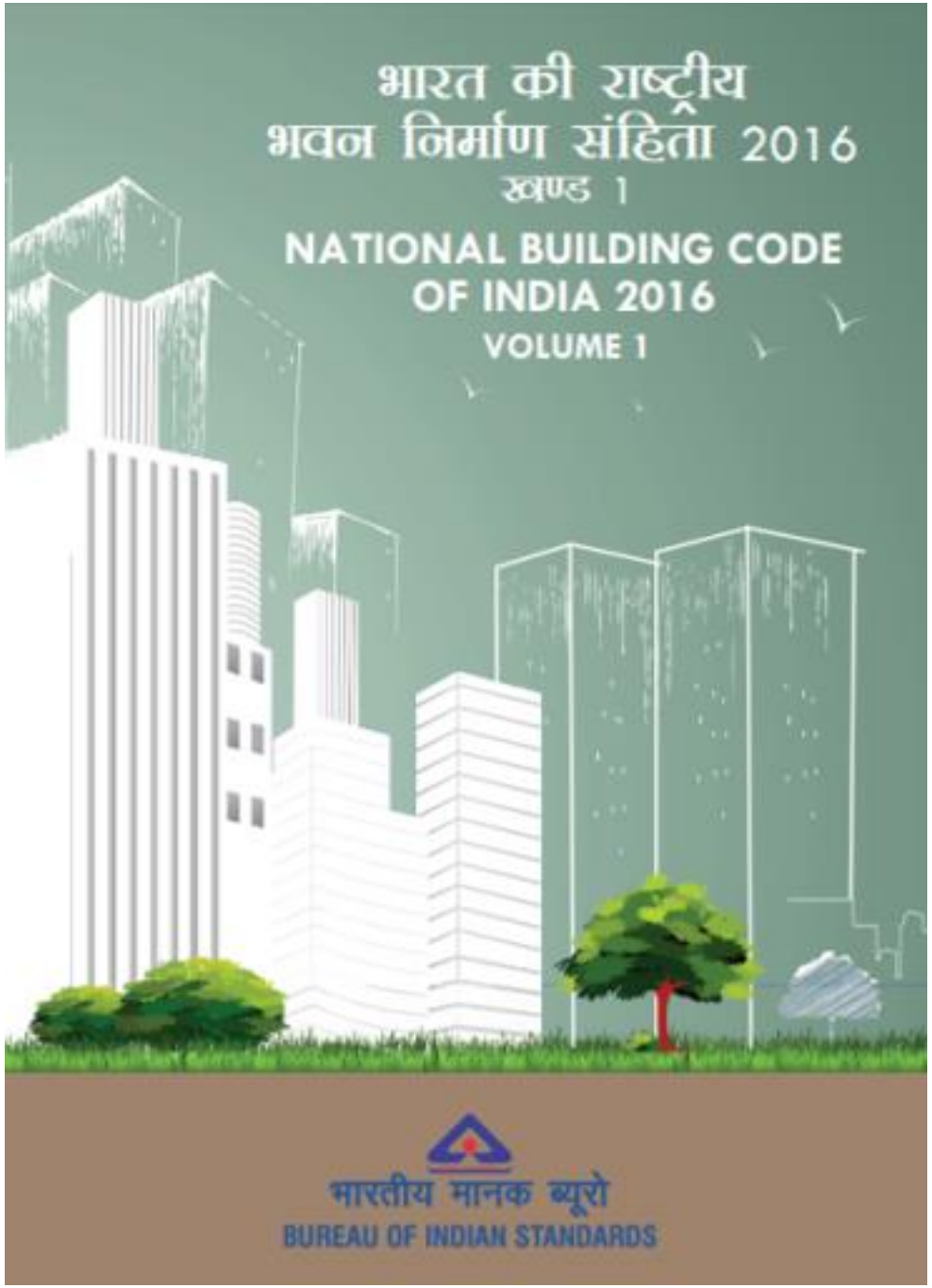
11

Introduction

- A **by-law** (or **bye-law**) is a rule or law established by an organization or community to regulate itself, or provided by some higher authority.
- **Before starting the planning process** of an area one must have the knowledge of bye laws.
- Building bye-laws sets standards for land use, open space (setbacks), Parking standards, building approvals, environmental norms, etc.
- The bye laws are **framed** by the state **Government/Municipal corporation/Municipal Committee**.
- Under the **building code IS 1256-1967** Bye laws differ from state to state.
- In **urban areas municipal corporation** and in **rural areas panchayat** is acting as a local body to control building construction.

National Building Code of India 2016

The Bureau of Indian Standards developed the National Building Code (NBC) in the early 1980s as a guiding code for municipalities and development authorities to follow in formulating and adopting building by-laws. The voluntary code covers most aspects of **building design and construction**, with a small part dedicated to **energy efficiency**. **Most cities and municipalities use the NBC for developing the local bylaws and standards.**



Necessity of Building Bye laws

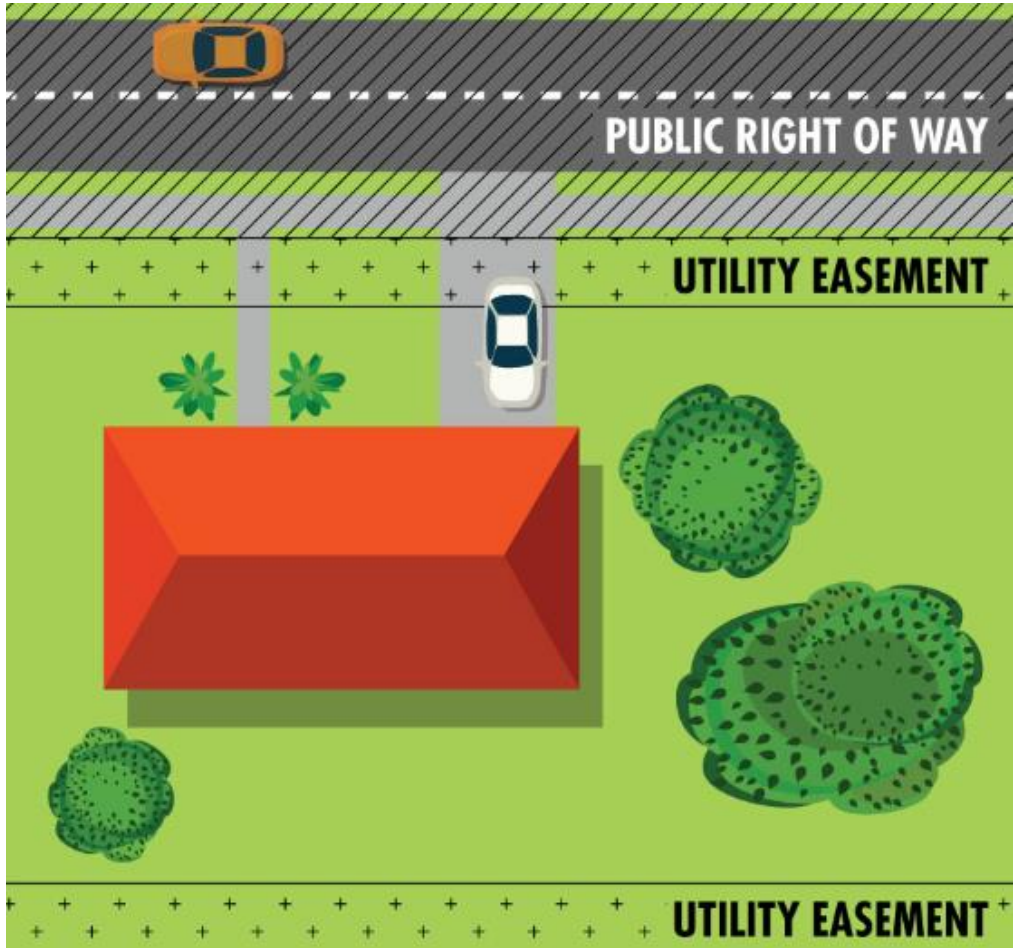
- To **curb** the unplanned **growth** of towns or cities.
- To facilitate **future use of land**, widening of streets, controlling the ribbon development in an area.
- To **reduce pollution** in area by restricting population density in an area there by providing hygienic environment.
- To ensure that every citizen will **receive facilities like water supply**, sanitation, ventilation, electric supply, parking and safety.

- If certain rules and regulations are not made, house owner may construct residential building as per his whims and fancies.
- Hence it is essential to maintain and implement the bye laws to provide proper ventilation, privacy, security and safety between the neighbors.

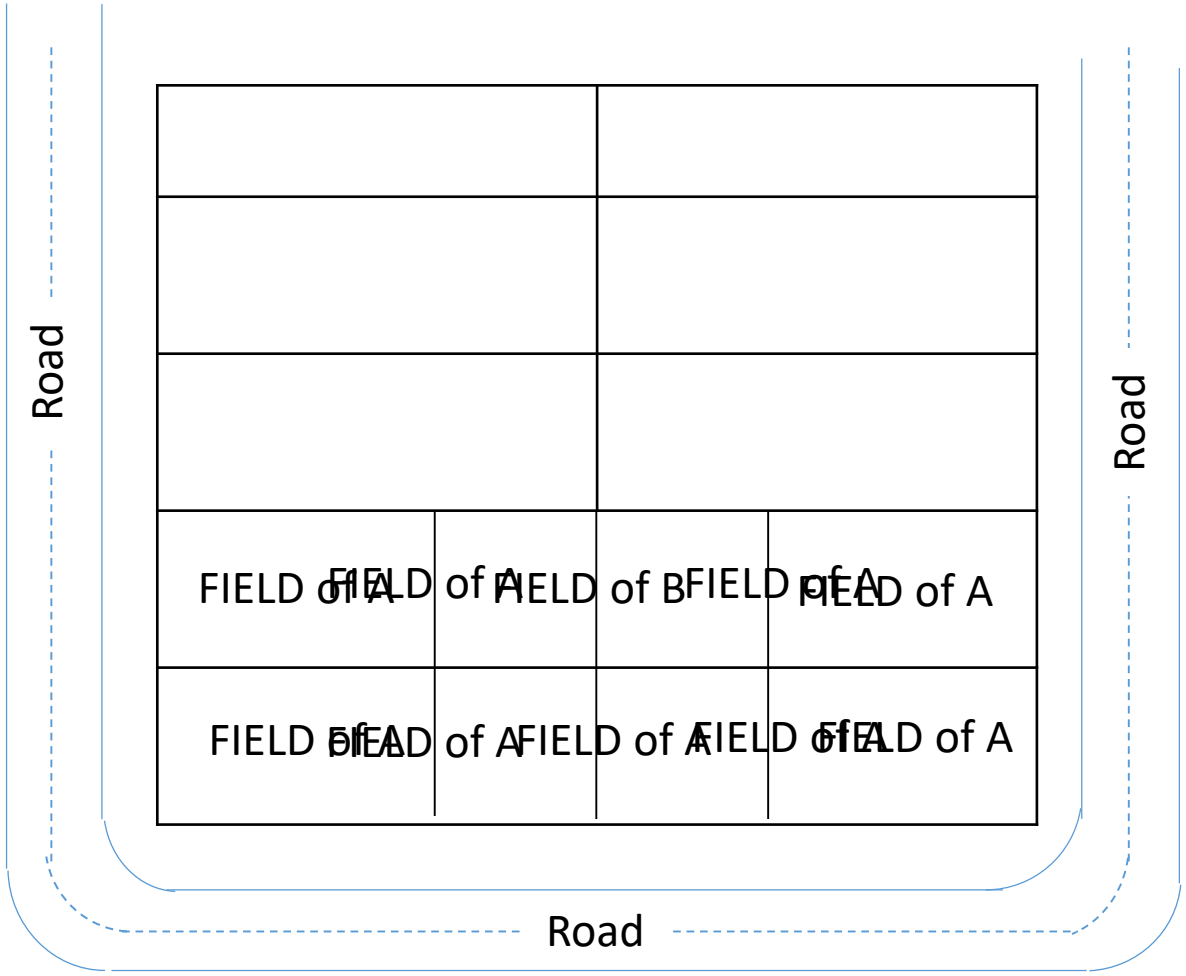
Easement

An easement is a certain right to use the real property of another without possessing it. It is “best typified in the right of way which one landowner, A, may enjoy over the land of another, B”

Easements are helpful for providing pathways across two or more pieces of property, allowing individuals to access other properties or a resource. An easement is considered as a property right in itself at common law and is still treated as a type of property in most jurisdictions.



Example of Easement

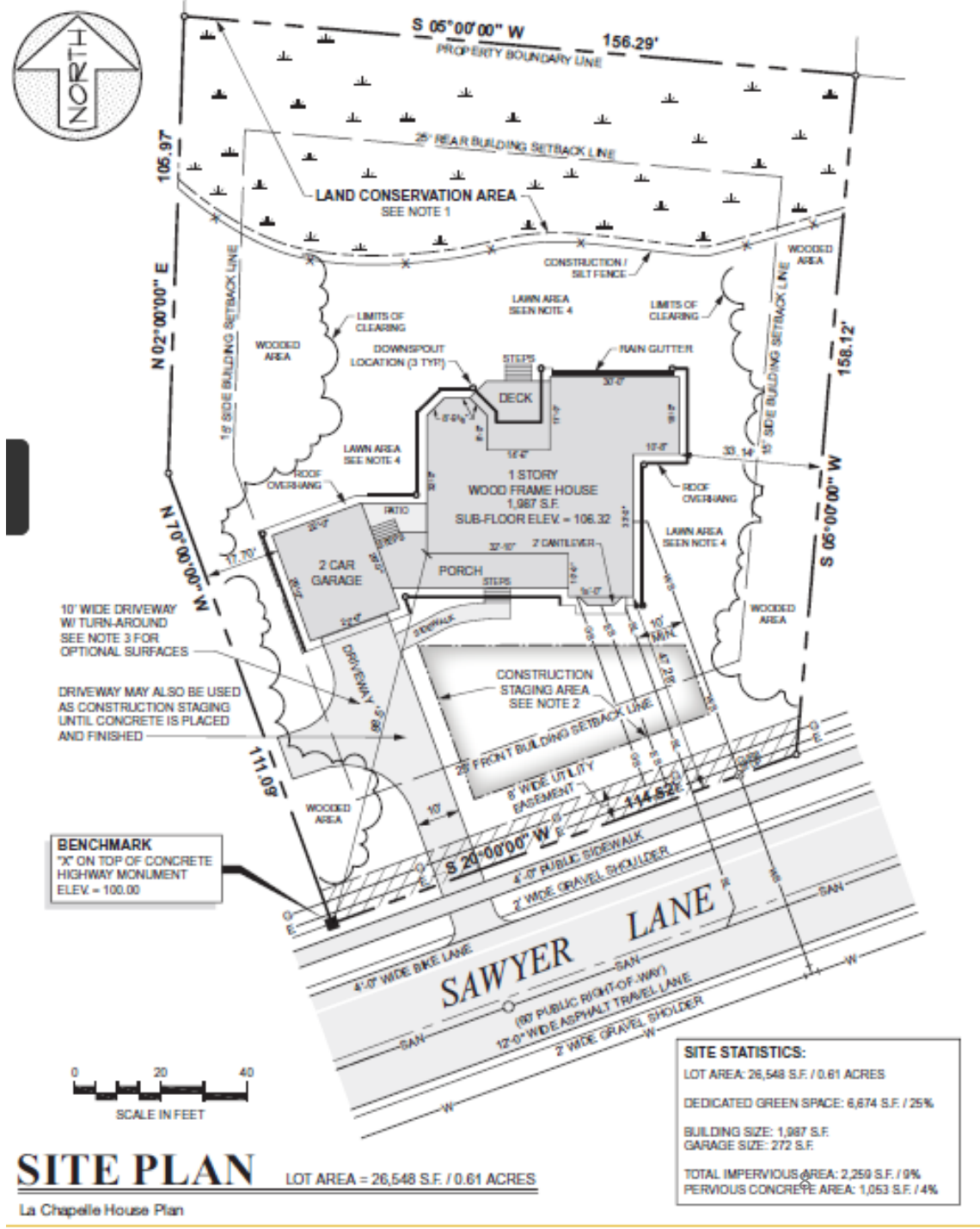


Site Plan

A site plan contains information verified by a surveyor, engineer, and others. It illustrates important features such as utility easements, topography, property lines, setbacks, and elevations.
Site plans usually include the building footprint, driveways, auxiliary buildings, and other constructed features on site as references.

Benchmark: The benchmark sets the elevation of many construction features, including finished floor levels and foundation heights.

Each site plan has an elevation called the **benchmark.** The benchmark represents a starting elevation that may be an actual elevation above sea level or, for ease of use, an arbitrary number like 100.00′. In either case, all points of elevation throughout the site plan reference against the benchmark elevation.



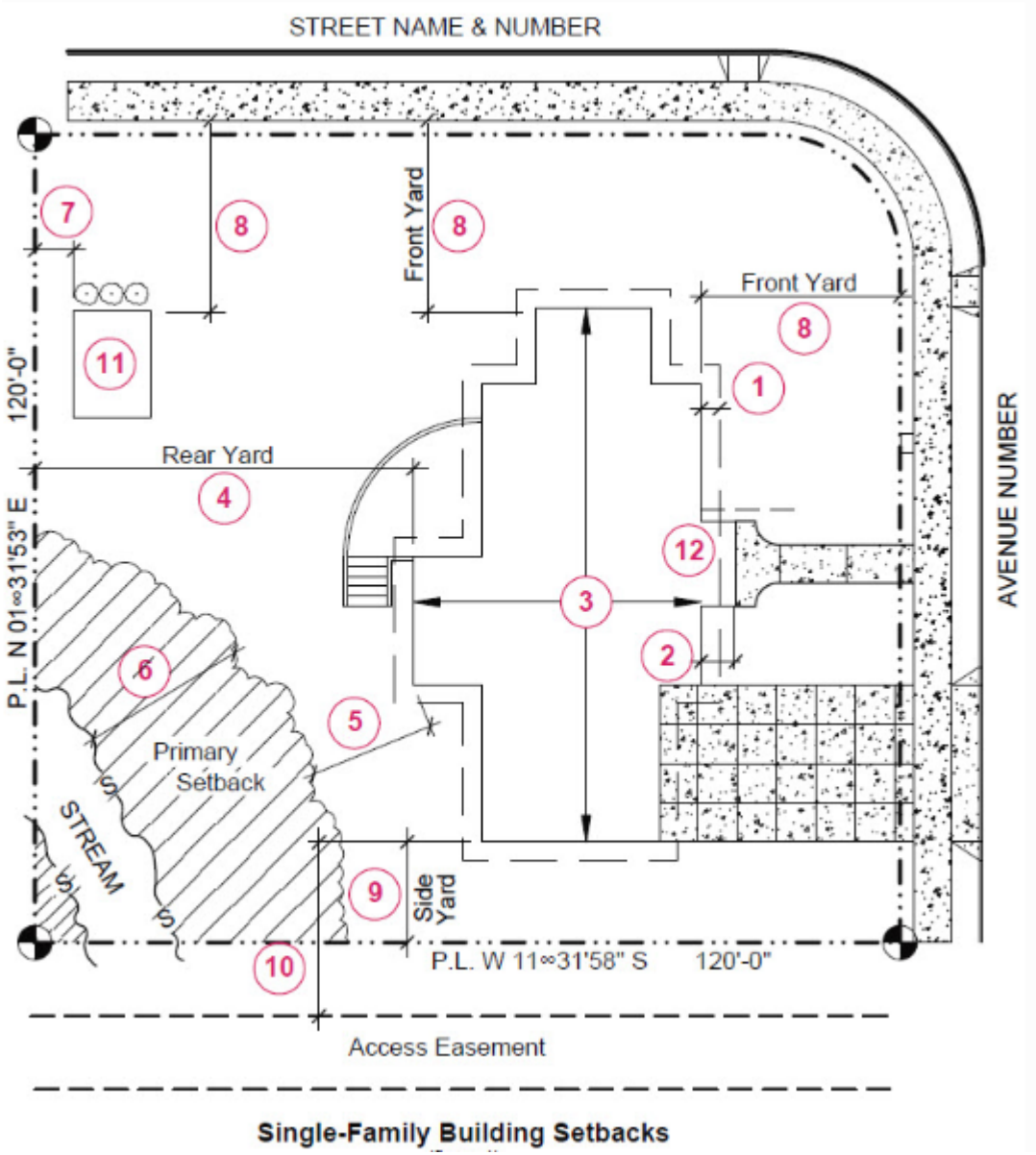
Building Setbacks

A setback is a space in which no structures is located

A setback is the minimum distance which a building or other structure must be set back from a street or road, a river or other stream, a shore or flood plain, or any other place which is deemed to need protection.

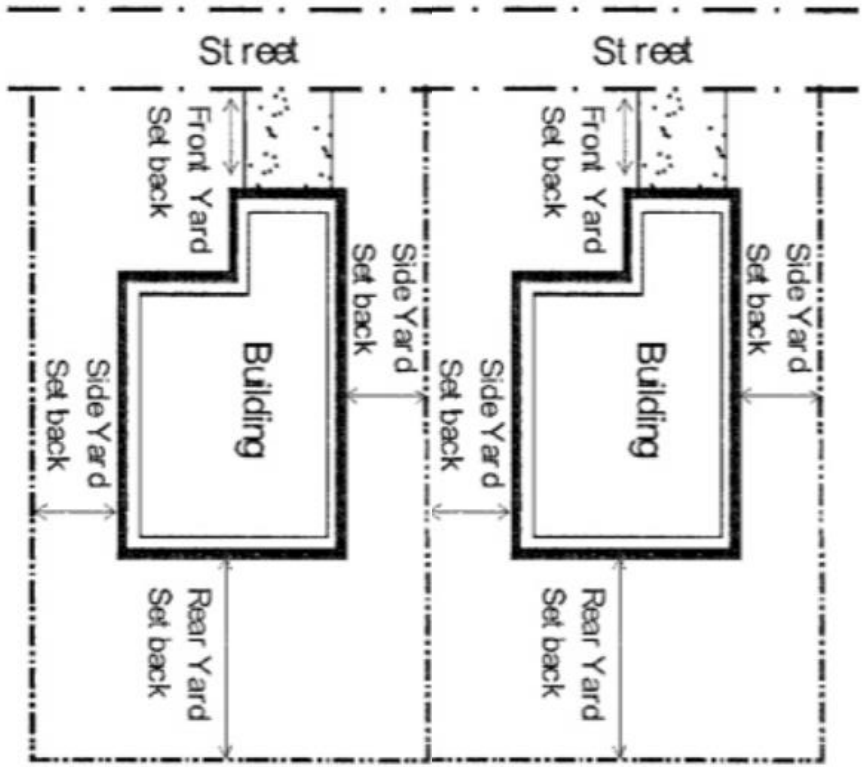
Legend

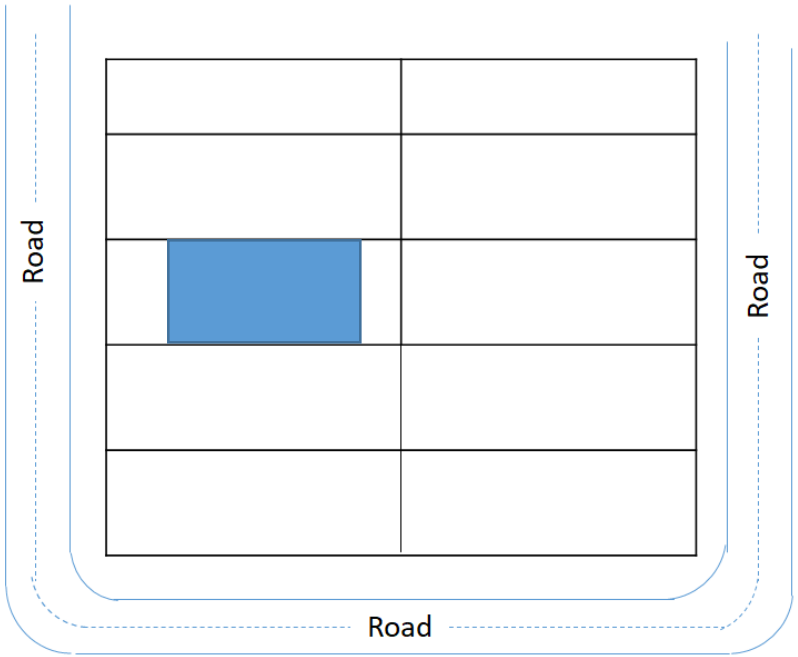
1. Depth of eave (over hand portion of the roof)
2. Setback intrusion by minor structural element (porch)
3. Building footprint – Existing single-family residence
4. Rear-yard setback dimension for primary structure.
5. Structure setback dimension from critical area.
6. Critical area buffer
7. Rear-yard setback dimension for accessory structure
8. Front-yard setback dimension (applies to all structures)
9. Side-yard setback dimension
10. Structure setback dimension from an access easement
11. Garden shed 15' or less in height above existing grade
12. Minor building element (porch)



Single-Family Building Setbacks

Building Setbacks





No setback is required for row housing

Zoning/Urban Planning

- No side setback is required for row housing.
- Cantilever or overhanging structures are not considered.
- Different setbacks for residential and commercial buildings.

Why building setbacks are required?

- Decrease the Population Density
- Safety and Security

Some Important Building Bye laws are as follows :-

Open space (SETBACK) requirement:

- The open space around the building is required to be provided to meet requirements of lighting, ventilations, future expansion, and approach.
- Open space for front, rear and side yards depend upon height of building and approximately can be calculated by the formula

$$W = 3 + (h/10)/3$$

where W = width of the open space in m

h = height of the building in m < 25 m

Residential buildings

Front open space

Sr.no	Width of street fronting the plot(m)	Front open space (minimum) in m
1	Up to 7.5	1.5
2	7.5 to 18	3
3	18 to 30	4.5
4	Above 30	6

* <7.5 m, 5 m from the centre line of street

Rear open space

- Every building of height less than 10 m have rear open space of an average width of 3 m but in no case measuring less than 1.8 m.
- corner plots (<300 sq.m) should have rear open space 2.4 m min.

Side open space

- Detached buildings – 3 m on both sides.
- Semi-Detached buildings – 3 m on one side.
- Row type buildings – No side open space.

For buildings of height above 10 m

Sl.no	Ht. of Building (m)	Side and Rare open spaces (m)
1	10	3
2	15	5
3	18	6
4	21	7
5	24	8
6	27	9
7	30	10
8	35	11
9	40	12
10	45	13
11	50	14
12	55 and above	16

Detached buildings

Semi-Detached buildings

Row type buildings

Interior Open Spaces

Type	Interior Open spaces
Inner court yard	Minimum 3 m
Ventilation shaft	Not less than 0.9 m(for 10 m Ht. of building)
Outer court yard	2.4 m

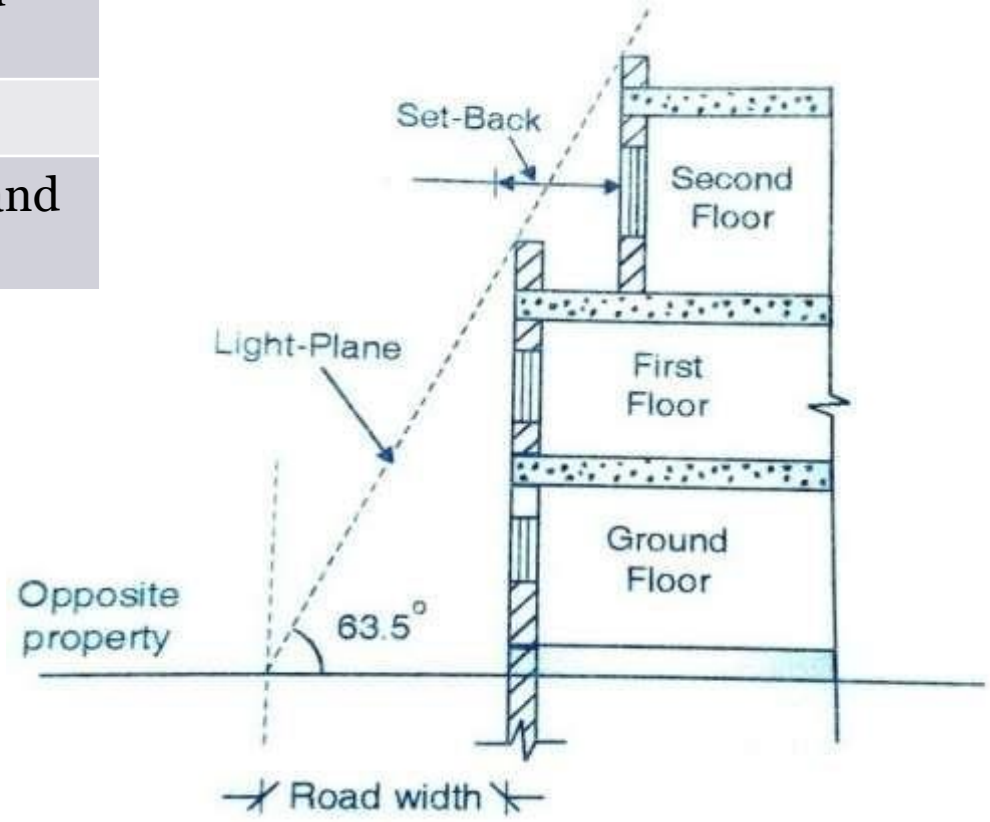
Other Buildings

Sl.no	Type of buildings	Open spaces
1	Educational and institutional	Not less than 6 m around the building
2	Assembly Buildings	Not less than 12 m in front and 6 m in others
3	Business, mercantile & storage	Min 4.5 m around the building (pure residential)
4	Industrial Buildings	Min 4.5 m around the building(Ht. up to 16 m)

0.25 m increase in open space for every increase of 1 m in Ht. (For Ht. > 16 m)

Height of the building

Sr.no.	Width of the road	Ht. of building
1.	Upto 8 m.	No more than 1 ½ times road width
2.	8m to 12 m.	No more than 12m
3.	>12m.	No more than road- width and 21 m



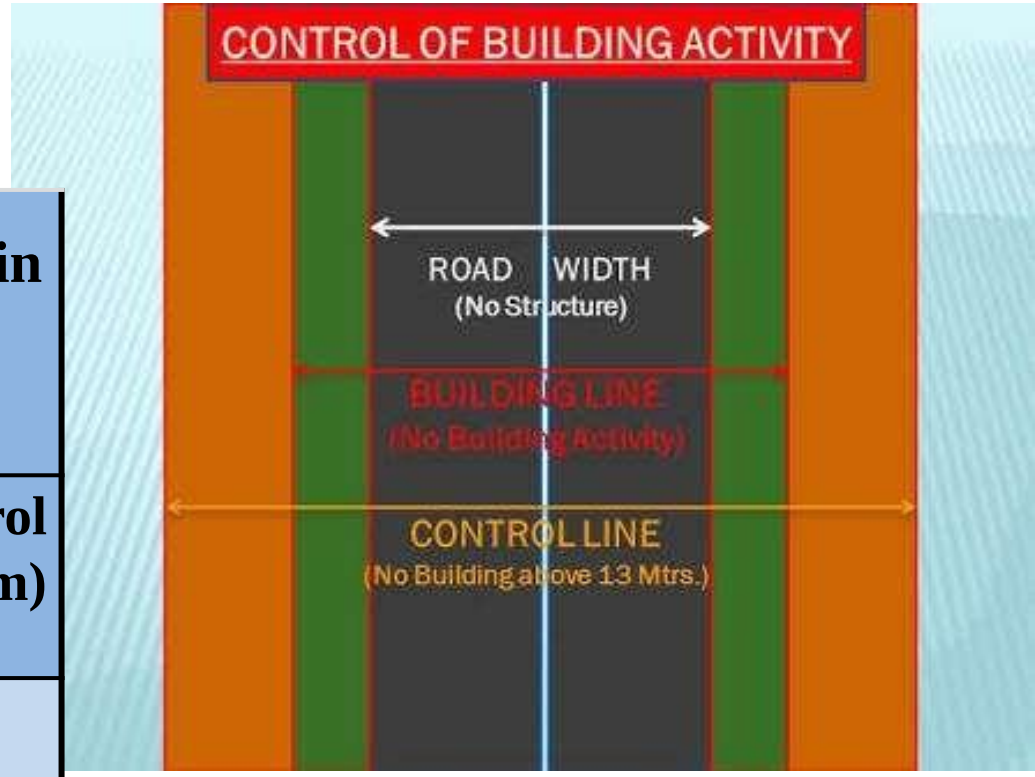
Building line:

It is the line up to which the plinth of a building adjoining from the centre of the street

Control line:

- To set back further distance apart from the building line in public buildings who's attracts large number of vehicles.
- These are one and half times the building line

Sr. no	Type of road	in open and aggricultural zone		Ribbon Devlpt along approahes		Actual limits in urban areas	
		Building line (m)	Control line (m)	Building line (m)	Control line (m	Building line (m	Control line (m)
1	NH/SH	30	56	18	30	30	45
2	MDR	24	45	9	15	15	24
3	ODR	15	24	6	9	9	25
4	VR	12	18	6	9	9	25

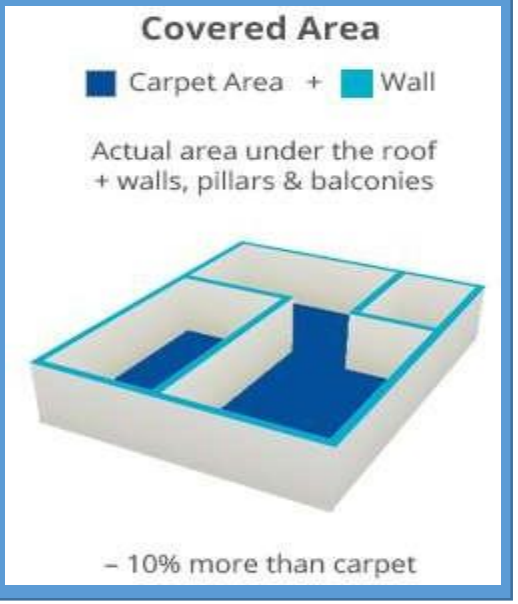


The distances of building and control lines is also depends on the category of streets and its width

For various forms of building coverage :

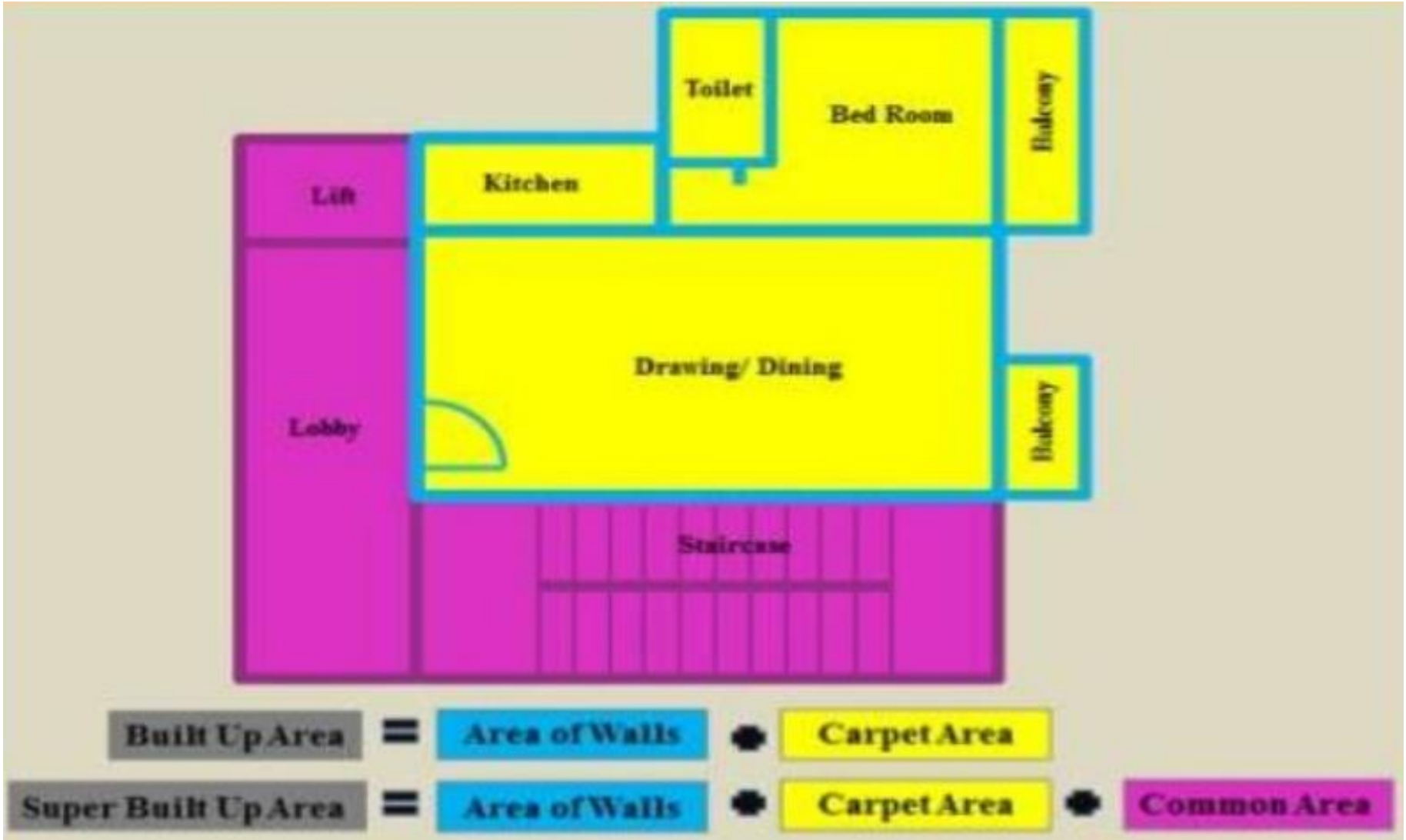
Covered area :

It isthe ground covered above plinth. Area occupied by compound wall, is not included in the covered area.



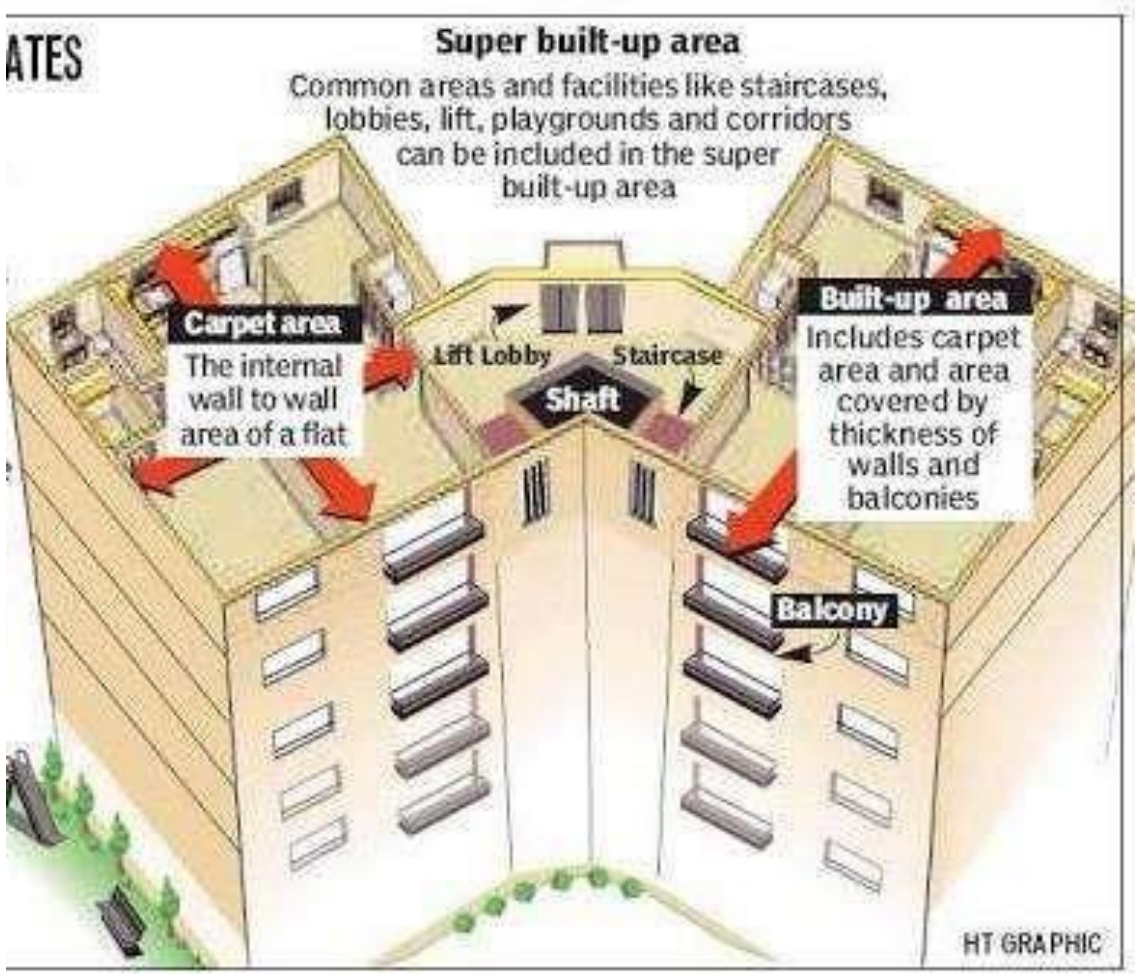
Carpet area:

- Actual area of usable at any floor level and it not includes verandahs, corridors, sanitary accommodation, stair cases, shafts from lifts, AC ducts


Toilet
Bed Room
Balcony
Lift
Kitchen
Drawing/ Dining
Lobby
Balcony
Staircase
Built Up Area = Area of Walls + Carpet Area
Super Built Up Area = Area of Walls + Carpet Area + Common Area

3. Built up area

Area covered by all floors in the building and stair case, shafts is excluded from this area.



4. Plinth Area

It is the built up covered area measured at the floor level of building

Includes	Excludes
Area of walls at floor level	Lofts
Internal shafts of sanitary(<2 m2)	Internal shafts of sanitary(>2 m2)
AC ducts, lift	Unclosed balconies
Porches and cantilevers	Towers, domes
	Architectural buns, cornices

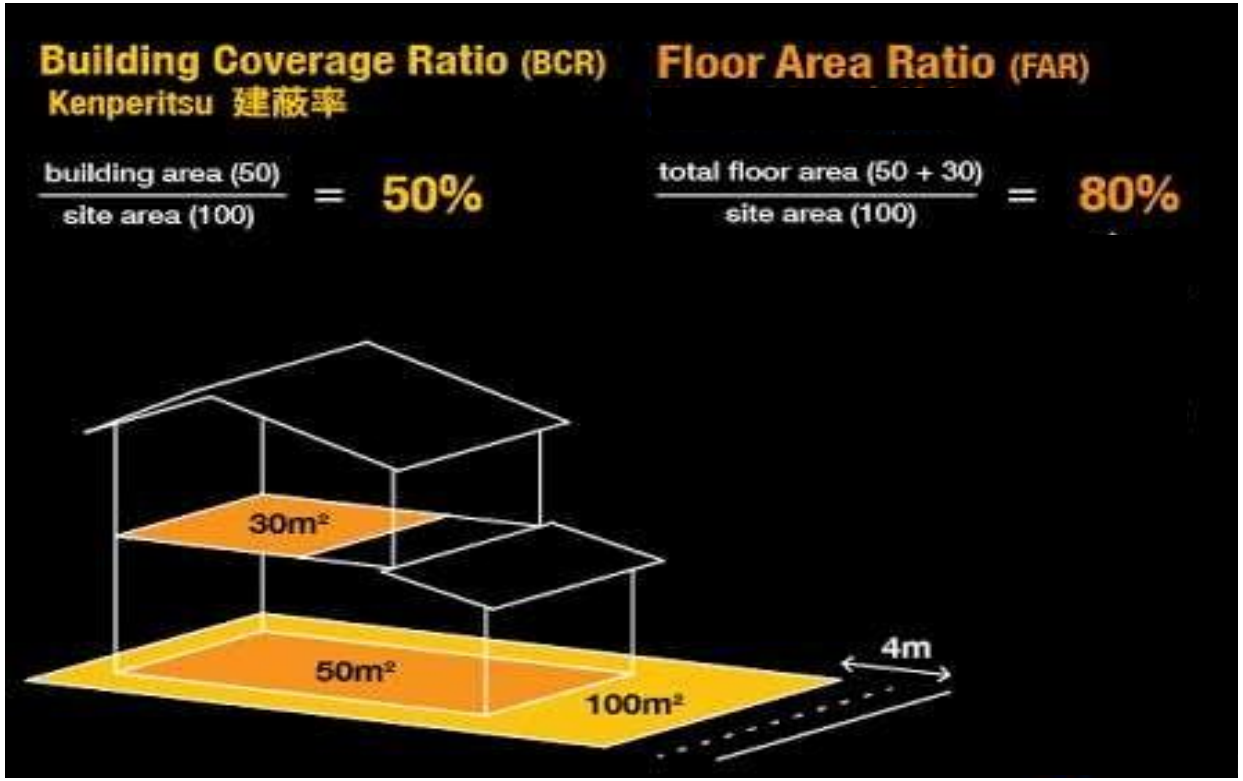
5. Floor Area

It is the usable covered area of the building at any floor

Includes	Excludes
Doors and other openings	Plaster along walls (<300 m^2)
Internal pillar and supports	Fire places projecting beyond face of the wall
Plaster along walls (>300 m^2)	

Floor Space Index (FSI) :

It is also called as Floor Area Ratio (FAR) is defined as, " the ratio of total built up area for the building (taken together) to the total plot area."



Zone	Maximum Permissible FSI
Residential(Sanctioned) Residential(New Proposed)	1.8 1.2
Natural Growth of village	1.2
Commercial	1.8
Industrial	1.0

Numerical on Floor Space Index

A plot owner proposed G+1 construction with 150 sq.m construction on each floor on a plot size 14x19 m. Find the ground coverage and FSI proposed. If margins from all sides are 2 m and FSI must be 1 as per bye laws, state with reasons whether plan will be sanctioned or not ?

Solution : Actual plot area = 14 x19 = 266 sq.m

Actual ground coverage = (14-4)x(19-4) = 150 sq.m

For G+1 Structure FSI consumed = (150 x 2)/266 = 1.12

Permissible FSI = 1

As FSI consumed > permissible FSI, plan will not be sanctioned

Structures and Projections Excluded for FSI Calculations:

- Chajja, Roof or Weather Shade of maximum projection of 0.75m.
- Canopy – 5 m. in length and 2.50 m. in width in form a cantilever with minimum clear height of 2.40 m. below it
- Balconies – minimum width 1.00 m. and not more than 15% of built up area of same floor.
- A projection of maximum 0.30m. on roof top terrace level and 0.45 m. in case of pitched roof
- Accessory Buildings:
  - Single storeyed toilet (maximum area of 4.00 sq.m.)
  - Parking lock up garage not exceeding 2.4 m in height
  - SuctionTank, Soak Pit, Pump Room, Electric Meter Room (3m x 5m), Garbage Shaft, Water Tanks, Dustbins etc.
  - Watchman Cabin not more than 3.00 sq.m built up area and minimum 1.20 m wide

Structures and Projections Excluded for FSI Calculations:

- Ramp
- Fire Escape Staircase
- Staircase Mid Landing with clear minimum headway of 2.10m. below it
- Stilt Parking
- Basement used as accessory to principal use
- Area covered by additional amenity of lift
- Rockery, Well and Well Structures, PlantNursery, Water Pool, Swimming Pool (if uncovered), Platform around Tree, Fountain Seat.
- Compound Wall and Gate Slide
- Society Office cum Letter Box Room
  - Flats less than equal to 20 : maximum dimension – (3.6m.*3.0m.)
  - More than 20 flats : maximum size – 20 sq.m
- Area for one Public Telephone Booth and one Telephone Exchange per building
- Area covered by new lift and passage there to in an existing building

ROOM SIZES

S. No.	Room Description	Minimum Carpet Area (sq.m.)	Minimum Width (m.)	Minimum Height (m.)	Other Important Factors
1	Living Room	9.5	2.40	2.75	-Maximum Height : 4.40 -Clear Headroom Under Beam : 2.40m. -Pitched Roof: Average Minimum Height : 2.75m. Minimum Height at Eaves Level : 2.10m.
2	Bed Room	6.50	2.40	2.75	
3	One Room Tenement	12.50	2.40	2.75	
4	Kitchen	5.5(9.5)	1.8(2.4)	2.75	
5	Independent Bath	1.80	1.20	2.20	-----
6	Independent WC	1.10	0.90	2.20	-----
7	Combined	2.80	1.20	2.20	-----
8	Store room	3.00	---	2.20	

WC is Water closet

Lighting and ventilation of rooms:

Provision for Lighting and Ventilation

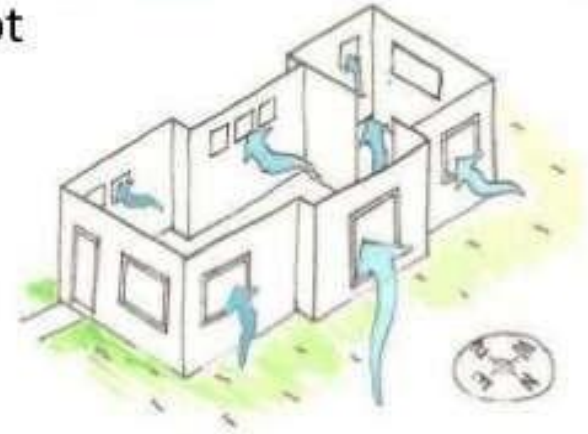
- Door opening is not counted in the lighting and ventilation of the building. Hence, the min area for opening shall be not less than,

a) 1/ 10^{th} of the floor area for dry hot climate.

b) 1/6^{th} of the floor area for wet hot climate.

c) 1/8^{th} of the floor area for intermediate climate.

d) 1/12^{th} of the floor area for cold climate.



- Artificial and mechanical ventilation as per latest version of part VIII building service section I of NBC.
- Ventilation shaft: For ventilating the spaces for WC and bath rooms the minimum values are depending up on height of the building.

Height of the building in m	Min area of ventilation shaft in sq.m	Min side of shaft in m
Up to 12	3	1.5
18	4.5	1.8
20	6	1.8

PARKING SPACES

The minimum sizes of parking spaces to be provided as

S. No.	Type of Vehicle	Minimum Size/Area of Parking Space
1	Motor Vehicle	2.50m. x 5.00m.
2	Scooter, Motor Cycle	1.00m. x 2.00m.
3	Bicycle	0.50m. x 1.40m.
4	Transport Vehicle	3.75m. x 7.50m.
Note:	In case of parking spaces for Motor Vehicles, upto 50% of the prescribed space may be of the size 2.30m. * 4.50m.	

Provisions for parking of vehicles

S. No.	Occupancy	One Parking Space for Every	Non Congested Area		
			Car	Scooter	Cycle
1	Residential (i) Multi- family Residential	(a) 2 tenements having built up area 100 to 200 sq.m	1	4	2
		(b) 1 tenements having built up area more than 201 sq.m.	1	2	4
		(c) 1 tenements having built up area between 40 to 100 sq.m.	0	2	4
		(d) 1 tenements having built up area upto 40 sq.m.	0	1	2
	(ii) Hotels with lodging accommodation	Every five guest rooms	1	2	4

S. No.	Occupancy	One Parking Space for Every	Non Congested Area		
			Car nos	Scooter nos	Cycle nos
2	Institutional(Hospital medical institutions	Every 20 beds	1	2	4
3	Educational	100 sq.m of floor area	1	2	4
4	Gov. of semi public or private business buildings and auditorium for educational buildings	100 sq,m carpet area	1	2	4
5	Commercial (shops, markets)	100 sq,m carpet area	1	2	4
6	Industrial	Every 300 sq.m	1	2	4
7	Storage	Every 400 sq.m	1	2	2
8	Plots less than 200 sq.m (any use)			4	8

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