

# BUILDING BYE-LAWS

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## 1. Introduction:

With rapid growing urbanization and population, Building bye-laws become an important tool for the controlling growth and development of the cities. This will help to promote systematic planning practice and will help to make city environment, a healthy and comfortable living place for all. Building byelaws are the set of guidelines regarding the design of buildings, orderly and systematic planning of the area and ensure safety standards. These rules are to be followed by architects, engineers, town planners and other experts so as to create a place as prescribed by the building bye-laws.

It consists of different regulations for construction works, classification of territory, means of access to plot, open spaces, Floor Area Ratio (FAR), ground coverage, height limitation, parking area etc.

## 2. Objectives of local byelaws and building regulations:

Local Byelaws for building, building regulations & standards are necessary for following purposes:-

1. To promote planning process according to human settlement growth and considering carrying capacity of the town.
2. To maintain and show civilization in the country.
3. To develop necessary physical infrastructure.
4. To use new land for future expansion.
5. To design and construct building as per climatology, topography, thermal aspect, lighting, acoustic etc.
6. To conserve and develop socio-economic values, culture, tradition, architecture, historical values.
7. To create comfort living conditions and safety of human beings in each and every building such as ventilation, sun light, fire safety, sewerage and sanitation etc.
8. To solve the problems & drawbacks of past and present of municipality and country and change the building regulation and standard as per changing period & time.
9. To maintain aesthetic value of the municipality and its building.
10. Specifying materials and workmanship as per standard specifications for the construction of buildings.

To fulfill above objectives, the bye- laws of Municipality concentrate in the following points:-

- Zoning of Municipality territory according to landuse i.e Residential, Industrial, Institutional, Future expansion zones etc.
- Rule & Regulations for ventilation, natural light, habitable space, area, maximum height maximum no. of floors, minimum plot size, floor height etc.
- Rule of FAR (Floor Area Ratio), setbacks, ROW (Right Of Way), Ground Coverage, Open spaces etc.
- Provision of safety standards against fire, noise, health hazard and structural failure.

### 3. Building Envelope:

Zoning also regulates the various physical dimensions of buildings:

- how tall the building is (height)
- how far from the street or the neighboring lot the building is placed (setbacks or front, side and rear yards)
- how much of the lot is covered by the actual building (lot coverage, building footprint)
- the amount of square footage in the building compared to the square footage of the lot (floor-area ratio or FAR)

Together these dimensions define the "building envelope."

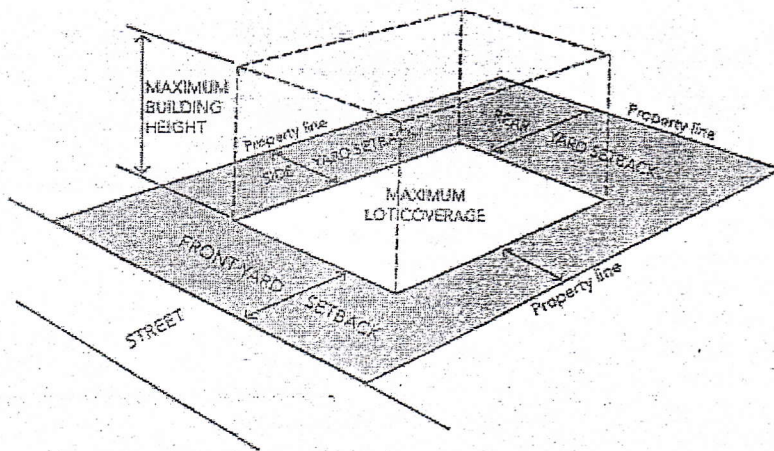


Figure 1: Building Envelope

#### 3.1 Floor Area Ratio (FAR):

Definition: Floor area ratio is the ratio of the floor area of a building to the area of the lot on which the building is located. For example, the diagram below illustrates three simple ways that a 1:1 FAR might be reached: one story covering the entire lot, 2 stories covering half of the lot, or 4 stories covering a quarter of the lot all result in the same FAR.

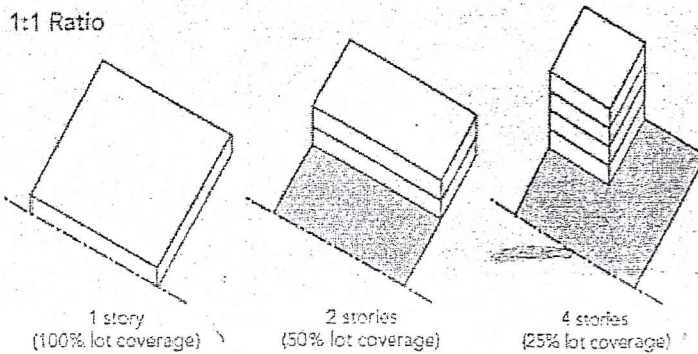


Figure 2: Floor Area Ratio (1:1)

### 3.2 Light Plane:

To control the height of the building so that it does not obstruct light and ventilation, the concept of light plane is introduced as shown in the figure below. For this purpose, a light plane is marked at a suitable angle, from the edge of the road on one side and the height of the building is suitably curtailed off to allow light to pass through the established light plane. The common angle for light plane is 63.5°. In this angle, the total height of the building should not exceed twice the width of road and setbacks.

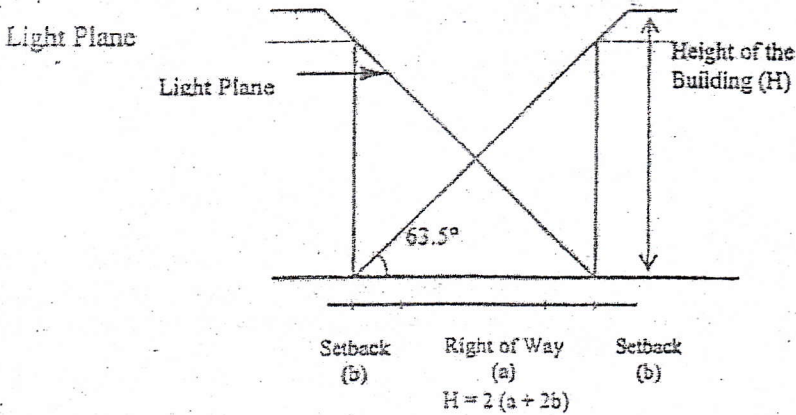


Figure 4: Light plane

### 3.3 Right of way:

A Public Right of Way is a highway over which the public have a right of access along a linear route.

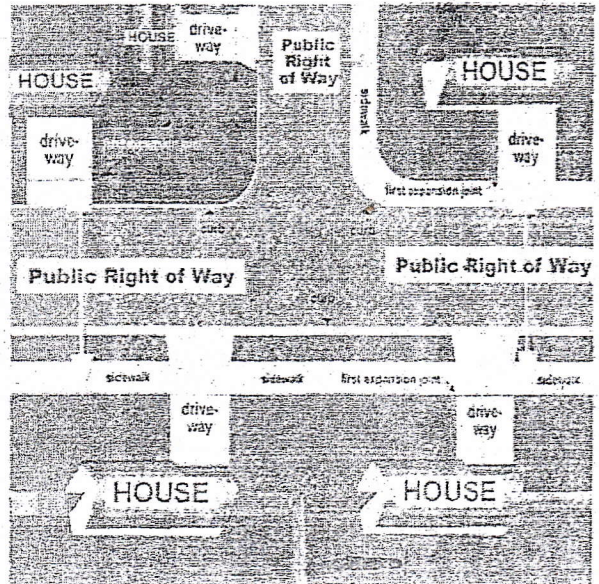


Figure 5: Public Right of way

#### 4. Classification of territory: (Land use permission)

Different zones are having different regulations as prescribed by the Bye-laws. Kathmandu Valley has been classified into following zones:

- a. Cultural Heritage Conservation Zone
- b. Residential Zone
- c. Institutional Zone
- d. Industrial Zone
- e. Preserved Zone
- f. Urban Expansion Zone
- g. Airport Zone
- h. Surface Vehicle Zone
- i. Sports Zone

For detail explanation, one of the zone (residential zone) is further discussed below:

##### 4.b Residential Zone:

The zone, which is mainly used for residential purpose, is the Residential Zone. The main objective of this subzone is to accommodate the increasing population in a systematic way. According to the nature of location, this zone has been further classified into four subzones:-

- a) Business Commercial Subzone
- b) Dense Mix Settlement Subzone
- c) Other Residential Subzone
- d) Planned Residential Subzone

##### 4.b.a Business Commercial Sub-zone:

Areas mainly dealing with retail business like supermarkets, commercial complex and lying along the 15 m wide road are included in Business Commercial Subzone. Expansion of these types of business is the main objective of this subzone. The following areas fall under this subzone:-

- Area within the distance 135 m east and 109 west from center line of the crossing of Maharajgunj Chakrapath and right of way from the center line of the road being 15 m on both the sides.
- Area starting from Chabahil chowk of Chakrapath up to Gaushala chowk with right of way 11 m from center line of road.
- Area within 303 m west of chakrapath towards east direction from the center of the crossing of Koteswor Chakrapath. The Right Of Way (ROW) from the centerline of the road is 15 m.
- From Chakrapath kalankasthan junction to Chakrapath Satdobato through kalimati, Bisnumati bridge, Tripureswor, Thapathali, Kupandole, Pulchowk, Jawalakhel and Lagankhel.
- From Putali Sadak to the three-way crossing of Kamaladi.
- From Gaushala chowk to Old Baneshwor.
- From the junction of Ratna park and Bagbazar to Bagbazar, Dillibazar, Dhobi khola bridge, Bagmati bridge of Old Baneshwor up to Sinamangal area.
- From the Chabahil junction to gate of Gokarna park through Boudha.
- From the Amrit Science College up to upper market area of Balaju through Sorhakhutte, Nayabazar and Ringroad.
- From Kalimati junction to Balkhu Chakrapath through Kuleshor.
- From Dillibazar (junction of petrol pump) to Naxal Bhagwati bahal through Chaarkhal Adda and Gyaneshwor petrol pump.
- From Golkupakha to Chakrapath through Samakhushi.

➤ From Lazimpat Sheetal neewas to Chakrapath.

- Areas within 25m on either side of the above-mentioned areas fall under this subzone. Floor Area Ratio must be considered for the maximum ground coverage area. Maximum ground coverage, maximum FAR & maximum height of the buildings for this subzone must be as shown in the table below:

Table: FAR, Maximum Ground Coverage, Maximum height

Serial no.	Building type	Area of plot	Maximum Ground Coverage	Maximum FAR	Maximum height
1.	Residential cum commercial building	2 anna 2 paisa - 4 anna	70 %	3.0	Height must be as shown in the light plane (Figure 4)
3.	Residential cum commercial building	> 8 anna	50%	3.0	
4.	School/Campus		40%	2.0	
5.	Government / semi government offices		50%	2.5	
6.	Cinema Hall, theater, City hall		40%	2.5	
7.	Star hotels		40%	2.5	
8.	Commercial complex eg. Supermarket.		50%	2.5	

- Minimum 1m of setback is required for the construction of buildings along the road. While providing the setback, the buildings can be constructed without obstructing the light plane. For the light plane consideration with minimum setback, the height of the building must be twice the open space between two buildings as shown in the Light Plane figure.
- For the construction of buildings in this subzone the minimum plot area is 2 aana 2 paisa and the minimum frontage of the plot connected with the road must be 13m.
- This subzone can be used for the following purposes: residential (fully residential buildings and residential buildings with shops on the ground floor), retail business (supermarket & business complex), traditional sculptures, Social work with public participation, cultural centers, five star hotels, lodge & restaurant, private & semi-private offices.
- Steps in the front of a building must not be in the right of way area. The minimum ceiling height of the building in this subzone must be 7 ft. 6 in.
- The following industries are prohibited in this area :
  - poultry farm & animals breeding
  - workshop for grill & bike maintenance along the road
  - small or medium sized industries which effect the environment

## 5. Classification of buildings:

Based on occupancy and type of construction technology, buildings have been classified as per following categories:

- a. Residential
- b. Educational
- c. Institutional
- d. Assembly
- e. Business
- f. Mercantile
- g. Industrial
- h. Storage
- i. Hazardous

## 6. Road setbacks:

Inside Kathmandu valley, different set-backs are specified as per the road categories:

- Ringroad
- Arniko and Tribhuwan highway
- Arterial road
- Connection road
- Feeder road
- Special road

## 7. Other regulations:

### Rules and regulations for mass housing and apartment buildings

Bye-laws prescribe different guidelines for mass housing and apartment building in terms of plot coverage, FAR, set-backs and other requirements such as building services, safety requirements (fire, escape routes), vertical communication (Lifts, stairs), open spaces, parking facilities etc.

### Rules and regulations for special areas (Pashupati area, Petrol pumps, Cinema halls etc)

Rules and regulations for other works (Drawing submission requirements and format, administrative procedures etc.

## 8. Conclusion

Bye-laws serve as an important guideline for builders, planners, engineers and other experts in creating a good living environment for the people. Following rules of bye-laws helps to minimize the un-systematic and haphazard growth and make the city look well-planned and organized. These municipality bye-laws should be followed in order to promote systematic development as per carrying capacity. It is also necessary to create comfortable living conditions and to provide a safe environment for human beings in each and every building with such provisions as ventilation, sunlight, fire safety, sewerage and sanitation etc. By following these bye-laws we can create a beautiful environment and a well organized place to live in.

## 7. Annexes

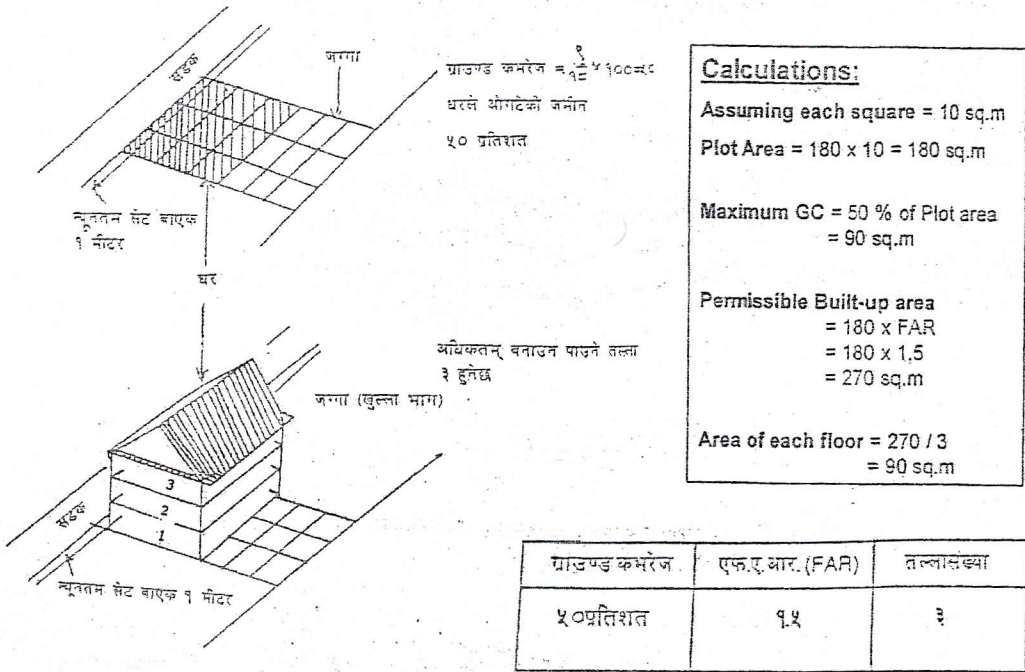


Figure 6: Floor Area Ratio and Maximum Ground Coverage

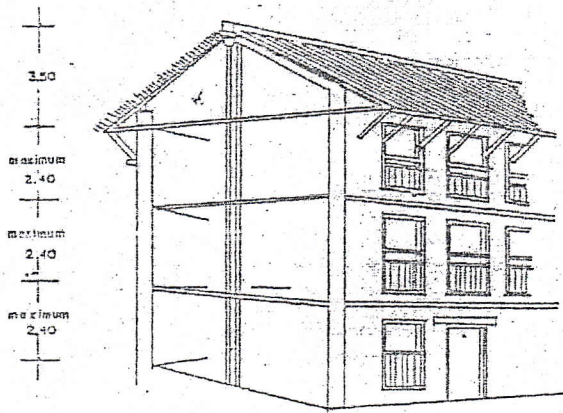


Figure 7: Number of floors

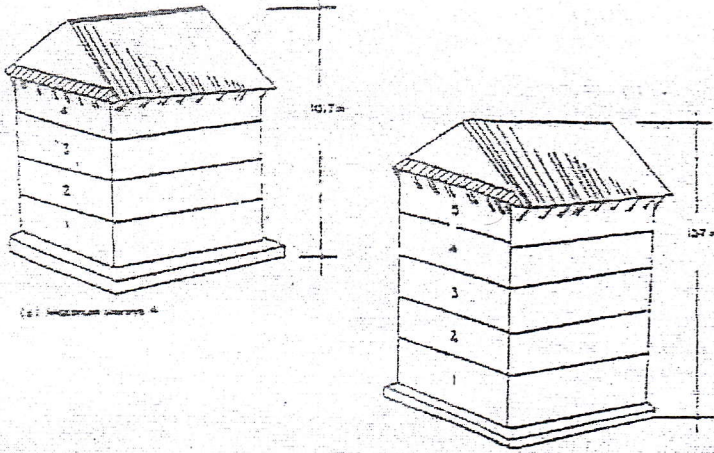


Figure 8: Maximum building height

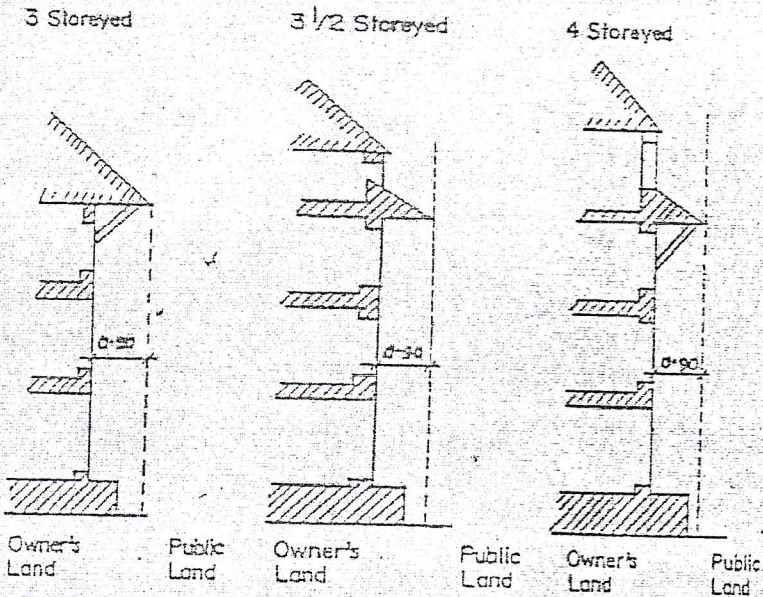


Figure 9: Roof overhang



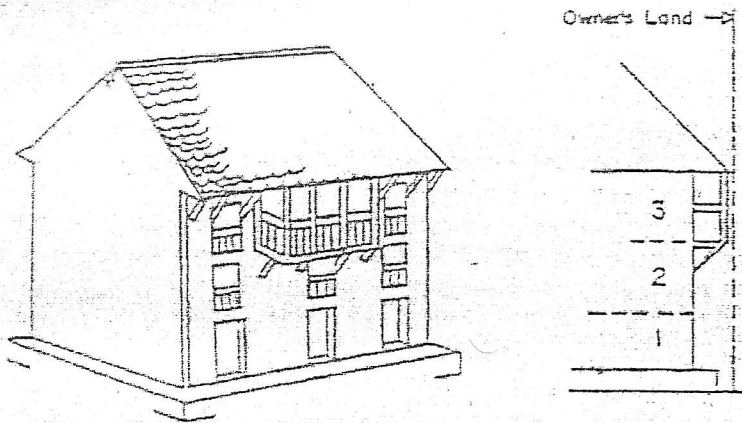


Figure 10: Balcony placement

## REFERENCES

- Bye-laws For Kathmandu and Lalitpur Municipalities, 2050, 2064 BS.
- Building Healthy Communities, Website: <http://www.lacity.org>