

How to design *a house*

that belongs to its plot, its street and its sky.

01

PLACE

Climate, sun, wind and the ground

02

RULES

Margins, FSI and height

03

PLAN

Rooms that work together

04

FACE

Elevation and materials

A house is a chain *of decisions.*

Good houses are not drawn from the rooms outwards. They start with the place, then the rules, then the family, and only then the plan and the face. This book follows that order.

01	Place	03
	The nine decisions, five climates, sun and hazards	

02	Rules	08
	Margins, FSI, height and the kind of house	

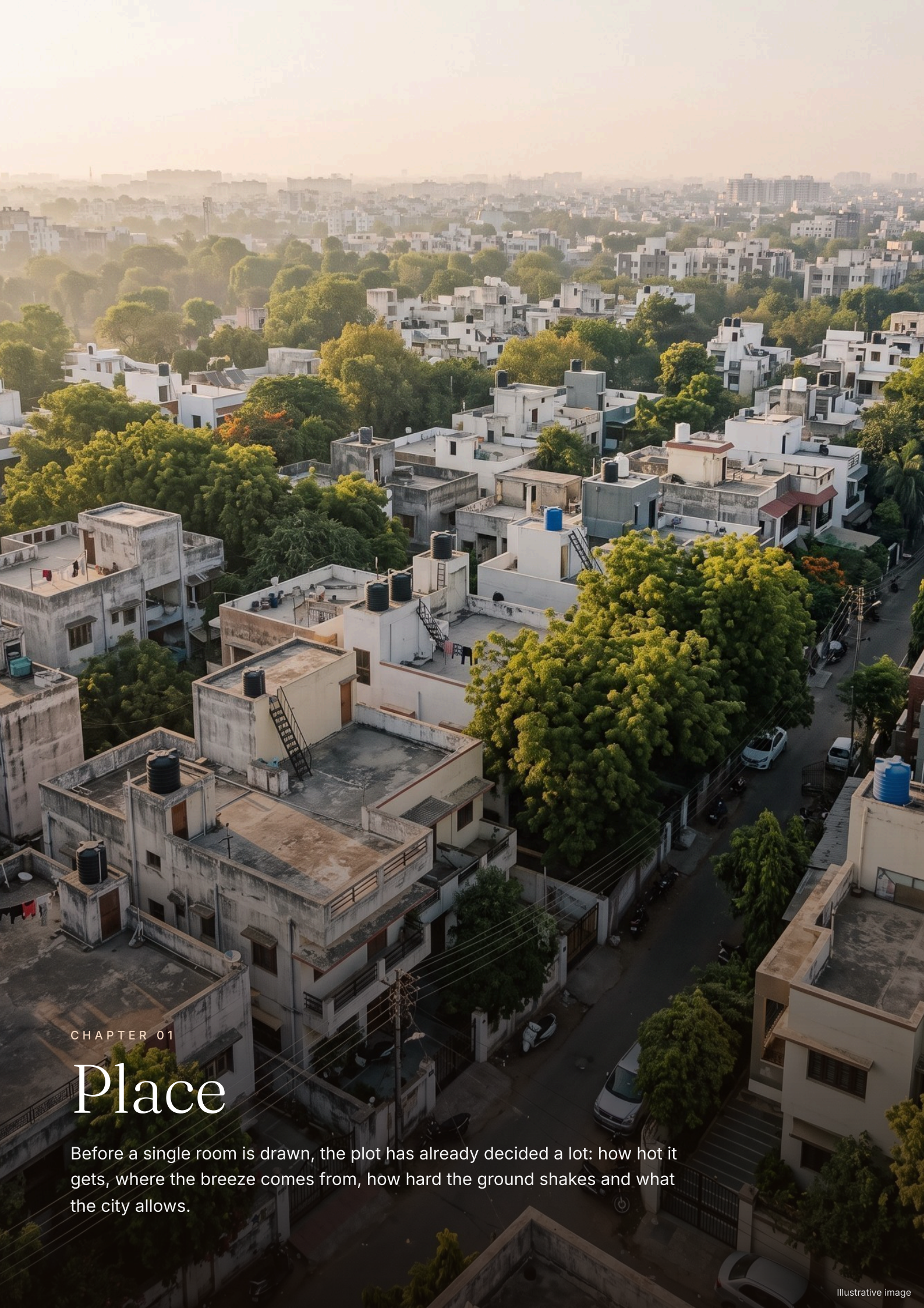
03	Plan	12
	Room sizes, light, air, kitchens, baths and stairs	

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	Elevation, shade and the materials of walls and roof	

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	Everything to ask before you approve a plan	

HOW TO READ THIS BOOK

Every number on a page carries its source at the foot of that page. National documents (NBC, Model Bye-Laws, Eco Niwas Samhita) are models; your state and city decide what is law on your plot. Images marked "illustrative" are not real projects.

An aerial photograph of a dense urban neighborhood. The scene is dominated by white, multi-story buildings with flat roofs, many of which have black water tanks. The buildings are interspersed with lush green trees, creating a vibrant contrast. A narrow street with parked cars and motorcycles runs through the lower right portion of the image. The background shows a hazy cityscape under a warm, golden light, suggesting early morning or late afternoon.

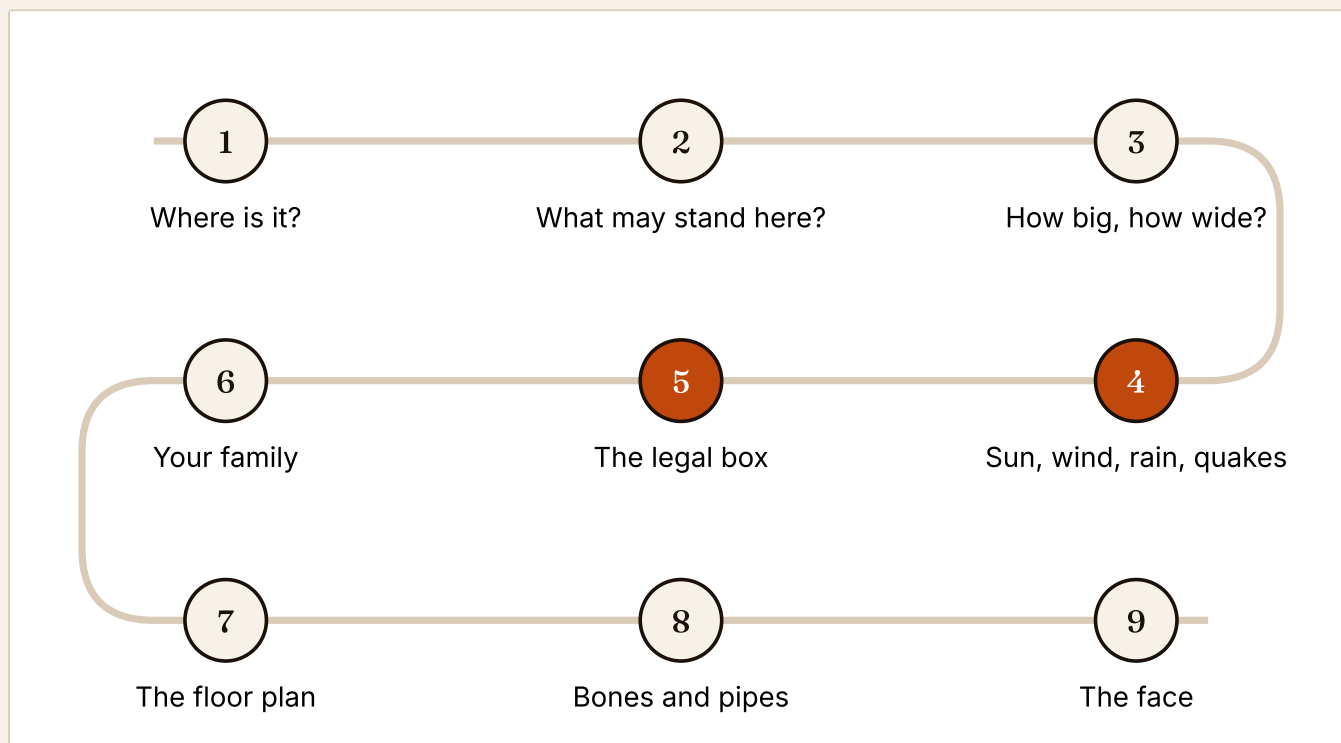
CHAPTER 01

Place

Before a single room is drawn, the plot has already decided a lot: how hot it gets, where the breeze comes from, how hard the ground shakes and what the city allows.

Nine decisions, *in this order.*

Check the plot, the climate and the legal building envelope before settling the rooms. This sequence helps organise those decisions.



Steps 1 to 3: the plot. The address tells you which authority approves the plan and which development plan applies. The zone says what may be built. Plot size and road width decide margins and height.

Steps 4 to 9: the house. Climate and hazards shape walls, roof and openings. The legal box is the space you may build in. Only then do the family, the plan, the structure and services, and the face follow.



Illustrative image

Sequence built from the planning steps in the Model Building Bye-Laws 2016 and state regulations (CGDCR 2017, UDCPR). A way to think, not a legal procedure.

India builds in *five climates.*

A house in Ahmedabad fights the sun; a house in Kochi fights the damp and wants the sea breeze. The rooms can be the same. The house that wraps them cannot.



01

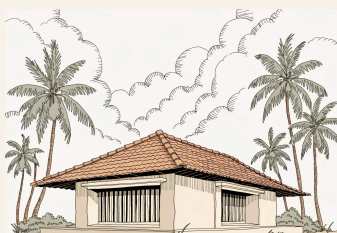
Hot and dry

Ahmedabad, Jaisalmer

Keep the sun off the walls. Small, deep-set, shaded openings and a light roof.

10.00%

openable area, as a share of the dwelling carpet area, at least



02

Warm and humid

Mumbai, Chennai, Kochi

Let the breeze through. Big openings on opposite walls, deep eaves for the rain.

16.66%

openable area, as a share of the dwelling carpet area, at least



03

Composite

New Delhi, Hyderabad, Rajkot

Shade in summer, sun in winter. Verandahs and shading you can adjust.

12.50%

openable area, as a share of the dwelling carpet area, at least



04

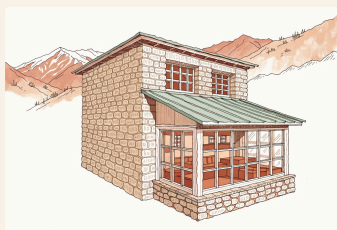
Temperate

Bengaluru

Mild all year. Generous windows, balconies and daylight.

12.50%

openable area, as a share of the dwelling carpet area, at least



05

Cold

Leh, Manali, Srinagar

Hold the heat. Compact form, insulated walls and roof, and carefully designed winter sun.

8.33%

openable area, as a share of the dwelling carpet area, at least

Follow the sun *before the plan.*

The sun is high in summer and low in winter. A deep shade over a window can block the first and welcome the second.



What to test on your plot. Hot-dry: shaded openings, an insulated roof, thermal mass tested together with shading and night ventilation. Warm-humid: openings that catch the seasonal breeze and shed rain. Composite: shading you can adjust, and winter sun. Cold: winter sun on glass, insulation and controlled ventilation.

What is not a rule. "The living room must always face north" is tradition, not code. Eco Niwas Samhita 2018 (BEE) gives orientation-based checks for walls and windows; your latitude, your street, your neighbours' buildings and trees decide where rooms go.

The ground shakes, *the wind pushes.*

India is mapped for earthquakes and for wind. Your engineer reads both maps for your exact plot; you should know which zone you are in before the structure is drawn.

II–V

Seismic zones on the national map. A town on a boundary takes the higher zone.

IS 1893 (Part 1):2016, cl. 6.4.1, Figure 1

33–55_{m/s}

Basic wind speeds on the national wind map, from inland plains to cyclone coasts.

IS 875 (Part 3):2015, Figure 1

2016

The Government stated on 1 April 2026 that IS 1893 (Part 1):2016 remained current after revised zoning was withdrawn in March 2026. Your engineer confirms the edition.

Parliament answer, 1 April 2026

1

Competent structural engineer. Confirm what your authority requires for registration, design signature and certificates. A zone map is an input, not a design.

State regulations, e.g. CGDCR 2017 and UDCPR

WHY IT MATTERS TO THE PLAN

Ask your engineer to review structural regularity, load paths and tank locations before you fix the plan. These checks do not replace structural design.



IS 1893 (Part 1):2016 and IS 875 (Part 3):2015 as checked; confirm current amendments with your engineer. Never use a generated or redrawn hazard map for a real plot.



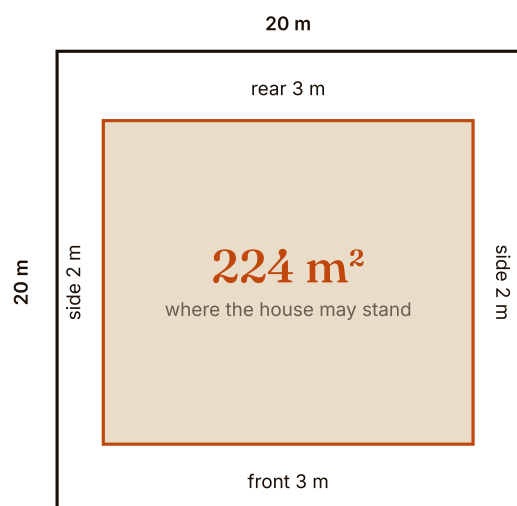
CHAPTER 02

Rules

Every plot comes with an invisible box: how far from the road and the neighbours you must stay, how much floor you may build, and how tall you may go.

How much of the plot *can I build on?*

Margins keep you back from the road and the neighbours. FSI says how much floor you may build in total. Assume a 400 m² R1 plot in the RUDA area, on a 12 m road, with a house classified as Dwelling 1 or 2. This example uses the 2017 provisions.



12 M ROAD (WIDTH SCHEMATIC)

Space inside the margins

$$(20 - 4) \times (20 - 6) = 224 \text{ m}^2$$

56% of the 400 m² plot.

Total floor at base FSI 1.8

$$400 \times 1.8 = 720 \text{ m}^2$$

About three floors of 224 m², if height, parking and stair rules allow.

The 56% is arithmetic for this plot, not a coverage rule. Road width, special areas and amendments change every number.



Illustrative image

Same idea, *another state.*

Maharashtra's unified rules tie margins and height to the width of the road in front. A wider road brings bigger margins and a taller allowance.

01

Road below 15 m

Minimum plot 80 m², width 6 m

Front margin 3 m; side and rear 1.5 m. These margins apply to G+2 or stilt+3 buildings; taller ones need the checks in cl. 6.2.3.

3 / 1.5_m
front / side and rear

02

Road 15 m to under 18 m

Minimum plot 200 m², width 10 m

Front margin 3 m; side and rear 1.5 m. Same G+2 or stilt+3 scope; taller ones need cl. 6.2.3.

3 / 1.5_m
front / side and rear

03

Road 18 m to under 30 m

Minimum plot 250 m², width 10 m

Front 4.5 m; side and rear 2 m. Applies up to 10 m height, excluding a qualifying parking floor; check cl. 6.2.3.

4.5 / 2_m
front / side and rear

WORKED EXAMPLE

A 10 × 20 m plot on a 12 m road: $(10 - 1.5 - 1.5) \times (20 - 3 - 1.5) = 108.5 \text{ m}^2$ to build on. At basic FSI 1.10, 220 m² of floor in all.



Row house, bungalow *or apartment?*

The kind of house decides which rules apply. Never carry the margins or parking of one type over to another.



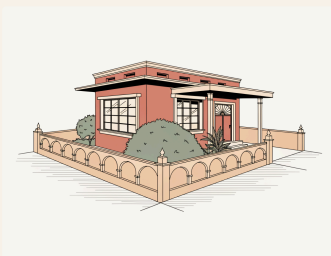
01

Row house

Shared side walls make front and rear openings important; courtyards, shafts and end-house openings can help. Coordinate toilets and stairs with ventilation and service access.

2

open sides in a typical middle house



02

Bungalow

Detached, open on all sides. Most freedom for light, air and extension; the most land and the most outer wall to maintain.

4

open sides



03

Apartment

Shared staircase, shafts, water and fire arrangements. Many homes on one plot; the building rules move to a stricter chapter.

1+

common core for every flat



Illustrative image



CHAPTER 03

Plan

Inside the legal box, the plan arranges how a family lives: where light falls, where air moves, and how far you walk with a pot of hot tea.

The smallest a room *may be.*

These are minimums, not targets. A plan that only meets them will feel tight; a plan below them may not be approved.

9.5 m²

Single-room dwelling: habitable room at least 9.5 m², width at least 2.4 m

NBC 2016 Part 3, 12.2.2

7.5 m²

Second room in a two-room home, width 2.1 m

NBC 2016 Part 3, 12.2.2

2.75 m

Ordinary habitable-room height, at least; the clause qualifies pitched roofs and ceilings

NBC 2016 Part 3, 12.2.1

5.0 m²

Separate kitchen, width 1.8 m (4.5 m² with a separate store)

NBC 2016 Part 3, 12.3.2

1.8 m²

Bathroom, width 1.2 m

NBC 2016 Part 3, 12.4.2

1.1 m²

Separate WC, width 0.9 m. Combined bath and WC: 2.8 m², width 1.2 m

NBC 2016 Part 3, 12.4.2

2.1 m

Height of a bathroom or WC, at least

NBC 2016 Part 3, 12.4.1

3.0 m²

Store room, height 2.2 m

Model Building Bye-Laws 2016 (MoHUA), 4.8.1-4.8.2

1.0 m

A-2 residential stair clear width; the clause allows an exception for two-storey row houses

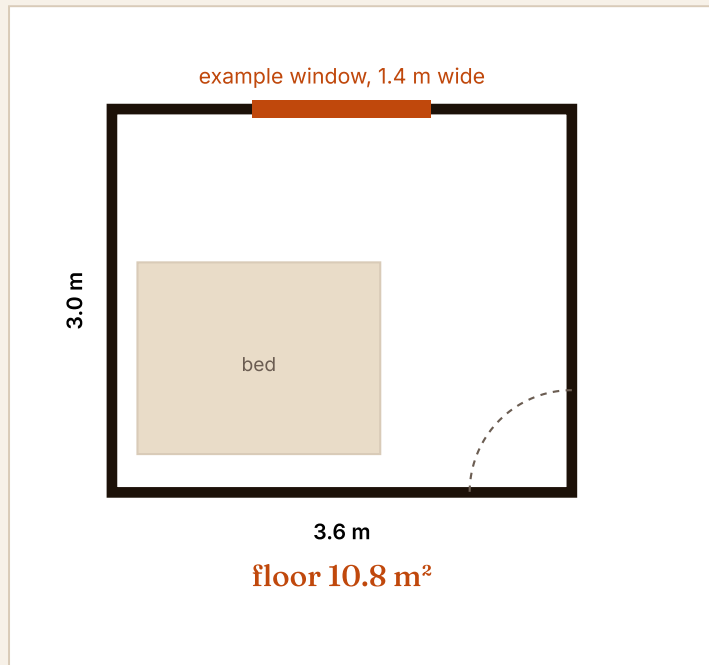
NBC 2016 Part 3, 12.18.1.1



Illustrative image

NBC 2016 Part 3 (dated baseline) and Model Building Bye-Laws 2016 (MoHUA). Rules are set by your state and city; these are model and example values. Check your own authority before you draw.

Light and air *are measured.*



Rules ask for a share of the floor area as window that opens. Doors do not count; only the part of a window that actually opens counts.

Dry-hot climate: floor $\div$ 10

$$10.8 \div 10 = 1.08 \text{ m}^2$$

Wet-hot climate: floor $\div$ 6

$$10.8 \div 6 = 1.8 \text{ m}^2$$

A kitchen asks 25% more

$$\times 1.25$$

Then check that it is still at least floor $\div$ 10.

Any part of a room more than 7.5 m from an opening is not counted as lit.



Illustrative image

Model Building Bye-Laws 2016 (MoHUA): openings by climate 4.30.1.1(a)-(d) (dry-hot 1/10, wet-hot 1/6, intermediate 1/8, cold 1/12); kitchens +25%, Note 3; overriding minimum 1/10, 4.30.1.2; 7.5 m from an opening, 4.30.1.3; doors excluded, 4.30.1.1 and 4.30.1.2; partly fixed windows, Note 1. Specify the window height and its actual openable area.

Kitchen and bath: *water, air and a window.*

Wet rooms need daylight or a shaft, a washable wall and air that leaves the house instead of drifting into the bedrooms.



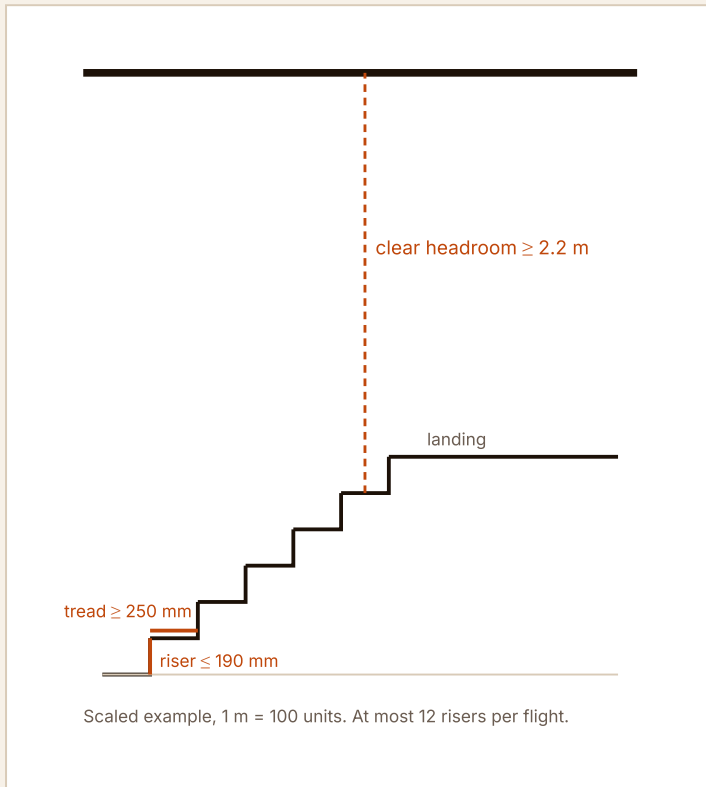
Illustrative image

Kitchen. At least 5 m² and 1.8 m wide, with a window 25% bigger than the room rule asks. About 6 air changes an hour for a family kitchen: a window plus an exhaust fan.

Bathroom and WC. A window or ventilator of at least 0.3 m², each side at least 0.3 m, opening onto open space or a ventilation shaft sized for the building height. An impervious wall finish at least 1 m high. About 6 air changes an hour. If there is only one WC, keep bath and WC separate.

A stair you *can climb for life.*

Stairs are where homes hurt people. The numbers below are for one- and two-family houses.



≤ 190 mm

Riser, the height of each step

≥ 250 mm

Tread, the depth of each step, not counting the nosing

≤ 12

Risers in one flight before a landing

≥ 2.2 m

Headroom over the stair and under a landing



Illustrative image

Water decides *the tank and the pipes.*

The number of people helps estimate daily demand. Your designer also checks supply reliability, storage, fixture flow and pressure.

135_L

Per person per day, the living-unit reference

Model Building Bye-Laws 2016 (MoHUA), 4.32.2, Table 4.6

150–200_L

Per person per day in cities over 1 lakh people, with full flushing

IS 1172:1993, cl. 4.1

45_L

Of that, per person per day, for flushing

IS 1172:1993, cl. 4.1.1

WORKED EXAMPLE

A family of five, two days of storage: $5 \times 135 \times 2 = \mathbf{1,350 \text{ litres}}$. Assumes two days of usable storage. Confirm the demand, the storage split, the tank size and its structural support before you buy.



Illustrative image



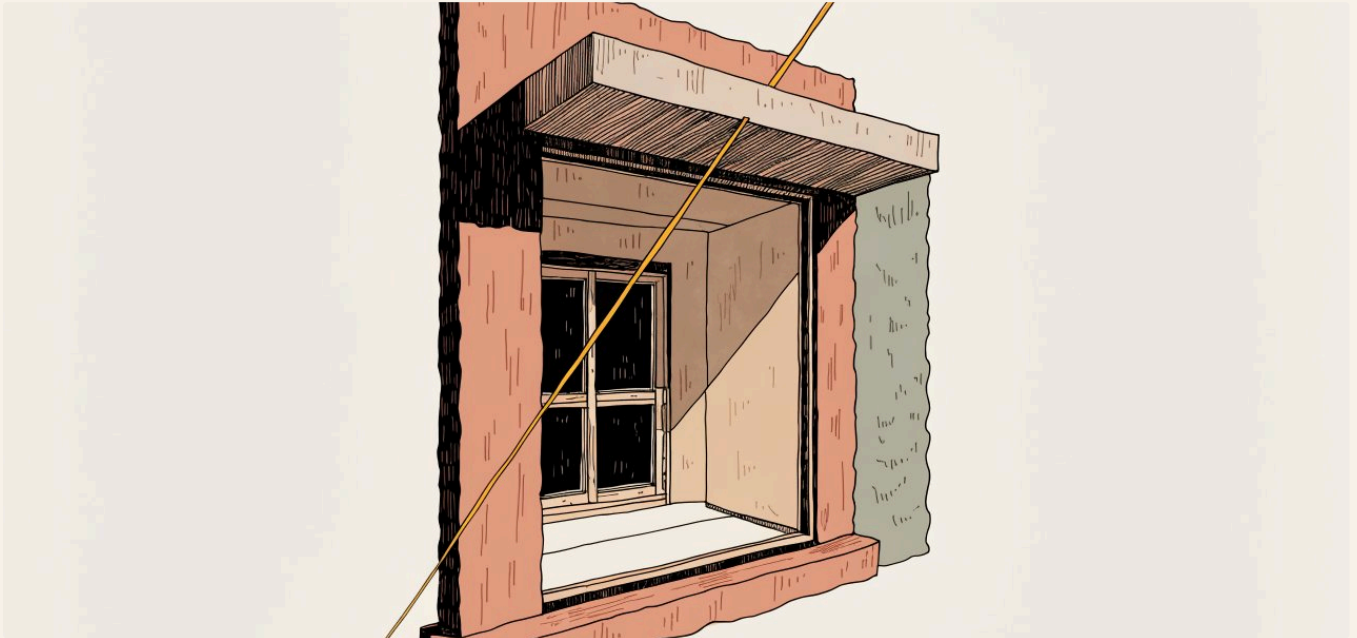
CHAPTER 04

Face

The elevation is not decoration. Shades, jaalis, projections and the colour of the roof are how a house answers the sun and the rain.

A shade is *a calculation.*

A well-designed shade can cut unwanted summer sun while letting in useful winter sun. Test its depth and shape for the direction and latitude of each window.

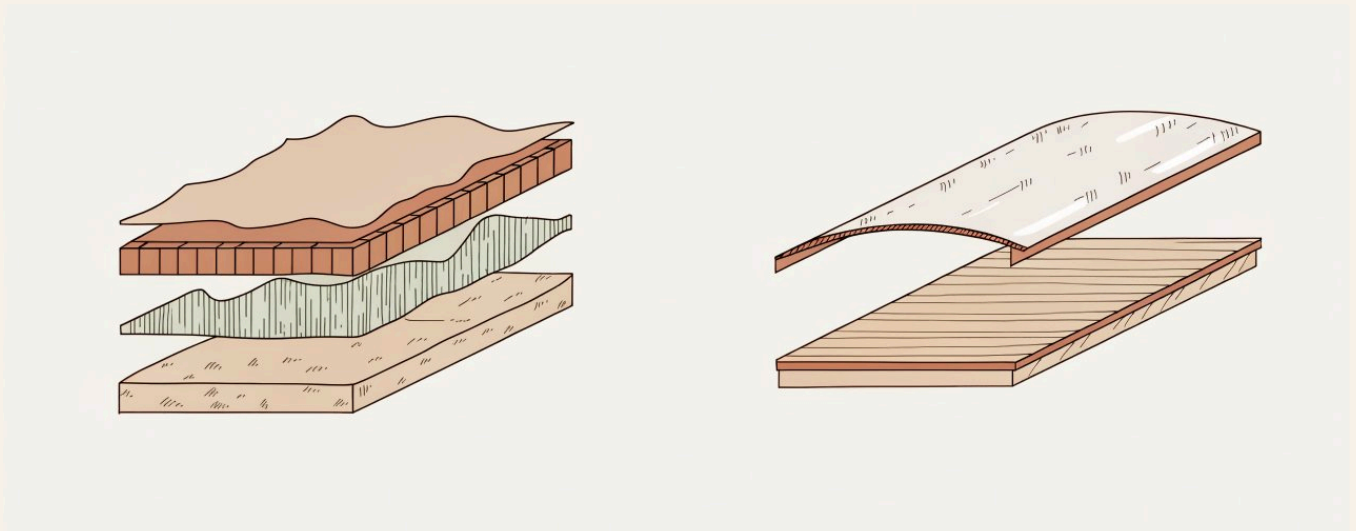


How far it may project. Rules limit projections over margins. Gujarat allows a 0.60 m non-habitable projection above 2.4 m; Maharashtra allows a 0.75 m sunshade, with conditions. These are permission limits, not proof the shade is deep enough.

How deep it should be. Eco Niwas Samhita gives shading factors for overhangs and side fins by orientation. Ask your designer to show the summer and winter sun on the section of each window, not one depth for every side.

Walls and roof *that keep the heat out.*

Energy codes measure how much heat a wall or roof lets through. Lower is better. Compare assemblies, not brand names.



$$\leq 1.2 \text{ W/m}^2\text{K}$$

Roof U-value, the heat a roof lets through

Eco Niwas Samhita 2018 (BEE), cl. 3.3

$$\leq 15 \text{ W/m}^2$$

RETV, heat gained through the walls and windows (not cold zones)

Eco Niwas Samhita 2018 (BEE), cl. 3.4.2

$$\leq 1.8 \text{ W/m}^2\text{K}$$

Cold-climate envelope U-value, excluding the roof

Eco Niwas Samhita 2018 (BEE), cl. 3.5.2

ENS applies to plots of 500 m² and more under the 2018 code, as adopted by your state; ENS 2024 uses 100 kW connected load or 120 kVA contract demand, with a 3,000 m² plot-area condition (cl. 2.2, footnote 7), whichever is more stringent. Small houses can still use its numbers as a target.

Before you approve *the plan.*

Print this page and take it to your architect.
Every line is a question with an answer you
can check.

PLACE

- ☐ Which authority approves my plan, and which rules apply?
Development plan, zone, road width
- ☐ Which climate zone, seismic zone and wind zone is my plot in?
- ☐ Where do the summer sun and the breeze come from on my plot?

RULES

- ☐ What are my margins on every side, and my FSI?
Margins in metres, FSI as a ratio, allowed floor area in m², from the current regulation
- ☐ How tall may I build, and what parking is required?

PLAN

- ☐ Does every room meet its minimum area, width and height?
- ☐ Is every window big enough for the climate, and does it open?
- ☐ Do the kitchen, bath and WC openings, shafts and exhausts meet the applicable rules?
- ☐ Does the stair meet the width, riser, tread (without nosing), flight, landing, handrail and headroom rules that apply?

FACE

- ☐ Is each window shaded for its own direction?
- ☐ What is the roof made of, and how hot will it get?



Illustrative image

Now draw it, *then build it right.*

This is volume one of five free NirmanDost guides. The next ones go inside the house, into the structure, and onto the site.

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Light, air, furniture and materials, room by room.

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