
3 x 3 x 3
L
W
H
The 3 meter Trap
Ajay Chovatia | UA0616

Most of the apartments built at the present are just a stacking of horizontal floor plates, the Idea of constant 3 metre height in the unit has become so rigid and embedded in practice that it has stopped exploring the volumetric variations in the vertical living, and hence this horizontally stacked apartment units with the constant height creates a monotony at various levels and has lost certain spatial experience

This also has a impact at urban level where they become visually unappealing and boring to be looked at.

Fig. 1

Fig. 2

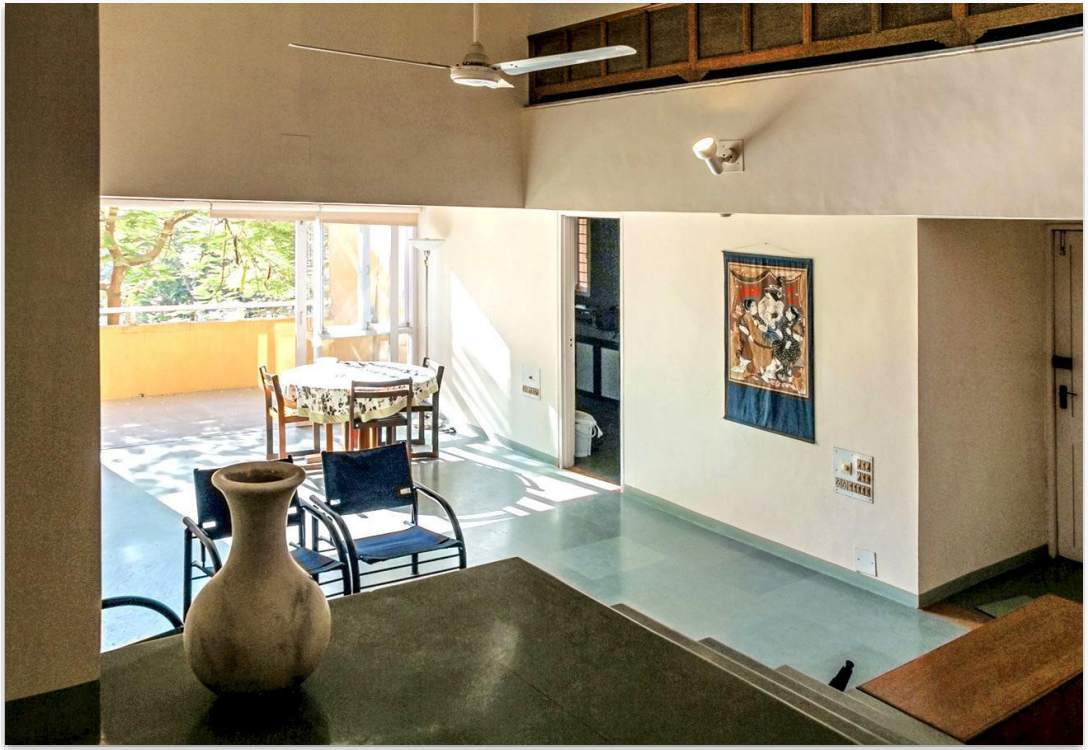


Fig. 3

Does it feel like an Apartment here?

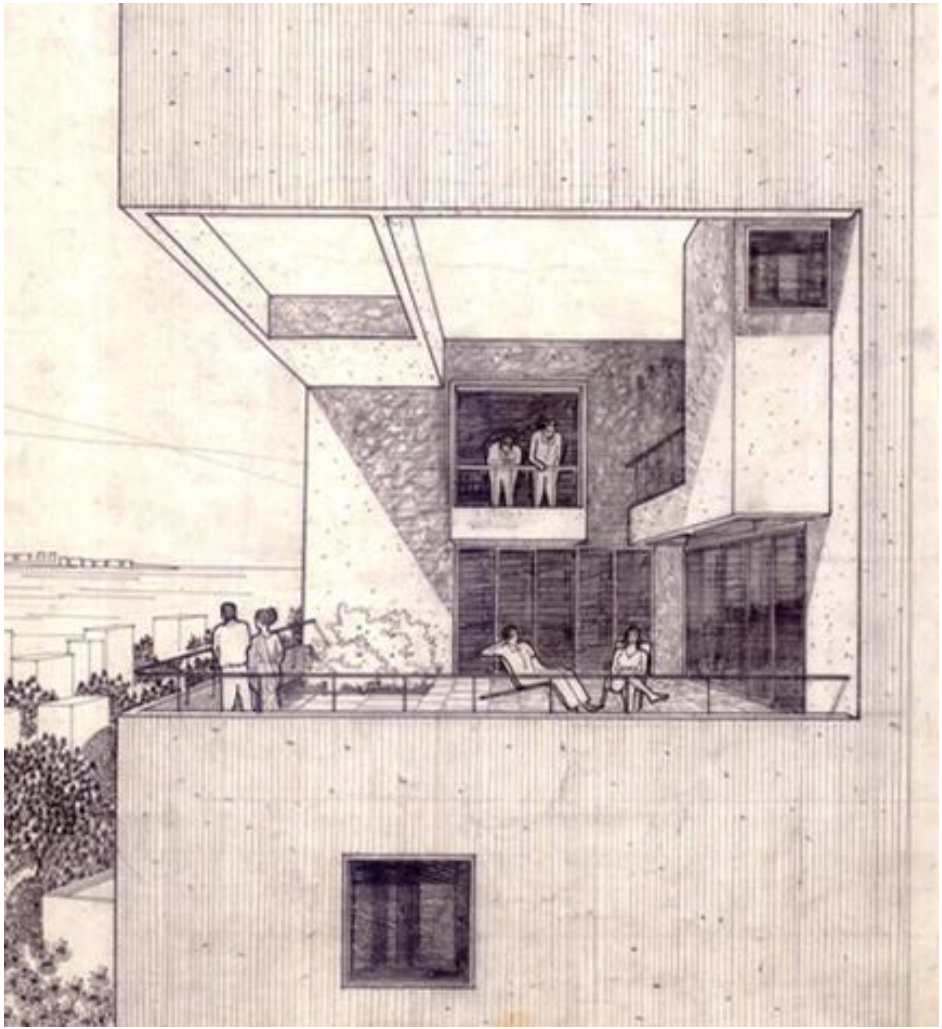


Fig. 4

Fig. 5

Does it feel like an Apartment here?

How to break away from the trap of 3 metre?

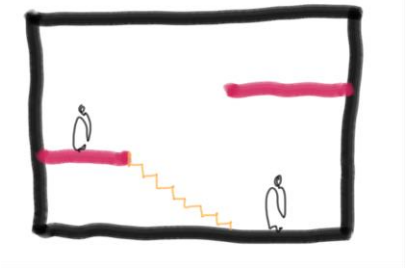
Can this be changed ?

Can we have varying heights within the units?

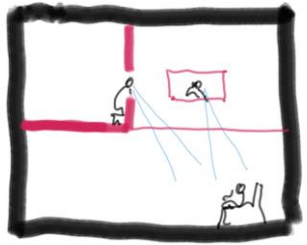
Is it possible to spread units vertically ??

what are the spatial benefits and practical challenges of building volumetrically varying units in the high rise apartments?

Three main Typologies emerged out of Volumetric Variations :



Split level Unit



Duplex with double height

Living room/balcony with more height

Fig. 6

What is interesting about these buildings ?

1.Interlocking enabled through Volumetric variation
2.Exterior facade : Visual Aesthetic
3.Spatial Quality

What does Volume do to an Unit ?

Fig. 7

Centre Point Apartment

HCP - Ahmedabad

Fig. 8

Kanchanjunga Apartments

Charles Correa - Mumbai

Fig. 9

Unité d'habitation

Le Corbusier - Marseille

Why don’t we have more buildings like these ?

Interlocking of Units

Kanchanjunga Apartments

Charles Correa - Mumbai

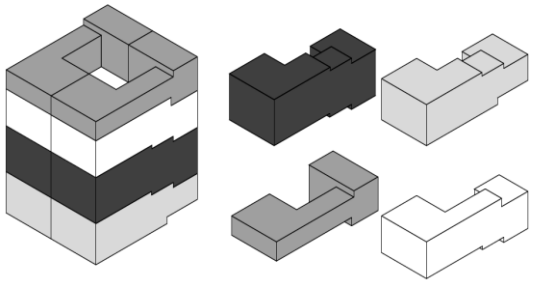


Fig. 10

Four different types of units are Interlocked

Unité d'habitation

Le Corbusier - Marseille

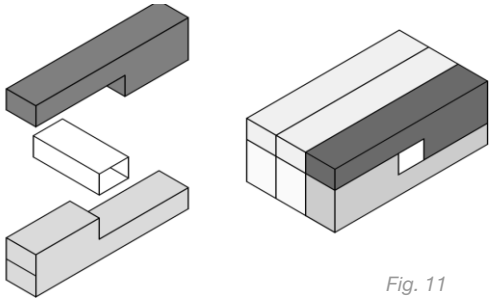


Fig. 11

Two different types of units are Interlocked

Centre Point Apartment

HCP - Ahmedabad

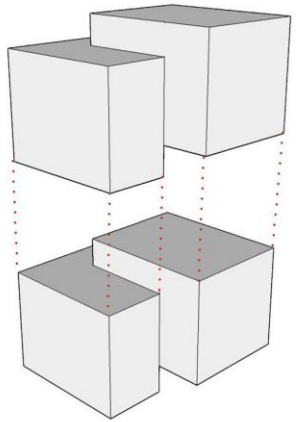


Fig. 12

Interlocking of two duplex units

Interlocking of Units

Kanchanjunga Apartments

Large tall Exterior spaces allow for greater experience of outdoors

Range of ceiling, heights and floor levels remove impression of standardisation of units

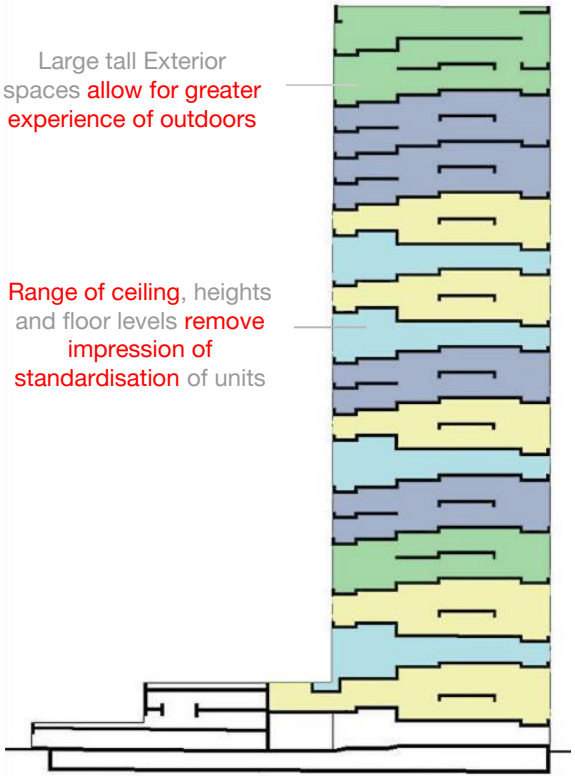


Fig. 13

Unité d'habitation

Efficient circulation Area in between the Interlocked units

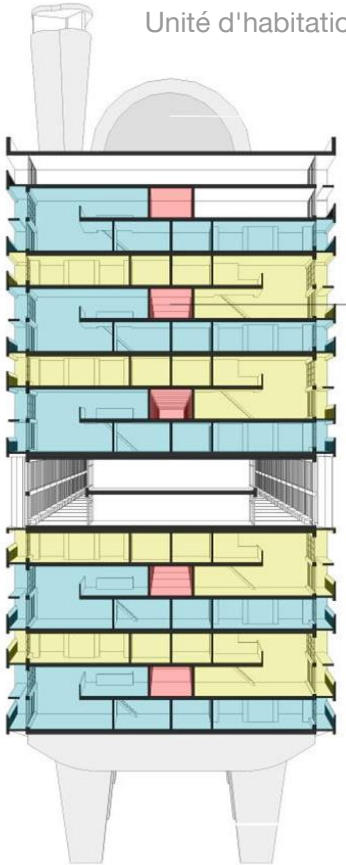


Fig. 14

Centre Point Apartment

One duplex unit

Split level of 1.5 metre for efficient circulation within the unit

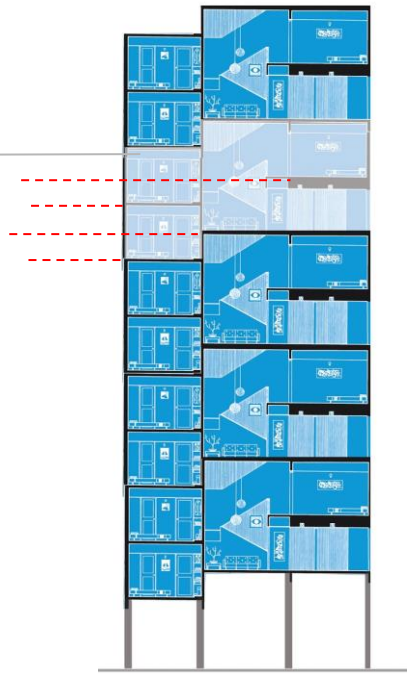


Fig. 15

Exterior facade : Visual Aesthetics

The volumetrically varying unit provides a higher likeliness to produce a wider range of Openings on the exterior , this different size of openings break up the building mass, provide greater visual interest and result in the Positive integration of the building into the immediate context

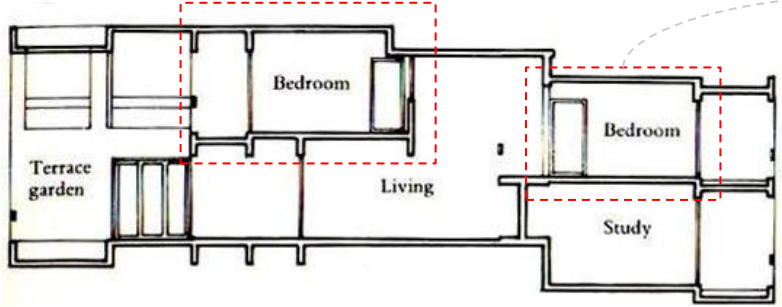
Fig. 16

Fig. 17

Fig. 19

Fig. 18

Privacy



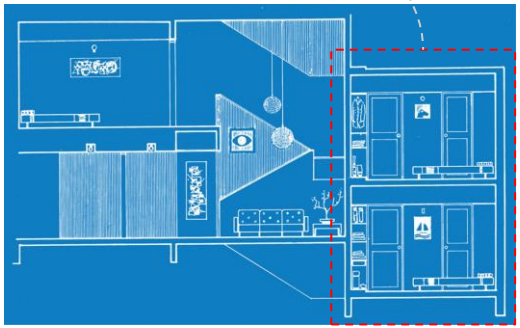
Kanchanjunga Apartments

Fig. 20

bedrooms on different level gives the privacy and comfort. While living spaces are design to have a range of heights, from the low sitting spaces, medium dining spaces or grand double height living spaces

Unité d'habitation

Fig. 21



Centre Point Apartment

Fig. 22

Developers thought

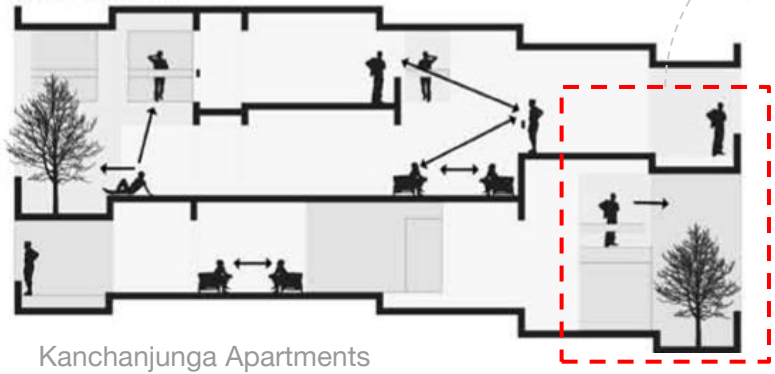
" the main problem that I know with the apartments is Privacy and in this case, you have double-height and you get bedrooms at different levels so that issue is resolved in such apartments, so these types of units are best suitable for a growing family with kids "

" it gives certain amount of convenience where ground level is for living, public , dining , grand parents and kids and upper level is for young married couple, the second generation "

Connection with Outside

A large double height exterior space is supplemented by smaller private terraces which are accessed off bedrooms and the kitchen.

Multiple deck increases outside space of apartment allowing for a range of uses in different times of day and weather conditions.The large double height openings and terrace garden reduces the perception of high-rise living.



Kanchanjunga Apartments

Fig. 23

Fig. 5

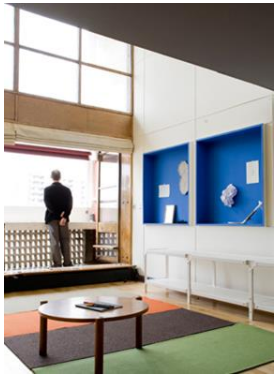


Fig. 24

Unité d'habitation

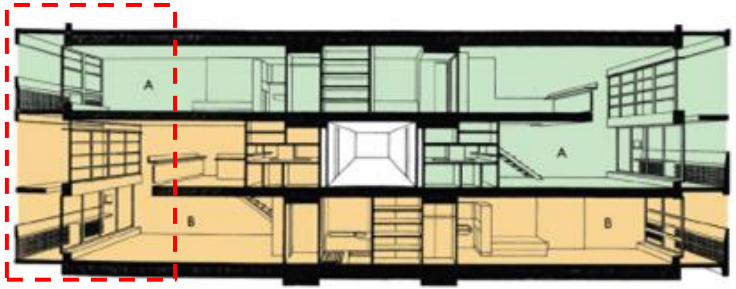


Fig. 21

Fig. 3

Centre Point Apartment

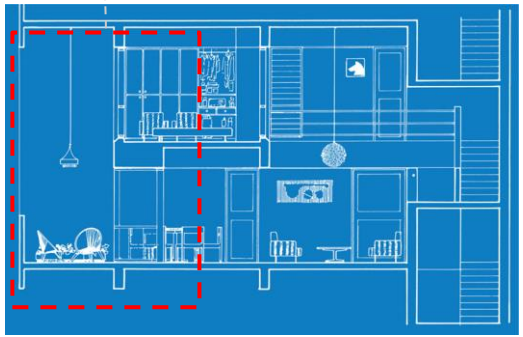
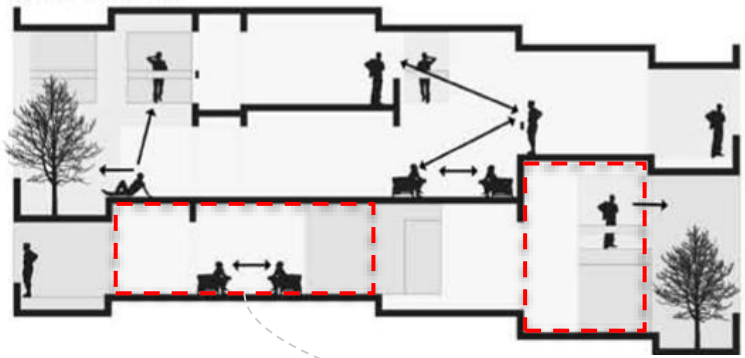


Fig. 22

Distinction of Public - Private



Kanchanjunga Apartments

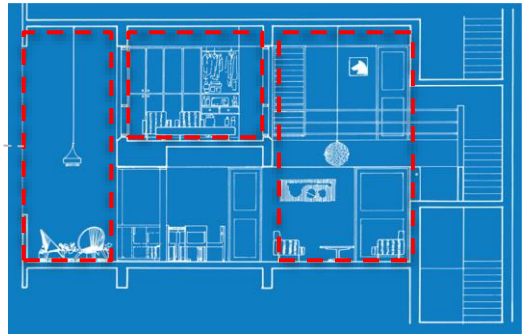
Fig. 23

The introduction of a range of floor and ceiling heights, results in split levels, shorter stairs and allows multiple views that connect different spaces better inside the unit

Important spaces are defined by change in floor or ceiling height. here, low ceilings imply intimacy (bedrooms) and high imply formality (living spaces)

Unité d'habitation

Fig. 21



Centre Point Apartment

Fig. 22

2. What are the practical challenges in making volumetrically varying units ? Or Why isn't it done often?

Abhishek Korat

Raghuvir Builders

Vivek Chauhan

Avantis Group

Bimal Shah

Tirth Developers

Dhaval Gajjar

Jagrut and Partners

what is the developers take on such explorations?

Need vs Luxury

Cost

Space efficiency

Regulations

Psychological Challenges

Construction

What are the Challenges to realise such projects?

Psychological Challenges

Developers mindset towards Volumetric units

" broader intention is to avoid a risk situation and have as much as standardization possible, not taking extra effort of certain kind "

" we look for more saleable area, people pay for more area, people don't pay premium rates for such things"

" duplex hasn't got same commercial success as in case of unit at one level, there is no as such enquiry in terms of duplex or a double height living room"

" limited amount with limited sqft. sectional play becomes difficult in affordable apartments, it is for luxury market "

What are the Challenges to realise such projects?

Psychological Challenges

Developers perspective on buyers mindset towards volumetric units

"why would people be ready to spend more? height is not something that people need it, that's not the quality as a society by and large people seek "

" what matters is what you have on the ground floor, all you remember about someone's house is the living spaces in front of you "

"Merely changing light bulbs requires a step ladder; so does.cleaning the room is much more strenuous than on the regular height.

Spiders tend to create their webs high above the level where we can't easily wipe them away. maintenance of the unit becomes problematic in such case "

" there has never been a demand collectively that put someone in a position to address it"

"people do feel the spatial benefits of such apartments but they might not be able to verbalise it or spell it out "

How much as a designer can we change this larger perception of the people and convince the developer for such projects ?

Regulations

Developers perspective on Regulatory limitations applicable to Volumetric units

" the height restrictions as per the road width, so if you use the permissible height allowed but don't consume the permissible FSI than that's a loss "

"Due to specific height restrictions we can't give double-height unit or different height than usual, because than the overall number of units produced will be less, giving additional height of one foot in a 10 storey building would cost us a loss of entire floor "

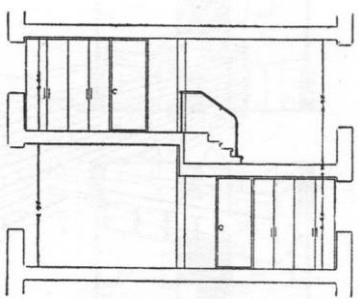


Fig. 25

Interlocking is the key?

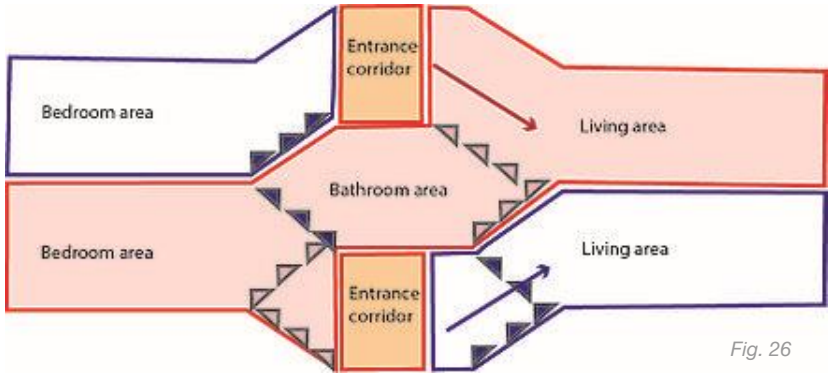


Fig. 26

Regulations

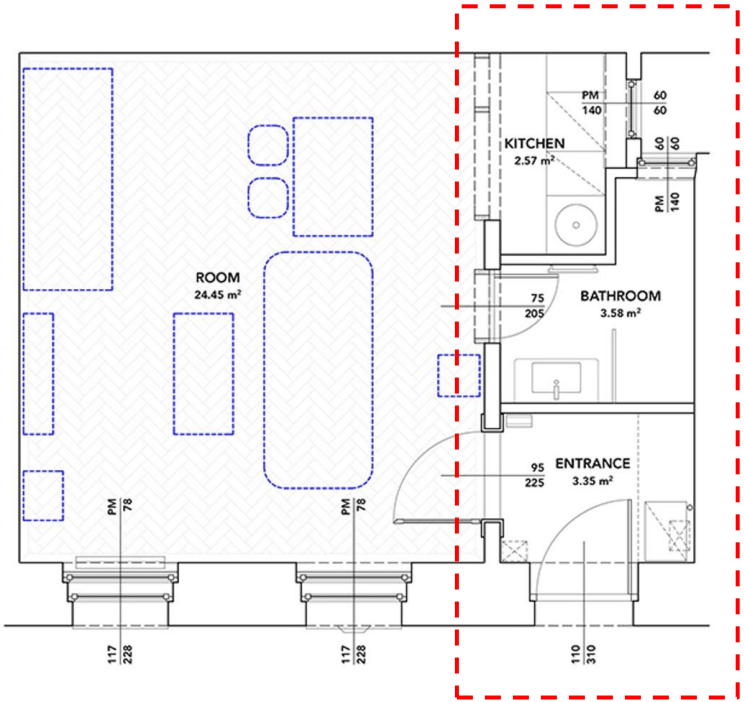


Fig. 27

Fig. 28

Regulations

Regulatory Restriction

"Mezzanine floor shall have a minimum clear height of 2.1 mts which may be allowed in a room at a minimum clear height of 2.1 mts from the finished floor level if; the area does not exceed 30% of the area of the enclosed space

Fig. 29

Can this 30% be at least 50% so that two rooms of appropriate size can be placed on the mezzanine level?

or

Can this percentage vary based on the area of the units ? ,
so larger the area the more percentage of mezzanine is allowed

13.1.8 Mezzanine

Mezzanine floor shall have a minimum clear height of 2.1 mts which may be allowed in a room at a minimum clear height of 2.1 mts from the finished floor level if; the area does not exceed 30 % of the area of the enclosed space.

Fig. 30

Construction Complexity

Developers perspective on construction related challenges of volumetric units

"It is difficult and tedious process for a small scale developer to come up with a construction cycle for one such building where time and money is used efficiently "

" support system needed for the shuttering is double the length, has to be customized "

"A fixed contractor who is doing frequent project with us at a tight rate might not be able to realise the project at the regular speed and required quality"

"Have to stop and wait at every intermediate level (split level), the overall construction process becomes a bit slow"

"Different setup required to paint and plaster high ceiling, may be a scaffolding "

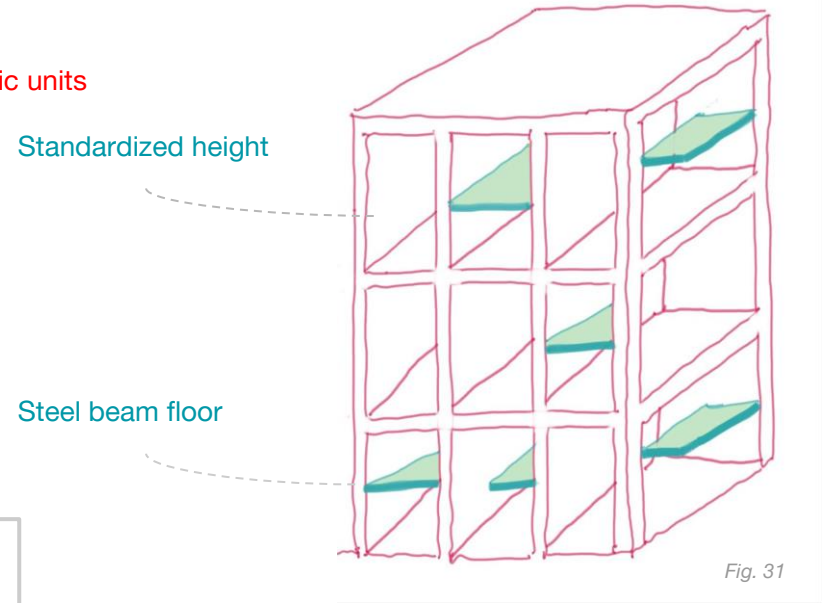


Fig. 31

Height of 5m or 6m can be standardized for the ease of construction and then The mezzanine level can be added with a steel beam as per the need and choice of people.

What are the Challenges to realise such projects?

Cost

Developers perspective on cost related limitations of volumetric units

" shuttering cost for the support system changes with the heighted ceilings double length is needed "

"Doing plaster and paint at 15 or 20 ft is costlier than doing plaster at 10 ft "

"by using the height efficiently It is preferred to make one building for utilizing the FSI fully, though the site is big because making the second building to make double height units involve a fixed set of cost, major foundation cost etc "

"The cost of the extra staircase within the unit and the cost of the non-habitable area in sq.ft occupied by the staircase"

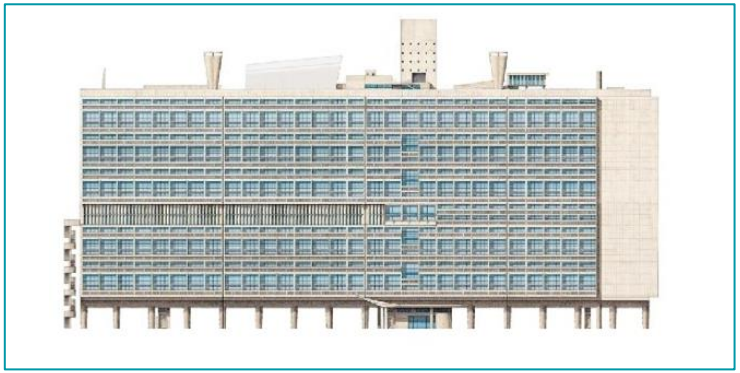


Fig. 32

A long block can be made to save on a set of fixed cost like staircase, foundation, etc for a new block.

What are the Challenges to realise such projects?

Space efficiency

Developers perspective on Space efficiency of volumetric units

"staircase occupies the space, it is not a part of the habitable space and so in affordable apartments each sq.ft matters, everything stops at budget "

" The unused double height "

"a 3500 sq.ft apartment can be a 4.bhk on a single level but when you try to make it on two different level it hardly becomes a 3.bhk"

"we are still not done with the floor plan,in that sense we are primitive and struggling with ground issues like resolving the layouts "

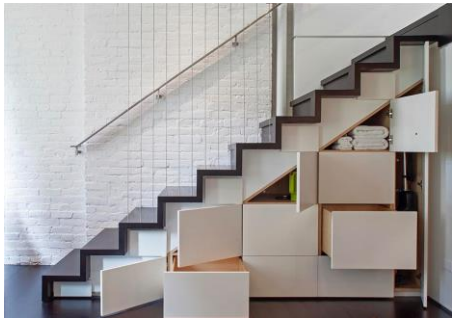


Fig. 33

A organized storage space under the staircase

Fig. 34

A compact lightweight staircase

Need vs Luxury

"Apartments 10-15 years back were trying to explore various typology in terms of height because the buyer back than was more attentive about their need and quality of living more than the things like status, amenities and money spent on interiors, at present these are things in which developers are cashing in to "

" projects that has crossed certain budget limit has started exploring double height (>1Cr) "

"The stage of window lintel has been eliminated, because of the construction time, now lintel for a projection is happening at beam level itself "

In 1990's average unit height was not less than 10-12 feet, a developer must consider 2.5 feet in total height for storage shelves or else people wouldn't buy it"

"crossing the limits of need, necessity "

Does Quality of living is directly proportional to the amount of money spent?

Why the increase in heights is always imagined in the multiple of 3, either its 3 m or double height? What is the In-between for height that is yet to be explored for the modern apartments in India ?

3 m - ??? - 6 m

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