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L'AVENIR CONSULTANCY PVT LTD, BANGALORE

VERTICAL TRANSPORTATION CONSULTANCY



AFFORDABLE HOUSING PROJECT,VIZAG- PHASE 1

TRAFFIC STUDY (FEBRUARY 2019)

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DETAILS RECEIVED FOR REVIEW

- Lift layouts
- Area Statement –To understand the floor services and Population
- Lift design data-Typical floor plans §ion

VIZAG -AFFORDABLE HOUSING PROJECT-PHASE 1

Type of building	RESIDENTIAL TOWERS
BLOCKS	ONE
No.of floors	SIX
HABITABLE FLOORS	STILT,1,2,3,4,5
Drawings-Section/typical floors	Concept design shared
Total occupied area-floor statement	Calculated from concept drawing
Population(approx)	Shared
Design with or with out MR	WITH MRL
Building constn.status	concept &Design stage
lifts serving terrace?	NO
Main lobby at?	STILT FLOOR
Lifts in initial design	5

Executive summary

- Design consideration - Two basic considerations, namely, the quantity of service required and the quality of service desired, determine the type of lifts to be provided in a particular building.

- **Quantity of Service.**

The quantity of service is a measure of the passenger **handling capacity** of a vertical transportation system. It is measured in terms of the total number of passengers handled during each five-minute peak period of the day.(HC)

- **Quality of Service.**

The quality of service on the other hand is generally measured by the passenger **waiting time** at the various floors.(WI)

***NBC 2016 Table 7 QUANTITY OF
SERVICE PART 8 SECTION
5A(Residential) –HANDLING CAPACITY***

<i>TYPE OF BUILDING</i>	<i>5 MIN HANDLING CAPACITY(% of population)</i>
High end Building	>8%
Mid end building	6-8%
Low end building	5-7%

NBC 2016 Table 8 QUALITY OF SERVICE PART 8 SECTION 5A(Residential)-WAITING INTERVAL

<i>ACCEPTABLE LEVEL</i>	<i>QUALITY OF SERVICE(in Sec)</i>
High end Building	<60 sec
Mid end building	60 to 80
Low end building	80 to 100

FLOOR HEIGHTS-PASSENGER LIFTS		
LMR CLEAR HT		
FLOOR LEVELS	OVER HEAD	
5		
4	3050	
3	3050	
2	3050	
1	3050	
STILT	3050	
PIT DEPTH		

ASSUMPTIONS MADE	
PARAMETERS	VARIABLES
TENANCY	RESIDENTIAL 2 BHK- 4 PERSONS
POPULATION CONSIDERATION FOR TRAFFIC STUDY	80% OCCUPANCY
DOOR OPEN TIME	VARIABLE
DOOR CLOSING TIME	VARIABLE
PASSENGER ENTRY/EXIT TIME	VARIABLE
AVG.HIGHEST FLOOR REACHED	VARIABLE
AVG.NO.OF STOPS MADE	VARIABLE

POPULATION			
	2 BHK		TOTAL
GF	38		
1st	44		
2nd	44		
3rd	44		
4th	44		
5th	44		
Total	258		258
Population per flat	4		
Total Population	1032		1032
		80% population	825.6

Considered scenarios into study

- Morning peak
- Evening peak
- Inter floor traffic

Traffic study results

LIFT TRAFFIC STUDY RESULTS SUMMARY

	CASE-1	CASE-2
OPERATION	DUPLEX	DUPLEX
SPEED(MPS)	1	1
CAPACITY(KG)	544	680
PERSONS	8	10
NO.OF LIFTS	2	2
MODEL	MRL	MRL
WAITING INTERVAL (HIGH RISE RESIDENTIAL BUILDING -DESIRED) IN SECONDS	HIGH END <60 MID END 60-80 LOW END 80-100	HIGH END <60 MID END 60-80 LOW END 80-100
WAITING INTERVAL (ACHIEVED)	37.7	39.6
HANDLING CAPACITY(MULTI TENANT OFFICE BUILDING -DESIRED -DESIRED) H.C%	HIGH END >8% MID END 6-8 % LOW END 5-7%	HIGH END >8% MID END 6-8 % LOW END 5-7%
HANDLING CAPACITY (ACHIEVED)H.C %	6.20%	7.30%

Recommendations

- We recommend Case-1 **with 2 nos. 8 Pax.capacity lifts(side by side) with shaft dimensions of 1850mm Wide x1850mm Deep & 1 no 13 pax capacity lift with deep car design is also recommended with shaft size of 1900mm Wide x2500mm Deep for goods carrying and medical emergencies to carry stretcher.**
- **All 3 lifts to be positioned in central core.**
- Speed-1 mps –owing to mid rise building
- Saving of 2 lifts from earlier design.
- We have given the Lift design options in central core and we suggest option 1 design. Please check with local fire norms just in case a fire lift is to be added to staircase design though building is only 5 floors height
- In case,the construction is with Myvan technology please ensure that the lift front walls are to be constructed later with block work.
- The waiting interval and handling capacity parameters are much with in permissable ranges for residential buildings,hence recommended.

LIFT DESIGN OPTIONS IN CENTRAL CORE

