



PORTFOLIO

Mohammad
07618001619
4th yr B

AP -401
ARCHITECTURAL
DESIGN

Submitted to:
Ar Gandharva
swami

INDEX

- **Site analysis**
- **Literature study**
- **Concept zoning**
- **Site plan**
- **Unit plans**
- **Cluster plan**
- **3D view**
- **Elevation**
- **Section**
- **remuneratives**

Site Analysis & Documentation

ADDRESS : SHASTRI MOHALLA PATPARGANJ SHAHDARA, DELHI, 110091
 AREA : 6.6 HECTARE (66000 MT SQ.)
 LANDUSE : RESIDENTIAL
 GOVERNANCE : RESIDENT WELFARE ASSOCIATION (DDA)

BUS : P.5 PANDAV NAGAR BUS STAND (90 M)
 RAILWAY STATION : ANAND VIHAR TERMINAL (6.8 KM)
 METRO : TRILOKIPURI SANJAY LAKE METRO STATION (1.8 KM)
 AIRPORT : INDIRA GANDHI INTERNATIONAL AIRPORT (22.3 KM)

LOCATION



HISTORY

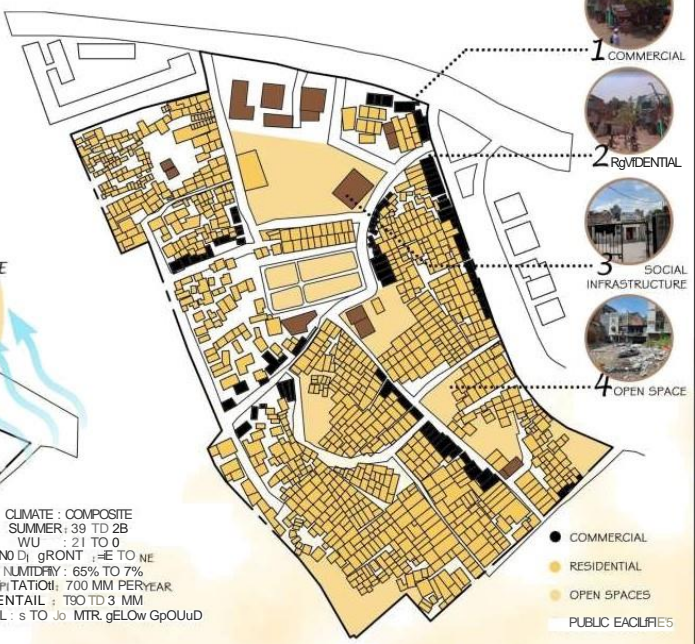
THE POPULATION COMPRISES MANY GENERATIONS OF MIGRANTS FROM UTTAR PRADESH AND BIHAR.
 THE OLD CAMPS OF SHASTRI AND JAWAHAR MOHALLA WERE ESTABLISHED AT THIS SITE.
 THE OTHER CAMPS CAME INTO EXISTENCE WHEN PEOPLE WERE EVACUATED FROM THE SITE OF ONE OF THEIR DAILY VISITS TO PATPARGANJ.



CLIMATE CONDITION



LANDUSE



COMMUNITY ZONES

- SHASTRI MOHALLA
- RAM PARSAD BISMIL CAMP
- MAHATMA GANDHI CAMP
- JAWAHAR MOHALLA
- KHOKA PATRI CAMP

SOCIO ECONOMIC

MEN : LABOURERS, DRIVERS, RICKSHAW PULLERS, OFFICE PEONS, PETTY SHOPKEEPERS AND REHRI WALAS
 FEMALE : WORKING AS MAIDS AND

THE AVERAGE MONTHLY INCOME IS RS. 8000-10,000/-

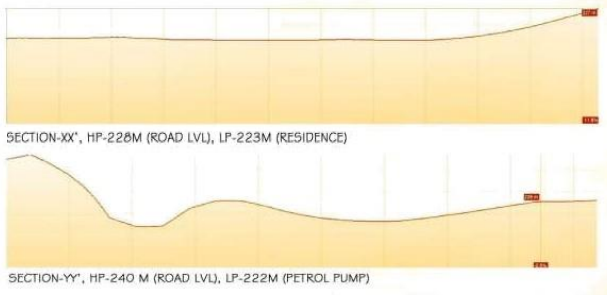
1 NEARBY PRIMARY, SECONDARY AND SENIOR SECONDARY SCHOOL RUN BY THE MCD IN THE VICINITY.



LANDMARKS & EXISTING STRUCTURES



SITE SECTIONS



SITE CONTEXT & SURROUNDINGS



ARCHITECTURAL DESIGN-VII (AP-401)
 B. ARCH, 4TH YEAR SEC B

SUBMITTED BY :
 AYUSHI TYAGI
 AYUSHI JANGID
 MOHAMMAD NJIT BLIATNASAR
 RITIL WALI
 SAYANI HOOI
 SHAMMI MAURYA

SUBMITTED TO:
 AR. SWATI PUNYAL
 AR. ABHINAV KESARVANI

SHEET NO :
 2 (A).

SCALE :

NORTH :

REMARKS :

NOTE :

APPROACH



■ MAIN STREET (20 M WIDE)
■ "SUB" STREET (3 TO 10 M WIDE)
■ LANES (0.9 TO 3 M WIDE)

BUILT SPACES



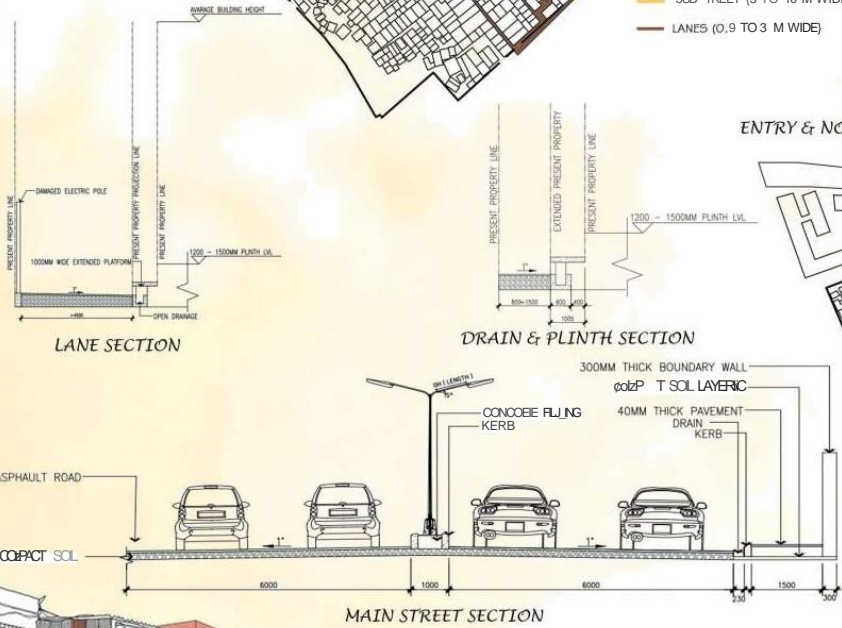
1 STREET HOUSES
 2 SUB STREET HOUSES

UNBUILT SPACES

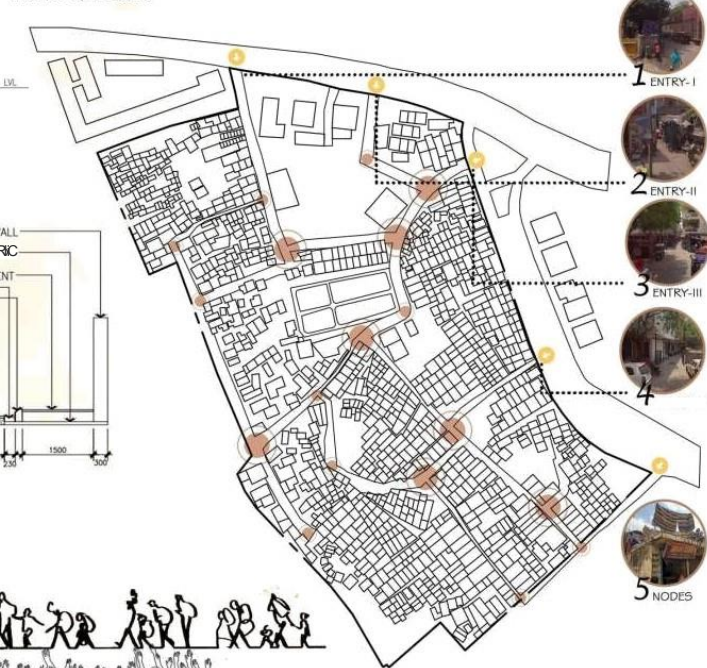


1 MCD PARKING
 2 STREET PARKING
 3 LANES PARKINGS
 4 PARKS

● PARKS / OPEN SPACE
● PARKING
● STREET PARKINGS
● EXISTING TREES



ENTRY & NODES



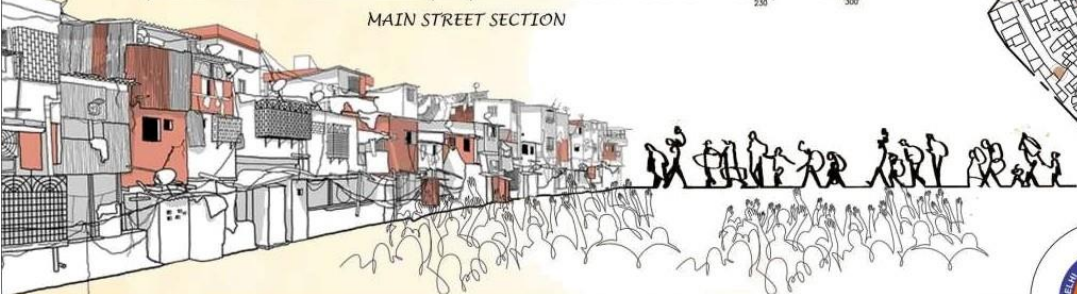
1 ENTRY-I
 2 ENTRY-II
 3 ENTRY-III
 4
 5 NODES

SERVICES



1 PUBMCTOLET
 2 ELE.SUBSTATION
 3 ELECTRICAL POLE
 4 DUMPYARD

● PUBLIC TOILETS
● STREET LIGHT POLES
● DUMPYARD ZONES
● ELECTRICAL SUBSTATION
— SEWAGE LINE



ARCH/TECTURAL
 DESIGN-VII
 (AP-401)
 B. ARCH, 4TH YEAR
 SEC B

SUBMITTED BY :
 AYUSHI TYAGI
 AYUSHI JANGID
 MOHAMMAD
 NJIT BLIATNASAR
 RITIL WALI
 SAYANI HOOI
 SHAMMI MAURYA

SUBMITTED TO :
 AR. SWATI PUNYAL
 AR. ABHINAV KESARVANI
 SHEET NO :
 2 (B).

SCALE :
 NORTH :

REMARKS :
 NOTE :

LOW COST HOUSING / AFFORDABLE HOUSING

LOW-COST HOUSING AND AFFORDABLE HOUSING ARE TERMS USED TO DESCRIBE HOUSING OPTIONS THAT ARE DESIGNED TO BE AFFORDABLE FOR INDIVIDUALS AND FAMILIES WITH LIMITED FINANCIAL RESOURCES, WHILE THEY ARE OFTEN USED INTERCHANGEABLY.

COST FOCUS: LOW-COST HOUSING PRIMARILY EMPHASIZES REDUCING CONSTRUCTION AND OPERATIONAL COSTS. THESE PROJECTS AIM TO MINIMIZE EXPENSES AT EVERY STAGE OF DEVELOPMENT, FROM LAND ACQUISITION TO CONSTRUCTION MATERIALS AND LABOR.

INCOME TARGET: LOW-COST HOUSING MAY TARGET PEOPLE WITH VERY LOW INCOMES, INCLUDING THOSE LIVING BELOW THE POVERTY LINE.

SUBSIDIES: IT MAY INVOLVE GOVERNMENT SUBSIDIES OR GRANTS TO MAKE THE HOUSING UNITS MORE AFFORDABLE.

BASIC AMENITIES: LOW-COST HOUSING MAY PROVIDE BASIC AMENITIES BUT MAY NOT OFFER AS MANY AMENITIES OR FEATURES AS AFFORDABLE HOUSING.

FUNDING

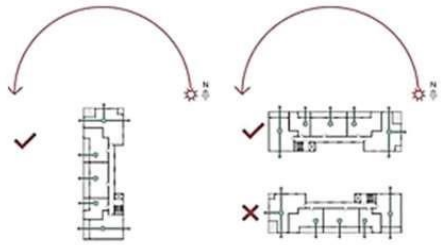


Developers offering low-cost housing	Monthly income	Measures required
<ul style="list-style-type: none"> Essex Group DBS Communities Tata Housing Mahindra Lifespaces Vastushodh Projects 	<ul style="list-style-type: none"> EWS: < Rs 5000 LIG: Rs 5000 - Rs 7500 	<ul style="list-style-type: none"> Land to be provided by government Optimal floor space index Tax exemptions New-age construction technologies Financial aid to buyers

SITE SELECTION AND CONNECTIVITY OF SPACES

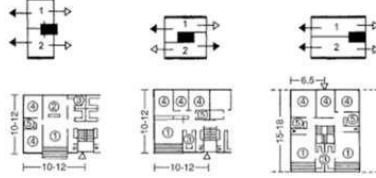
ORIENTATION

- ORIENTATION OF THE BUILDING IN DESIGN BUILDING IN SUCH A WAY THAT RECEIVES MAXIMUM VENTILATION AND NATURAL LIGHT IN ALL CLIMATE CONDITIONS.
- IT PROVIDED COMFORTABLE LIVING CONDITIONS INSIDE THE HOUSE/BUILDING AND HAVE ENERGY BILL.



FOUR MOUNTAIN IZELMETER

- TWO DWELLING UNITS PER FLOOR
- UNITS AROUND A CENTRAL CORE
- PROVIDES A GOOD BALANCE BETWEEN LIVING QUALITY AND ECONOMY.
- ALLOWS A VARIETY OF PLANS WITH SPACING AND COLUMN ORIENTATION.



THREE DWELLING UNIT PER FLOOR

- OUR A GOOD MIX OF ECONOMIC AND LIVING QUALITY

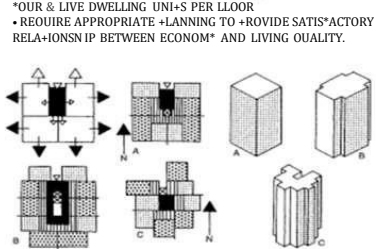
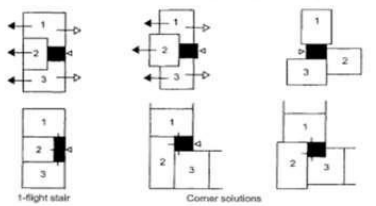
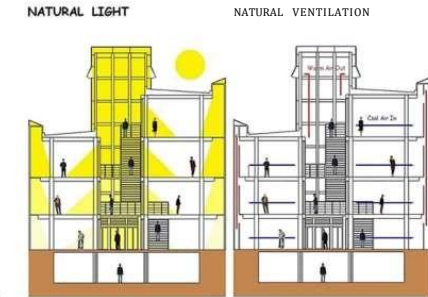


Table 4.5 Size of Ventilation Shaft

Height of Building (m)	Size of ventilation shaft (sq m)	Minimum size of shaft (m)
Upto 10.0	0.80	0.80
Upto 12.0	0.90	0.90
Upto 14.0	1.00	1.00
Upto 16.0	1.10	1.10
Upto 18.0	1.20	1.20
Upto 20.0	1.30	1.30



LIVING AREA SHOULD BE LOCATED ADJACENT TO THE ENTRANCE.

- DINING SPACE LOCATED IN A COMBINED LIVING DINING OR SEPARATE DINING ROOM COULD BE DIRECT ACCESS TO THE PITCHEN.
- KITCHEN SHOULD BE LOCATED IN PROXIMITY TO THE PRIMARY ENTRANCE DOOR OF THE UNIT.
- BEDROOM SHOULD BE LOCATED IN PRIVATE AREA.
- BATHROOM SHOULD BE CONVENIENTLY ACCESSIBLE TO ALL ROOMS MAYBE ATTACHED.

- (1). ENTRANCE
- (2). LOYER
- (3). LIVING ROOM
- (4). DINING ROOM
- (5). KITCHEN
- (6). MITCHEN
- (7). GALLERY
- (8). BEDROOM
- (9). BEDROOM
- (10). BEDROOM POWDER ROOM

PUBLIC → SEMI-PUBLIC → PRIVATE → PRIVATE

SPACE ANALYSIS

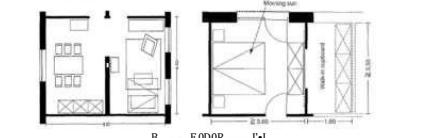
BUILDING REQUIREMENT IN RESPECT OF DWELLING UNITS UPTO 45 TO MT. IN SIZE WILL CORRESPOND TO TABLE AND AT APPLICABLE POINTS UPTO HQ M.

Table 4.2 Minimum Size and Width of Different Components of Residential Premises

Sl. No.	Component of Building	Area	Min. requirement for plots upto 50 sq. m.	Min. requirement for plots above 50 sq. m.	
1	Habitable Rooms	Area	7.50 sq. m	9.50 sq. m	
		Width	2.14 m	2.75 m	
		Height	2.75 m	2.75 m	
2	Kitchen	Area	3.30 sq. m.	4.50 sq. m.	
		Width	1.90 m.	1.90 m.	
		Height	2.75 m.	2.75 m.	
3	Pantry	Area	Not applicable	Area	3.00 sq. m.
		Width	Not applicable	Width	1.40 m.
		Height	Not applicable	Height	2.75 m.
4	Bathroom	Area	1.30 sq. m.	1.80 sq. m.	
		Width	1.00 m.	1.20 m.	
		Height	2.20 m.	2.20 m.	
5	W.C.	Area	1.80 sq. m.	1.80 sq. m.	
		Width	0.90 m.	0.90 m.	
		Height	2.20 m.	2.20 m.	
6	Combined Bath & W.C. (Toilet)	Area	1.80 sq. m.	2.80 sq. m.	
		Width	1.00 m.	1.20 m.	
		Height	2.20 m.	2.20 m.	
7		Area	No restriction	Area	2.30 sq. m.
		Width	No restriction	Width	0.75 m.
8		Area	2.30 m	2.30 m	
		Width	0.75 m	0.75 m	
9		Area	2.30 m	2.30 m	
		Width	0.75 m	0.75 m	
10		Area	14.85 sq. m.	14.85 sq. m.	
		Width	2.75 m.	2.75 m.	
		Length	2.40 m.	2.40 m.	
		Height	2.20 m.	2.20 m.	
11		Area	1.00 m.	1.00 m.	
		Width	0.90 m.	0.90 m.	
		Height	2.20 m.	2.20 m.	
12		Area	0.90 m.	0.90 m.	
		Width	0.75 m.	0.75 m.	
		Height	2.00 m.	2.00 m.	
14		Area	0.75 m.	0.75 m.	
		Width	No restriction for internal ladder.	No restriction for internal ladder.	

LIVING ROOM

- AN INDIVIDUAL ROOM WHICH CAN BE USED FOR A WIDE RANGE OF FUNCTIONS.
- IT HAS AN AREA OF APPROX. 13 SQM, INCLUDING MOVEMENT AREAS.
- IT SHOULD BE WELL-LIGHTED AND HAVE A BALCONY.

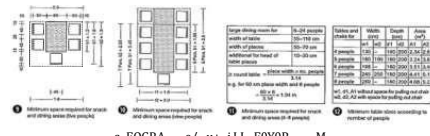


BEDROOMS WITH MINIMAL SPACE OF APPROX. 13 SQM (A5 + AKENT'S ROOM OR TWIN BEDROOM) AND APPROX. 8 M² (SINGLE ROOM).

- USE OPTIONS FOR A GENEROUS TWIN BEDROOM OF 16.5 M², WHICH COULD BE PARTITIONED.

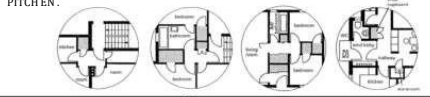
DINING AREA

- THE DINING AREA SHOULD BE LAID OUT TO ACCOMMODATE A LARGE ANTICIPATED SIZE OF HOUSEHOLD.
- IT SHOULD ALWAYS HAVE SPACE FOR AT LEAST 4 PEOPLE.



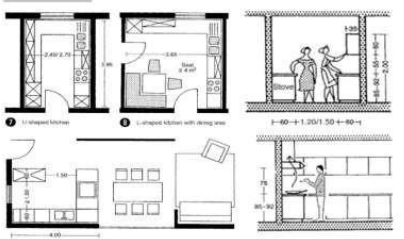
STORAGE SPACE SHOULD BE PROVIDED WITH AN AREA OF 1.1 M² WITH A CLEAR WIDTH OF 75 CM.

- IN LARGER PLATE, STORAGE AREA SHOULD BE PROVIDED AT 3-ORANGE SPACE.
- IT IS PRACTICAL TO LOCATE A KITCHEN STORAGE AREA NEAR A KITCHEN.



KITCHEN

- WITH DINING AREAS CAN BE PLANNED FROM APPROX. 10 SQM.
- A GOOD ARRANGEMENT IS AN L-SHAPE WITH DOORS CONNECTING TO THE LIVING ROOM AND CORRIDOR. AREA APPROX. 14 M².
- AT LEAST A WINDOW NOT LESS THAN 1 HQ M. IN AREA OPEN DIRECTLY TO AN INTERIOR OR EXTERIOR OPEN SPACE, BUT NOT INTO A BALCONY.



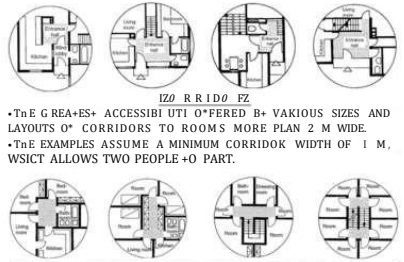
BATHROOM

- WALLS SHALL OPEN TO EXTERNAL AIR AND SHALL HAVE A MINIMUM OPENING IN THE FORM OF WINDOW OR VENTILATION TO THE EXTENT OF APPROX. 3.7 HQ M.
- A TOILET ON TERRACE HAVING A MAXIMUM OF 2.2 MT. HEIGHT SHALL BE TERMED SUBJECT TO CONDITION THAT IT SHALL BE COUNTED IN FAR.

Washbasin, hand basins and bidets	Area required	
	Width (cm)	Depth (cm)
1. single washbasin	≥60	≥55
2. double washbasin	≥120	≥55
3. built-in vanity unit with one washbasin and cupboard underneath	≥70	≥60
4. built-in vanity unit with two washbasins and cupboard underneath	≥140	≥60
5. hand basins	≥45	≥35
6. bidet, floor-standing or wall-hanging	40	60
7. bathtub	≥170	≥75
8. shower tray	≥80	≥60
WCs and urinals		
9. WC with wall installation or pressure flush	40	75
10. WC without cistern (with cistern installed in wall)	40	60
11. urinal	40	40
Laundry equipment		
12. washing machine	40-60	60
13. washer/dryer	60	60
Bathroom furniture		
14. low cupboards, wall cupboards, high cupboards	according to manufacturer	
* for shower trays, width = 90 also 75 cm		

ENTRANCE

- THE ENTRANCE WALL SHOULD BE ENCLOSED EXCEPT THE ENTRANCE LEADS DIRECTLY TO THE OPEN AIR WITH AN INNER DOOR (WIND LOBBY FUNCTION).
- IT SHOULD ALSO BE A WELL-LIGHTED ROOM FOR A LOT OF MOVING AROUND FOR CIRCULATION.



Corridor type	Lite traffic	Heavy traffic
doors one side, opening into the rooms	0.90 m	1.30 m
doors both sides, opening into the rooms	1.60 m	1.60 m
doors one side, opening into the corridor	1.40 m	1.60 m
doors both sides, opening into the corridor	2.20 m	2.20 m
doors both sides and opposite each other, opening into the corridor	2.40 m	2.60 m

LITERATURE STUDY-LOW COST HOUSING OF AFFORDABLE HOUSING



ARCHITECTURAL DESIGN-VII AP-40 I

SUBMITTED BY :
AYUSHI TYAGI
AYUSHI JANGID
MOHAMMAD RANJIT BNATNAGAK
RITIK WANI
SAYANI HOOI
SUAMMI MAUKYA

SUBMITTED TO :
AR. SWATI PUNYAL
AR. ARBINAV KESARKANI

SHEET NO :
1 (A).

BARCELONA, 4th YEAR / SEC B

Demographics & User Analysis

SITE DEMOGRAPHICS

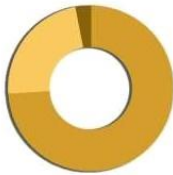
(AS PER DELHI URBAN ART COMMISSION)
 OWNERSHIP = DELHI DEVELOPMENT AUTHORITY
 STATUS = SLUM
 TOTAL SITE AREA = 6.18 HA
 OPEN AREA = 1.18 HA
 TOTAL SLUM AREA = 5.34 HA
 GROUND COVERAGE = 46.3%
 EXISTING FAR = 1.13
 OWNER POPULATION = 10505
 RENTED POPULATION = 10000
 GROUP POPULATION = ZOSOS
 EXISTING DWELLING UNITS = 4556
 POPULATION PER UNIT = 663
 PEOPLE PER DWELLING UNIT = AVG. 6
 AVG. UNIT SIZE = 9.12 SQ. M



POPULATION
 MALE 52.81%
 FEMALE 47.19%



CHILD POPULATION
 MALE CHILD 52.09%
 FEMALE CHILD 47.91%



RELIGION
 MUSLIM (74.96%)
 HINDU (23%)
 OTHERS (3%)

SOCIO-ECONOMIC CHARACTERISTICS

THE MEN WORKING IN THE SLUM ARE LABOURER, DRIVER, RICHLAW-PULLER, OFFICE PEON, PETTY SHOPKEEPER, AND REPAIRMAN.
 MANY WOMEN ARE WORKING AS MAIDS AND THOSE WHOSE AVERAGE HOUSING INCOME IS 2 RR, 8000-10,000.
 THERE ARE PRIMARY, SECONDARY AND SENIOR SECONDARY SCHOOLS RUN BY THE MCD IN THE VICINITY.



LITERACY RATE
 LITERATES 75.61%
 ILLITERATES 24.37%



WORKING POPULATION
 WORKING 34.60%
 NON WORKERS 65.40%

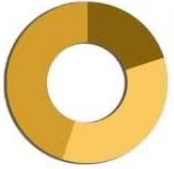
Existing Conditions

STRUCTURE

THE AVERAGE SIZE OF DWELLING UNITS IS 9-20 SQ. M.
 THE RENTED POPULATION MUST LIVE IN UPPER LEVEL.

Plot Sizes (sq m)	No. of Units (%)
Less than 7	20
7-15	35
15-25	26
25-35	14
>35	5

TYPOLOGIES
 WITH SELF-SELECTING FAMILIES OF INCREASING NUMBERS.
 IN SOME CASES, ADDITIONAL FLOORS HAVE BEEN ADDED TO BE RENTED OUT TO ENHANCE THE FAMILY INCOME.



EVENED FAMILY - 45%
NUCLEAR FAMILY (3-4 PEOPLE PER ROOM) - 35%
RENTED LIVING (MOSTLY SINGLE MEN) - 10%



DU TYPOLOGIES WERE MAINLY OF 2 TYPE:
 ONE WHICH WAS CONSTRUCTED MANY YEARS AGO, BUILT WITH TEMPORARY MATERIALS AND ARE IN VERY POOR CONDITION NOW.
 ONE WHICH WAS CONSTRUCTED IN THE LAST FEW YEARS IN BETTER CONDITIONS AND WEATHER-PROOF CHANGE ARE PRETTY STABLE AND ARE IN BETTER STATE COMPARED TO THE OTHERS.

MATERIALS

WALLS WERE MADE OF EXPOSED BRICK AND WERE NOT FINISHED.
 ROOMS WERE SUPPORTED THROUGH GIRDER BEAM IN OLD HOUSES WHERE IN NEW ONES USE OF RCC SLAB & WIRE TO BEAN FOR SOME NEWLY CONSTRUCTED BUILDING.



THE AVERAGE STREET WIDTH VARIES FROM 0.75 M TO 1.5 M

VERTICAL ACCESSIBILITY

STAIRCASES WERE BUILT NARROW ABOUT 0.6M AND LEAVE RISERS ABOUT 0.3M.
 OLD STRUCTURES ARE ONLY IN GROUND FLOOR. ONE'S WHICH ARE LABEL EXPANDED ARE CONNECTED THROUGH MOBILE VERTICAL LADDERS.
 PLINTH OR OLD WOME ARE BELOW ROAD LEVEL WHICH CAUSED BAINWATER INTO THEIR HOMES.
 TO AVOID THIS ISSUE, THE NEW ONES SIEVE HIGH PLINTHS TO AVOID WATER FROM HANGING OUT PLACE.



Slum Survey

BACKGROUND

PEOPLE MIGRATE FROM BIHAR, BEHAR, WEST BENGAL OF UP AND ODISHA AND ARE RESIDENTS OF PATPARGANJ SLUMS SINCE LAST 2 GENERATIONS ALMOST



- ANGANWADI TEACHER

"FOR THE PAST 25 YEARS, I HAVE BEEN SERVING HERE AND HAVE SEEN A LOT OF CHILDREN LOSE THEIR CHILDHOOD DUE TO LACK OF FACILITIES AND TO FULFILL THEIR BASIC NEEDS"

SUPPORT FROM GOVERNMENT

AROUND 2 GOV RASHION PORTS ARE PROVIDED INSIDE THE COMPLEX FOR THE RESIDENTS
 16 ANGANWADIS AND 2 GOV DAYCARE WHICH ALSO PROVIDES COMPUTER AND BEAUTY CLASSES TO PEOPLE DURING THE EVENINGS



- RESIDENT

"WE LIVE IN A HOME THAT DOESN'T FEEL LIKE HOME. WE OFTEN PREFER STAYING OUT AND COME HOME TO ONLY SLEEP."

OCCUPATION

MEN WORK IN SHOPS AND AS LABOURS AND RICKSHAW DRIVERS ETC WHILE A 2 WOMEN WORK AS HOUSEWIVES, AIDS USUALLY GO TO SCHOOL AND THE ELDER CHILD HELPS AT HOME TOO

ECONOMIC EXPENSES

FAMILIES USUALLY HAVE ATLEAST 2 CHILDREN WHICH CAN RISE UP TO 6 AND THE OVERALL FAMILY INCOME COMBINED IN AROUND 8000-10000 WHICH IS NOT ENOUGH TO COMBAT FINANCIAL ISSUES, USUALLY HOUSES ITSELF HAS 2 STOPS AND THE TOP FLOOR OF THE STRUCTURE IS USUALLY USED FOR RENTAL PURPOSES.



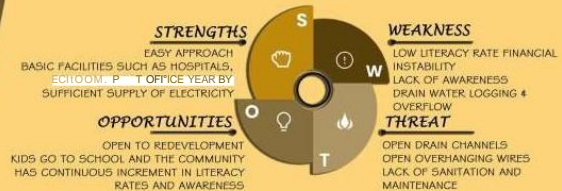
- CRECH INCHARGE

"OVER THE YEARS, I HAVE SEEN SO MANY PEOPLE COME FOR SURVEYS AND PROMISE US FOR A BETTER TOMORROW, BUT THOSE WORDS NEVER TURN IN ACTIONS!"

SAFETY AND OTHER CONCERNS

OPEN DRAIN UP TO 8FT DEEP HAVE BEEN CHILDREN DROWING AND UNMANAGED OVERHANGING HAVE CAUSED ELECTRIC SHOCK CASES IN THE PAST. CREATION OF BACTERIA, DISEASES AND MOUTHOIT DUE TO LACK OF SANITATION HAS CAUSED VARIOUS HEALTH CONCERNS. OTHERWISE THE COMMUNITY FOR FEMALES AND CHILDREN AS SAID BY THE RESIDENTS.

Inferences



MAJOR ISSUES AS NOTICED:

LACK OF VENTILATION AND LIGHT
 LACK OF SANITATION AND MAINTENANCE
 LACK OF COMMUNITY SPACES
 LACK OF PLACE FOR CHILDREN TO PLAY
 MANAGEMENT OF SEWAGE AND DRAINAGE SYSTEM
 EXCESSIVELY SMALL PATHS FOR PEOPLE AS WELL AS 2 WHEELERS

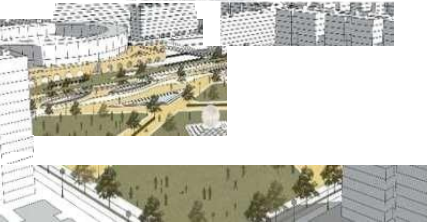
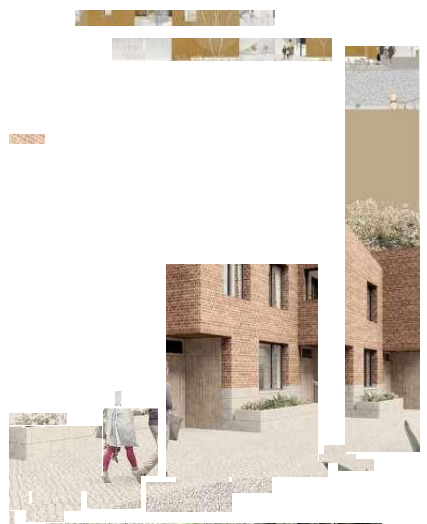
BASIC REQUIREMENTS NEEDED AS NOTICED:

WATER SUPPLY
 SANITATION AND OTHER SERVICES
 IMPROVED ROAD AND SLOPED PLACES FOR CHILDREN TO PLAY
 COMMUNITY SPACE FOR GATHERINGS

BIBLIOGRAPHY

- DELHI DEVELOPMENT AUTHORITY HAND-BOOK FOR RESIDENTIAL LANDUSE MAP 2021 DELHI DEVELOPMENT AUTHORITY MASTERPLAN 2021 DELHI DEVELOPMENT AUTHORITY THERYERLAN 2021 RIPO MUNICIPAL COORDINATION OF DELHI 2001
- NATIONAL BUILDING CODE 2016
- CENSUS 2011
- DELHI URBAN ARTS COMMISSION
- UTILITY JACOUSTEK9
- OUTCITY.COM
- ZONAL PORT
- REPAIR & SANITATION AND OTHER SERVICES
- 5W M AND USED IN STRUCTURE FOR SLOPED PLACES FOR CHILDREN TO PLAY
- COMMUNITY SPACE FOR GATHERINGS





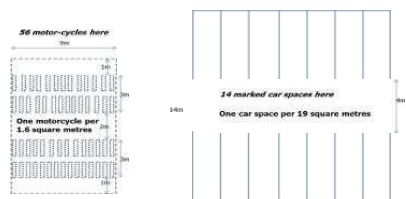
DEVELOPMENT OF GROUP HOUSING WILL BE UNDER PROVISION OF MASTER PLAN, ENCLAVE DEVELOPMENT PLAN AND LAYOUT PLAN. MINIMUM AREA OF PLOT WILL BE 2000 SQ.M
THE NUMBER OF DWELLING UNITS AT CALCULATED ON THE BASIS OF THE DENSITY PATTERN GIVEN IN THE DEVELOPMENT PLAN TAKING INTO CONSIDERATION A POPULATION OF 4.5 PERSONS PER DWELLING UNIT.
GROUP HOUSING MAY BE PERMITTED IN CLUSTER HOUSING CONCEPT.
BUILDING EQUIPMENT IN RESPECT OF DWELLING UNITS ABOVE 45 SQ.M, APPLICABLE TO ABOVE 50 SQ.M PLOTS SIZE.
WHEN THE SITE FRONT ON TWO OUTLETS, THE FRONTAGE WOULD BE ON THE STREET NAVING THE LARGER WIDTH.
IN CASE, WHERE THE TWO ALTERNATE OPEN NAME WIDTH, THEN THE LARGER DEPTH OF THE SITE WILL DECIDE THE FRONTAGE AND OPEN SPACE. IN SUCH CASE THE LOCATION OF A GARAGE (ON A CORNER PLOT) IN PROVIDED WITHIN THE OPEN SPACES SHALL BE LOCATED DIAGONALLY OPPOSITE TO THE POINT OF INTERSECTION.

THE WIDTH OF THE MAIN STREET ON WHICH THE BUILDING ABOUT SHALL NOT BE LESS THAN 12.0 M.
IF THERE AT ANY BENDS OR CURVES IN THE APPROACH ROAD, SUFFICIENT WIDTHS SHALL BE PERMITTED AT THE CURVE TO ENABLE THE WIRE TENDER TO TURN, THE TURNING CIRCLE SHALL BE AT LEAST OF 1. M. RADIUS.
THE APPROACH TO THE BUILDING AND OPEN SPACE ON ITS ALL SIDES UPTO 6.0 M. WIDTH AND LAYOUT OF THE NAME SHALL BE DONE IN CONSULTATION WITH THE CONCERNED WIRE OFFICER AND THE NAME SHALL BE OF LIARD SURFACE CAPABLE OF TAKING THE WEIGHT OF WIRE TENDER, WEIGHING UPTO 22 TONES NOK LOW RUE BUILDING AND 45 TONES NOK BUILDING 15 M., AND ABOVE IN HEIGHT. TIME RAID OPEN SPACE SHALL BE DEPT FREE OF OBSTRUCTIONS AND SHALL BE MOTORABLE.
LAND PROPOSED FOR GROUP HOUSING WILL BE LOCATED AT 12M SIDE OF EXISTING ROAD, BUT THE DISTANCE OF THE PLOT FROM 18M (OR ABOVE) WIDE ROAD WILL NOT BE MORE THAN 100M.
A RIG ID OF WAY OF AT LEAST 6M WIDTHS SHOULD BE PROVIDED. MIN. WIDTH OF PEDESTIAN PATHS SHALL BE 3M.

SETBACKS
IN GROUP HOUSING BUILDINGS WITH HEIGHT OF 12.5 M WILL HAVE A SETBACK OF MINIMUM 5.0 M AROUND.
BUILDING HEIGHT BELOW 24M THE SETBACK FROM ALL SIDES IS LEFT THAN 6M.
IF THE PERCENTAGE OF SETBACK IS 1/3RD OF THE BUILDING HEIGHT IT.
NO CONSTRUCTION IN SETBACK AREA.

FAR KING
ONE CAR PARKING SPACE NOK EVERY TWO FLATS UPTO 90 SQ.M FLOOR AREA AND ONE FOR EVERY FLAT FOR 100 SQ.M
NOK UPTO 100 PARKING SPACE, ONE DESIGNATED ACCESSIBLE PARKING SPACE SHALL BE PROVIDED.
SHALL FLOOR WILL BE PERMITTED NOK THE PURPOSE OF PARKING IN GROUP HOUSING BUILDINGS, HEIGHT OF WHICH IS MORE THAN 1 M UP TO THE BEAM.
IF SHALL FLOOR IN USED NOK PURPOSE OTHER THAN PARKING THEN IT WILL BE COUNTED IN P.A.R.
PURTHER 50% OF THE OPEN SPACE REQUIRES AROUND BUILDING UNDER 0 MAYBE ALLOWED TO BE UTILIZED NOK CAR PARKING OR LOADING OR UNLOADING SPACE, PROVIDED A MIN. DISTANCE OF 3.6 M AROUND THE BUILDING IN NPT. FREE FROM ANY PARKING.
FOR CAR, THE MIN PARKING SPACE TO BE 3 X 6 M FOR INDIVIDUAL, 2.75 X 5 M WHEN COMMON PARKING.
SPACE NOK TWO WHEELER TO BE NOT LESS THAN 1.25 M HQ. AND 1 M HQ.
AGA NOK EACH EQUIVALENT CAR SPACE INCLUSIVE OF CIRCULATION AREA IN 23 M HQ. FOR OPEN PARKING, 20 M HQ. FOR GROUND FLOOR COVERED PARKING.

Two-wheeler parking is space efficient



My measurements of parking dimensions in a park-and-ride lot in Bogor, Indonesia

Table 6 Floor Area Ratio and Coverage for Group Housing (Clause 9.6.2)

Sl No.	Net Residential Density Dwelling Units/Hectare	Maximum Coverage Percent	Floor Area Ratio
(1)	(2)	(3)	(4)
i)	M	25	0.50
ii)	50	30	0.75
iii)	75	33	0.90
iv)	100	35	1.00
v)	125	38	1.25
vi)	150	40	1.50
vii)	200	35	2.00
viii)	250	35	2.50
ix)	260	35	2.60
x)	265	35	2.65
xi)	270	35	2.70
xii)	275	35	2.75
xiii)	280	35	2.80
xiv)	285	35	2.85
xv)	290	35	2.90
xvi)	300	35	3.00
xvii)	325	35	3.25
xviii)	350	35	3.50
xix)	375	35	3.75
xx)	400	35	4.00

NOTE — The coverage shall be calculated on the basis of the whole area reserved for group housing.

HEIGHT
THE MAXIMUM HEIGHT OF BUILDING SHALL NOT EXCEED 1.5 TIMES THE WIDTH OF ROAD ABUTTING PLUS THE FRONT OPEN SPACES.
IN GROUND AND ONE STOREYED STRUCTURES NOT MORE THAN 20 ROWER S COULD BE GROUPED IN A CLUSTER. MIN. DIMENSION OF OPEN SPACE SHALL BE NOT LESS THAN 6 M OR 3/4TH OF THE HEIGHT OF BUILDING.
BUILDING SHOULD AROUNDING NOK THE LOW INCOME GROUP SHALL PREFERABLY BE UPTO A MAX. OF TWO STOREY.

Sl. No.	Height of the Building type (m.)	Minimum open space to be left around the sides (m.) (front, rear and sides in each plot)
1	10	5
2	15	5
3	18	5
4	21	6
5	24	8
6	27	9
7	30	10
8	33	11
9	36	12
10	45	15
11	50	16
12	55 and above	16

Note: On sides where no habitable rooms face, a minimum space of 9.1 m. shall be left for heights above 7.1 m.

OPEN SPACES
ALL OPEN SPACES PROVIDED EITHER IN INTERIOR OR EXTERIOR SHALL BE NOT FREE FROM ANY ERECTIONS THEREON AND SHALL OPEN TO THE ANY. NOTHING EXCEPT CORNICE, CHIMNEY OR WEATHER GADE (NOT MORE THAN 0.75 M. WIDE) SHALL OVERHANG OR PROJECT OVER THE RAID OPEN SPACE SO AS TO REDUCE THE WIDTH TO LESS THAN MINIMUM REQUIRED.
IN CASE OF MULTI STOREYED BUILDINGS THE EXTERIOR OPEN SPACE AROUND A BUILDING SHALL BE OF FARD DUKPACA CAPABLE TO TAKING LOAD OF PIKE ENGINE (WEIGHING UPTO 45 TONNES).
PAL AND OPEN AGA WILL BE PROVIDED AT THE RATE OF 10 SQ.M. PER PERSON OR 1 5% OF TIME WHOLE AGA. WHICH IS MORE IN THE PLOT OF AREA 3000 HQ.M (OR ABOVE).

OCCUPANTS LOAD

Sl. No.	Type of Occupancy	Occupant Load per 100 sq. m. of Plinth or Covered Area
1	Residential	2.0
2	Educational	2.0
3	Institutional	2.0
4	Assembly hall or indoor sports and dance floor (B) without seating facilities including dining room	166.6
5	Assembly hall or indoor sports and dance floor (B) upper sub floor	66.6
6	Business and industrial	3.3
7	Storage	3.3
8	Hazardous	10.0

Sl. No.	Group of Occupancy	Staircases	Number of Occupants	Doors
1	Residential	25	50	75
2	Educational	25	50	75
3	Institutional	25	50	75
4	Assembly	40	80	100
5	Business	50	100	125
6	Commercial	50	100	125
7	Industrial	50	100	125
8	Storage	50	100	125
9	Hazardous	25	50	75

ENTRY
MAIN ENTRANCE TO THE PREMISES SHALL BE OF ADEQUATE WIDTH TO ALLOW EASY ACCESS TO THE WIRE TENDER AND IN NO CASE IT SHALL MEASURE LESS THAN 5 M.
IF THE ENTRANCE GATE SHALL HOLD BACK AGAINST THE TSC COMPOUND (WALL OF THE PREMISES, THUS LEAVING THE EXTERIOR ACCESS WAY WITHIN THE PLOT FREE FOR MOVEMENT OF THE FIRE SERVICE VEHICLES.
IF ARCHWAY IN PROVIDED OVER THE MAIN ENTRANCE, THE WEIGHT OF THE ARCHWAYS SHALL NOT BE HEIGHT LEFT THAN 5.0 M.
IF WIDE MIN. WIDTH OF DIA WILL BE 1.2 M WILL BE ALLOTTED AT THE ENTRY GATE BUT IN ANY CASE FOR WIRE EXTINGUISHING CONSTRUCTION IN DELID MINIMUM SETBACK WILL NOT BE PERMITTED.

EXIT
EXIT SHALL BE SO LOCATED TO THE GATE TRAVEL DISTANCE ON THE FLOOR SHALL NOT EXCEED 22.50 M. FOR RESIDENTIAL, EDUCATIONAL, INSTITUTIONAL AND HAZARDOUS OCCUPANCIES AND 30.0 M. FOR COMMERCIAL, BUSINESS, MERCANTILE, INDUSTRIAL AND STORAGE OCCUPANCIES.
THE TRAVEL DISTANCE TO AN EXIT FROM THE REMOTE POINT SHALL NOT EXCEED THE DISTANCE AT STATED ABOVE EXCEPT IN THE CASE OF INSTITUTIONAL OCCUPANCY IN WHICH CASE IT SHALL NOT EXCEED 6.0 M.
EXIT SHALL BE EITHER HORIZONTAL OR VERTICAL TYPE AN EXIT MAY BE DOORWAY, CORRIDOR AND PASSAGE TO AN INTERNAL STAIRCASE OR EXTERNAL STAIRCASE, RAMP OR TO A VERANDA AND/OR TERRACES THAT LEAVE ACCESS TO THE STREET OR TO ROOF OF A BUILDING AN EXIT MAY ALSO INCLUDE HORIZONTAL EXIT LEADING TO AN ADJOINING BUILDING AT THE SAME LEVEL.

E-EXIT REQUISITES
MINIMUM OF TWO STAIRCASES AND ONE OF THEM SHALL BE ENCLOSED STAIRWAY AND THE OTHER SHALL BE ON THE EXTERNAL WALL OF BUILDING AND SQUALL OPEN DIRECTLY TO THE EXTERIOR, INTERIOR OPEN SPACE OR TO ANY OPEN PLACE OF SAFETY.
IF THE MINIMUM HEADROOM IN A PACKAGE UNDER THE STAIRCASE A STAIRCASE AND UNDER THE STAIRCASE SHALL BE 2.2 M
A STAIRCASE SHALL NOT BE ARRANGED AROUND A LIFT DRAFT NOK BUILDING'S 15.0 M. AND ABOVE HEIGHT. THE STAIRCASE LOCATION SHALL BE TO THE SATISFACTION OF THE CONCERNED OFFICER.
THE MAIN STAIRCASE AND FIRE ESCAPE STAIRCASE SHALL BE CONTINUOUS FROM GROUND FLOOR TO THE TERRACE LEVEL.
NO ELECTRICAL SLITS/AC DUCTS OR GAS PIPE ETC. SHALL PART THROUGH THE STAIRCASE.
MIN. CLEAR WIDTH:
 2 STOREYED-STRAIGHT: 0.60 M
 2 STOREYED-WINDING: 0.75 M
 3 OR MORE STOREYED-STRAIGHT: 0.75 M
 3 OR MORE STOREYED-WINDING: 0.90 M
KITE: 150 MM (MIN), 200 MM (MAX)
TREAD
 2 STOREYED: 225 MM (MIN)
 3 STOREYED OR MORE: 250 MM (MIN)
HEADROOM- THE MIN CLEAR HEAD ROOM SHALL BE 2.1 M

DOORWAY
NO EXIT DOORWAYS SHALL BE LEFT EXPOSED TO THE WIND IN WIDTH 1 EXIT DOORWAY SHALL OPEN OUTWARDS, THAT IN ANY POINT THE ROOM BUT SHALL NOT OBSTRUCT THE TRAVEL ALONG ANY EXIT. NO DOOR WHEN OPENED SHALL REDUCE THE REQUIRED WIDTH OF STAIRWAY OR LANDING TO LESS THAN 100 CM.
OVERHEAD OR SLIDING DOORS SHALL NOT BE INSTALLED.
EXIT DOOR SHALL NOT OPEN IMMEDIATELY UPON A FLIGHT OR AT A LANDING EQUAL TO AT LEAST, THE WIDTH OF THE DOOR SHALL BE PROVIDED IN THE STAIRWAY AT EACH FLOORWAY.
DOORWAYS SHALL NOT BE ALLOWED.

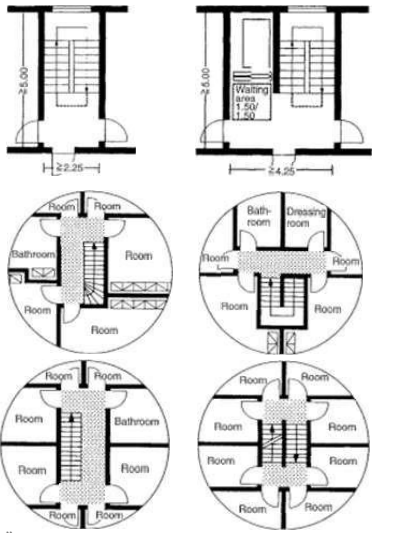


SUBMITTED BY :
 AYUSLI TYAGI
 AYUSUI JANGID
 MONAMMAD
 RANJIT BNATNAGAR
 RITIK WANI
 SAYANI LIOOI
 SNAMMI MAURYA

FIRE SAFETY
THE MIN WIDTH IS ESSENTIAL TO FACILITATE FREE MOVEMENT OF THE UNIT.
IN THE SETBACK AREA/OPEN SPACE IN MORE THAN 12 M, TIME PROVISION FOR CAR PARKING CAN BE DONE IN THE SETBACK OR OPEN SPACE AT THE PERIPHERY OF THE COURTYARD LEAVING 6 M MOTORABLE ROAD.

Sl. No.	Height of building in storey	Exterior open spaces setbacks to be provided in meters
i.	Above 7.5 Ht to 12	4.8
ii.	Above 12 Ht to 15	5.0
iii.	Above 15 Ht to 18	6.0
iv.	Above 18 Ht to 21	7.0
v.	Above 21 Ht to 24	8.0
vi.	Above 24 Ht to 27	9.0
vii.	Above 27 Ht to 30	10.0
viii.	Above 30 Ht to 33	11.0
ix.	Above 33 Ht to 36	12.0
x.	Above 36 Ht to 40	13.0
xi.	Above 40 Ht to 45	14.11
xii.	Above 45 Ht to 50	16.0

FIRE TAI REQUISITES
WIDTH OF STAIRCASE VARIED FROM 1 M TO 2 M
OUT OF 2 STAIRCASE, 1 CAN BE USED AT A WIRE ESCAPE.
MINIMUM OF 3 STAIRCASES SHOULD BE 0.75 M.
3 STAIRCASES SHALL BE ENCLOSED TO PREVENT ENTRY OF SMOKE INTO THE STAIRCASE. AVICE VERA.



FIRE EQUIPMENTS
 (Refer to the relevant Code of Practice for Fire Protection and Prevention)

Sl. No.	Room	Area (sq. m)	Fire Alarm	Fire Extinguisher	Fire Escape	Fire Hose	Fire Blanket	Fire Alarm	Fire Extinguisher	Fire Escape	Fire Hose	Fire Blanket
1	Residential	100	1	1	1	1	1	1	1	1	1	1
2	Educational	100	1	1	1	1	1	1	1	1	1	1
3	Institutional	100	1	1	1	1	1	1	1	1	1	1
4	Assembly hall or indoor sports and dance floor (B) without seating facilities including dining room	100	1	1	1	1	1	1	1	1	1	1
5	Assembly hall or indoor sports and dance floor (B) upper sub floor	100	1	1	1	1	1	1	1	1	1	1
6	Business and industrial	100	1	1	1	1	1	1	1	1	1	1
7	Storage	100	1	1	1	1	1	1	1	1	1	1
8	Hazardous	100	1	1	1	1	1	1	1	1	1	1

SUBMITTED TO :
 AR. SWATI PUNYAL
 AK. ABNINAV KESARVANI

REMARKS :
 NOTE :

BUILDING SERVICES

ELECTRICAL

*DISTANCE FROM ELECTRICAL LINE-

	Vertically	Horizontally
a) Low and medium voltage lines and service lines	2.50 m.	1.20 m.
b) High voltage lines upto and including 11,000 volts	3.70 m.	1.20 m.
c) High voltage lines above 11,000 volts and upto and including 33,000 volts	3.70 m.	2.00 m.
d) Extra high voltage lines additional 33,000 volts	Plus 0.3 mt. for every additional 33,000 V or part thereof.	Plus 0.3 m. for every additional 33,000 V or part thereof.

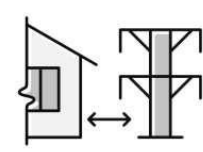
Sl. No.	Purpose of Final Circuit Fall from Construction Site figure to which Diversion applies	Typical Allowances for Diversity Based on Type of Building		
		Individual House Hold Installations, including additional Dividing of a Block (1)	Small Shops, Stores, Offices and Business Premises (2)	Small Hotels, Boarding Houses, etc. (3)
(1)	Lighting	60 percent of total current demand	90 percent of total current demand	75 percent of total current demand
(2)	Heating and power (see also Sl. No. (14) to (16))	100 percent of total current demand up to 15 A. = 50 percent of any current demand in excess of 15 A.	100 percent of full load of largest appliance = 80 percent of full load of second largest appliance = 60 percent of full load of remaining appliances	100 percent of full load of largest appliance = 80 percent of full load of second largest appliance = 60 percent of full load of remaining appliances
(3)	Cooking appliances	10 A + 30 percent full load of connected cooking appliances in excess of 10 A. = 6 A if socket outlet incorporated in the unit	100 percent of full load of largest appliance = 80 percent of full load of second largest appliance = 60 percent of full load of remaining appliances	100 percent of full load of largest appliance = 80 percent of full load of second largest appliance = 60 percent of full load of remaining appliances
(4)	Motors (other than lift motors which are subject to special consideration)	100 percent of full load of largest motor = 80 percent of full load of second largest motor = 60 percent of full load of remaining motors	100 percent of full load of largest motor = 70 percent of full load of second largest motor = 50 percent of full load of remaining motors	100 percent of full load of largest motor = 70 percent of full load of second largest motor = 50 percent of full load of remaining motors
(5)	Water heater (instantaneous type)	100 percent of full load of largest appliance = 100 percent of full load of second largest appliance = 25 percent of full load of remaining appliances	100 percent of full load of largest appliance = 100 percent of full load of second largest appliance = 25 percent of full load of remaining appliances	100 percent of full load of largest appliance = 100 percent of full load of second largest appliance = 25 percent of full load of remaining appliances
(6)	Water heater (thermostatically controlled)	No diversity allowable	No diversity allowable	No diversity allowable
(7)	Floor warming installation	No diversity allowable	No diversity allowable	No diversity allowable
(8)	Water heaters thermal storage space heating installations	No diversity allowable	No diversity allowable	No diversity allowable
(9)	Standard arrangements of final circuits in accordance with good practice (B-2(1))	100 percent of the current demand of the largest circuit = 80 percent of the current demand of every other circuit	100 percent of the current demand of the largest circuit = 50 percent of the current demand of every other circuit	100 percent of the current demand of the largest circuit = 50 percent of the current demand of every other circuit

*CURRENT LOAD # NOB OF SOCKETS OR ELECTRICAL POINTS

Sl. No.	Room	Area (sq. m)	Location	Number of 6 A Sockets	Number of 16 A Sockets
(1)	Living room	2 to 6	(1)	(2)	(3)
(2)	Bed room	2 to 6	(1)	(2)	(3)
(3)	Kitchen	2 to 6	(1)	(2)	(3)
(4)	Dining room	2 to 6	(1)	(2)	(3)
(5)	Change	1	(1)	(2)	(3)
(6)	For refrigerator	1	(1)	(2)	(3)
(7)	For air conditioner	1 per 10 m ²	(1)	(2)	(3)
(8)	For wash basin	1 per 10 m ²	(1)	(2)	(3)
(9)	For shower	1 per 10 m ²	(1)	(2)	(3)
(10)	For toilet	1 per 10 m ²	(1)	(2)	(3)
(11)	For bathroom	1 per 10 m ²	(1)	(2)	(3)



LITERATURE STUDY-LOW COST HOUSING
OF AFFORDABLE HOUSING



NON-RESIDENTIAL BUILDING * GUARD ROOM
 • TOE MINIMUM AREA FOR 0+HICE ROOM/SNO+ OK ANY OTHER SPACE TO BE USED AT WORKSPACE SHALL NOT BE LESS THAN 6.0 HQ M. WITH A MINIMUM WIDTH OF 2.1 M.
 • GUARD ROOM OF 1.6 HQ M DIMENSIONS.

MEZZANINE FLOOR
 • MEZZANINE FLOOR MAY BE PROVIDED WITH THE MINIMUM HEIGHT 0+ 2.75 M. BETWEEN ANY TWO BLOCKS ABOVE GROUND IN ALL TYPES OF BUILDING PROVIDED THE NAME IS COUNTED AT PART OF TOTAL PERMISSIBLE FLOOR AREA TO AND NEIGN+ OF +NE BUILDING.

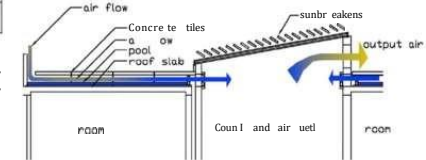


SUSTAINABILITY DESIGN & CONSTRUCTION TECHNIQUES

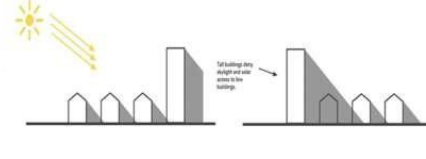
SITE PLANNING
 • CROSS VENTILATION CAN BE ENHANCED BY+LACI NG /WINDOWS OK VENTS ON O POLITE U IDEA OF TO E BUILDING, TO AIM OR TUNNEL BREEZE.
 • BY ORIENTING THE BUILDING TO THAT ITS 5L OUTEK AXIS ALIGNS WITH PREVAILING WINDS WILL PROVIDE THE MOST VENTILATION.

COURTYARD
 • DUE TO INCIDENT SOLAR RADIATION IN A COURTYARD, THE AIR GETS /WARMER AND KUEL. COOL AIR +KOM TPIE GROUND LEVEL PLOW THROUGH THE LOUVED OPENINGS O* ROOMS EUGROUNDING A COURTYARD, TO UO PRODUCING AIR FLOWS.

LOOPING 5+UTEM
 • A ROO* POND UNEP A STORE O* WATER ABOVE +UE ROOM TO MEDIATE INTERNAL TEMPERATURES, UAUALLY IN NOT DESERT ENVIKON MENTS.
 • AT NIGHT, THE INSULATION IN REMOVED AND TNE EXPOSED WATER LOWER SIGNI+ICANT AMOUNT OF NEAT BY RADIATION TO THE NIGHT SKY.



POLAR ACCESS
 KOLAK ACCESS CAN BE DESCRIBED AT TO E ABI LITS O+ TO E SUN TO PENETRATE A BUILDING OK BE UTILIZED B+ A POLAR COLLECTOR ON I E UK*6A E K IN I DU ILVIN DE IWEEN 6.V. IN K.M.

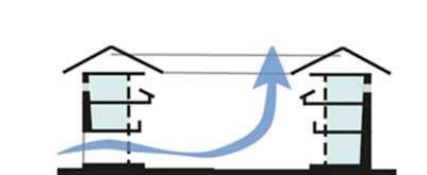
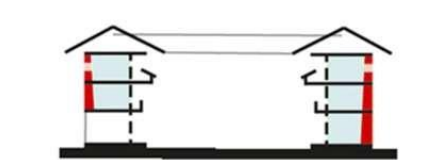


EXTERIOR
 • TO REDUCE NEAR TRANSMISSION, LIGHT COLOU LED EXTERNAL SURFACES CAN BE USED TO REDUCE NEAR TRANSMISSION TO +E INTERIORS IN ADDITION +O TOE COOLING LOADS.
 • TO E STUDIES ShOW TNA+ TEMPERATURES WERE REDUCE D BY 4 °C (M TALEB, 20 14) WS EN IT IN USED ALONGSIDE PAINTING IN GREY OR DARKER COLOURS.
 • LIGHT COLOURED EXTERNAL SUR+ACE TO RE+LEC+ POLAR RADIATION LOADING DEVICE/PROJEC+IONS
 • WELL-DESIGNED SUN CONTROL AND SN ADING DEVICES, EI+N ER AT PART OF A BUILDING OK SEPARA+EL+ PLACED FROM A BUILDING *ACADE, CAN REDUCE HEAT GAIN AND COOLING REQUIREMENTS.

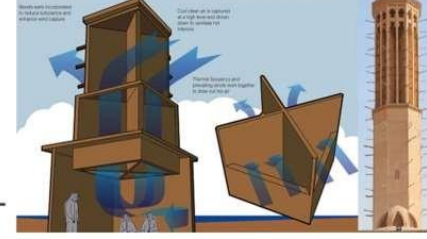
LIGN+ ENVELS
 • USUALLY RELEK TO NOKIZONTAL EU KPACER MOUNTED INSIDE A BUILDING. +U ELEW +ERIOK LIGHT SU ELVES DIVI DE WINDOWS BETWEEN TOE VIEWABLE POK+ON.



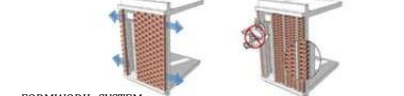
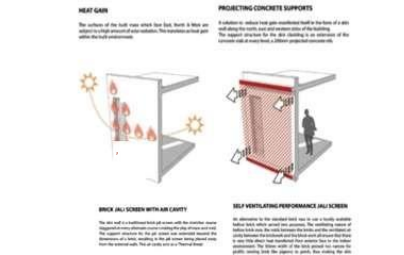
***ASSIVE COOLING**
 • EVAPORATIVE COOLING IN A PARTIVR COOLING TECHNIQUE IN WSICIT OUTDOOR AIR IN COOLED BY EVAPORATING WATER BEFORE IT IN INTRODUCED IN TOE BUILDING. TOE HEAT OF AIR IN HOED TO EVAPORATE WATER, THUS COOLING THE AIR, WHICH IN TURN COOLS THE LIVING SPACE IN THE BUILDING.



WIND +OWER
 • WIND TOWER, TNE NOT AIR ENTERS TOE TOWER TOUGH TO E O+ E NINGS IN TOE TOWER, GETS COOLED, BECOMES N WAVIER AND 5+L+ DOWN.
 • TOE INLET AND OUTLET OF ROOMS INDUCE COOL AIR MOVEMENT.



CAVITY WALL
 • TO E CAVITY COULD UTILIZED AIK OR INSULATION MATERIAL. TO L NEAT GATE STORED IN +N E CAVITY. WS ICT ACTS AT A TOERMAI RARRI +R



FORMWORK SYSTEM
 • FORMWORK NOK MONOLITHIC CONCRETE CONSTRUCTION .
 • ALL WALLS, FLOORS, SLABS, COLUMN NO, BEAMS, STAIRS, TO GETS EK WITH DOWND, COLDWOOD OPENING ARE CAST INT ITU MONOLITH ICALL+ USING APPRO KI TATE GRADE O CONCRETE IN ONE OPERATION B+ USING 5+CE ALL+ DESIGN ED.



PRECAST SANDWICH ANEL SYSTEM
 • TO E RA+ID PANEL IN A +REFABRICATED ASSEMBLY OP NIGA-S+KENG+N STEEL WIRE LOKMING A ANEL WITH A COKE OF EXPANDED OL+YSTYRENE (EPS) .
 • T IS AN INDUSTRIAL SYSTEM FOR THE CONSTRUCTION OF STRUKTUPAL WALLS OF REINFORCED CONCRETE NOK BUILDING IN 5 NGLE ANEL UP +O G + 3.



STEEL STRUCTURAL SYSTEM
 • THE SPEED FLOOR SYSTEM IS A SUSPENDED CONCRETE FLOORING SYSTEM USING A ROLL FORMED STEEL JOINT AT AN INTEGRAL PART OF TOL FINAL CONCRETE AND STEEL COMPOSITE FLOOR

• LIGHT GAUGE STEEL STRUCTURAL SYSTEM DEVELOED THROUGH A COLD-FORMED PROCLS WLAHOUT TO L USE OF NEAT. TO IN ROCESS+ ENABLES STEEL MAN UCTURE RR TO PRODUCE LIGHT+WEIGHT BUT NIGA TENDILE STEEL UNEETU



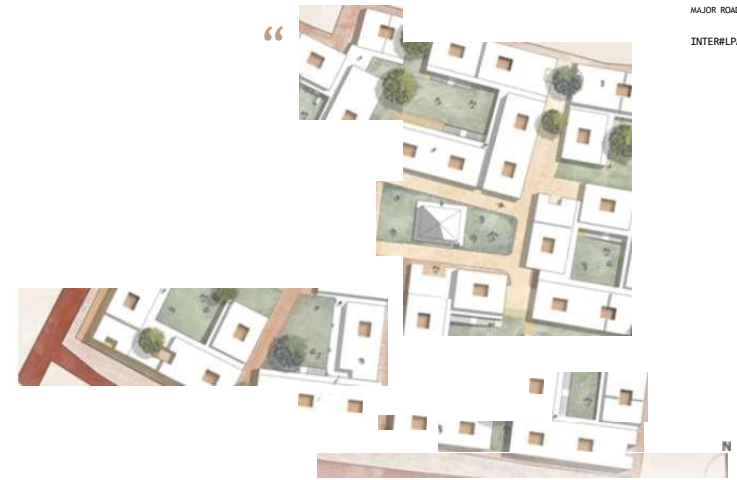
SUBMITTED BY :	SUBMITTED TO :	REMARKS :
AYUSHI TYAGI AYUSHI JANGID MOHAMMAD RANJIT BNATNAGAK RITIK WANI SAYANI HOOI SUAMMI MAUKYA	AR. SWATI PUNYAL AR. ABNNAV KESAKVANI	
	SHEET NO : 1(C).	NOTE :
B.ARCf1, 4th YEAK / SEC B		



A

PROBLEMS
 • EACH OPEN 28-SQUARE-METRE WOMEN ARE ARRANGED AROUND A SERIES OF COURTYARDS THAT WERE DESIGNED TO ENCOURAGE INTERACTION BETWEEN THE RESIDENTS.
 • THE DECISION TO CREATE THESE COURTYARDS CAME ABOUT THROUGH COMMUNICATION WITH THE LOCAL RESIDENTS, WHO PREVIOUSLY LIVED IN ROOMS MADE FROM CORRUGATED UNPAINTED METAL OR RECLAIMED MATERIALS SUCH AS SCRAP METAL.

- REASONS
- GOOD DAYLIGHT AND VENTILATION
 - COMMUNITY SPACER
 - GREEN SPACE FOR LIVESTOCK AND PET
 - INTERESTING DESIGN FOR EVERY COMMUNITY



PLANNING
 • THE 296 DWELLING UNITS ARE ORGANIZED INTO 8 G+2 BUILDINGS.
 • TO PROMOTE COMMUNITY LIVING, EACH OF THE 8 BUILDINGS ARE PLANNED AROUND COURTYARDS OF DIFFERENT SIZES.
 • AT THE CENTER OF THE SITE, A COMMUNITY GATHERING AREA HAS BEEN PROVIDED WHICH IS USED FOR EDUCATIONAL PURPOSES DURING DAYTIME AND AT NIGHT AT MEETING PLAN.



DESIGN FEATURES
 • TO ENHANCE THE SOCIAL INFRASTRUCTURE OF THE AREA, THE BUILDINGS ARE ORGANIZED AROUND EIGHT COURTYARDS OF VARYING SIZES.
 • WHEN COMPLETED, SAJAYNAGAR WILL BE A FULLY FUNCTIONAL NEIGHBORHOOD WITH ALL ESSENTIAL AMENITIES INCLUDING WATER, DRAINAGE, ROADS, STREET LIGHTING, CHILDREN AND COMMUNITY CENTERS, COURTYARDS FOR HEALTHY RECREATION, AND EDIBLE ROOFTOP GARDENS.
 • THE PROJECT TEAM FOCUSED ON THE QUALITY OF CONSTRUCTION, KEEPING IN MIND THE LOCAL ROLES (BLACK COTTON) AND WEATHER CONDITIONS.
 • THE BUILDING HAS LOAD-BEARING, REINFORCED MASONRY WALL, WITH A VERNACULAR PLANT AND JOINT SLAB SYSTEM. ELEMENTS SUCH AS BAMBOO SKELETON AND PERGOLAS HAVE BEEN ADDED AT LOADING DEVICES THROUGHOUT THE BUILDING.
 • THE WIDE CORRIDOR HAVE BEEN DESIGNED TO HAVE COMMON SPACER FOR SOCIAL INTERACTIONS, AT WELL AS NATURAL LIGHTING AND ADEQUATE VENTILATION THROUGHOUT.



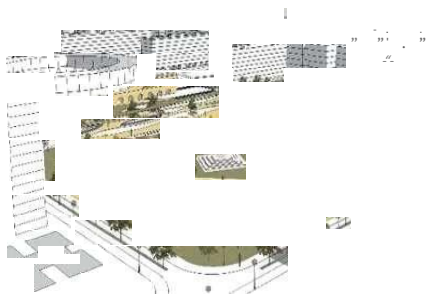
TYPICAL FLOOR PLAN EACH DWELLING PLAN TERRACE PLAN

AREA DISTRIBUTION

LIVING + KITCHEN	12 MSQ
BEDROOM	10 MSQ
BATHROOM	3 SQM
TOILET	3 SQM
TOTAL AREA	28 SQM

REVIEWS
 • EXTERNAL STAIRCASES OF WITH 2 METERS HAS BEEN PROVIDED FOR EACH CLUSTER.
 • INTERNAL STAIRCASES HAVE BEEN PROVIDED FOR JOINT KAMILIES.
 • 8 M HQ CENTRAL OPEN-ROOF SPACE USED AS GAAP AND LOCAL LIGHTING AND VENTILATION HAS BEEN PROVIDED.
 • PROVISION FOR RAIN WATER HARVESTING HAS BEEN PROVIDED WITHIN THE LANDSCAPE TO CONTROL WATER SCARCITY.
 • TERRACE GARDENS WITH PROVISION FOR SOLAR PANELS HAVE BEEN PROVIDED.
 • INTERNAL ROADS OF WITH 4M WIDTH CONNECTS EACH CLUSTER WITH THE EXTERNAL ROAD.

MATERIALS
 • THE BUILDING HAVE BEEN DESIGNED AND BUILT WITH MINIMUM MATERIAL WITH THE HELP OF LOCAL COMMUNITY.
 • THE SAJAYNAGAR BUILDINGS WERE CONSTRUCTED FROM LOCALLY-MADE BRICK MADE OF PLY AND CRUSHED LAND AND CEMENT.
 • THE ROOFS DRAW ON VERNACULAR CONSTRUCTION AND ARE BUILT WITH PLANT AND JOINT SYSTEM MADE OF STEEL I-SECTIONS AND STONE SLABS DRAW INSPIRATION FROM VERNACULAR CONSTRUCTION TECHNIQUES.
 • DESIGNED AND BUILT WITH HELP FROM THE LOCAL COMMUNITY, THE HOUSING BLOCKS ALSO STATUS NUMEROUS DECORATIVE TOUCHES.
 • NOT THE FACADE PACING THE COURTYARD, SCREENS MADE OF SPLIT BAMBOO AND STEEL FRAME PROVIDE AN INTERESTING PLAY OF LIGHT AND SHADOW ALONG THE CORRIDOR THROUGHOUT THE DAY.
 • THE USE OF COLOR FOR WINDOW FRAMES AND THE BALCONY RAILING ADDS CONTRAST TO THE MONOCHROMATIC FACADE.



LITERATURE STUDY-LOW COST HOUSING OR AFFORDABLE HOUSING



ARCHITECTURAL DESIGN-VII AP- 40 I

SUBMITTED BY :
 AYUSHI TYAGI
 AYUSHI JANGID
 MOLTAMMAD
 RANJIT B HATNAGAR
 KITIK WANI
 SAYANI LIOOI
 SHYAMMA MAURYA

SUBMITTED TO :
 DR. SWATI PUNYAL
 DR. ABINAV KESAKVANI

REMARKS :

NOTE :
 51/ET NO :
 I(D).

BYE LAWS OF MAHARASHTRA

- IN RESPONSE TO THE NEEDS AND DEMANDS FOR AFFORDABLE HOUSING, THE MAHARASHTRA HOUSING AND AREA DEVELOPMENT AUTHORITY (MHADA)
- AFFORDABLE HOUSING HAVE BEEN DEFINED AS 27.68 SQ. M. FOR FWS.
- DWELLING UNITS (DUS) WITH CARPET AREA SHALL BE BETWEEN 21 TO 27 SQ.M. FOR ECONOMICALLY WEAKER SECTION (EWS) CATEGORY AND 28 TO 50 SQ.M. FOR EWS HOUSING PROJECT.
- PROJECTS USING AT LEAST 60 PERCENT OF THE FAR/FSI FOR DWELLING UNITS OF CARPET AREA NOT MORE THAN 50 SQ.M. WILL BE CONSIDERED AS AFFORDABLE HOUSING PROJECTS.
- IN ADDITION, 35 PERCENT OF THE TOTAL NUMBER OF DWELLING UNITS CONSTRUCTED SHOULD BE OF CARPET AREA 21 TO 27 SQ.M. FOR EWS CATEGORY.
- SUCH PROJECTS CAN HAVE A MIX OF EWS/HIGHER CATEGORY DUS AND COMMERCIAL UNITS. PROVISION OF APARTMENT'S QUARTERS ALONG WITH THE MAIN DWELLING UNIT WILL NOT BE COUNTED AS DWELLING UNITS FOR EWS/UG UNDER AFFORDABLE HOUSING (AH) PROJECT.

HEIGHT

- DEPENDS ON LOCATION AND PROXIMITY TO AIRPORT. HEIGHT OF A ROOM SHOULD BE LESS THAN 4.2M.

SETBACKS / OPEN SPACES

- REQUIRED AROUND BUILDING, HTS FOR LIVING SPACES (BEDROOMS, LIVING ROOMS) AND HTS FOR DEAD WALLS AND TOILETS.
- THIS CAN BE OVERCOME BY PAYING A PREMIUM TO THE BMC. THIS IS CALLED OPEN SPACE DEFICIENCY. HOWEVER THE CFO WILL DEMAND A CLEAR 6WxGM FOR FIRE ENGINE MOVEMENT.

MIN SIZE OF ROOMS

- | | MIN AREA | MIN WIDTH | AREA OF BATH |
|------------------------|-------------------------|--------------------|--------------|
| HABITABLE ROOMS | 9.5 M ² | 2.4M | |
| TOILETS | 2.2 M ² | | |
| TOILETS (SEPARATE) | 1.1 M ² (WC) | 1.5 M ² | |
| KITCHENS (1 BHK FLATS) | 5.5 M ² | 1.0M | |
| KITCHENS (2 BHK FLATS) | 7.5 M ² | 2.1M | |

REFUSE AREAS

- ONE EVERY 24M IN HEIGHT. AREA NOT LESS THAN 4% OF THE OCCUPIED SPACE EXISTING TILL THE NEXT REFUSE AREA. STAIRCASES
- TWO IF THE FLOOR PLATE IS MORE THAN 500M² OR THE HEIGHT MORE THAN 24M.
- EACH SHOULD BE 1.5M WIDE, ENCLOSED BY A 250MM BRICK WALL, VENTILATED TO THE OUTSIDE, AND ACCESSIBLE VIA A FIRE DOOR. HIGHER BUILDINGS WILL REQUIRE 2M WIDE STAIRS, SHAFTS.
- MIN DIMENSION OF 0.6M

SERVICE FLOORS

- SHOULD HAVE A MINIMUM CLEAR HEIGHT OF 1.5M.

PARKING

- IN RESIDENTIAL BUILDINGS, FOR TENEMENTS UP TO 70 M² IN AREA, 1 CAR PER TENEMENT, 2 FOR BIGGER PLATS (EXCEPT IN A WARD, WHERE 4 ARE REQUIRED).
- AFTER THIS, ADD 10% FOR VISITORS. 50% OF SPACES CAN MAY BE 4.5 X 2.3M, THE REST NOT LESS THAN 5.5 X 2.5M.



LITERATURE STUDY-LOW COST HOUSING O& AFFORDABLE HOUSING

6. Minimum Specification of Affordable Housing shall be as follows-

	Specification	EWS	LG
Flooring and Skirting (100mmx4)	Living Room Dining Room Kitchen Bed Room Verandah Balcony Passages Lobby	Ceramic Tiles (300mm x 300mm)	Ceramic Tiles (300mm x 300mm)
Flooring	Toilet	Anti Skid Ceramic Tiles (300mm x300mm)	Anti Skid Ceramic Tiles (300mm x300mm)
Wall Tiles/ Dado	Kitchen	Ceramic wall tiles (300mm x 200mm)	Ceramic wall tiles (300mm x 200mm)
	Toilet	Ceramic wall tiles (300mm x 200mm)	Ceramic wall tiles (300mm x 200mm)
Staircase	Floor and skirting (100mm)	Kota/ marble/ concrete paver/ mosaic tiles	Kota/ marble/ concrete paver/ mosaic tiles
Parking floor	Work	Red Bricks/ Conc. Hollow Blocks/ Flyash Bricks	Red Bricks/ Conc. Hollow Blocks/ Flyash Bricks
Wall work	External (200mm thick)	Conc. Hollow Blocks	Conc. Hollow Blocks
	Internal (150/100mm thick)	20mm thick cement Plaster in 1:4 with proper waterproofing	20mm thick cement Plaster in 1:4 with proper waterproofing
External Plaster	Internal Plaster	12/15 mm thick cement Raster in 1:6	12/15 mm thick cement Plaster in 1:6
Kitchen Platform	Width approx x 52mm	Kota Stone with Stainless Steel sink	Polished Granite Stone with Stainless Steel sink
Windows		7 track Aluminium thick glass	3 track Aluminium Anodized with 2 track - 4mm thick glass and 1 track stainless steel mosquito mesh
Doors	External-30mm thick Internal-25mm thick	Wooden Commercial Flush Doors	Wooden Commercial Flush Doors
Sanitary ware		White Vitrified/ porcelain	White Vitrified/ porcelain
CP Fittings		As per ISI Mark	As per ISI Mark
Pumbing		PVC/UPVC/PVC Pipes	PVC/UPVC/PVC Pipes
External Paint		Cement Based Paint	Cement Based Paint
Internal Paint		Oil bound distemper over a coat of Plaster of Paris	Oil bound distemper over a coat of Plaster of Paris
Electrical		Electrical work with copper wires in concealed PVC conduits. Provision shall be made for sufficient lighting and powerpoints. Required switches and sockets, telephone and TV points. Each bedroom shall have min 3 Nos- 5 Amp points and 1 No- 5 Amp point, MCB as required	Electrical work with copper wires in concealed PVC conduits. Provision shall be made for sufficient lighting and powerpoints. Required switches and sockets, telephone and TV points. Each bedroom shall have min 3 Nos- 5 Amp points and 1 No- 5 Amp point, MCBs required
Hardware		Aluminium fittings including Aldrop, towel lock, handles as per ISI fittings	Aluminium fittings including Aldrop, towel lock, handles as per ISI fittings
Water Supply		Deep Bore wells/ Shallow wells/ Municipal supply lines through Over head tanks	Deep Bore wells/ Shallow wells/ Municipal supply lines through Over head tanks

B M I L D I W J E R E I N M L A T 10 N J E

Table 2 Comparison of building regulations. Source: Compiled by authors

	Regulations as per prevalent GDCR	Modified and reduced regulations
Maximum allowable FSI	1.8	1.8
Minimum common open plot (COP)	10% of lot area	10% of lot area
Minimum size	200	Not specified
Maximum dimension	10.5 m	Not specified
No. of floors (without elevators)	Ground + 3	Ground + 4
Maximum ground coverage	45%	Not specified
Internal road width for road length		
Up to 150 m	7.5 m	4.5 m
Up to 300 m		6.0 m
Minimum distance between two low-rise buildings		
Facade with openings	4.5 m	3.5 m
Facade without openings	4.5 m	2.5 m
Front and rear margins/backsets	As per GDCR	As per GDCR
Plotting	15% of FSI covered or utilized	Not specified
Minimum width of staircase flight	1.2 m	
	Layout design with prevalent regulations	Layout design with modified regulations
Total lot area	17,000 sq. m.	17,000 sq. m.
1-sep area	20,144 sq. m.	30,464 sq. m.
FSI covered area	1.2	1.8
No. of floors	Ground + 3	Ground + 4
Total no. of units	640	1120
Dwelling unit density (no. of units per hectare)		659.82
Individual housing unit area		
Carpet area	24.3 sq. m.	24.3 sq. m.
Block up area	27.2 sq. m.	27.2 sq. m.
Gross built up area	34.0 sq. m.	34.0 sq. m.
Average land area consumed by each unit	26.56 sq. m.	30.77 sq. m.
Average land area consumed by each sq. m. of built floor space	0.84 sq. m.	0.55 sq. m.
Ground coverage without	32.20%	39.89%
Common open plot (COP)	11.71%	11.34%
Percentage of area water roads	29.35%	32.89%
Percentage of land under dedicated parking	12%	9%
Other open and marginal spacer (not building area) (sq. m.)	14,276	17,305
	11,849.41	17,020.00
		31.23

* Includes commonly shared areas such as toilet and staircases

DESIGN CONSIDERATION FOR LOW COST HOUSING

- DESIGN A COM ACT BUILDING WITH MINIMUM LOOPTKIN+S OP BUILDING DESIGN BUILDINGS BASED ON SPECII ED NOKMS AND STANDARDS TO AVOID TOEIK OVE&UNDEK-DESIGNING DESIGN WITH LEAST AMOUNT OP WASTE A NEGOTIVE SPACER.
- STICK +O RIGHT ANGLES AND SIMPLE KOOM ADAPTS TO MINIMIZE COMPLEXITY OF CONSTRUCTION .
- BUILD MUST/TUTORIED CONSTRUCTION - SINCE FOUNDATION AND LOOPING CO/T5 REMAIN COMPAT&TIVELY NGA . Y DONT INCKEAVE SLAB NEIGHTH Y PLAN NOK VOLUME LT DEK THAN *LOOR AREA Y DONT DESIGN

FOR ADDITIONAL FLOORS/5+ACES , IP NOT KEQUIRE.

- ADD+ A SHAPE WSIC LEADS +O MINIMUM LENGTH OP WALLS

- ACHIEVE HIGA BUILDING EPMICIENCY- CAKPET AKEA- I E UNABLE AKEA XI OO/GKROUP AREA
- MINIMIKE AREA UNDEK WALLS CIRCULATION AND AMENTIEU
- MAKE OPTIMUM USE OP SPACE AND WHERE FEASIBLE MAKE MULTIELE USE O+ SPACE.
- MINIMIZE AREA UNDER WALL- USING OPTIONS O+ ARE-CAST CONCRETE BLOCLO, 7 I 2 WALLS INSTEAD OP 9 WALLI
- EVOLVENG DESIGN HAVING LOW WALL AREA/LLOOR AREA LTSO

- ADD+ A SYSTEM OF UHAKING --BUILDING COMMON WALLS BETWEEN ADJOINING ROUTER TO ECONOMIZE ON SBACE, LABOUR, MATEKIALS , TIME / UTUKTUKE.
- IN NARROWER AND LONGER PLOTS HAVING LIMITED OPTIONS OP LIGHT - MECHANISM OF COURTYARD COULD BE USED NOK ENSURING AIR, LIGU+ AND VENTILATION TO KOOMS.
- COURTYARDS ,WHERE PROVIDED, SHOULD BE EPBECTIVELY INTEGRATED AT ART/ EX+ENOION OP LIVING 0 ACES
- FOR MULTI-STOKEYED BUILDINGS--- REPEAT TOILETS ONE ABOVE OTGER

- LEED YOUR 0 ACES THAT NEED PLUMBNG CLOSE TOGETSER OK ABOVE EACH O+NER TO MINIMIZE COST
- DESIGN ALL PUBLIC HEALTH SERVICES NEAR TO OUP+LY / DRAINAGE NETWORK +O REDUCE LENGTN O+ PIPES AND COST

- LOOK FOR LIFE-CYCLE CO5+ AND NOT INITIAL COST.
- DESIGN GREEN BUILDINGS WSIC HAVE LOT OF WATER AND ELECTRIC ENERGY- MAKES BUILDING COST- EPPECTIVE OVEK ENGIKE LIFE CYCLE.
- BUILD TO MATCH STANDARD MATERIAL DIMENDIONS- NOK EXAMPLE PLYV+OOD IN 4' X 8' . +NUS IT IN BEST TO BUILD IN ' MODULES
- USING +KE-CASTE /PRE+ABRICOT5O PRODUCTS TO OE EXTENT POSSIBLE- DOOKS/ WINDOWS CU BOAKOU ETC TO MINIMIZE COST AVOID FANCY+ALSE/DECORA+VE STKUTUREL IN BUILDING.
- MAKE YOUR KOOMS VEKSA+LE- TO OPTIMIZE SPACE UTILIZATION- DO YOU KEALLY NEED A LIVING KOOM --NAME SPACE CAN UEKVE MANY USER.
- AVOID COKKIDOKN TO EXTENT POWERBLE- CORRIDORS CAN BE DEAD SPACE-- ONLY USED FOR MOVING BETWEEN ADJACEN+ SPACES.
- WHEREVEK USED, TKY TO MALE I+ DOUBLY LOADED TO MINIMIZE AREA UNDEK CIRCULATION .

- TOIN LONG TKEM --AT COST O+ OWNERSUIP SPANS MAY BE MANY LEARN. HOME EXTRA INSULATION AND PASSIVE HEATING / COOLING.
- MAY BE BONEPICAL OVEK THE WELTH OF YOUR HOME OWNEANI P.

- SELECT WINDOW PLACEMENT WELL- TOE+ AKE COSTLY - IN PIRO+ COST AND IN ENERGY LOPA--SELECT U+ANDARD WINDOW SIZING.
- SEEP BATTKOOMS TO A MINIMUM , --MOTT EXPENDIVE ROOM PER SQUARE *OOT IN COME.
- TKY TO DESIGN MULTI USE BATT ROOMS--- WITH PRIVATS ENCLOSURES FOR BLOWER, WC AND PINL--ALLOWING 3 PEO+LE USING ONE BATT ROOM AT NAME TIME.
- PLAN LIVING AND HABITABLE AREAS IN--- BEST ORIENTATION AND NON-LIVING AREAS IN TOE WOKNT ORIENTATION.

BIBLIOGRAPHY

CA E2E E2T M D Y

- NTTPU//WWW.DEZEEN.COM/2022/05/02/CDA--WOMEN--SANJA+NAGAK--ALUM--LOCAL--REV IDENTS--INDIA
- HTTFS//COMMUNITYDESIGNAGENCY.COM/ ROJEC+3/UANJAYNAGAR/
- NTTPE//WSG.ARCHDAILY.COM/98253 /SANJAYNAGAK--ALUM--REHABILITATION--PROJECT--COMMUNITY--DELI GN--AGENCY
- HTTFS//WWW.ARCHITECT+U.PLDIGENT.IN+ORVIN--AN MEDNAGAR--RESIDENTS--OF--A--ALUM--DESIGN--TNER--OWN--UOMEN/
- HTTFS//3URLACEKERORTE&COM+AR+ICL/ 13426 2CDA--RANULORMU--UANJAYNAGAK--ALUM--NIO--A--DIGNIDIED--HOUSING--TROUHG--AKTICPIA+ORY--DESIGN--APPROACH--3WAPNAPUKPI

E2ME2 A I N A B L I T Y

- TTTPE//GITC--INDIA.GOV.IN+I+N+M+CONTENT+/DL/COMPENDIUM +N+M.PDP
- TTTPE// .GRINAINDIA.OKG/GKIEA--AN

B M I L D I W J E R E I R E J E M L A 10 N J E I 2 E N J E R A L E 3 M I D L I M E 2

- NEW+LR+ ARCHITEC+ S DATA BOOK
- NBC 20 I G

MAHARA 3H T R A B Y E L A W E I

- HTTFS//WWW.MWADA.GOV.IN/EN

STRENGTH: LOAD BEARING, REINFORCED MASONRY WALL STRUCTURE, COURTYARDS FOR VENTILATION, DAY LIGHT AND SERVICES.LOCAL MATERIAL WAS USED.

WEAKNESS: NOT UNIVERSAL DESIGN, TERRACE GARDEN DIFFICULT TO MAINTAIN, SOLAR PANELS AND RAIN WATER HARVESTING IS EXPENSIVE.

OPPORTUNITY: COURTYARD SERVE AS COMMUNITY SPACE.GREEN SPACE FOR LIVESTOCKS

THREAT: PEOPLE TEND TO USE SPACE/DUE TO LACKOF LITERACY.



ARCHITECTURAL DESIGN-VII AP- 40 I

SUBMITTED BY :	SUBMITTED TO :	REMARKS :
AYUSHI TYAGI AYUSHI JANGID MOHAMMAD RANJIT BNATNAGAK RITIK WANI SAYANI HOOI SUAMMI MAUKYA	AR. SWATI PUNYAL AR. ABNINAV KESAKVANI	
	SHEET NO : 1 (E).	NOTE :
B.AR.Cf1, 4th YEAK/ SEC B		



Affiliated to GGSIP University, New Delhi
Approved by AICTE & Council of Architecture

DRAWING TITLE:

STUDIO INCHARGE:

**MOHAMMAD
07618001619**

SHEET

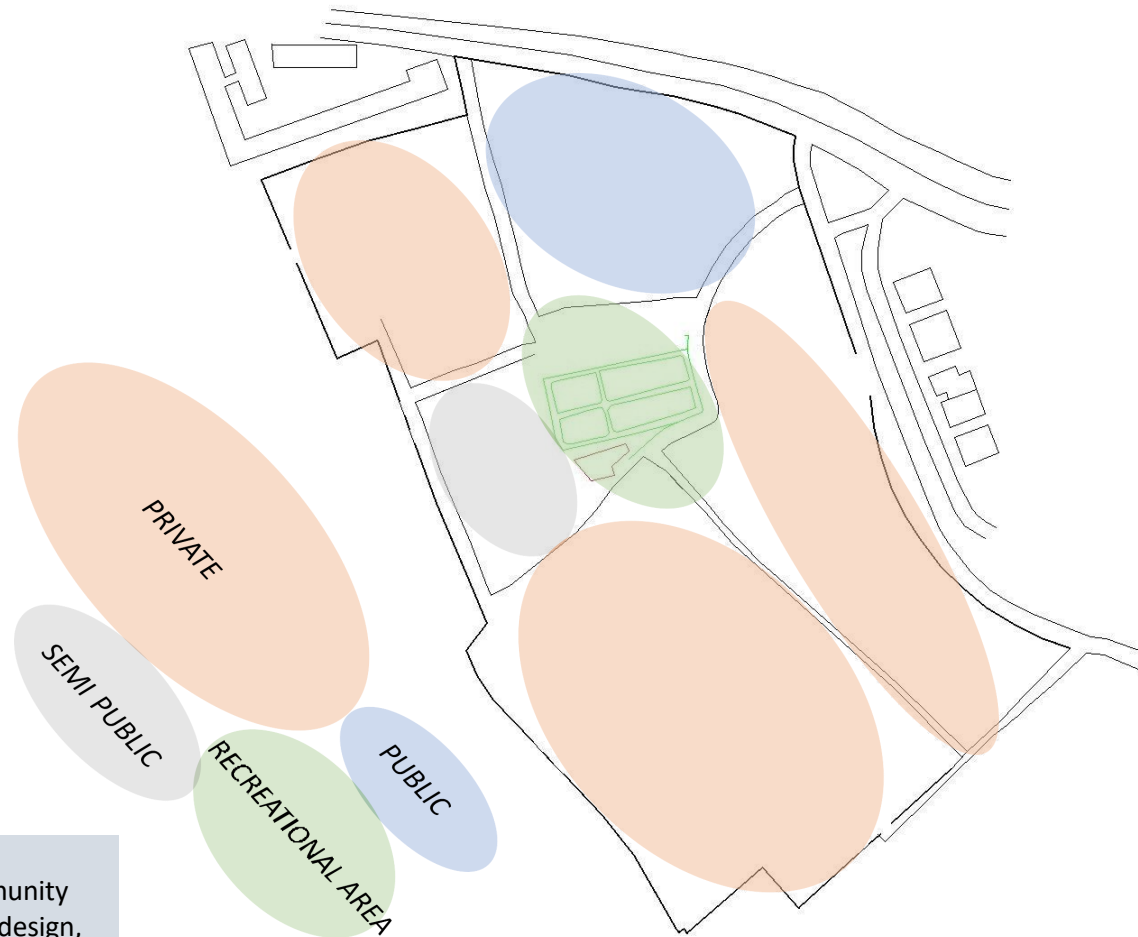
**ARCHITECTURAL DESIGN
AP-401**

AREA STATEMENT

SITE AREA = 6.6 HECTARES
 FAR = 2.5
 TOTAL BUILT UP AREA = 166897.5 SQM
 CORE RESIDENTIAL AREA = 75% OF TOTAL BUILT UP AREA
 75% OF 166897.5 = 125173.125 SQM
 REMUNERATIVE AREA = 25% OF TOTAL BUILT UP AREA
 25% OF 166897.5 = 41724.375 SQM
 GROUND COVERAGE = 40%-45%

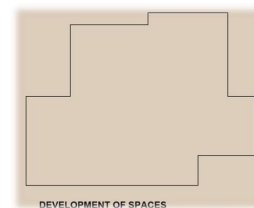
25-SQM TYPE 'A' DWELLING UNIT	25-SQM CLUSTER
BEDROOM - 2.7*2.7 = 7.29 SQM TOILET - 1.385*1.5 = 2.0775 SQM KITCHEN - 2*1.685 = 3.37 SQM LIVING - 3*3 = 9 SQM AREA OF WALLS - 3.252 SQM TOTAL AREA - 24.990 SQM	NUMBER OF UNITS = 780 NUMBER OF CLUSTERS = 65 AREA OF 1 CLUSTER = 374.905 SQM SINGLE CORRIDOR AREA = 63.096 SQM TOTAL CIRCULATION AREA = 4876.5 SQM TOTAL BUILT UP AREA - 24368.5 SQM
25-SQM TYPE 'B' DWELLING UNIT	40 SQM
BEDROOM1 - 2.7*2.7 = 7.29 SQM TOILET - 1.385*1.5 = 2.0775 SQM KITCHEN - 2*1.685 = 3.37 SQM LIVING - 3*3 = 9 SQM AREA OF WALLS - 3.252 SQM TOTAL AREA - 24.990 SQM	NUMBER OF UNITS = 900 NUMBER OF CLUSTERS = 75 AREA OF 1 CLUSTER = 574.6 SQM TOTAL CIRCULATION AREA = 8626 SQM TOTAL BUILT UP AREA = 43093.9 SQM
40-SQM DWELLING UNIT	AREA ACHIEVED
BEDROOM1 - 2.7*2.7 = 7.29 SQM BEDROOM2 - 2.7*3 = 8.1 SQM TOILET - (2.3*1.2)2 = 2.76*2 = 5.52 SQM KITCHEN - 2*1.8 = 3.6 SQM LIVING - 3*3 = 9 SQM AREA OF WALLS - 4.97 SQM TOTAL AREA - 38.4 SQM	CARPET AREA - 67462.4 SQM

ZONING



CONCEPT

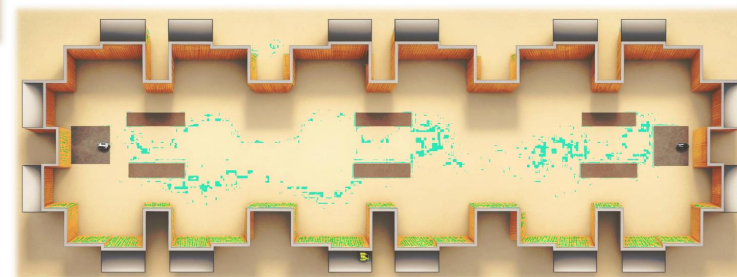
The concept for this low-cost group housing project is centered around the idea of fostering a sense of community and promoting sustainable living. Through thoughtful design, the project aims to provide comfortable and affordable homes for a group of individuals while ensuring minimal environmental impact. Philosophy of Design: Our philosophy of design for this low-cost group housing project is guided by the principles of simplicity, efficiency, and integration. By adopting passive design strategies and prioritizing cost-effective solutions, we aim to create a harmonious balance between functionality, aesthetics, and sustainability. Passive design techniques will be employed to optimize energy efficiency and reduce reliance on mechanical systems. By strategically orienting the buildings and utilizing natural ventilation, ample daylight, and thermal insulation, we strive to minimize the demand for artificial heating and cooling. This not only lowers operational costs for the residents but also reduces the overall environmental footprint



FORMATION OF SPACE

CONCEPTUAL FORM

FORMATION OF CLUSTERS



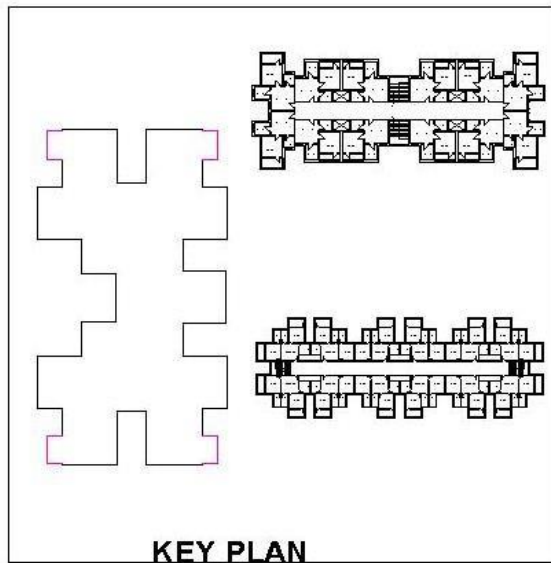
ABOUT SITE

SITE AREA=6.6Ha(66759 SQM)

FLOOR AREA RATIO (PROPOSED) 2.5

T.B.A =2.5 *66759= 67462.4

GROUND COVERAGE -45%



Approved by Council of Architecture, New Delhi
Approved by AICTE & Council of Architecture

Page No.

SLUM REDEVELOPMENT

Drawing Title

SITE PLAN

Author

Ar. GANDHARV SAMI

NOTES :

1. ALL DIMENSIONS ARE IN MM (OTHERWISE NOTED).
2. PLEASE COORDINATE ARCHITECTURAL DRAWING WITH STRUCTURE DRAWINGS BEFORE EXECUTION.

REVISIONS NO DATE :

NO	DATE

MOHAMMAD
4TH YEAR - B.ARC(II)
DELHI TECHNICAL CAMPUS

Subject

**ARCHITECTURAL
DESIGN-VII**

Subject Code

AP - 401

Scale

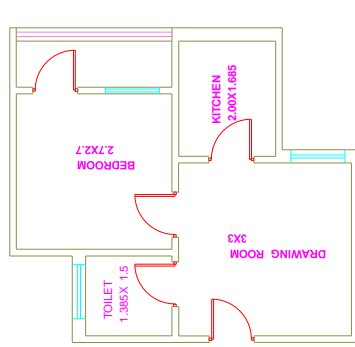


Scale

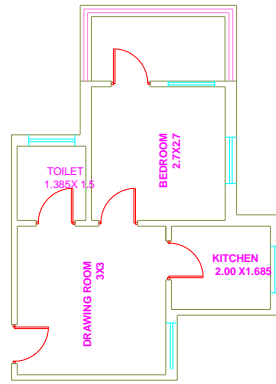
1:100

Sheet No.

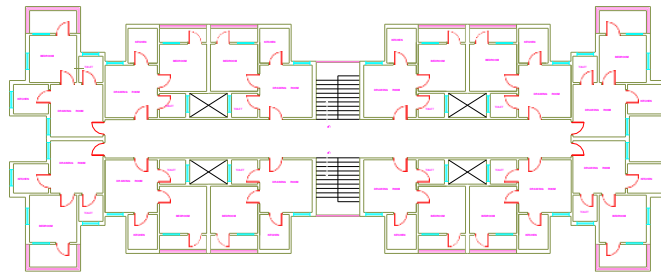
SLUM REDEVELOPMENT SCHEME FOR WARD NO 220 AT PATPARGANJ , NEW DELHI



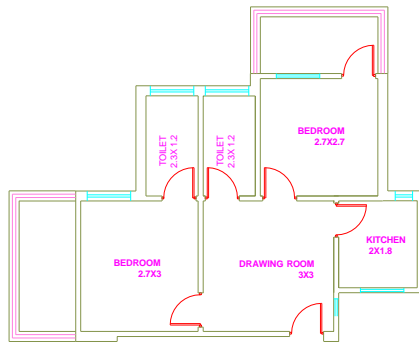
25sqm PLAN "A"



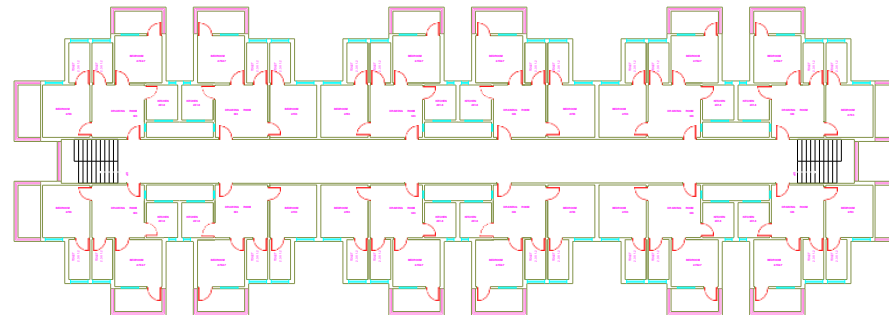
25sqm PLAN "B"



25sqm CLUSTER PLAN



40sqm PLAN "A"



40sqm CLUSTER PLAN

AREA STATEMENT	
SITE AREA	6.6 HECTARES
GROUND COVERAGE	42%
BUILT UP AREA	BUILT UP 166897.5 Sq.M
F.A.R	
25 Sq.m Dwelling Unit (24Sq.m)	
LIVING ROOM	3 X 3 MTR
BEDROOM	2,7 X 2,7 MTR
WASHROOM	1,4 X 1,5 MTR
KITCHEN	2 X 1,7 MTR
40 Sq.m Dwelling Unit (38Sq.m)	
LIVING ROOM	3 X 3 MTR
BEDROOM	3 X 2,7 MTR
BEDROOM	2,7 X 2,7 MTR
WASHROOM	2,3 X 1,2 MTR
BATHROOM	2,3 X 1,2 MTR
KITCHEN	2 X 1,8 MTR

ARCHITECTURAL DESIGN VII

REMARKS

DATE :

STUDIO INCHARGE:-

AR. GANDHARVA SWAMI

NAME: MOHAMMAD
YEAR /SEC - 4th (B)
ROLL NO - 07618001619
DELHI TECHNICAL CAMPUS

SHEET NO:



Affiliated to GGSIP University, New Delhi
Approved by AICTE & Council of Architecture

DRAWING TITLE:

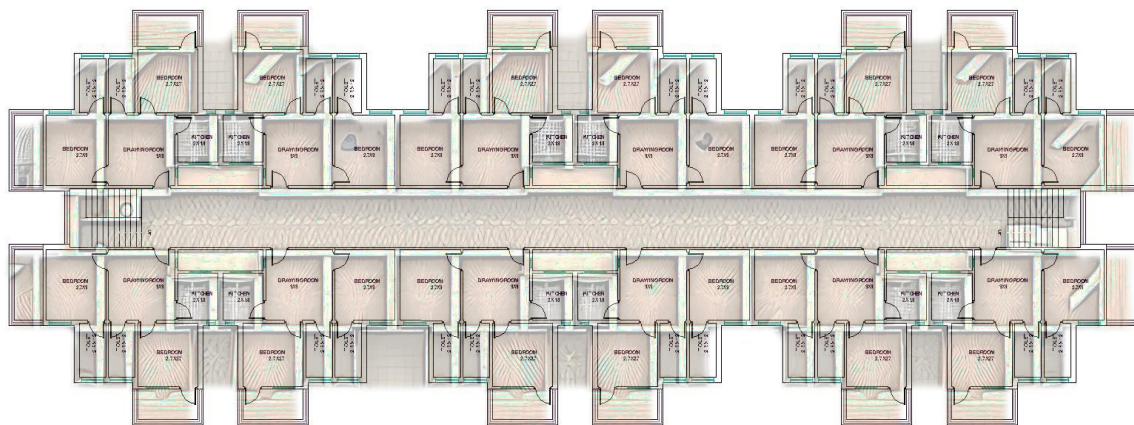
STUDIO INCHARGE:

MOHAMMAD
07618001619

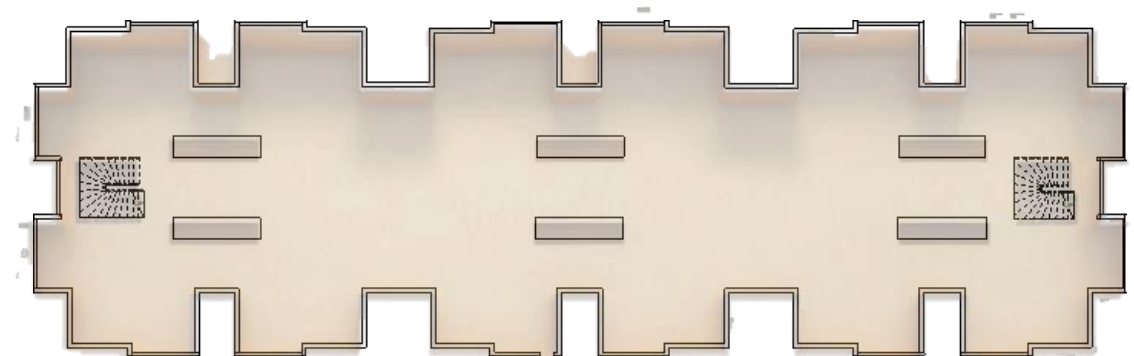
SHEET

ARCHITECTURAL DESIGN

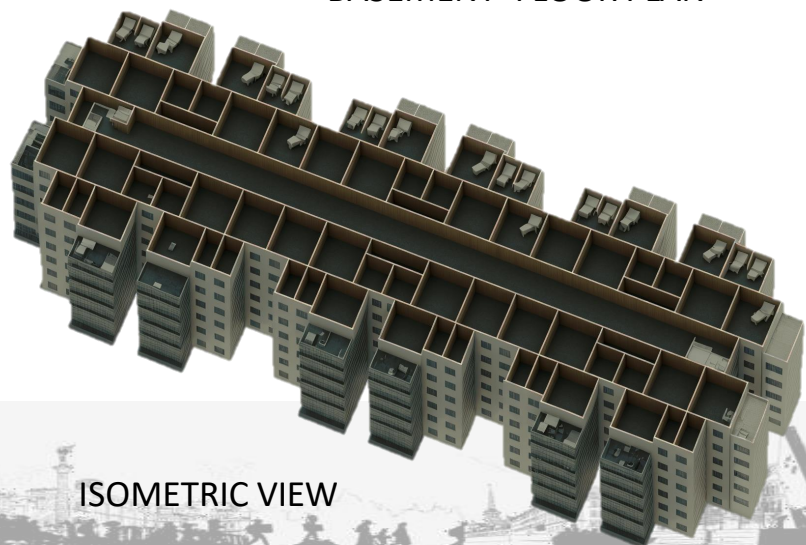
AP-401



1ST FLOOR RENDERED PLAN



BASEMENT FLOOR PLAN

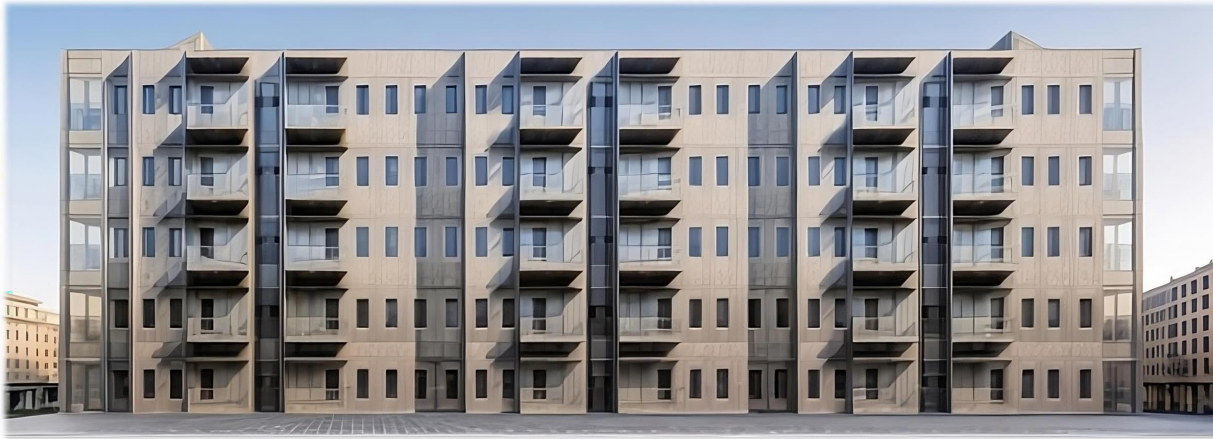


ISOMETRIC VIEW

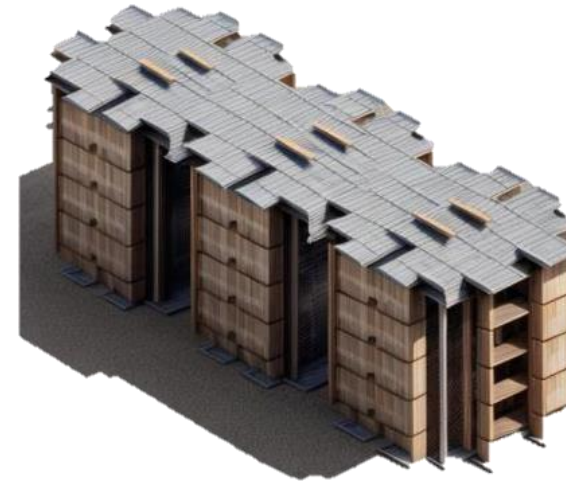


ISOMETRIC VIEW RENDERED

AREA CHART & O	
BEDROOM 1	2.7*3
BEDROOM 2	2.7*2.7
LIVING ROOM	3*3
KITCHEN	2*1.8
BATHROOM 1	2.3*1.2
BATHROOM 2	2.3*1.2



FRONT ELEVATION VIEW



CORNER VIEW



RIGHT ELEVATION VIEW



Affiliated to GGSIP University, New Delhi
Approved by AICTE & Council of Architecture

DRAWING TITLE:

STUDIO INCHARGE:

**MOHAMMAD
07618001619**

SHEET

**ARCHITECTURAL DESIGN
AP-401**



Affiliated to GGSIP University, New Delhi
Approved by AICTE & Council of Architecture

DRAWING TITLE:

STUDIO INCHARGE:

**MOHAMMAD
07618001619**

SHEET

ARCHITECTURAL DESIGN

AP-401



SECTION "A"



SECTION "B"



DRAWING TITLE:

STUDIO INCHARGE:

MOHAMMAD
07618001619

SHEET

ARCHITECTURAL DESIGN

AP-401

40-SQM DWELLING UNIT-

BEDROOM1- $2.7 \times 2.7 = 7.29$ SQM
 BEDROOM2- $2.7 \times 3 = 8.1$ SQM
 TOILET- $(2.3 \times 1.2) \times 2 = 2.76 \times 2 = 5.52$ SQM
 KITCHEN - $2 \times 1.8 = 3.6$ SQM
 LIVING - $3 \times 3 = 9$ SQM
 AREA OF WALLS - 4.97 SQM
 TOTAL AREA - 38.4 SQM

40-SQM

NUMBER OF UNITS = 900
 NUMBER OF CLUSTERS = 75
 AREA OF 1 CLUSTER = 574.6 SQM
 TOTAL CIRCULATION AREA = 8626 SQM
 TOTAL BUILT UP AREA = 43093.9 SQM



40 SQM SINGLE UNIT PLAN



40 SQM CLUSTER PLAN





Affiliated to GGSIP University, New Delhi
Approved by AICTE & Council of Architecture

DRAWING TITLE:

STUDIO INCHARGE:

**MOHAMMAD
07618001619**

SHEET

**ARCHITECTURAL DESIGN
AP-401**



1ST FLOOR RENDERED PLAN

AREA CHART	& O
BEDROOM 2	2.7*2.7
LIVING ROOM	3*3
KITCHEN	2*1.7
BATHROOM 1	1.4*1.5



ROOFTOP PLAN



CORNER VIEW



3D ELEVATION VIEW



Affiliated to GGSIP University, New Delhi
Approved by AICTE & Council of Architecture

DRAWING TITLE:

STUDIO INCHARGE:

**MOHAMMAD
07618001619**

SHEET

**ARCHITECTURAL DESIGN
AP-401**



FRONT ELEVATION VIEW



ISOMETRIC VIEW



CORNER ELEVATION VIEW



FRONT ELEVATION VIEW





Affiliated to GGSIP University, New Delhi
Approved by AICTE & Council of Architecture

DRAWING TITLE:

STUDIO INCHARGE:

**MOHAMMAD
07618001619**

SHEET

**ARCHITECTURAL DESIGN
AP-401**



SECTION "A"

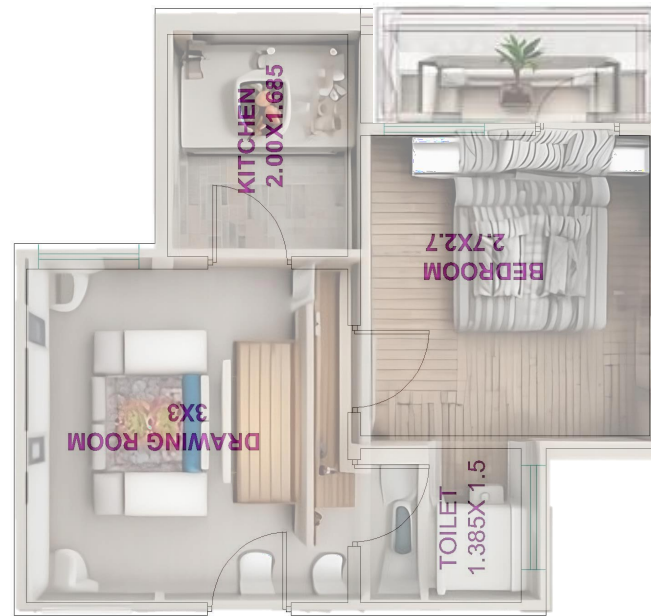


SECTION "B"





25 SQM SINGLE UNIT PLAN 'A'



25 SQM SINGLE UNIT PLAN 'B'

25 SQM TYPE 'A' DWELLING UNIT

BEDROOM - $2.7 \times 2.7 = 7.29$ SQM
TOILET - $1.385 \times 1.5 = 2.0775$ SQM
KITCHEN - $2 \times 1.685 = 3.37$ SQM
LIVING - $3 \times 3 = 9$ SQM
AREA OF WALLS - 3.252 SQM
TOTAL AREA - 24.990 SQM

25 SQM TYPE 'B' DWELLING UNIT

BEDROOM - $2.7 \times 2.7 = 7.29$ SQM
TOILET - $1.385 \times 1.5 = 2.0775$ SQM
KITCHEN - $2 \times 1.685 = 3.37$ SQM
LIVING - $3 \times 3 = 9$ SQM
AREA OF WALLS - 3.252 SQM
TOTAL AREA - 24.990 SQM

25 SQM CLUSTER

NUMBER OF UNITS = 780
NUMBER OF CLUSTERS = 65
AREA OF 1 CLUSTER = 374.90 SQM
SINGLE CORRIDOR AREA = 63.096 SQM
TOTAL CIRCULATION AREA = 4876.5 SQM
TOTAL BUILT UP AREA = 24368.5 SQM



25 SQM CLUSTER PLAN



Affiliated to GGSIP University, New Delhi
Approved by AICTE & Council of Architecture

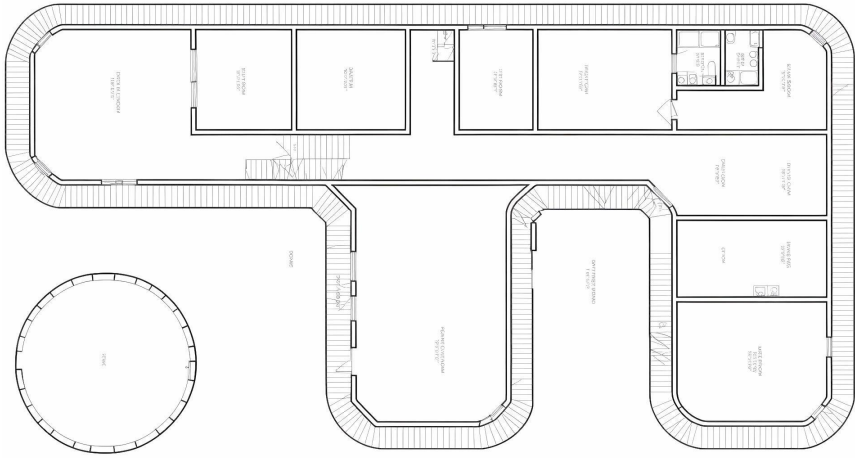
DRAWING TITLE:

STUDIO INCHARGE:

**MOHAMMAD
07618001619**

SHEET

**ARCHITECTURAL DESIGN
AP-401**



Remunerative Floor plan



Remunerative isometric view



Rendered Floor plan