

REVAMP

IN BUILDING AND OTHER CONSTRUCTION WORKS MORE THAN EIGHT MILLION WORKERS ARE ENGAGED THROUGHOUT THE COUNTRY, CONTRIBUTING 7.7% TO THE COUNTRY'S GDP. IT IS ONE OF INDIA'S FASTEST GROWING SECTORS. THESE WORKERS ARE ONE OF THE MOST VULNERABLE SEGMENTS OF THE UNORGANISED LABOUR IN INDIA. THEIR WORK IS OF TEMPORARY NATURE, THE RELATIONSHIP BETWEEN EMPLOYER AND THE EMPLOYEE IS TEMPORARY, WORKING HOURS ARE UNCERTAIN. BASIC AMENITIES AND WELFARE FACILITIES PROVIDED TO THESE WORKERS ARE INADEQUATE.

REASONS FOR MIGRATION

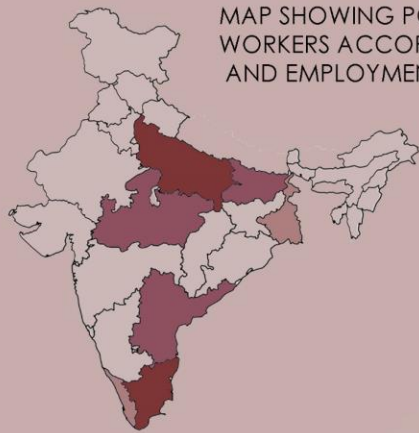


RURAL POVERTY AND FOOD INSECURITY, LACK OF EMPLOYMENT AND INCOME GENERATING OPPORTUNITIES, INEQUALITY, LIMITED ACCESS TO SOCIAL PROTECTION.

INDUSTRIALIZATION ATTRACTED RURAL PEOPLE, WHICH LEAD TO MIGRATION IN SEARCH OF JOB.



CONSTRUCTION IS A FAST GROWING INDUSTRY AND REQUIRE LOT OF LABOUR. HENCE MOST OF THE UNEDUCATED MIGRANTS BECOME LABOURS.



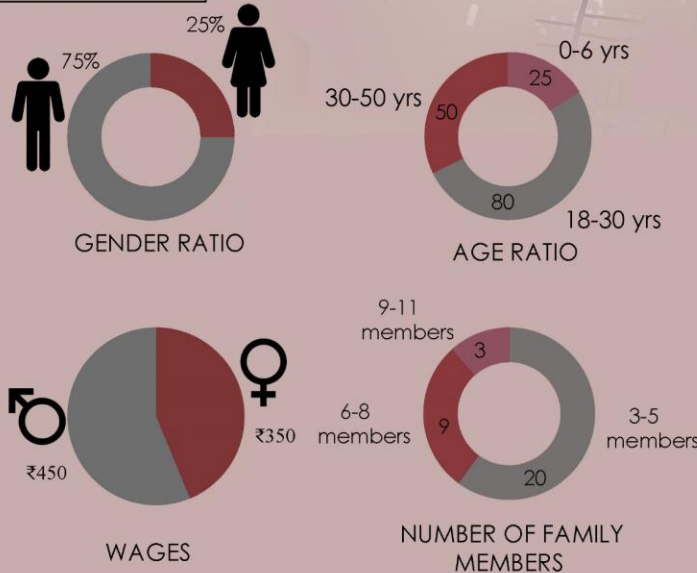
MAP SHOWING POPULATION OF MIGRANT WORKERS ACCORDING TO MINISTRY OF LABOUR AND EMPLOYMENT (2015)

Uttar Pradesh (10.5 %)	Tamil Nadu (11.8 %)
Madhya Pradesh (8.3 %)	Bihar (9.5 %)
West Bengal (9.8 %)	Andhra Pradesh (8 %)
	Kerala (13.9 %)

SITE SELECTION

THE ONGOING PROJECT OF JINDAL PRESTIGE GROUPS IN BENGALURU, KARNATAKA, HOUSES 32 FAMILIES OF CONSTRUCTION WORKERS.

DEMOGRAPHICS



ROUTINE



AFTER FRESHENING UP THEIR DAY STARTS TO FETCH WATER FOR THEIR DAILY USE FOR CONSUMPTION AND SANITATION



7:00am



BOTH BREAKFAST AND LUNCH ARE PREPARED AT ONCE IN THE MORNING.

9:00am



CONSTRUCTION WORKERS ARE SCHEDULED TO WORK FOR 9 HOURS.



2:00pm



CONSTRUCTION WORKERS ARE GIVEN HALF AN HOUR LUNCH BREAK.

2:30pm



RETURN TO WORK AFTER THE LUNCH BREAK



6:00pm



AFTER THE WORK HOURS THEY RETURN TO THEIR HOUSING UNITS AND SPEND LEISURE TIME TOGETHER

9:00pm



SLEEPING HOURS

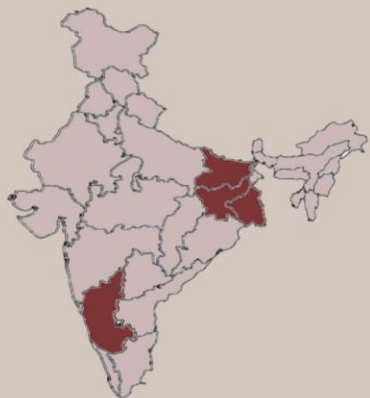
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BACKGROUND OF CONSTRUCTION WORKERS ON SITE



MIGRANT WORKERS ON SITE ARE FROM KARNATAKA, BIHAR, JHARKHAND AND UTTAR PRADESH. MOST OF THEM HOWEVER ARE FROM RAICHUR WHICH IS IN THE NORTH EASTERN PART OF KARNATAKA.

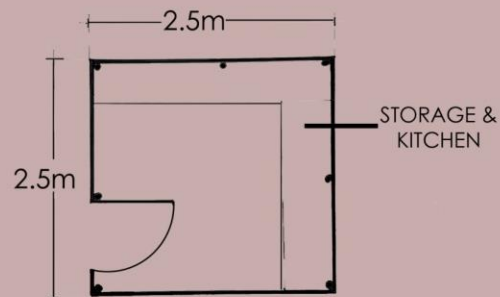
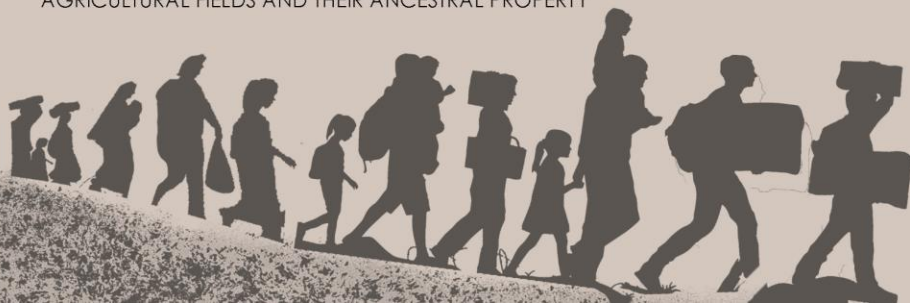


MIGRANTS IN SELECTED CONSTRUCTION SITE MAINLY COME IN SEARCH OF EMPLOYMENT EVEN IF THEY HAVE OR HAD FARMING LANDS OR EXPERIENCE IN FARMING BUT MIGRATE DUE TO LACK OF RAINFALL, DROUGHT, AND EXPECTING BETTER INCOME, HENCE IMPROVED LIFESTYLE.

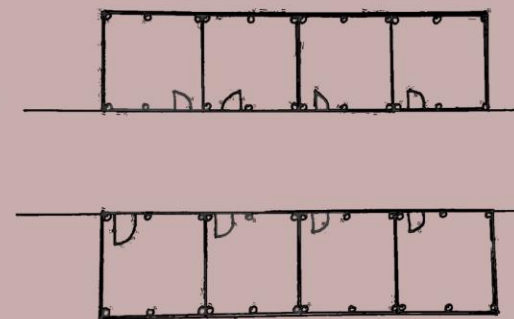


WORKING POPULATION IN THE SITE IS OF AGE GROUP OF 18-50 THE KIDS BELOW THE AGE OF 6 RESIDE WITH THEIR PARENTS ON SITE AFTER THE PASS THE AGE OF 6 THE CHILDREN ARE SENT BACK TO THEIR NATIVES FOR THEIR EDUCATION.

THE OLD AGED PARENTS STAY BACK AT THEIR NATIVES. TAKING CARE OF THEIR AGRICULTURAL FIELDS AND THEIR ANCESTRAL PROPERTY



PLAN SHOWING SINGLE HOUSING UNIT.



PLAN SHOWING ARRANGEMENT OF HOUSING UNITS ON SITE

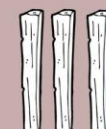
MATERIALS USED FOR CONSTRUCTING EXISTING HOUSING UNITS



GI SHEETS



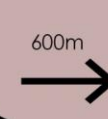
SHUTTERING BOARD



WOODEN POST

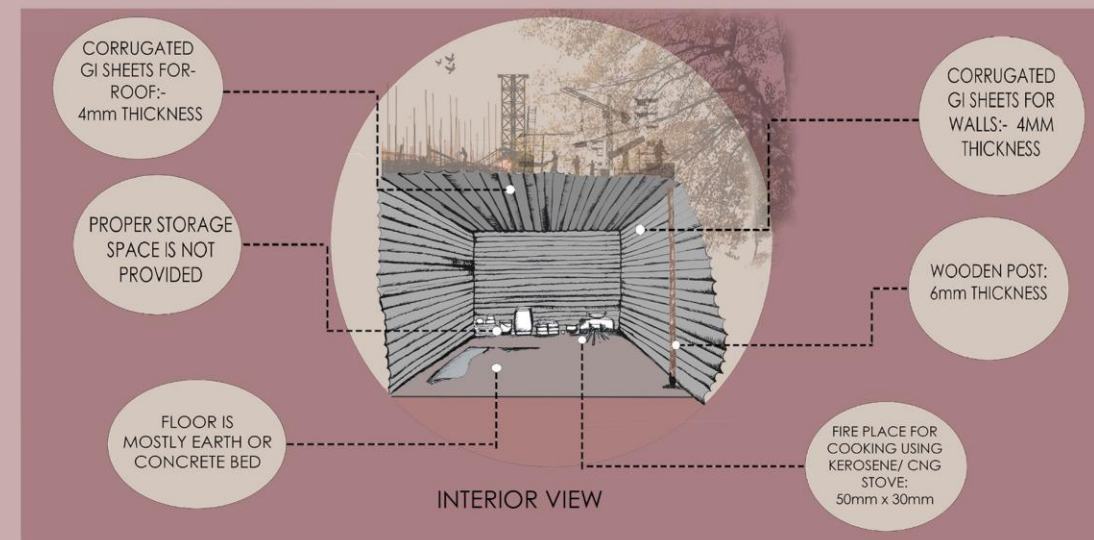


HOUSING UNIT



CONSTRUCTION SITE

600m



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ANALYSING THE SERVICES

SANITATION



TOILET

CONSTRUCTION WORKERS ARE GIVEN MODULAR TOILETS ON SITE. NEAR THE HOUSING UNIT THEY ARE GIVEN TOILETS WHICH ARE MADE OF GI SHEETS.

THE TOILET WASTE ARE DRAINED INTO A BIG CLOSED PIT WHICH IS THEN SEALED OFF AFTER THE COMPLETION OF THE PROJECT.

TOILET HAS PLUMBING FACILITIES.



BATHROOM

WORKERS MOSTLY CLEAN UP IN OPEN. BUT THERE IS SEPARATE BATHING AREA FOR FEMALE WORKERS.

THE BATHROOM WATER IS LET OUT ON TO GROUND, IT DOESN'T HAVE ANY PIT OR DRAINAGE FEATURE FOR IT.

FOR BATHING WATER IS STORED IN TANK AND USED.

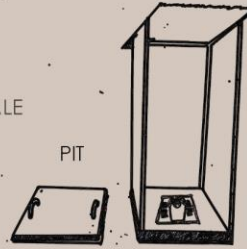


COOKING AREA

KITCHEN :- A SLAB IS GIVEN WHICH IS USED FOR STORAGE. THEY USE KEROSENE OR CNG STOVE. WATER IS STORED SEPARATELY FOR COOKING. WATER IS GIVEN BY THE CONTRACTOR.

DRINKING WATER

FETCHED AND STORED TWO DAYS ONCE.



TO

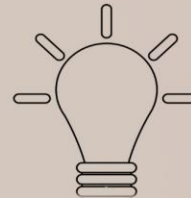


MALE
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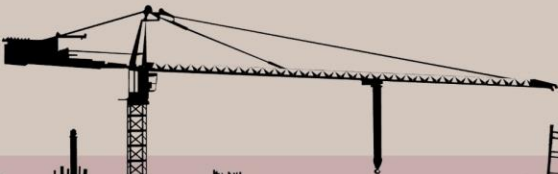
FEMALE
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WATER STORED

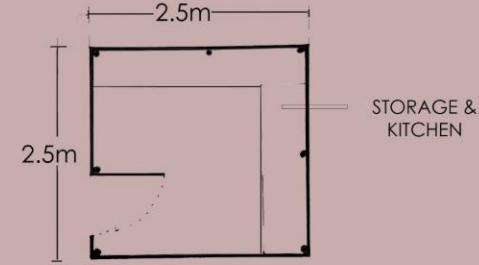


ELECTRICITY

IN ORDER TO PROVIDE ALL THE ELECTRIC POWER FOR CONSTRUCTION WORKERS, GENERAL CONTRACTORS OFTEN USE POWER FROM THE EXISTING MUNICIPAL POWER GRID, THAT IS ALSO USED AT THE CONSTRUCTION SITE.



CONCERNS



PLAN SHOWING SINGLE HOUSING UNIT.

IT IS VERY SMALL SPACE WHICH IS NOT ENOUGH FOR SLEEPING, COOKING AND ALSO STORAGE.

HENCE PEOPLE COME OUT AND SIT OUT FOR RELAXATION.

UNORGANISED - THERE IS NO SPACE FOR COOKING AND STORAGE INSIDE THE HOUSE. PROPER DOOR NOT PROVIDED,

THEREFORE IT IS NOT SAFE TO STORE ANY VALUABLE THINGS.



NO PROPER PLUMBING LINES. WATER MUST BE FETCHED FOR BATHING.

BATHROOMS DOESN'T HAVE SEWAGE LINE IT IS LET OUT ON THE GROUND.

BATHROOMS DOES NOT HAVE LOCK SO IT IS NOT SAFE FOR WOMEN.

MALE MEMEBERS BATH OUTSIDE IN OPEN.



External Gains

NO PROPER VENTILATION.

THE MATERIAL USED FOR HOUSE USED IS GI SHEETS WHICH HEATS THE INTERIOR SPACE WHEN THE OUTSIDE TEMPERATURE IS HIGH.

Internal Gains

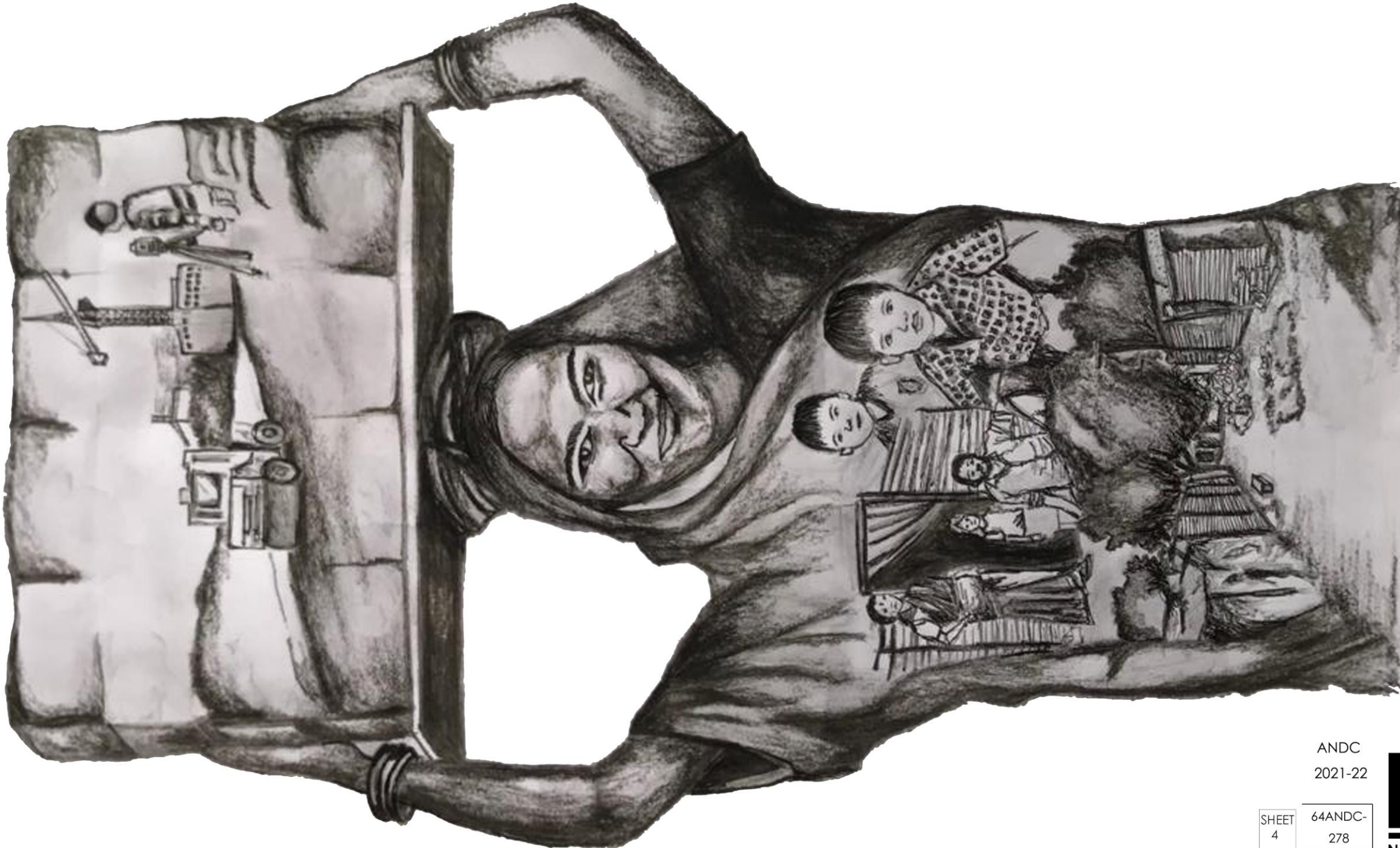


AT RAINY SEASON HOUSES ARE FLOODED AND CAUSES DISCOMFORT. HOUSES ARE DIFFICULT TO CLEAN.

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REVAMP MANUAL

INTRODUCTION

LE CORBUSIER ONCE SAID "THE HOME SHOULD BE THE TREASURE CHEST OF LIVING". MOTIVATION STARTS FROM HOME. WHEN AN INDIVIDUAL RETURNS TO A WELL-KEPT HOME IT HELPS UPLIFTING THEIR SELF-ESTEEM THEREFORE LEADING TO A HAPPIER BELONGING WHILST LIVING IN A RUNDOWN PROPERTY THAT IS POORLY KEPT WILL REFLECT ON THE INDIVIDUAL NOT ONLY ON THEIR LIFESTYLE BUT IN THE MOTIVATION THEY HAVE FOR EVERYDAY LIFE. TO CREATE THAT WELL-MAINTAINED HOME, A NEW CONCEPT OF LABOUR HOUSING WAS REVAMPED WHICH MEANS A NEW AND IMPROVED FORM OR A STRUCTURE WAS DESIGNED TO IMPROVE THE LIVING SITUATION AND STANDARD OF LIVING AS WELL AS RETAIN A SOCIAL LIFE FOR EVERY INDIVIDUAL WORKER.

POOR LIVING CONDITIONS AND BAD HYGIENE ARE MAJOR ISSUES OF THESE LABOURS. THIS PROJECT REVEALS ISSUES OF THE LIVING SITUATION OF CONSTRUCTION WORKERS. A SEMI-PERMANENT SUSTAINABLE LIVING ENVIRONMENT WAS CREATED TO SATISFY THEIR NEEDS.



APPROACH A : ANALYTICAL ESSAY :

THE PROJECT FUNDAMENTAL FLOOR PLAN IS DESIGNED CONSIDERING USER TYPOLOGY AND CONTEXT. SINCE THE PROTOTYPE HAS TO BE PLACED IN THE CONSTRUCTION SITE, THE WORKERS ARE GIVEN TRANSFORMABLE MODULE WHICH IS COMPACT AND EASILY TRANSPORTABLE.



APPROACH B : CLIMATIC ANALYSIS:

THE PROJECT IS ANALYZED TO FIT IN ALL KINDS OF TEMPERATURE AND WEATHER CONDITIONS.

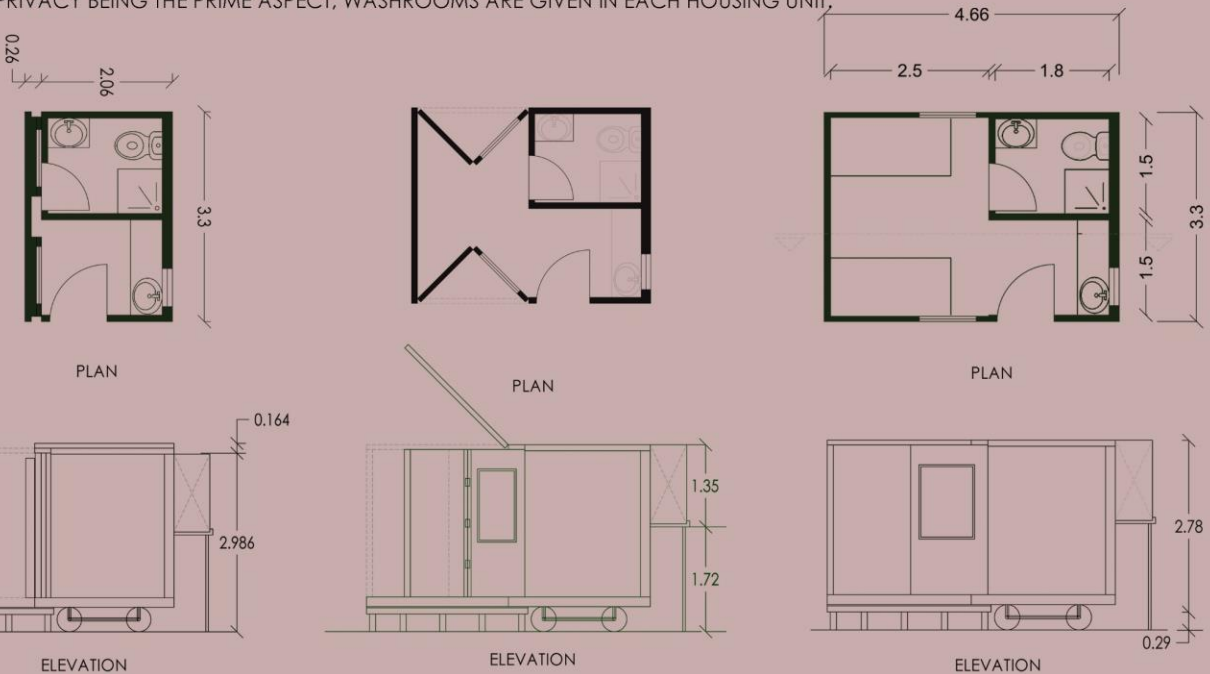
APPROACH C : MATERIAL AND FIXTURES

THE PROJECT IS DESIGNED ON A MATERIAL AND ANALYZED FIXTURES WHICH MAKES PROTOTYPE TRANSFORMABLE.



APPROACH D : LIFESTYLE :

HYGIENE AND PRIVACY BEING THE PRIME ASPECT, WASHROOMS ARE GIVEN IN EACH HOUSING UNIT,



THIS THE SOILD PART OF THE PROTOTYPE. IT HAS KITCHEN AND WASHROOM. SINCE BOTH THE SPACE HAVE FIXTURES AND PLUMBING LINES GOING THIS SPACE IS KEPT SOILD. AS IN WHILE TRANSPORTING ONLY THIS PART IS MOVED.

TRANSFORMING PORTOTYPE FIRST THE LOOR IS OPNED AND THEN WALL IS PULLED OUT IN ABOVE PATTERN AND THE ROOF IS OPENED.

THIS IS HOW THE PROTOTYPE LOOKS WHEN IT IS ASSEMBLED.

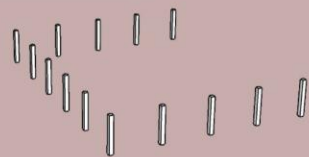
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INSTALLATION

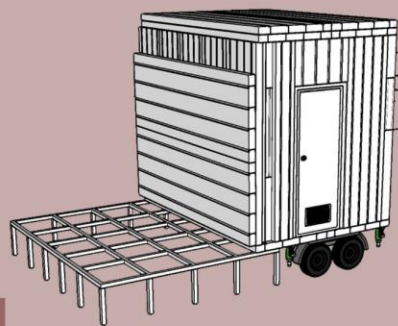


1

WOODEN POST OF PLINTH IS ARRANGED IN SIZE OF 2.65M X 3.3M. IN AN INTERVAL OF 0.66M

2

WOODEN FRAME IS PUT ON THE PLINTH FOR THE SUPPORT OF TRANSFORMABLE PART OF THE UNIT.

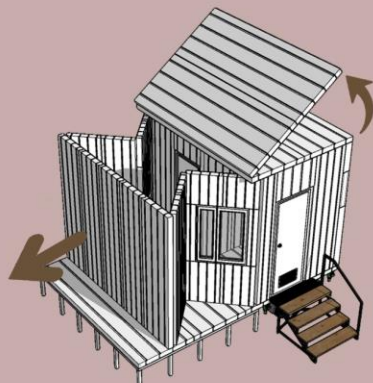


3

SOLD PART IS PLACED NEXT TO THE PLINTH

4

THE FLOOR IS PULLED DOWN FROM THE SOLD PART

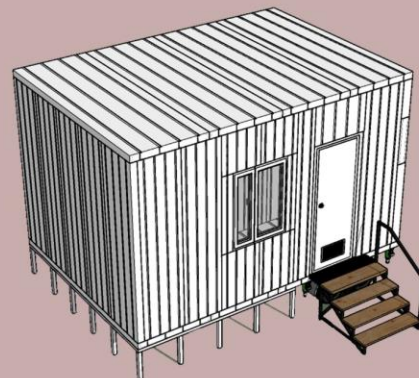


5

WALL AND ROOF OPENING FROM SOLD PART.

6

TRANSFORMABLE HOUSING UNIT

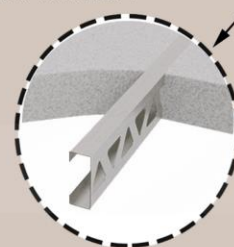


EXPLODED VIEW

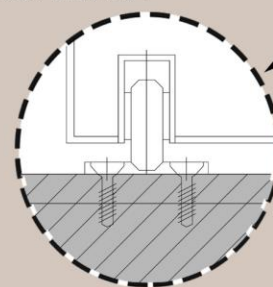
LEGEND:-

- 1 - WOODEN PLINTH
- 2 - WOODEN FRAME
- 3 - EPS FLOOR
- 4 - WHEELS
- 5 - JACK
- 6 - PVC PANEL
- 7 - POLYVINY SLIDING WINDOWS
- 8 - DOOR
- 9 - GUTTER
- 10 - EPS PANEL ROOF
- 11 - WATER CLOSET

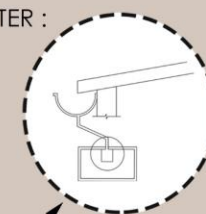
EPS PANELS :



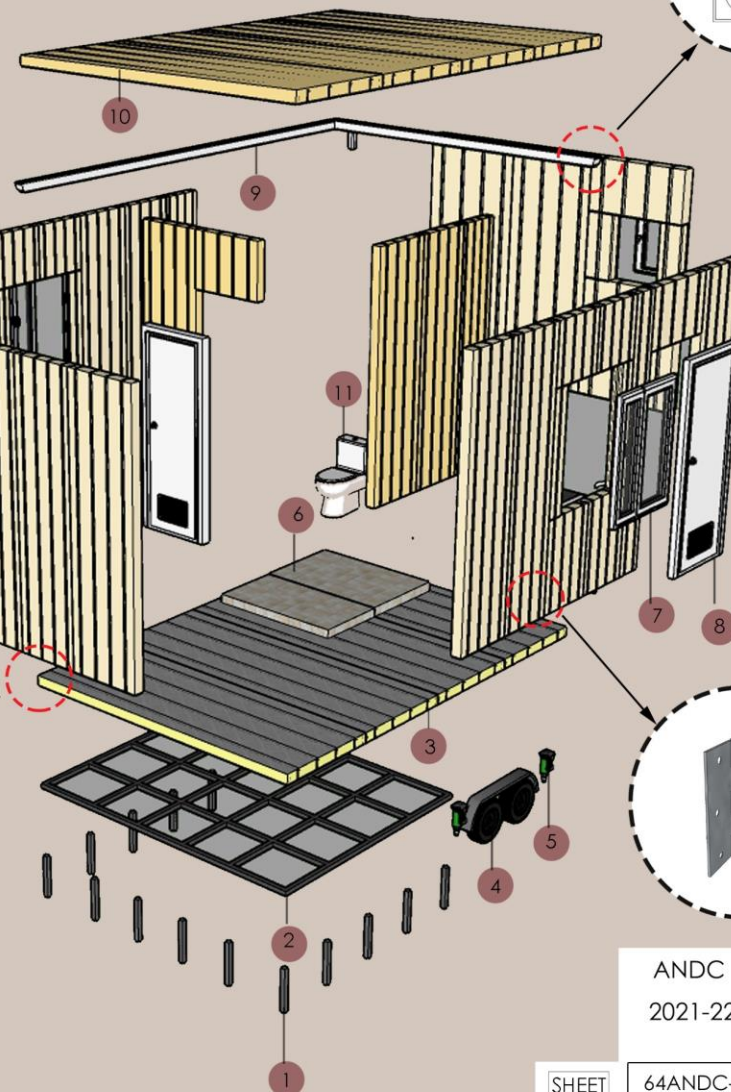
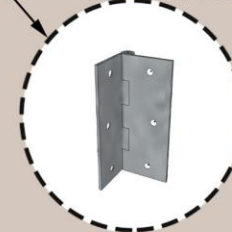
TRACK DETAILS :



GUTTER :



HINGES :



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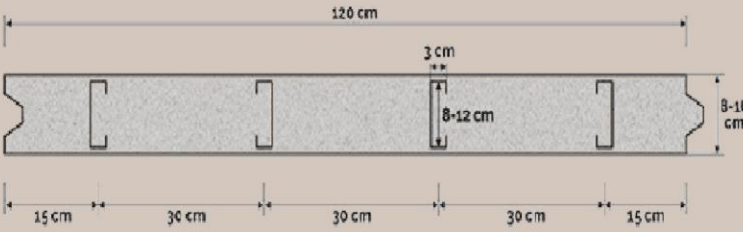
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REVAMP: MATERIALS AND COST

NO.S	MATERIALS	COST	TOTAL MATERIAL USED	TOTAL COST
1	WOODEN FRAME	₹ 15,890.00 /m³	0.167m³	₹ 2653.00
2	WOODEN PLINTH	₹ 15,890.00 /m³	0.0261m³	₹ 414.00
3	EPS FLOOR	₹ 650.00 /m²	12.3m²	₹ 7995.00
4	WHEELS	₹ 1500.00	2 in no's	₹3000.00
5	JACK	₹600.00	2 in no's	₹1200.00
6	PVC PANEL	₹50.00 /m²	24.3m²	₹ 1215.00
7	PVC WINDOWS	₹250.00 /m²	3m²	₹ 750.00
8	DOOR	₹1500.00 /m²	2 in no's	₹3000.00
9	GI GUTTER	₹200.00 /m	7.9m	₹ 1580.00
10	EPS ROOF	₹ 650.00 /m²	12.3m²	₹ 7995.00
11	EPS WALL	₹ 650.00 /m²	32.52m²	₹25,038.00
12	WATER CLOSET	₹2250.00 /m²	1 in no's	₹2250.00
13	SINK	₹500.00 /m²	2 in no's	₹1000.00
14	HINGES	₹ 20.00 /m²	21 in no's	₹400.00
TOTAL AVERAGE COST OF EACH UNIT				₹58,490.00



SECTION OF THE EPS PANEL

THICKNESS USED IN THE DESIGN UNIT

INTERIOR WALLS: 8cm THICK
EXTERIOR WALLS: 10cm THICK
FLOOR: 16cm THICK

MATERIALS USED:- EPS PANEL



EXPANDED POLYSTYRENE (EPS) REFERS TO A RIGID, TOUGH AND LIGHTWEIGHT THERMOPLASTIC PRODUCT. EPS IS GENERALLY MADE OF PRE-EXPANDED POLYSTYRENE BEADS. EPS IS IDEAL FOR THE PACKAGING AND CONSTRUCTION INDUSTRIES DUE TO ITS LIGHT WEIGHT, STRONG AND EXCELLENT THERMAL INSULATION PROPERTIES.

HIGH-DENSITY EPS:
EXPANDED POLYSTYRENE IS AN ISOTROPIC, HOMOGENOUS POLYMER, CHARACTERIZED BY A HIGH RESISTANCE TO COMPRESSION AND HIGH THERMAL AND ACOUSTIC INSULATION.

SOUND-PROOF:
THE EPS HAS BY ITSELF A HIGH SOUND INSULATION RATING, WHICH CAN BE IMPROVED BY PAIRING IT WITH SPECIFIC ELEMENTS IN CASE OF PARTICULAR NEEDS.

WEATHER-PROOF:
THE PANEL ALLOWS THERMAL COMFORT BEYOND COMPARE IN ANY WEATHER CONDITION.

MODULAR:
THE INNOVATIVE HOOKING SYSTEM MAKES THE STRUCTURE OF THE EPS PANELS VERSATILE AND MODULAR.

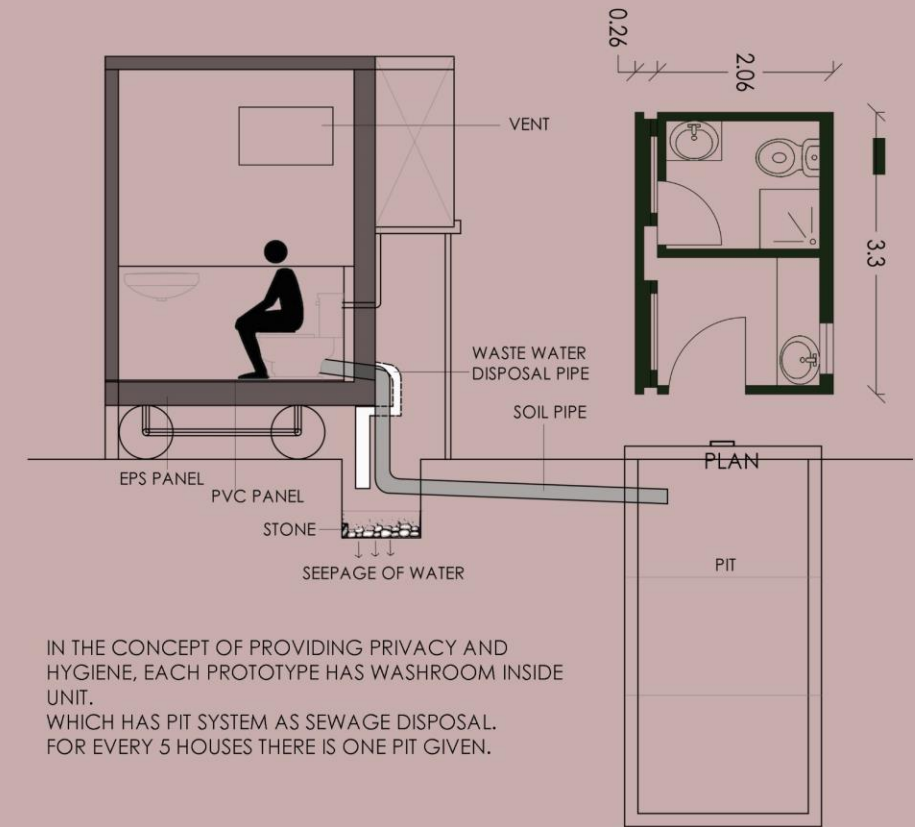
RESISTANT:
THE CONSTRUCTION MADE WITH THE EPS PANELS SYSTEM ARE ABLE TO WITHSTAND STRONG WINDS, MAKING THEM IDEAL TO BE USED IN AREAS KEEN TO HURRICANES, TYPHOONS AND TORNADO.

LIGHTWEIGHT:
LIGHT AND EASY TO MANEUVER, THE EPS PANEL IS A REVOLUTION FOR THE CONSTRUCTION INDUSTRY.

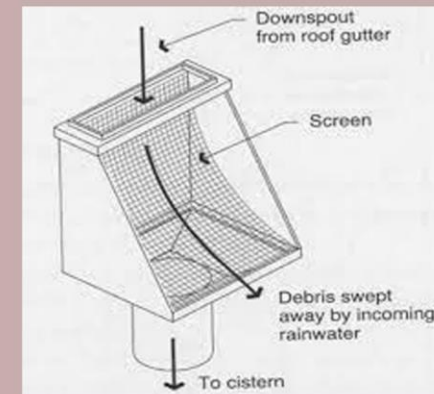
COST EFFECTIVE AND TIME SAVING:
THE REDUCED COST OF THE PANELS, THE FAST FITTING TIME AND THE LOW NUMBER OF WORKFORCE NEEDED FOR THE ON-SITE INSTALLATION AND FINISHING OF THE PANELS, PROVIDE A HIGH SAVING IN TERMS OF COSTS AND TIME.

SUSTAINABLE:
COMPLETELY RECYCLABLE AND WITH A REDUCTION IN THE PRODUCTION PHASE OF 60% OF EMISSIONS OF CO2.





IN THE CONCEPT OF PROVIDING PRIVACY AND HYGIENE, EACH PROTOTYPE HAS WASHROOM INSIDE UNIT. WHICH HAS PIT SYSTEM AS SEWAGE DISPOSAL. FOR EVERY 5 HOUSES THERE IS ONE PIT GIVEN.



RAIN WATER HARVESTING ROOF IS GIVEN GUTTER WHICH COLLECTS RAIN WATER.

RAINWATER IS RUN THE GUTTERWHERE THE SCREEN FILTER WATER AND SEND SIT TO TANK.



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