

BRIEF

To design an innovative environmental friendly & disaster resilient housing for low income community in urban and sub-urban area

DESIGN REQUIREMENTS

- Cost effectiveness
- Green and sustainable aspect
- Functionality
- Aesthetics
- Innovation

SITE: BAHAWALPUR, PUNJAB PAKISTAN



LANDMARKS



Darawar Fort



Noor mahal



sadiq dane school



Victoria hospital



Farid Gate



craft of the city



Festivals



People



Specialty

The site I have chosen for affordable housing is the central south region of Punjab (Bahawalpur) situated 90km from Multan and 420 Km from Lahore. This city has its own diverse cultural history, founded in 1978 by Nawab Bahawal Khan. The city is divided into 3 parts: the riverine area (close to Sutlej River), plain (mid-city) and the desert area. The climate of Bahawalpur district is extremely hot and dry in summer and cold and dry in winter. The summer season starts in April and continues until October. Dust storms are frequent during summer months. Average rainfall is less as the district is located at the tail end of monsoon region. Seraiki is the mother tongue of the majority, spoken by 64 out of every 100.

It is predominant in rural areas at 70 percent as compared to 49 percent in urban areas. The chief crops are wheat, gram, cotton, sugarcane, and dates. Sheep and cattle are raised for export of wool and hides. Mangoes and dates are also grown here. This city is a very important marketing place for neighboring areas. Bahawalpur has many sugarmills that allow it to export sugar from outside of the country.

The pivotal point for choosing this city for housing is its diversity in culture, tradition, and its architectural language, but unfortunately this district is characterized by a high poverty level. The urban areas are ranked as 25th and rural areas as 31st most deprived districts of Punjab out of 34 districts, and because of a 15% literacy gap between poor and non-poor, the unemployment rate is double in low middle class families. And due to this, my site is located in a mid-urban area of the city adjacent to a railway station and industrial area to facilitate housing for the working class of both communities.

MASTER PLAN

NUMBER OF HOUSES:60

TYPE A:30

TYPE B: 30

SOCIETY

SHADRA ROAD

- TYPE A
- TYPE B
- GREEN SPACES
- ROADS
- PATHWAYS

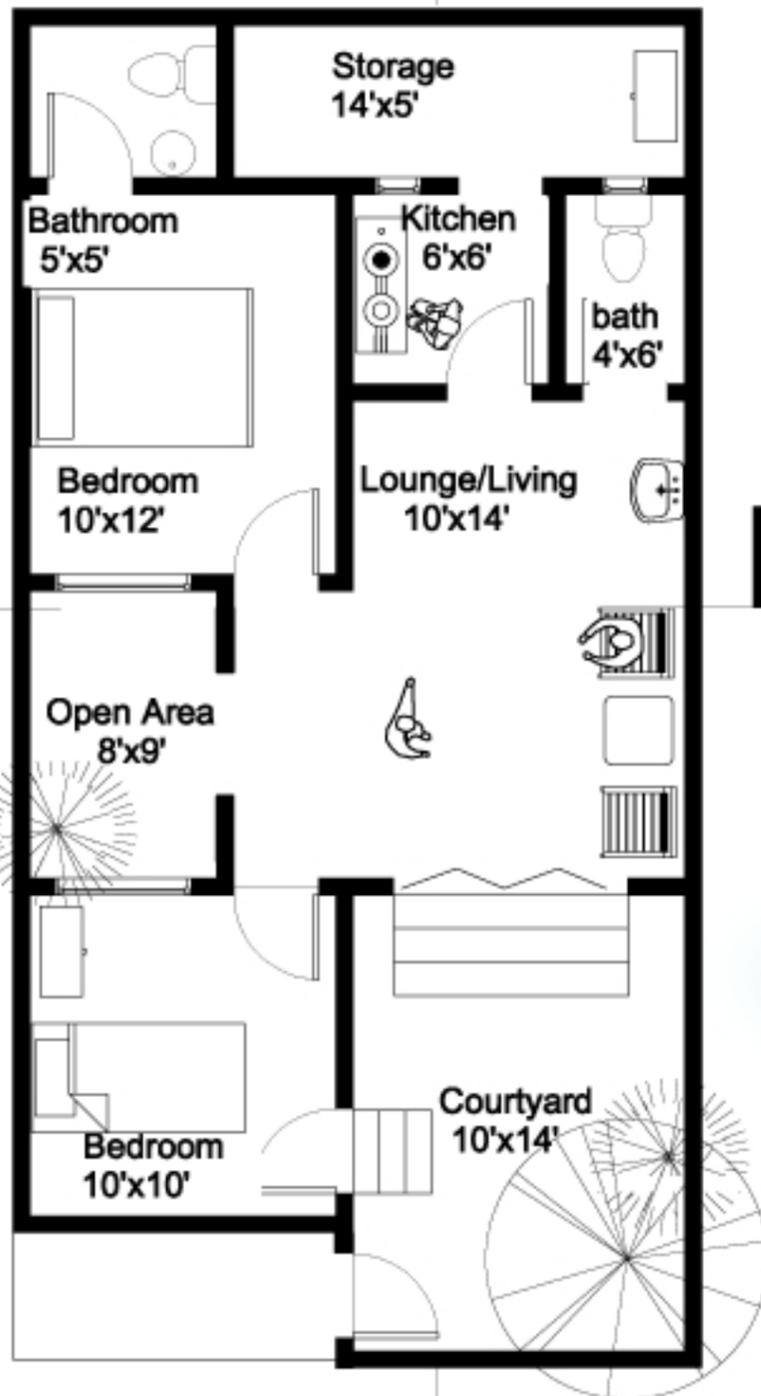


SCALE = 1'=1/32"



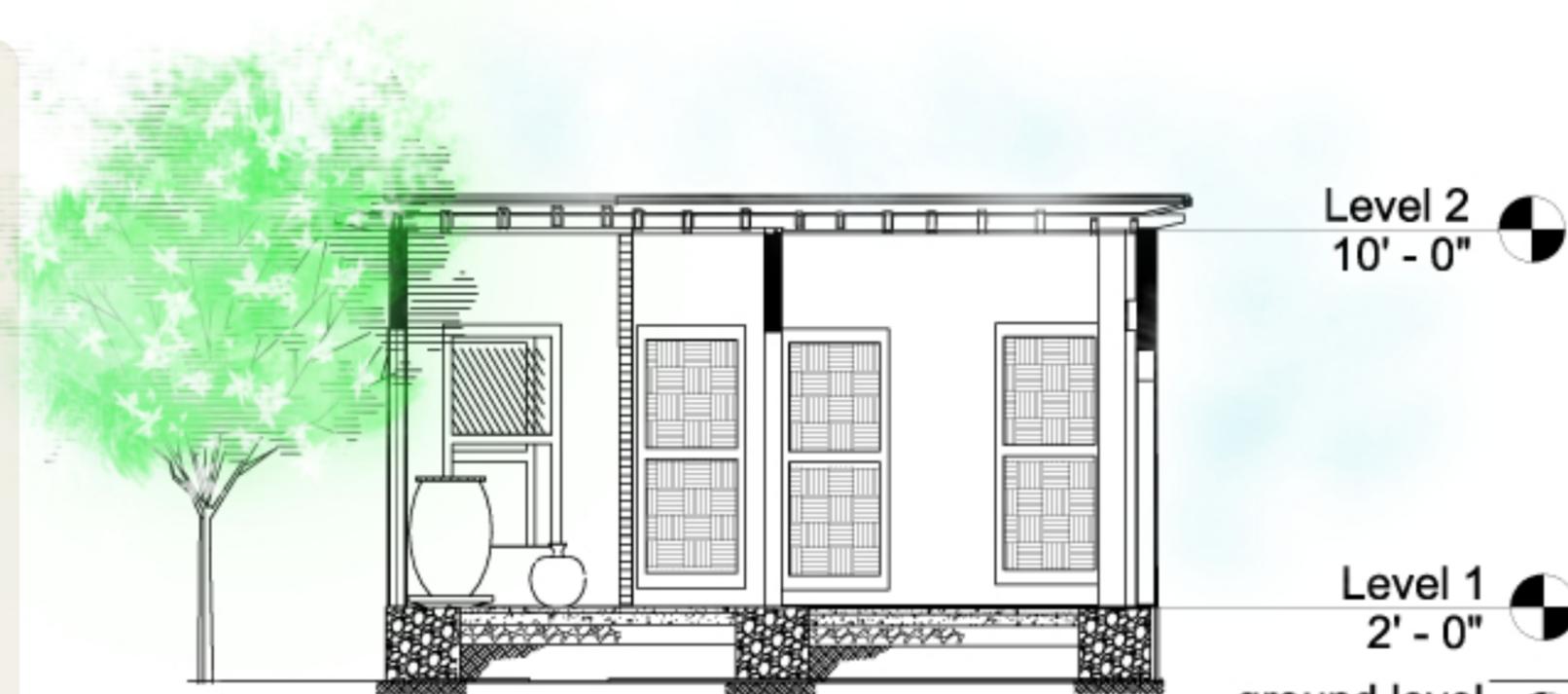
CATEGORY B

Ground Floor Plan



- 1-BEDROOM =100SQFT
- 2-BEDROOM 2 =120SQFT
- 3-BATH=24 SQFT
- 4-KITCHEN=36 SQFT
- 5-LOUNGE =140SQFT
- 6-BATHROOM =25 SQFT
- 7-STORAGE=70SQFT
- BUILT UP AREA=517SQ.FT
- PLOT AREA=40X20=800SQFT

SCALE=3/16"=1'



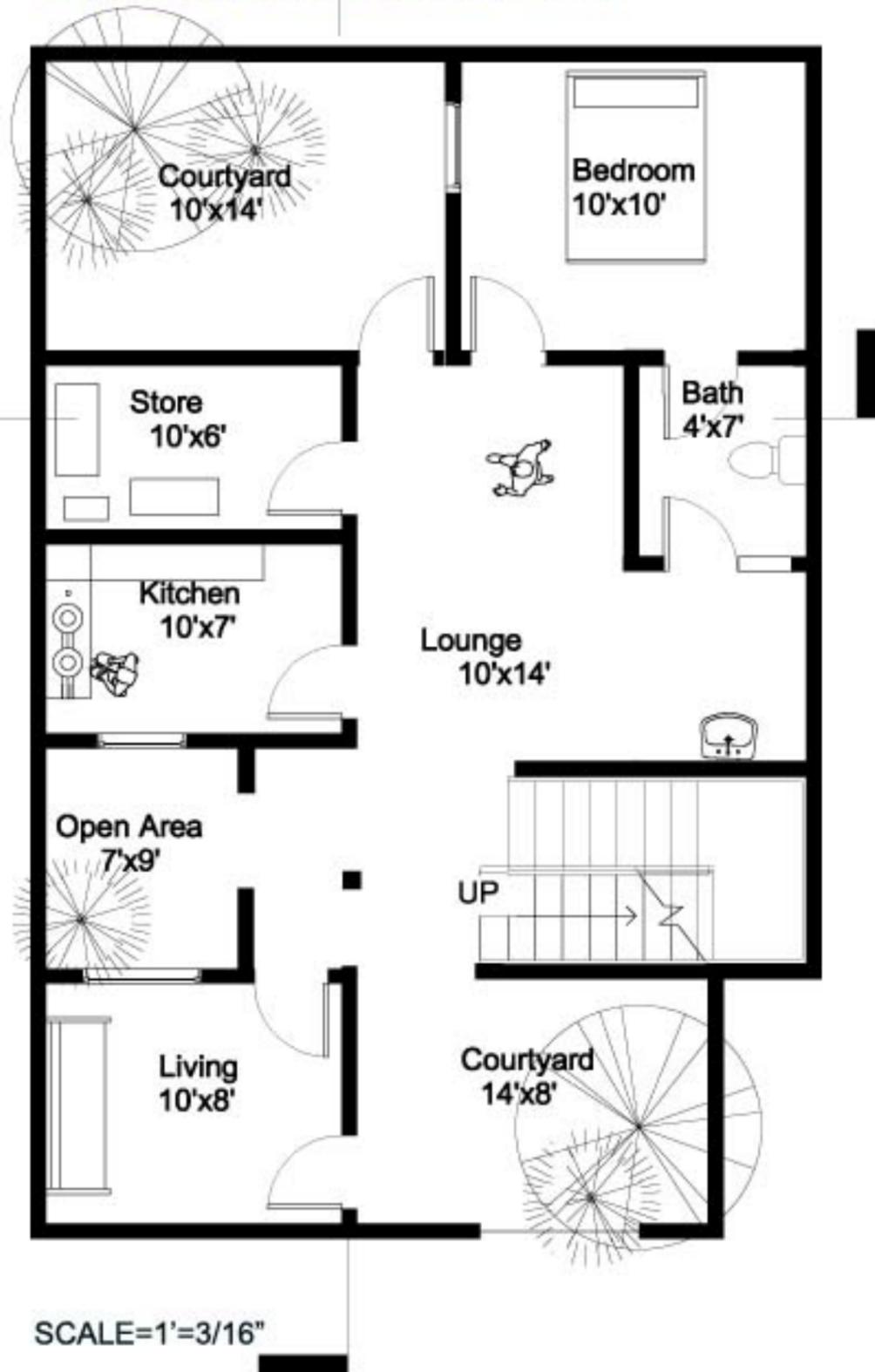
Section A A'



Section B B'

CATEGORY B

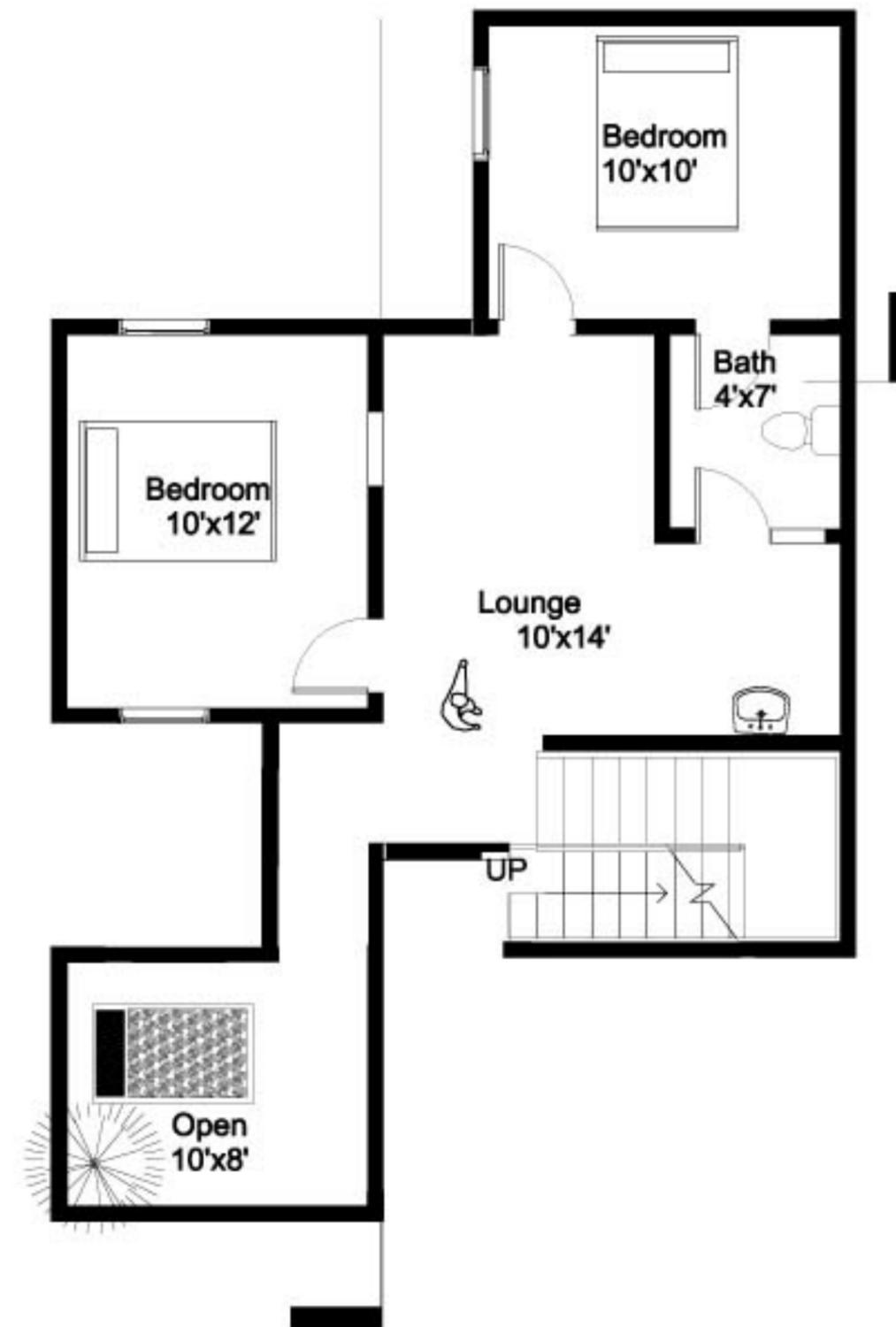
GROUND FLOOR PLAN



SCALE=1'=3/16"

- 1-BEDROOM1 (2X) =100SQFT
- 2-BEDROOM 2 =120SQFT
- 3-BATH(2X)=28SQFT
- 4-KITCHEN=70 SQFT
- 5-LOUNGE(2X) =140SQFT
- 6-BATHROOM =25 SQFT
- 7-LIIVING=180SQFT
- BUILT UP AREA= 956 SQ.FT
- PLOT AREA=40X25=1000SQFT

FIRST FLOOR PLAN



PRECEDENCE

TARA HOUSING GROUP Charles Correa

Location: New Delhi, India
Date: 1975-1978
Site: 1.48 ha
Program: Social housing
with 160 units of 2 and 3 bedroom
Flats Client: Tara Housing Society

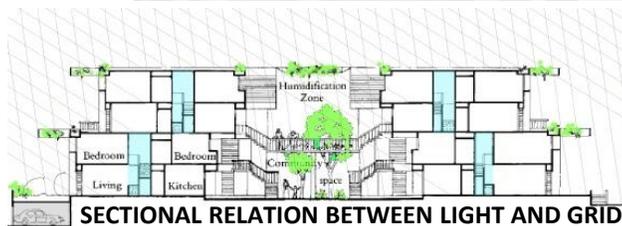
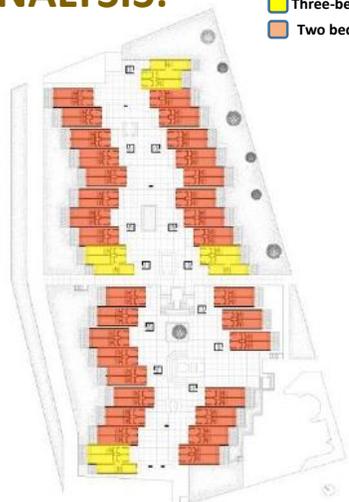


Concept:

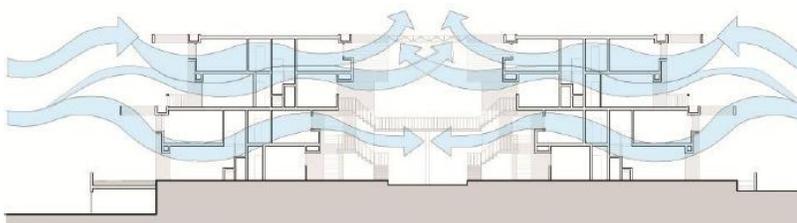
- The main concept in Tara housing group project is a creative vernacular typology in term of arranging and piling the singular flat into united blocks
- To provide both public and private life to people of the society
- The project takes a big advantage from natural resources Like air ventilation and natural lightings.

ANALYSIS:

■ Three-bedroom flats
■ Two bedroom flat



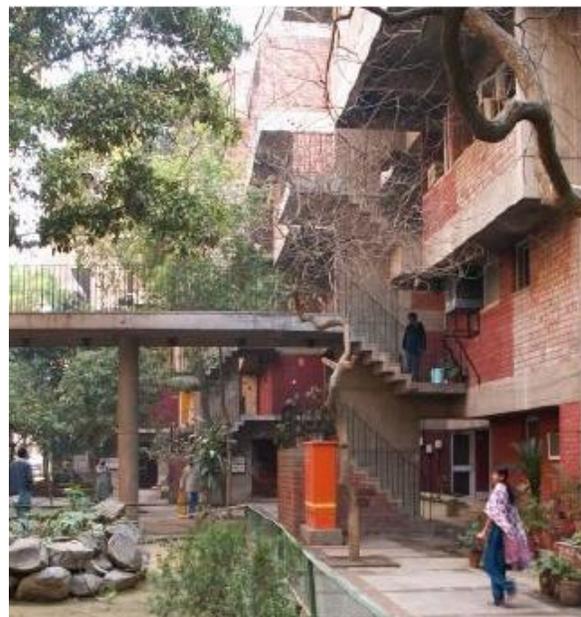
SECTIONAL RELATION BETWEEN LIGHT AND GRID PATTERN



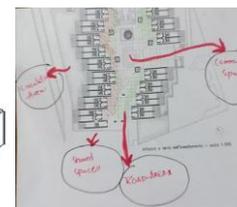
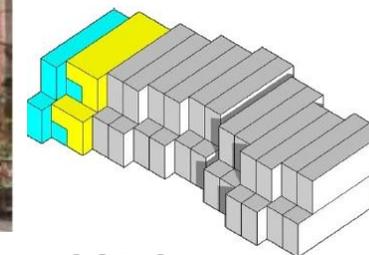
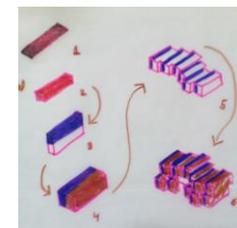
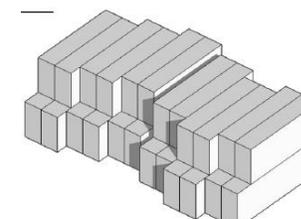
NATURAL VENTILATION



SECTION AA'



VOLUMETRIC SCHEMES



PROS

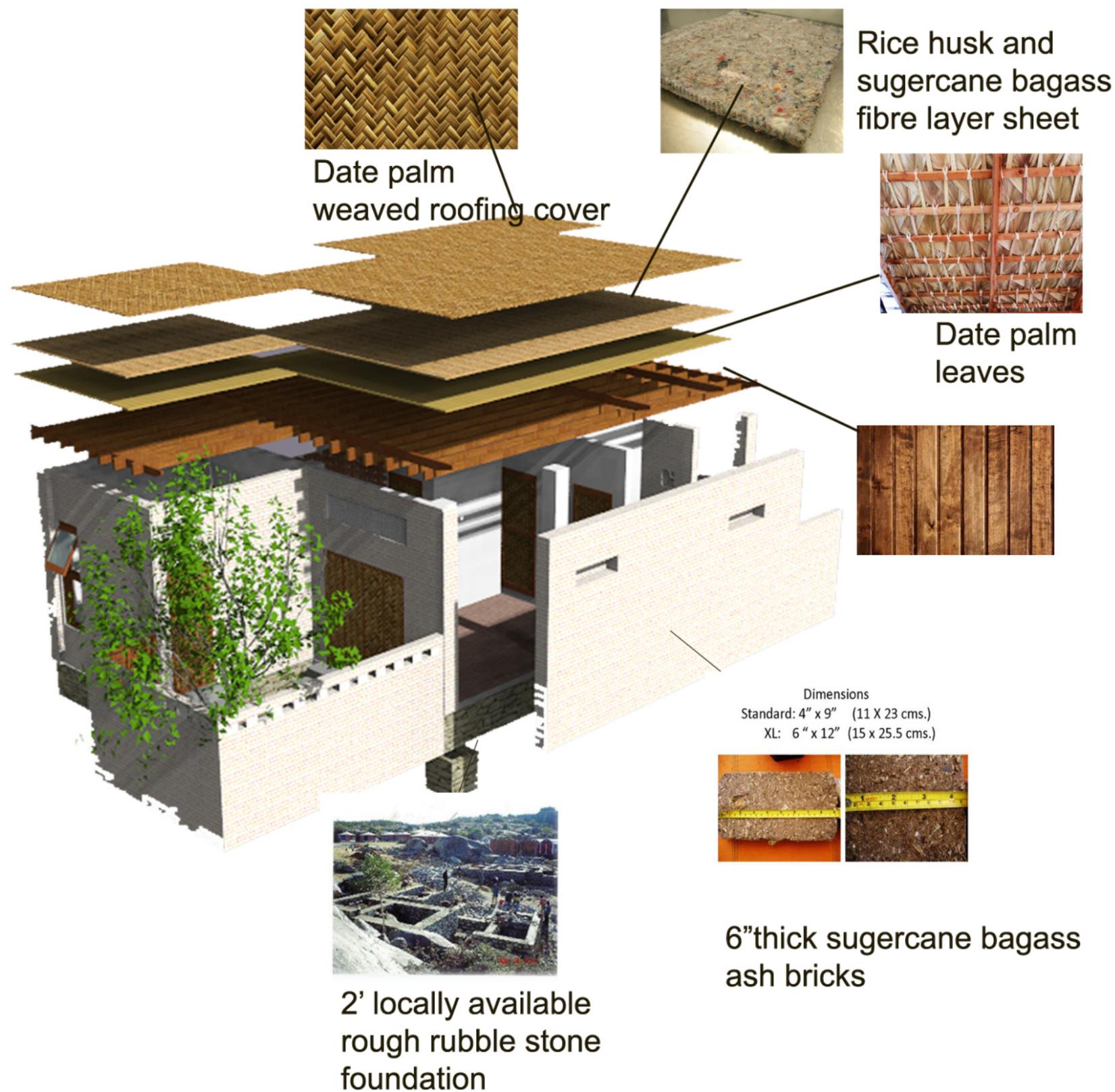
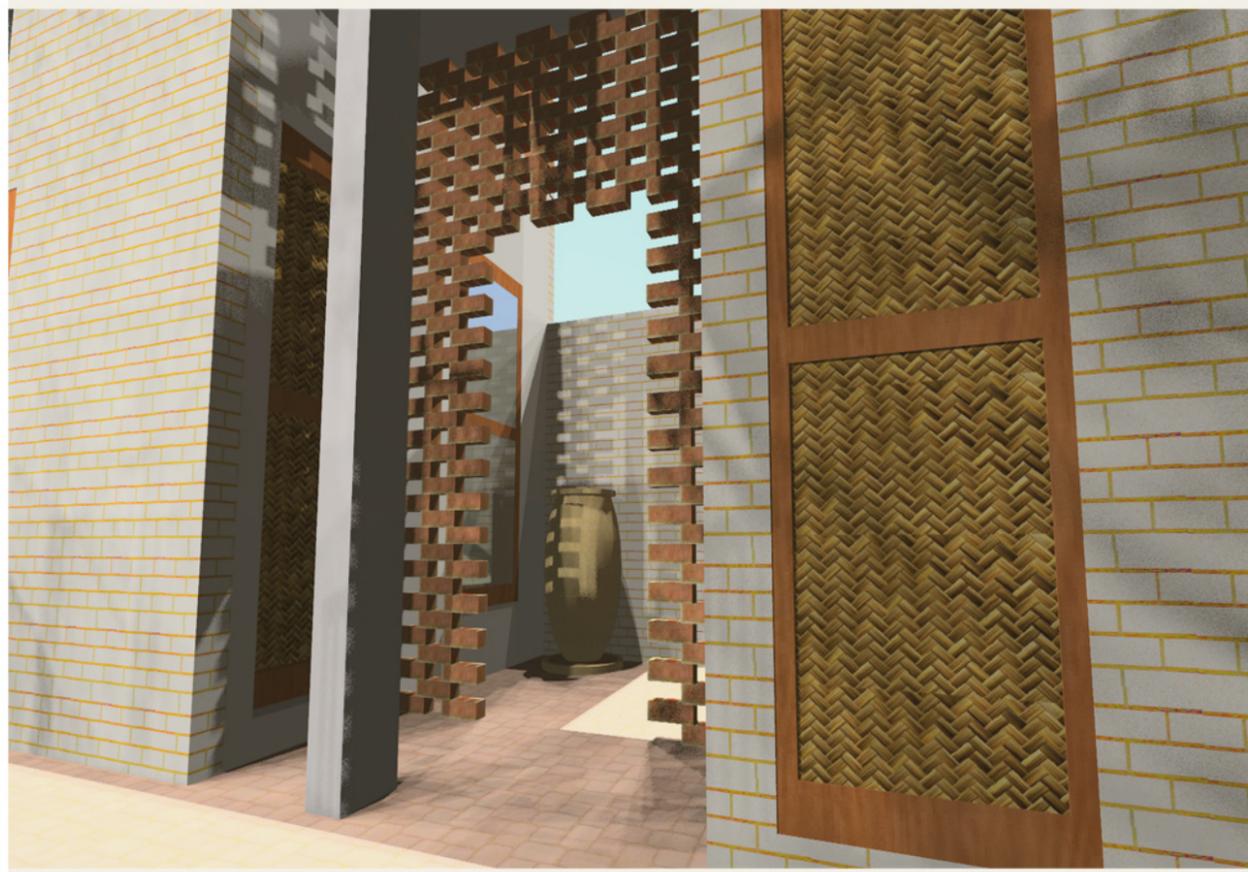
- Cost-consciousness
- Pedestrian and lighting accessibility
- Tangible and intangible spaces
- Use of indigenous materials

CONS

- Shared wall
- Less circulation space in duplex
- The second floor is larger than first so there is no Breathing or private green space

DESIGN INNOVATION

Low income housing is based on two major causes one is resources of available materials and other is labor cost. We can reduce both factors by using locally available materials through which by the same time this will cut the labor cost also, in our society there is a misconception that low income housing has only suitable for low standard work of building construction in which you can utilize cheap materials but it's not much true, the fact is that Low cost housing is done by proper management of resources. Luckily Bahawalpur is blessed with so many useful natural resources, if we utilize such resources in a proper way like the most important crop is date palm tree, the high tensile and compression strength, low thermal conductivity, light weight, resistance to corrosion and abundance of Date Palm Fronds (DPF) were utilized in producing flat and curved roofs. Light flexible roofs were also produced by using a special non-hardening roofing material with DPF. There are 3 overlapped layer which helps in insulation of roof, Bricks are also designed from indigenous material of the city, sugarcane bagasse ash bricks, is an alternate of red burnt brick works 15% efficiently than local bricks. Usage of these innovative building materials has considerably reduced the exploitative use of concrete, wood and other traditional resources



ELEVATIONS



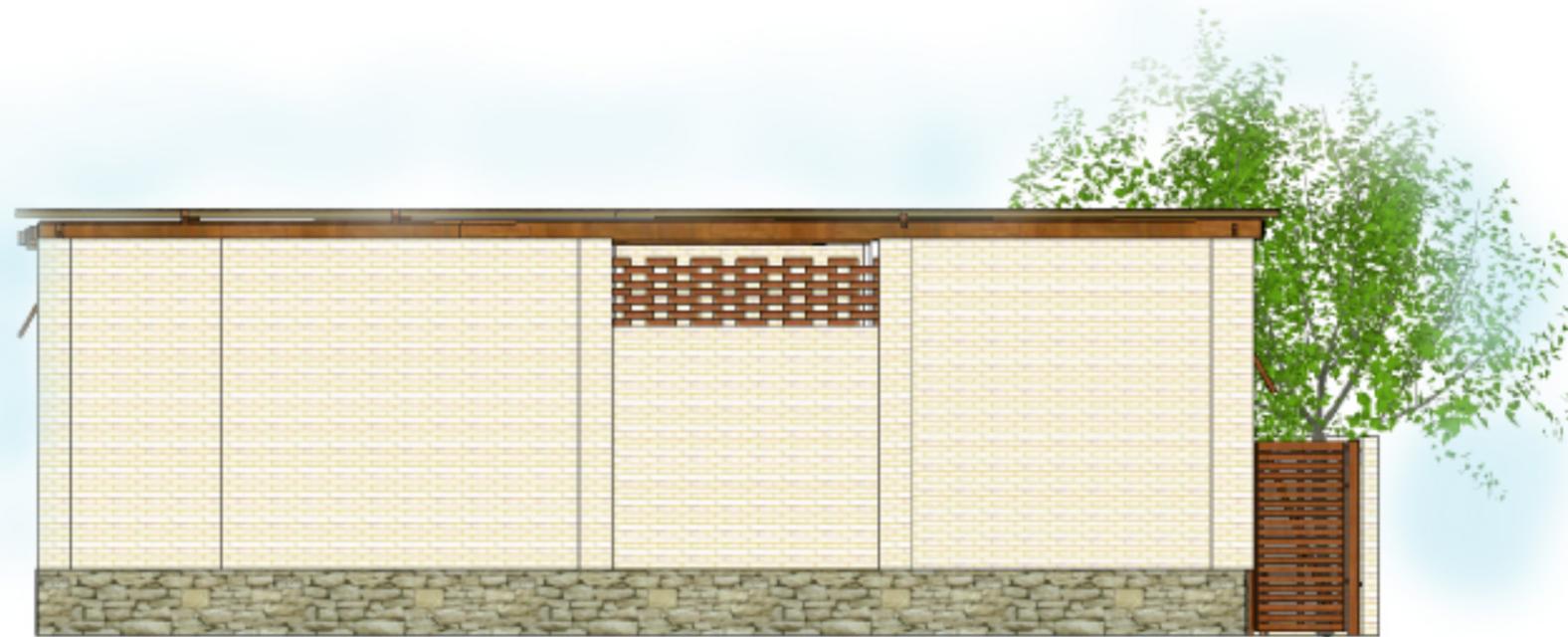
FRONT ELEVATION



LEFT ELEVATION



REAR ELEVATION



RIGHT ELEVATION

SCALE= 1'=3/16"

CATEGORY B

AITC-034

ELEVATIONS



FRONT ELEVATION



LEFT ELEVATION



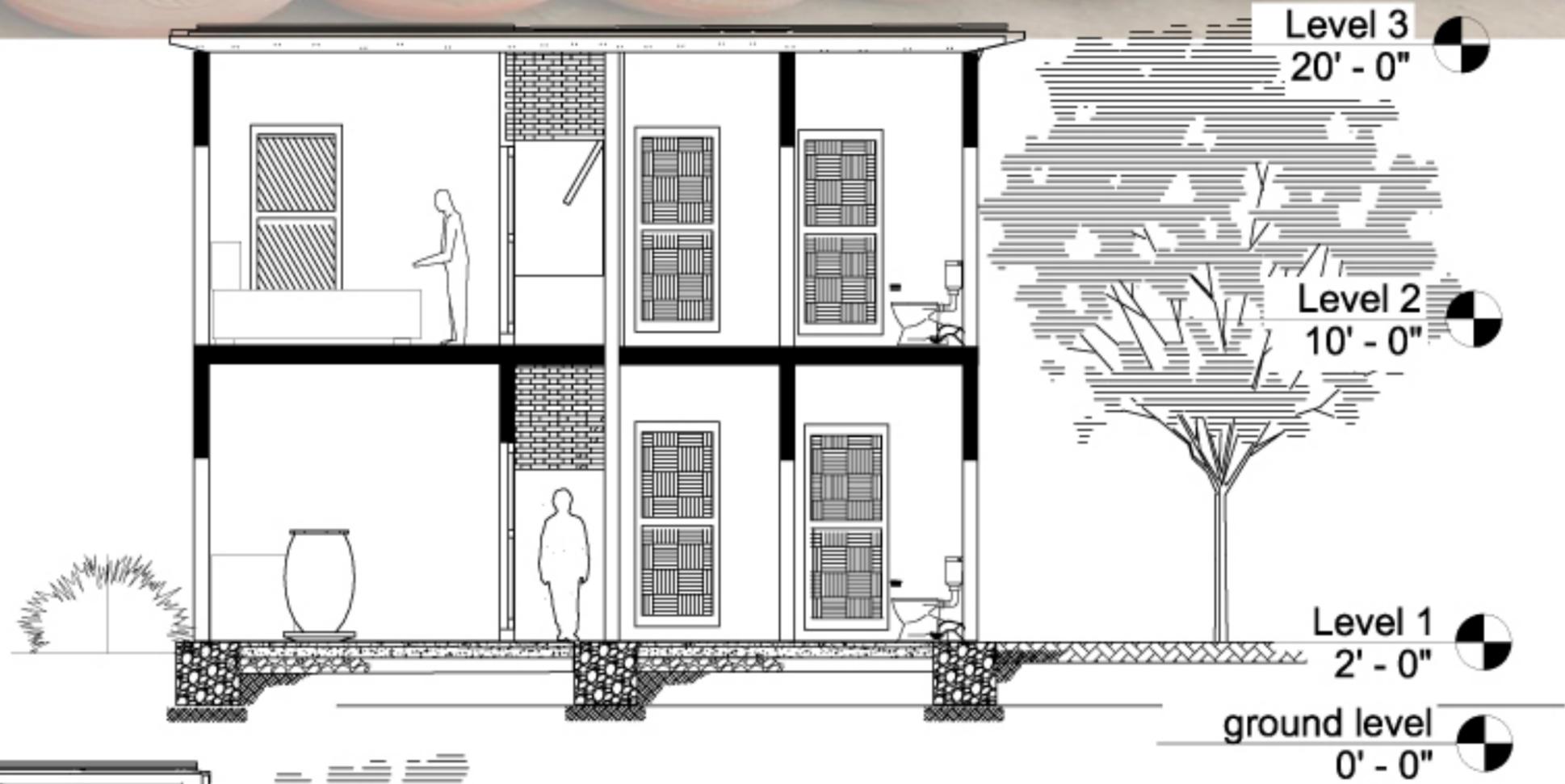
RIGHT ELEVATION



REAR ELEVATION

SCALE= 1'=3/16"

SECTIONS



SECTION B B'



SCALE=1'=3/16'