Sustainable Housing Programme intends to explore the possibilities of achieving sustainability in built environment through different interventions on a pilot basis and subsequent scaling of pilots.
PANI PURI MAKING AS A LIVELIHOOD

Raja beti ben resides in Rajivenagar, Ahmedabad with her husband and five children. She runs Pani puri vending business with her husband since 25 years. They spend a major part of their day in the livelihood activity.

OBJECTIVE OF THE PROJECT

The aim of the project is to analyse residences and the living conditions of the households involved in the occupation of pani puri making, and to propose interventions in construction materials, building layout, and introduction of energy efficient appliance and renewable technologies.

EXISTING SITUATION

Raja beti ben and her family is indulged in the livelihood for more than 12 hours and are exposed to high heat stress due to their involvement in continuous cooking activities. Apart from the thermal discomfort, their poor habitat conditions are effecting the family’s economic perfor mance. The materials used for walling and roofing are bricks and MS corrugated sheet.

EXISTING USAGE OF SPACES

OBSERVATIONS ABOUT THE HOUSE

The utility area and kitchen are the same; challenges with hygiene.

Lighting is insufficient. Scope to make storage space efficient.

Low outdoor roof height making it difficult to move around.

Prone to infection due to Sanitation Issues.

Roof prone to water leakage and heating in summers.

Storage space needs to be managed such that there is optimal utilization.

Provision of permanent roof can provide better work space and can regulate hygiene.
EXPLORING BUILT ENVIRONMENT AND ENERGY EFFICIENT INNOVATIONS

In order to create an optimal built and energy efficient environment, three main aspects must be considered. This includes the layout and design of the space, the materials involved, and the use of energy appliances. These three aspects must be built to be as efficient as possible by using renewable energy, space management and sustainable materials.

THE KEY CONCEPT

The key concept is to explore the possibilities to create a place that resonates the residents to thrive their livelihood with a space to live and work in harmony.

The proposed design is a G+2 structure. The idea is to segregate living and work spaces.

Activities involved in process of pani puri making are performed in both outdoor and indoor.

Separate kitchen area is provided where indoor activities of pani puri making can be performed such as dough making, boiling potatoes etc. A semi covered area is proposed considering a lot of outdoor activities such as frying puris. Essential services such as wash area has been provided in the outdoor space.

Living area is in the ground floor which can be converted as indoor work space as per requirement. (The women in the household are also involved in tailoring business.)

Sleeping area is provided in the second floor with attached bath and verandah to ensure privacy.

Added windows ad ventilators for increased cross-ventilation and lighting.

PROPOSED DESIGN FOR THE HOUSE

GROUND FLOOR PLAN

- Proposed Living Spaces
- Proposed Livelihood Spaces

FIRST FLOOR PLAN

SECOND FLOOR PLAN

STORAGE IDEATION FOR PANI PURI LIVELIHOOD

BASIC REQUIREMENTS

- Water resistant
- Mobile and movable
- Lightweight
- Afforable and accessible
- User friendly and ergonomic
- Modular and customizable

SUSTAINABLE ALTERNATIVE TECHNOLOGY

MHT had identified and researched various alternate technologies for construction including roofing and walling materials and compared them across a matrix to understand the potential of their application in different contexts. One such material being analysed is CAF Panels for the walls - Compressed Agricultural Fiberboard (CAF) panels are 100% natural, vapour permeable construction panels made from compressed straw.

Material:
- Compressed Agricultural Fiberboard (CAF) panels

Company:
- Strawture ECO

Components for Implementation:
- Walling

Durability:
- 25 years

Concrete deck slab has been used for the slabs.

FEATURES

- Good thermal properties
- Quick & easy installation
- Ecological alternative

- Mechanically durable
- Fire retardant and weather resistant
RAJABETI’S HOUSE IN RAJIVNAGAR 6, AHMEDABAD

DURING THE CONSTRUCTION

POST CONSTRUCTION

KEY IMPACTS & LEARNINGS

- Enhanced economical output
- Sustainable building material helps in increasing thermal comfort
- Improved built environment enhances the work efficiency of the women
- Improved quality of life of the family

SUSTAINABLE HOUSING PROGRAMME
SUSTAINABLE HOME BASED LIVELIHOOD THROUGH CONSTRUCTION MATERIALS AND LAYOUTS
OCTOBER 2020