

G.PULLAIAH COLLEGE OF ENGINEERING & TECHNOLOGY
(Autonomous)
Department of Civil Engineering

A memorandum of understanding has been signed by and between SURA Associates, Kurnool and G Pullaiah College of Engineering and Technology, Kurnool (GPCET) to carry out the consultancy works related to Civil Engineering department. As a part of this MoU, GPCET assigned the work of Green buildings to Sura Associates.

GREEN BUILDINGS

Green building refers to both a structure and the application of processes that are environmentally responsible and resource-efficient throughout a building's life-cycle: from planning to design, construction, operation, maintenance, renovation, and demolition. This requires close cooperation of the contractor, the architects, the engineers, and the client at all project stages. The Green Building practice expands and complements the classical building design concerns of economy, utility, durability, and comfort. Green building also refers to saving resources to the maximum extent, including energy saving, land saving, water saving, material saving, etc., during the whole life cycle of the building, protecting the environment and reducing pollution, providing people with healthy, comfortable and efficient use of space, and being in harmony with nature Buildings that live in harmony. Green building technology focuses on low consumption, high efficiency, economy, environmental protection, integration and optimization.

The following materials need be used for construction of building

Engineered Wood

Wood is one of the most famous building materials used around the world. But in the process of conversion of raw timber to wood boards and planks, most percentage of wood may get wasted. This wastage can also be used to make structural parts like walls, boards, doors etc. in the form of engineered wood.



Insulated Concrete Forms

Insulated concrete forms contain two insulation layers with some space in between them. This space contains some arrangement for holding reinforcement bars, after placing reinforcement, concrete is poured into this space. They are light in weight, fire resistant, low dense and have good thermal and sound insulation properties.



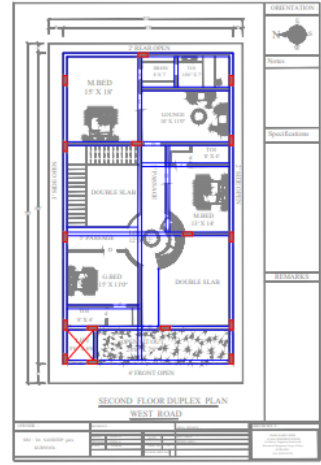
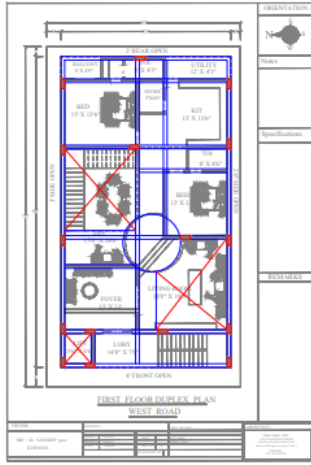
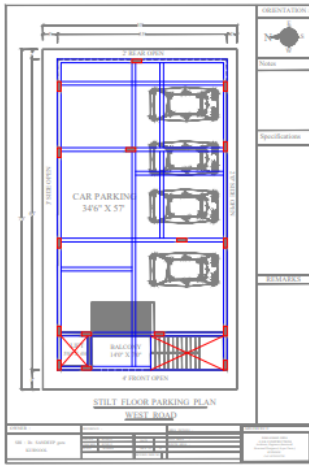
Steel

Steel roof panels and shingles are highly durable and they can be recycled again and again. So, these are the best choices for green roofing materials.

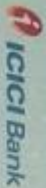


PROPOSED PLAN AND ELEVATION





SESHAASAI (H) / CTS - 2010



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G.PULLAIAH COLLEGE OF ENGINEERING & TECHNOLOGY
(Autonomous)
Department of Electrical & Electronics Engineering

A memorandum of understanding has been signed by and between Asif & Habeeba Kisan Seva Kendra, Kurnool and G Pullaiah College of Engineering and Technology, Kurnool (GPCET) to carry out the consultancy works related to Electrical & Electronics Engineering department. As a part of this MoU, GPCET assigned the work of Pedal Operated Maize Sheller to Asif & Habeeba Kisan Seva Kendra.

Pedal Operated Maize Sheller

In India, Maize (*Zea mays*) is an important crop after the rice and wheat. Many farmers grow maize but could not afford the cost of acquiring some of the imported threshing machines because of their cost. Such people resort to manual means of threshing which results into low efficiency, high level of wastage and exerting of much labor. This machine was constructed to shell maize and separate the cob from the grains. It was constructed from locally available materials and its cost is low and affordable. The operating speed of pedal operated maize sheller was optimized for its operation at higher or lower operating speeds in pedaling mode. The performance of the pedal operated maize sheller was evaluated with local or traditional shelling method - tubular maize shelling. The capacity of machine was 58-62 kg/hr which is 3 to 4 times than tubular maize shelling and with maximum shelling efficiency and cleaned outlet grain i.e. 98 % and minimum mechanically damaged i.e. less than 2 % at moisture content of maize was 10 %. The pedal operated maize sheller can be effectively used by the farmers for shelling of maize.

Materials and Methods

This section includes the materials used and the methods and procedures that were adopted during the study.

Sketch and preliminary design

Selection of materials

Various materials that were used in the fabrication of the machine are as follows.

Frame structure

This forms the main skeleton of the machine. It was made strong enough to resist the maximum magnitudes of compressive, tensile and impact forces i.e, 250 MPa, 370 MPa and 2000 MPa respectively and simultaneously support the other parts of the machine fixed on it.

Shelling unit

The shelling unit was fixed on the right side of the machine. It consists of cast iron sheller for shelling and the teeth are tapered.

Transmission system

It includes the various components which were employed to transmit the power from the lower back and leg muscles of the worker finally to the shelling unit with the help of shafts, chains and sprockets and plumber block.

Plummer block

A Plummer block or bearing housing is a pedestal used to provide support for a rotating shaft with the help of compatible bearings & various accessories. Housing material for a plumber block is typically made of cast iron or cast steel.

Miscellaneous materials

There were many items which have not been mentioned under any subheading. These were nuts and bolts, steel screws, pedals, seat, shelling unit and welding kit (iron and steel) with welding rods.

Performance parameters of machine

After the machine was made, the testing of the machine was done considering the following parameters: Independent/Operational parameters:

Moisture Content (%)

Feed rate (kg/h)

Dependent/Response parameters: Machine capacity (kg/h) Unshelled grain (%) Mechanically damaged grain (%) Shelling efficiency (%) Cleaned outlet grain (%)

Capacity of machine

The shelling capacity was determined as the weight of cobs shelled in an hour, and expressed as kg of cob/h.

The following materials need be used for construction of building

Materials used for development of angle frame structure

S.No	Name of Part Used	Materials
1	Frame structure	Mild steel

Materials used for development of shelling unit

S.No	Name of Part Used	Materials
1	Sheller	Mild steel
2	Shelling teeth	Mild steel
3	Frame	Mild steel

Materials used for development of transmission system

S.No	Name of Part Used	Materials
1	Chains	Cast Iron
2	Sprockets	Stainless steel
3	Plummer Block	Cast iron
4	Pedal	Rubber and SS
5	Shafts	Mild steel

PROPOSED PLAN AND ELEVATION



