Maths in Architecture: Project Challenge

WORKING OUT OUSEBURN
OUSEBURN FARM GOAT HOUSE CHALLENGE

The Ouseburn Farm has 20no. sheets of 22mm thick plywood. Each sheet is 2.4m long and 1.2m wide.

They want to build a new goat house using this material and are keen to get the most goat house possible from the material with little or no waste material.

Can you design a goat house using the following criteria and using all (or as much as possible of the plywood)? This challenge can be worked out on paper and the maths involved should be shown.

•The house must have walls and a roof. It has to have at least one door but it doesn't need windows.

•The average goat is 1m tall stood up and 1.3m long, each goat needs at least 2 square metres floor area

•You are allowed to cut the plywood sheets up but each sheet must only be cut a maximum of three times

Questions to find an answer to while you are designing

•   How much wastage have you got? Say in square metres

•   What pitch (angle) is the roof you have used?

•   What is the floor area of the goat house? Say in square metres

•   How many goats can live in your house?

Goa-to it!