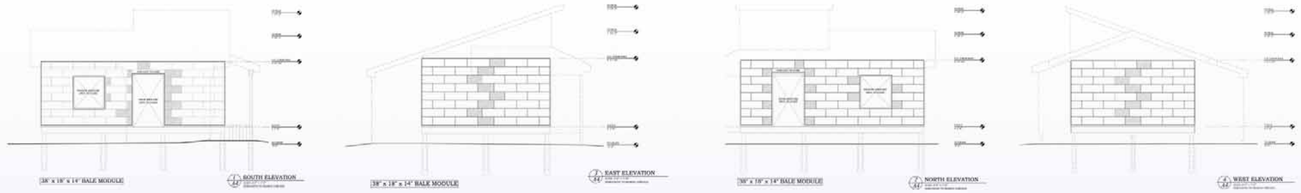
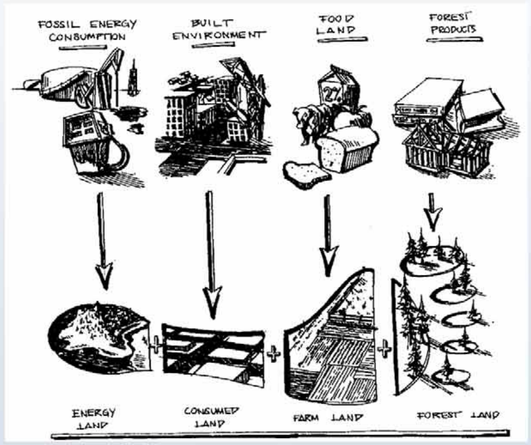
Ecological Footprinting|Straw Bale House

The phrase "ecological footprint" is a metaphor used to depict the amount of land and water area a human population would hypothetically need to provide the resources required to support itself and to absorb its wastes, given prevailing technology. Ecological footprints have been used to argue that current lifestyles are not sustainable.



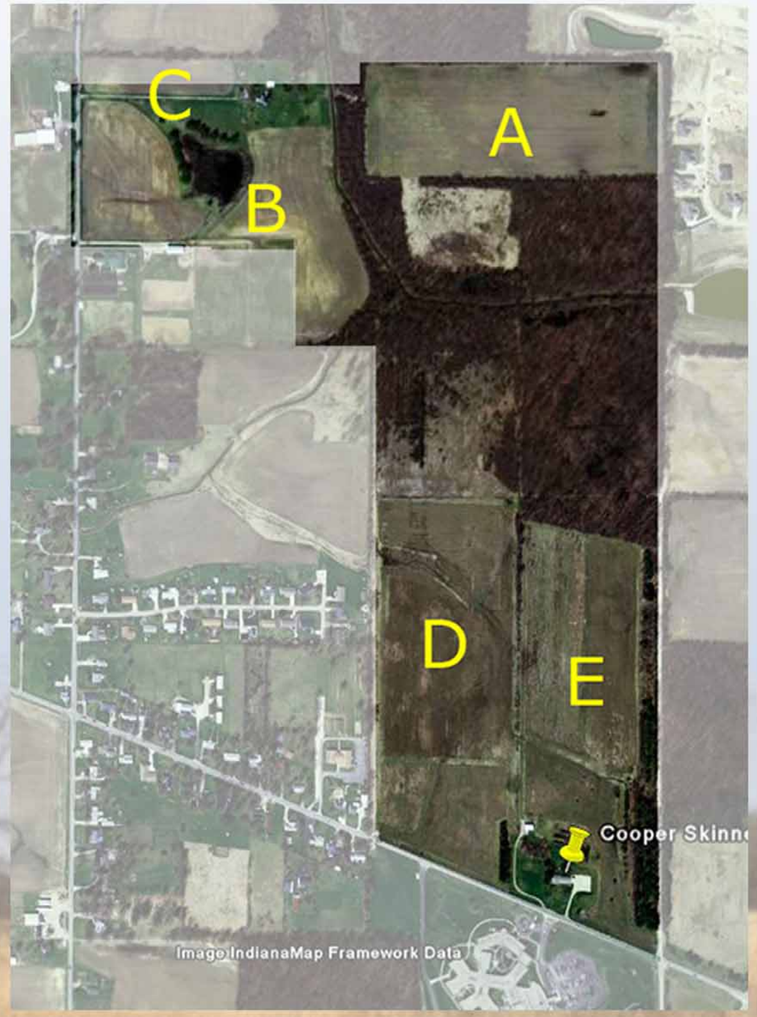


Life cycle cost estimate for conventional vs. straw-bale houses

Conventional
(Construction)$82,500 (Finance)396,000
(Energy)120,000 (Total)**532,500**
(Savings)none

Straw bale
(Construction)$78,375 (Finance)376,000
(Energy)60,000 (Total)**451,675**
(Savings)83,875

Straw Bale with owner-built walls, finishing, roofing
(Construction)$40,000 (Finance)192,000
(Energy)60,000 (Total)**260,000**
(Savings)272,500



Ecological footprint analysis approximates the amount of ecologically productive land, sea, and other water mass area required to sustain a population, manufacture a product, or undertake certain activities, by accounting the use of energy, food, water, building material and other consumables.

This project has taken advantage of the land by using straw bale to build the house. The average cropland yields 75 bales of hay per acre. The map of the site shows a division of the land and the chart below shows the aproximate number of bales that can be gleaned from each division; this amount depends on good mantainace of the land, the weather, the season of the year, etc. The dimensions of the house are 22’ by 24’ which contains 190 bales, this means the land can produce more than just one house per year. The total area of the cropland on site is 67.8 acres, which can produce about 5085 straw bales, or 26 houses per year.

A 14.4 ac.	1,080 bales
B 2.5 ac	188 bales
C 14.8 ac	1,110 bales
D 20.7 ac	1,552 bales
E 15.4 ac	1,155 bales
67.8 ac	**5,085 bales**

Conventional Wood frame of a House

Notes:
-Life cycle = 100 years.
-Finance cost = construction cost minus down payment of twenty percent at an annual interest rate of six percent over the one hundred year life cycle (does not include closing costs when the house is sold).
-Energy = the average cost for heating and cooling a conventional home for this analysis to be $100 per month.
-Total = Amount of down payment plus energy and finance.

Wood frame of a Straw Bale House

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