Design & Construction of Solar Passive Silkworm Rearing House for Sericulture Farmers

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Silkworm rearing house: Bangalore

Thermal comfort requirement: Chawki room: 25 to 28 deg C with 70-90% RH

Rearing room: 23 to 25 deg C with 70-80% RH

Non uniform heating/cooling leads to loss in 50-70% of yield

External methods used to decrease the temperature

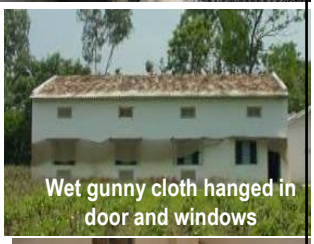

False ceiling with thermocol


False ceiling with thermocol


False ceiling with thermocol


False ceiling with wooden logs


Wet gunny cloth hanged in corridor


Wet gunny cloth hanged in door and windows


Wet gunny cloth hanged in windows


Coconut leaves shading to doors and windows

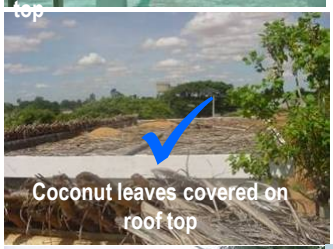

Wet sand bed with ragi seeds sown near bottom ventilators

External methods used to decrease the temperature


Shade nets covered on roof top


Coconut leaves and dry grass cover on roof top


Coconut leaves covered on roof top


Coconut leaves covered on roof top


Thermocol covered on roof top


Coconut leaves hangings with drip liners


Dry grass covered on roof top and wet gunny cloths covered to windows


Coconut leaves covered on roof top

Solar passive silkworm rearing house for enhanced productivity

Thermal comfort requirement:

Rearing room: 23 to 25 deg C with 70-80% RH

Non uniform heating/cooling leads to loss in 50-70% of yield

Strategies for summer:

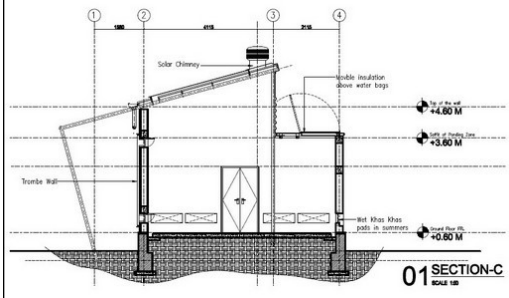
Roof pond with insulation ;Insulated wall and roof; Wall shading

Solar chimney on south wall with adjustable vents (to improve ACH in the rearing room)

Air Inlet from north wall covered with wet gunny bags for added humidity

Silkworm rearing being carried out in the constructed solar passive house

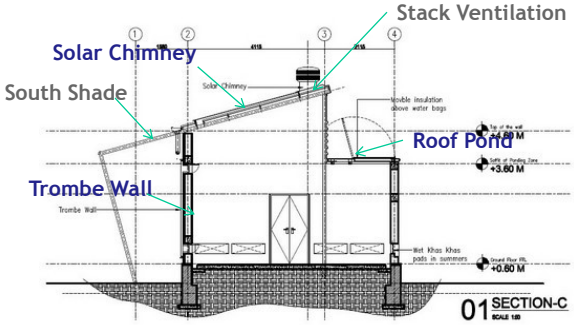
Constructed solar passive silk worm rearing house



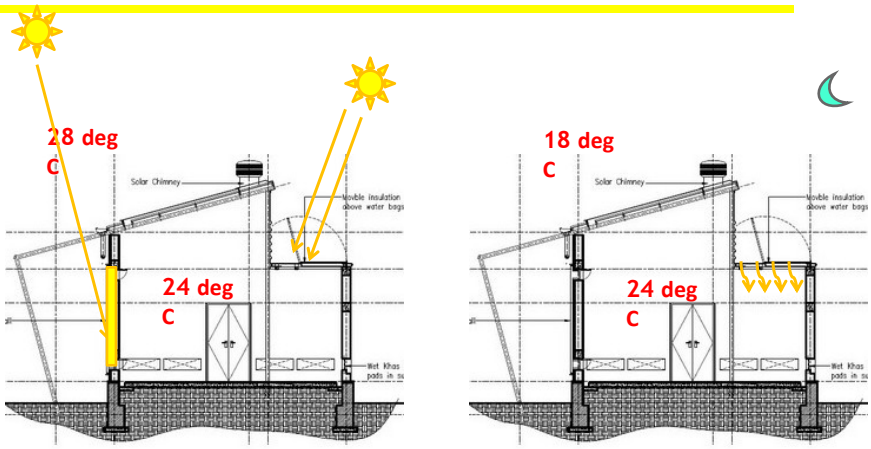
Building section for silkworm rearing house

Solar Passive Silkworm Rearing House

Thermal comfort requirement for silkworms:
Temperature: 23 – 28 deg C
RH: 70-90%



Winter Strategy



Summer Strategy