

# COOLTEK

our energy efficient home



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Stephanie Bacon

# 350 Jalan Woodland, Tiara Melaka Golf Club



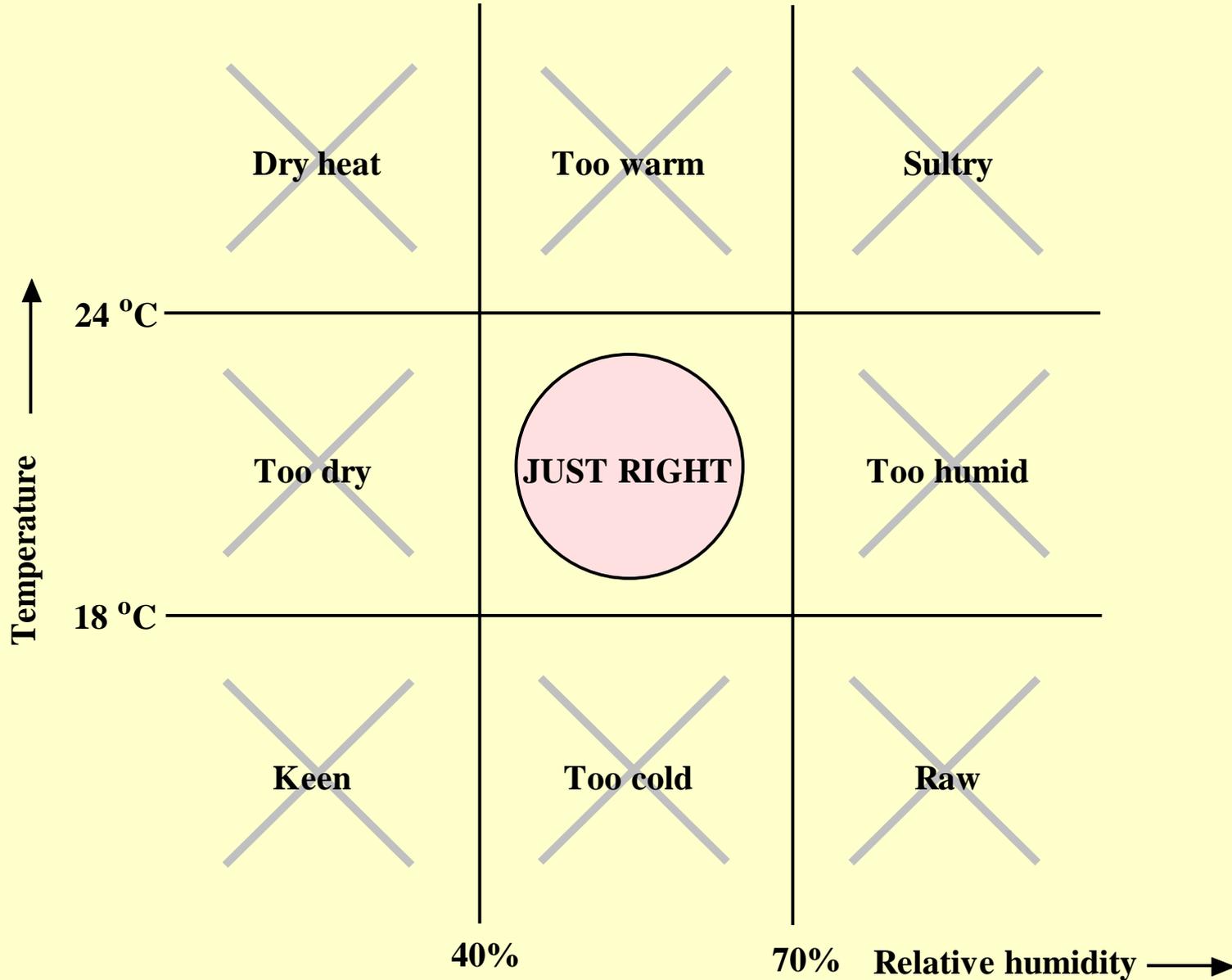
# Woodland 3



# Woodland 5



# Comfort zone



# COOLTEK design features

1. Protection
2. Orientation
3. Insulation
4. Ventilation
5. Investigation

# 1. PROTECTION

# Surrounding vegetation



# White Roof



# White walls



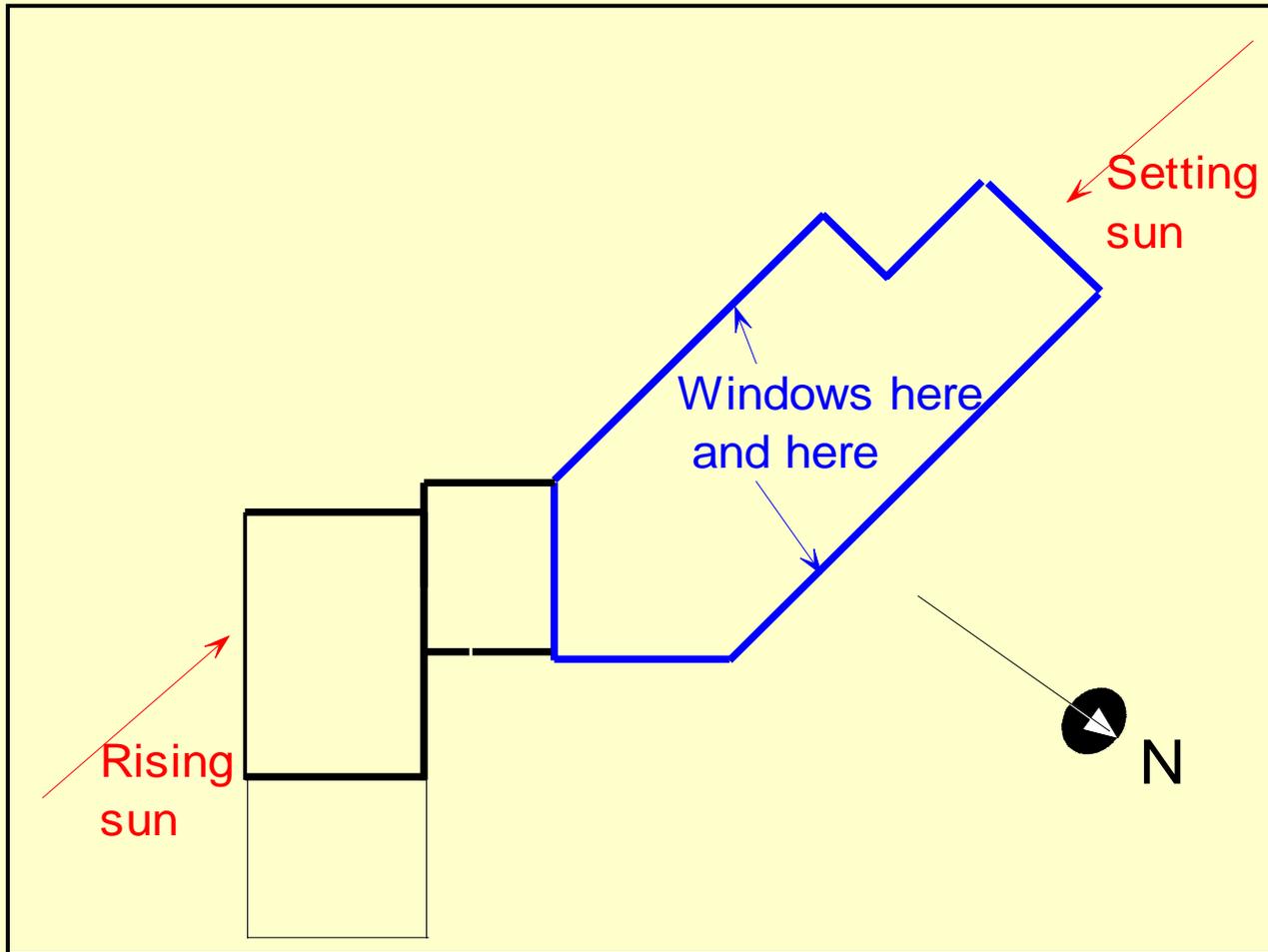
# Roof overhang



# Inset windows



# 2. ORIENTATION



# 3. INSULATION

# Aerated Lightweight Concrete walls



# Load bearing walls



# ALC blocks laid with Thin Bed Adhesive



# ALC lintels



# Double glazed Windows



- low-emissive coating
- argon gas filling
- clear glass



# Rockwool Insulation above the ceiling



# Above ceiling insulation



# Polyurethane below the flooring



# PU laid

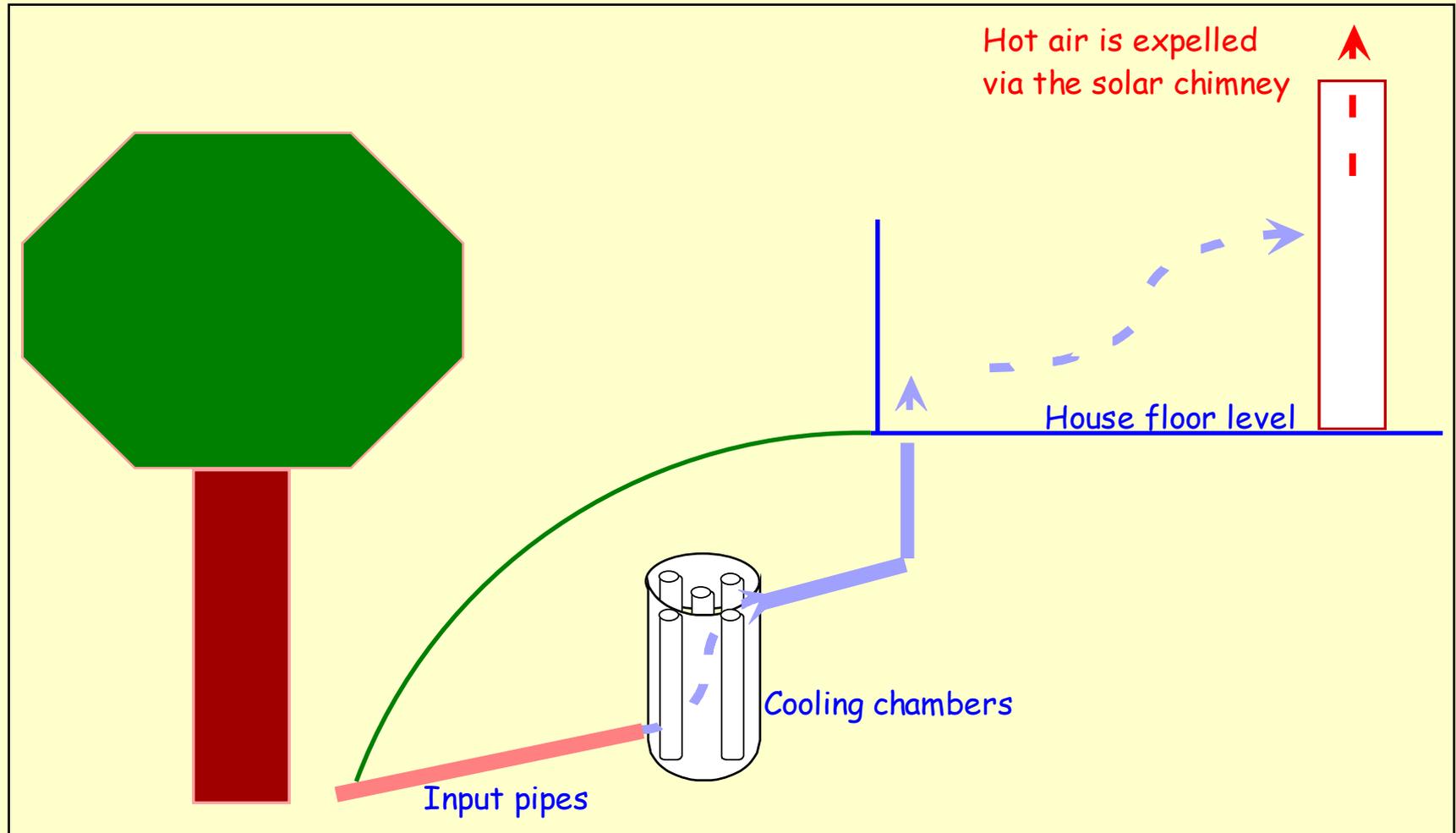


# Flooring being laid



# 4. VENTILATION

# 4. COOLTEK ventilation



# Finished slab



# Output pipe in slab



# Vent pipes build



# Inlet pipes being laid



# Cooling chamber baffles



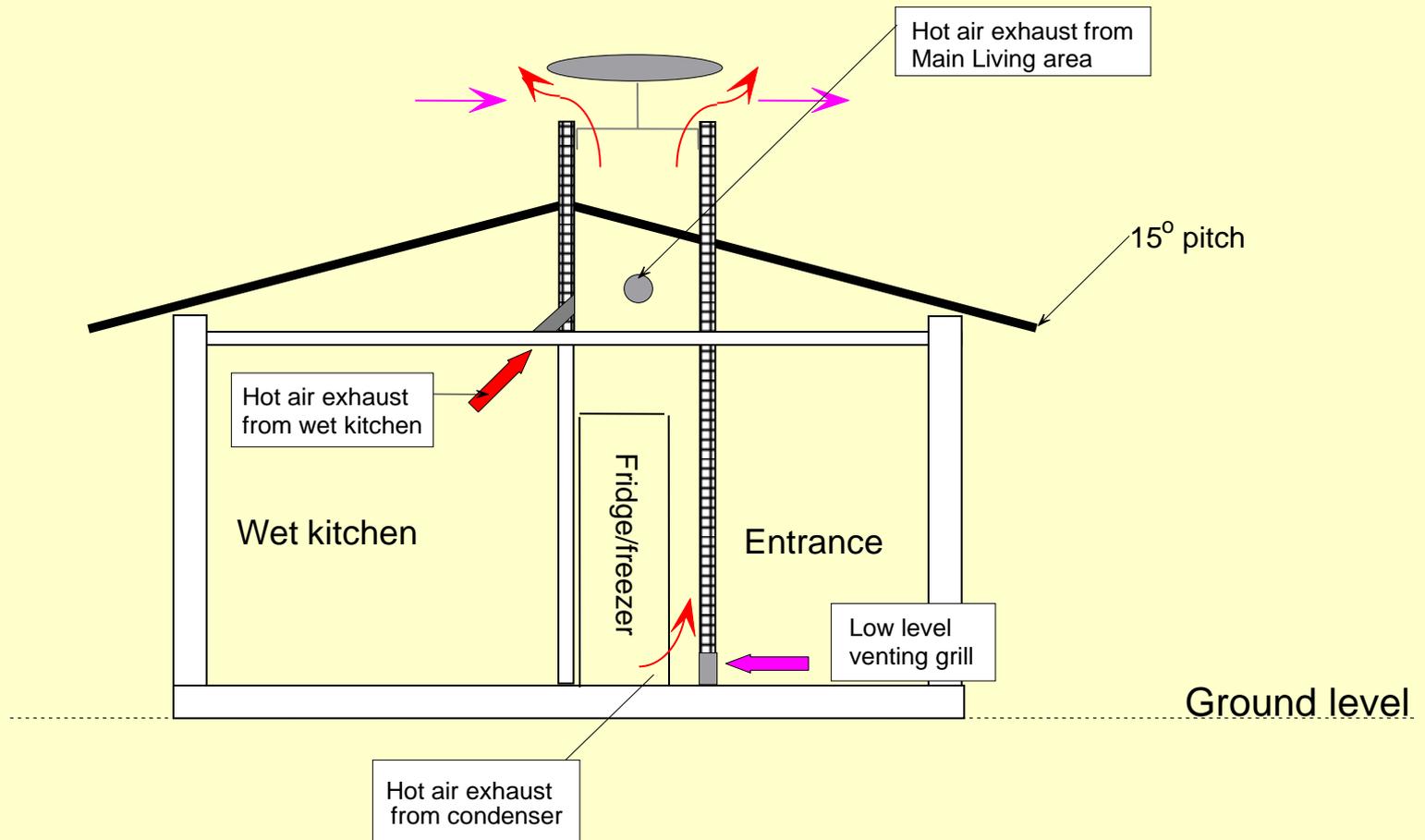
# Cooling chamber lids



# Chimney above roof

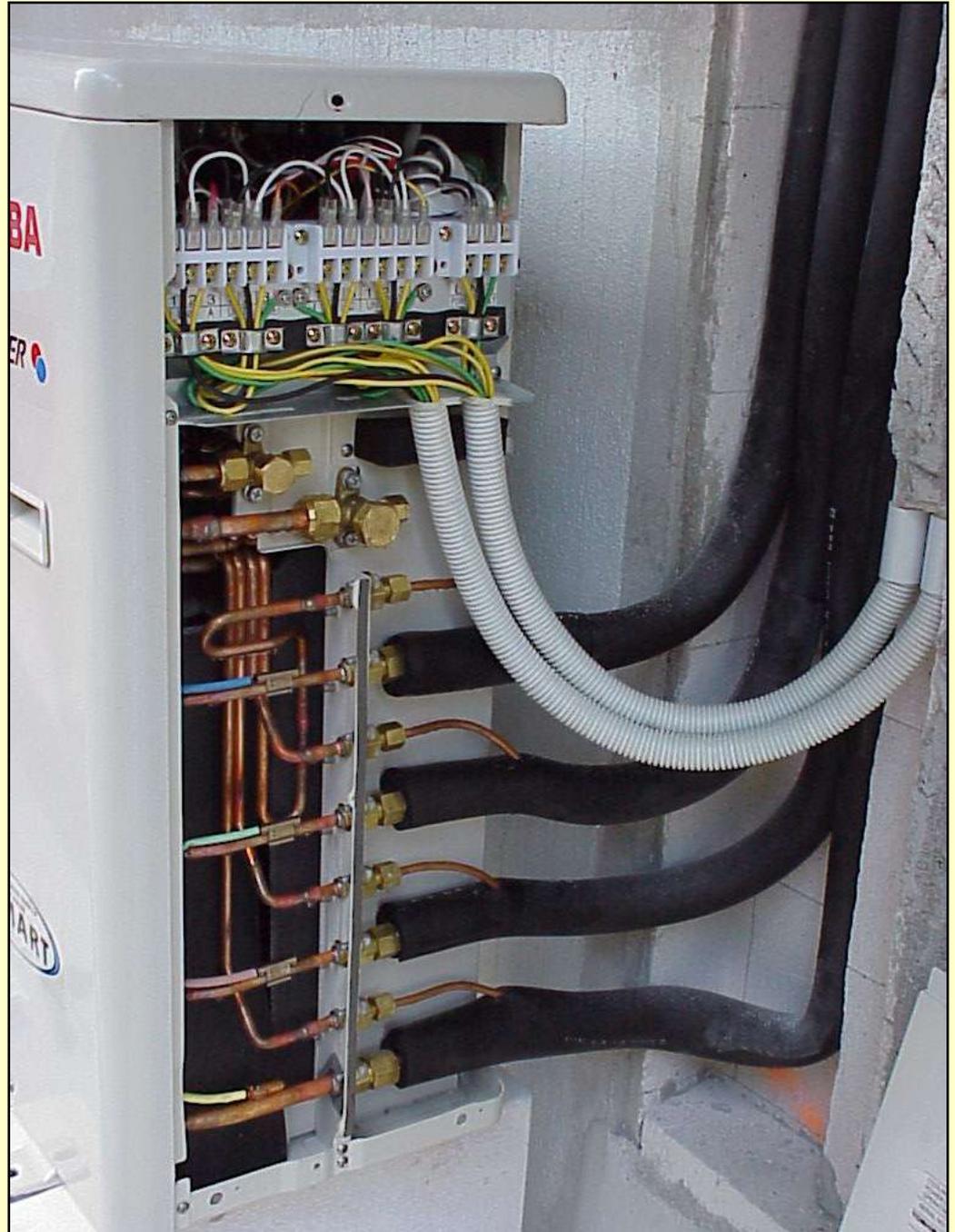


# Thermal chimney



# 5. INVESTIGATION

Multi split  
air con unit,  
with R410A  
refrigerant



# Energy Efficient Lighting



## LIVING ROOM

- compact fluorescent light bulbs
- mirror reflector



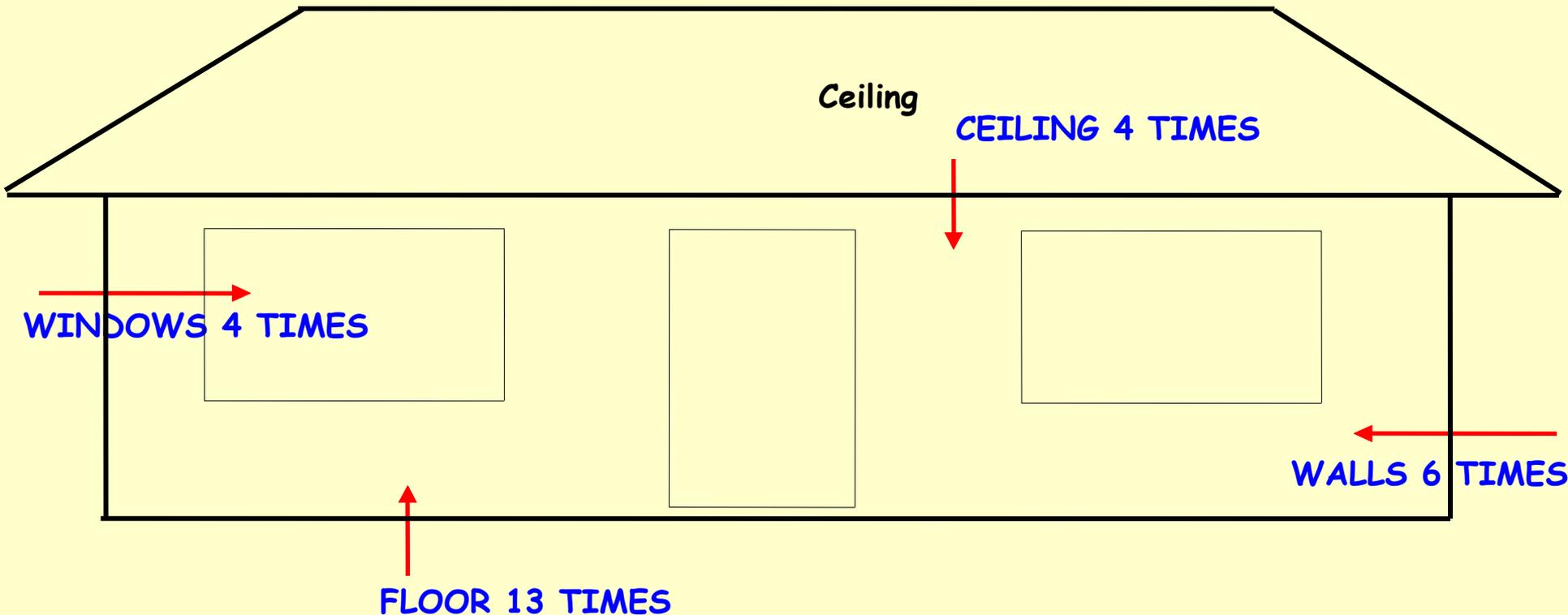
## GARAGE

- fluorescent T8 tubes
- electronic ballasts
- daylight glass wall blocks

# Solar water heating

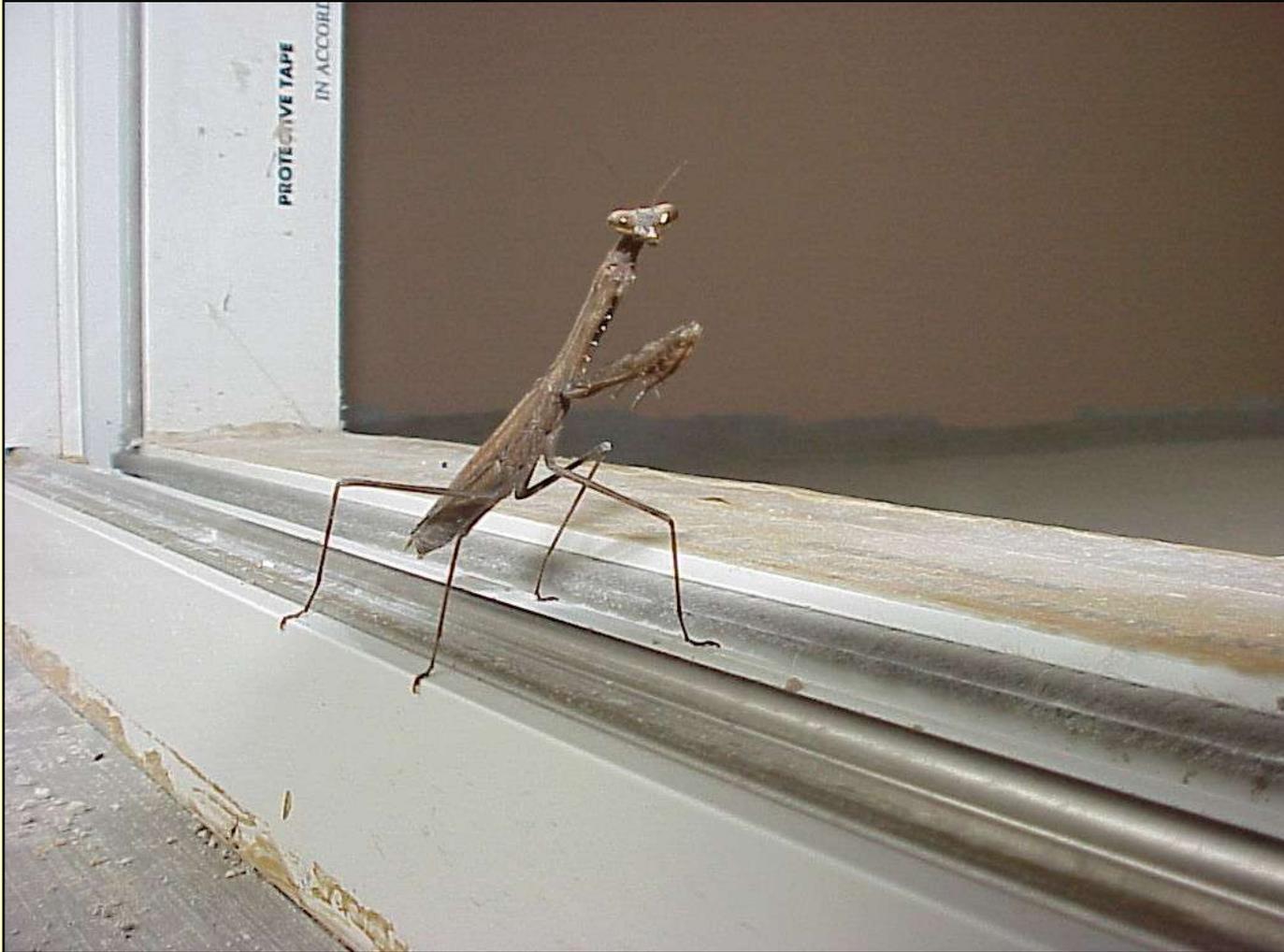


# COOLTEK EFFICIENCIES at resisting heat gain



# COOLTEK friends

## Praying mantis



# Fivebar swordtail



# Large tailed nightjar



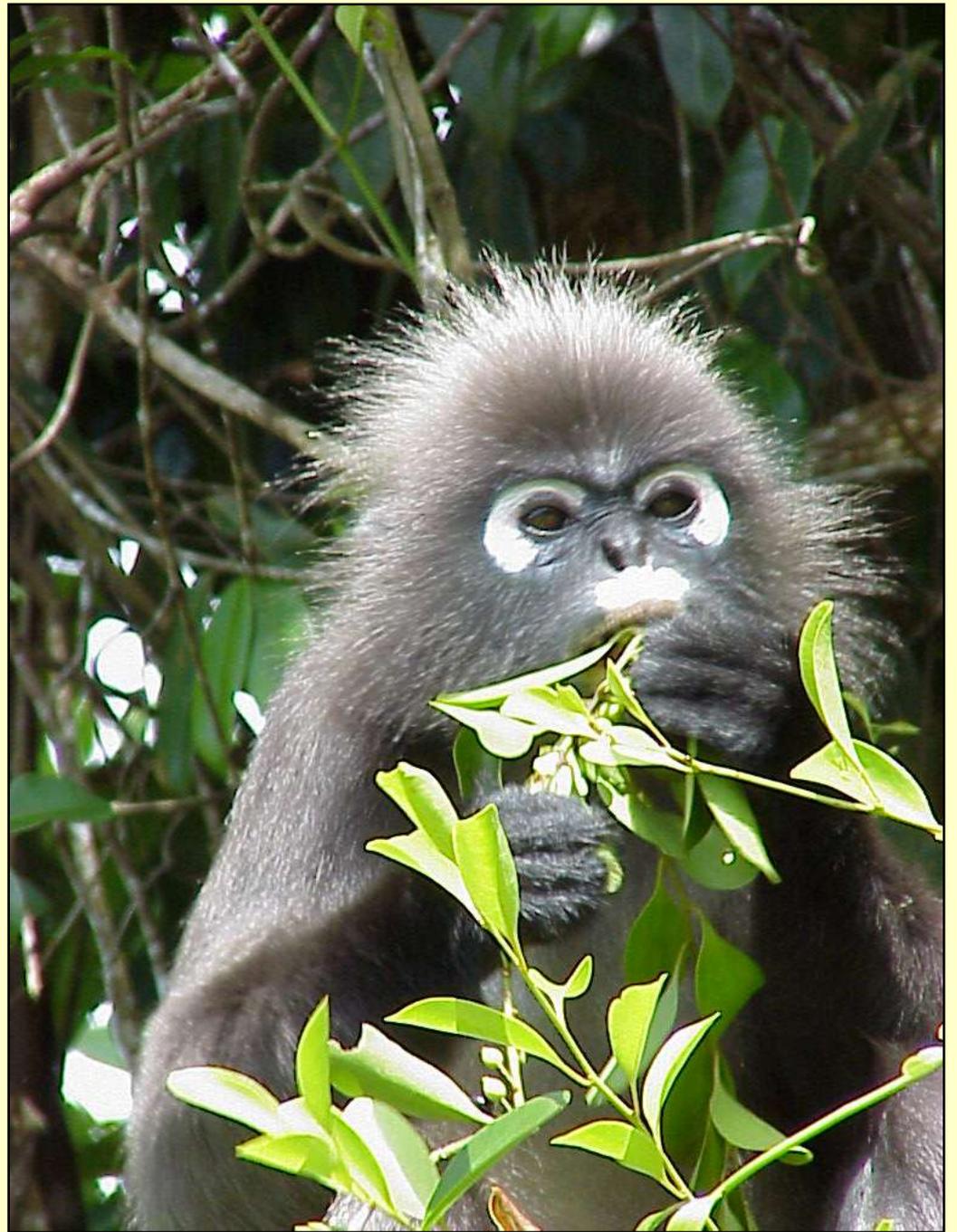
# Stork billed kingfisher



# Whose golf course is this?



# Spectacled Langur





Thank you and  
any questions

## ROOF

- white metal sheets (15° pitch)
- aluminum foil (radiant barrier)
- 50 mm hard rockwool (insulation)
- aluminum ceiling (2.5 m height)
- large eaves (> 1 meter)

## WINDOWS

- double pane
- low-e
- argon gas
- non openable
- north/south orientation

## VENTILATION

- ground cooled intake
- no regulation

## SOLAR CHIMNEY

- fridge/freezer 'exhaust'
- 'pulls' exhaust air out

## WALLS

- 250 mm aerated concrete
- load bearing walls
- white

## DOORS

- double pane
- double seals (air tight)

## AIR-CON

- 4 units
- shared condenser
- variable speed drive
- COP = 3.2



## FLOOR

- 50 mm polyurathane insulation
- vapour barrier

