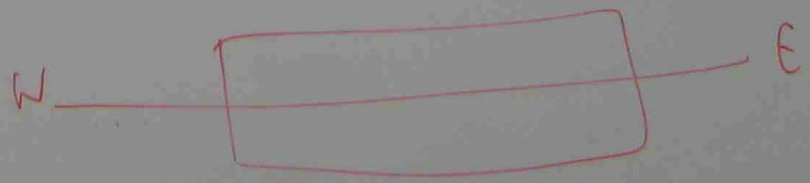
NORTH FACING WINDOW = 20% of TOTAL FLOOR AREA

AIR MOVEMENT = 1.5 m/s

DIRECTIVE EVAPORATIVE COOLING.

TEMPERATE CLIMATE

- DIRECT SOLAR GAIN FOR MID AUTUMN TO SPRING
- COMPLETE SUMMER SHADING FOR ALL WINDOWS
- MAXIMIZE GLAZING ON NORTH SIDE
- ADEQUATE THERMAL MASS SHOULD BE PROVIDED IN ACCORDANCE TO THE AMOUNT OF NORTH FACING GLAZING.
- ORIENT THE BUILDING SO THAT THE LONG AXIS LIES ALONG THE EAST-WEST AXIS
- PROVIDE ACCESS TO COOL SUMMER BREEZES
- LOCATE LIVING AREA ON NORTH SIDE of BUILDING
- PROVIDE SEALED VENTS.



CITY	NORTH FACING GLASS	FLOOR	INSULATION	CEILING INSULATION
HOBART	20 → 39% FLOOR AREA	TIMBER	R 1.0	R 3.5
SYDNEY	20 → 30%		EXTERNAL WALL R 1.0	R 1.5 → 2
MELBOURNE	25 → 40%	R1.0	R1.0	R 2.5

HOT ARID CLIMATE

(TYPICAL CITY – ALICE SPRING)

VERY HIGH DAY TIME TEMPERATURE IN SUMMER WITH HOT NIGHTS

WINTER (DAY) WARM → HOT, (NIGHT) COOL → COLD

LOW RELATIVE HUMIDITY, IRREGULAR RAIN FALL.

- HEATING → SOLAR GAIN IS ONLY NECESSARY IN MIDDLE OF WINTER
- PROVIDE COMPLETE SHADING FOR WINDOWS AT ALL TIMES.
- MINIMIZE TOTAL GLAZING.
- PLACE GLAZING ON NORTH AND SOUTH SIDE ONLY
- USE HIGH THERMAL MASS CONSTRUCTION TYPE
- ORIENT BUILDING EAST – WEST
- WELL VENTILATED ROOF | PROTECT HOT SUMMER WINDS

HOT HUMID CLIMATE

TYPICAL CITY - DARWIN

SUMMER CYCLONES,

AIR MOVEMENT IS THE MOST IMPORTANT

CEILING FAN

LOUVRE WINDOWS

LIGHT COLOUR EXTERIOR & SHADING WALL

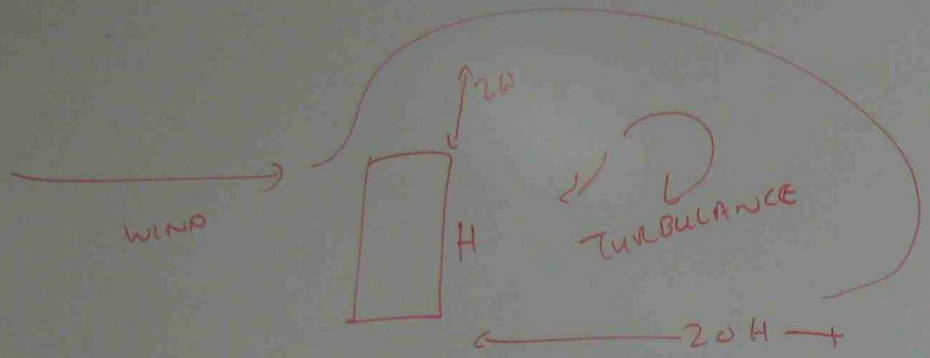
REFLECTIVE INSULATION FOR WALL.

GLASS AREA → 15 → 20%

EAST - WEST ORIENTATION

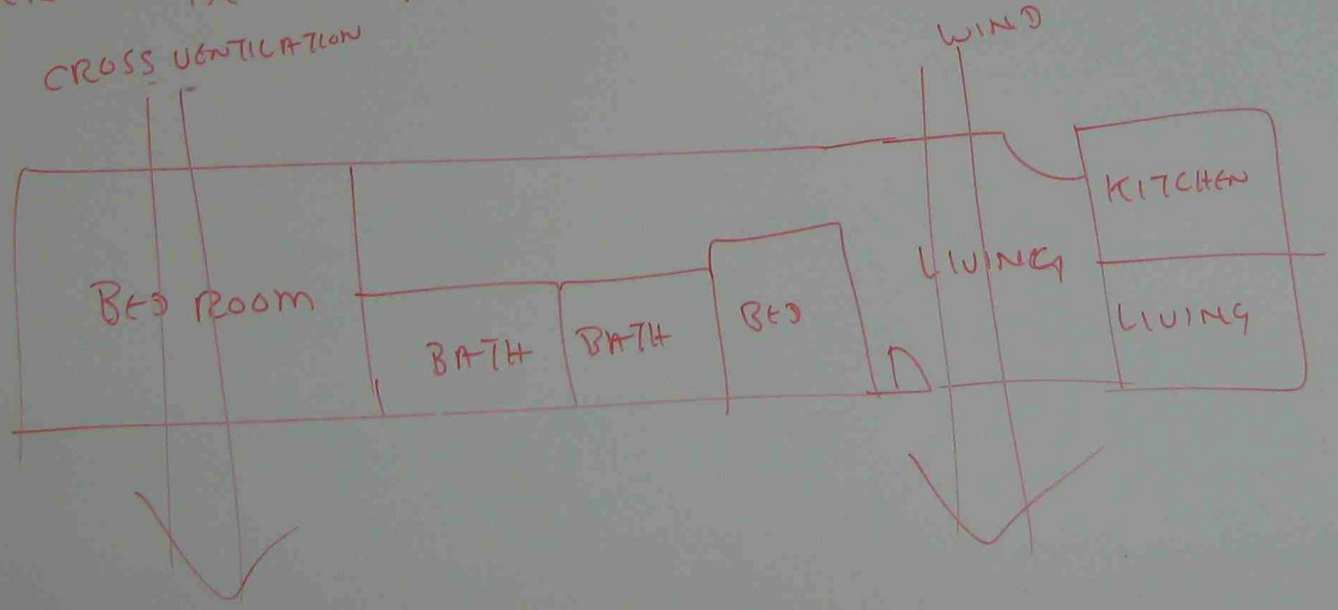
BULKED INSULATION AT CEILING

- TRUE NORTH DIRECTION
- PROVIDE SLOPES / DRIANGE



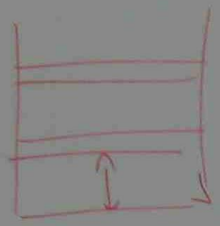
SOLAR ACCESS

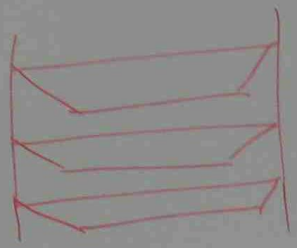
IT IS DESIRABLE TO HAVE AT LEAST 6 HR of SUN LIGHT IN WINTER IN TEMPERATE CLIMATE.



WINDOW

VERTICAL SLIDING WINDOW





LOUVRE

VENTILATION

$$V = 0.117\ A\ h\ \Delta t \quad \left(m^3/sec/m^2\right)$$

V = VENTILATION RATE

A = AREA OF INLET

h = HEIGHT OF STACK

Δt = TEMPERATURE DIFFERENCE

CEILING FAN – 2.2 m ABOVE FLOOR

DAY LIGHTING

SHADING | LOUVER TO REDUCE GLARE