

CLIMATE

Nairobi falls within Tropical Upland Climate. This climate is similar to composite or monsoon climates with its distinctly rainy seasons.

It is dominated by strong solar radiation, often with moderate to cool air temperatures. Humidities are not excessive and there is an almost constant air movement.

PSYCHOLOGICAL OBJECTIVES

As the air temperature rarely exceeds the comfort limit, overheating would be caused by solar radiation.

Protection against such overheating can be provided by several means:

- Provision of adequate shading both for windows and external activity areas.

- Limit the heat admission of building during the stringest sunshine hours (insulation, thermal inertia and colouring)

- If the building is overheated, this can be counteracted by the provision of adequate ventilation.

DATA SOURCE

Information for this climatic analysis has been derived from the Dagoretti Meteorological Station.

TABLE 3: RECOMMENDATIONS

LAYOUT

Buildings should be planned around small courtyards if thermal storage is required for most of the year.

SPACING

Compact planning is required since air movement requirement is insignificant.

AIR MOVEMENT

Rooms may be double-banked, but the plan should allow for temporary cross-ventilation e.g by interconnecting doors.

OPENINGS

Total area of fenestrations should constitute approximately 20% or less of the wall area. These need not be fully-glazed but should be protected from the sun. Preferably by horizontal overhangs

TABLE 4: DETAIL SPECIFICATIONS

SIZE OF OPENINGS

Openings should be small, 10-20% of wall area.

POSITION OF OPENINGS

The rooms may be double-banked, with internal walls having adequate openings.

PROTECTION OF OPENINGS

Complete exclusion of solar radiation throughout the year is recommended.

WALLS AND FLOORS

Total When thermal storage is required for more than 2 months, a very heavy fabric is recommended. Solid brick, blocks, concrete or adobe of about 300mm.

Mahoney Tables

Location	NAIROBI DAGORETTI CORNER
Longitude	36° 45' E
Latitude	01° 18' S
Altitude	1798 METRES

AIR TEMPERATURE (°C)

	J	F	M	A	M	J	J	A	S	O	N	D	HIGH	AMT
Monthly Mean max	25	26	26	24	23	22	21	21	24	25	23	23	26	18
Monthly Mean min	12	12	13	14	13	11	10	10	11	13	13	13	10	8
Monthly Mean Range	13	14	13	10	10	11	11	11	13	12	10	10		
													LOW	AMR

RELATIVE HUMIDITY (%)

	J	F	M	A	M	J	J	A	S	O	N	D
Monthly mean max a.m	93	91	94	95	96	94	93	93	94	94	94	95
Monthly mean max p.m	46	42	44	36	61	59	59	56	47	44	56	53
Average	69.5	66.5	69	65.5	73.5	76.5	76	74.5	70.5	68	75	74
Humidity Group	3	3	3	3	4	4	4	4	4	3	4	4

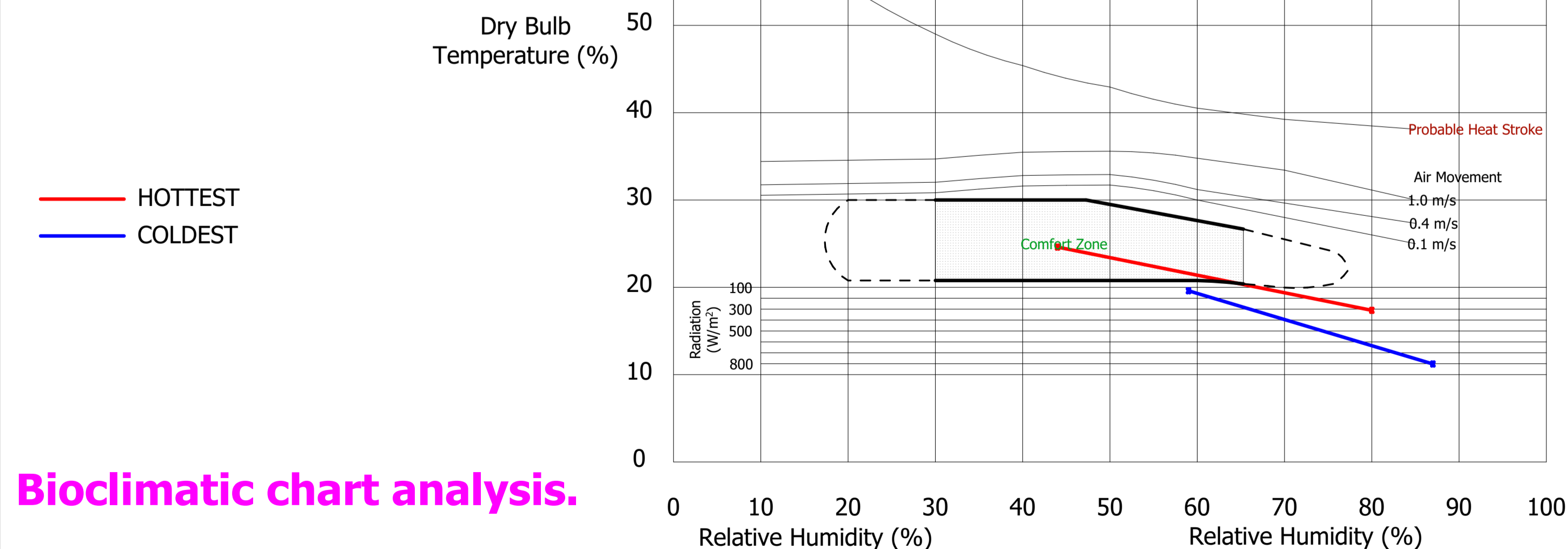
Humidity Group	RH
1	Below 30%
2	30%-50%
3	50%-70%
4	Above 70%

RAIN & WIND

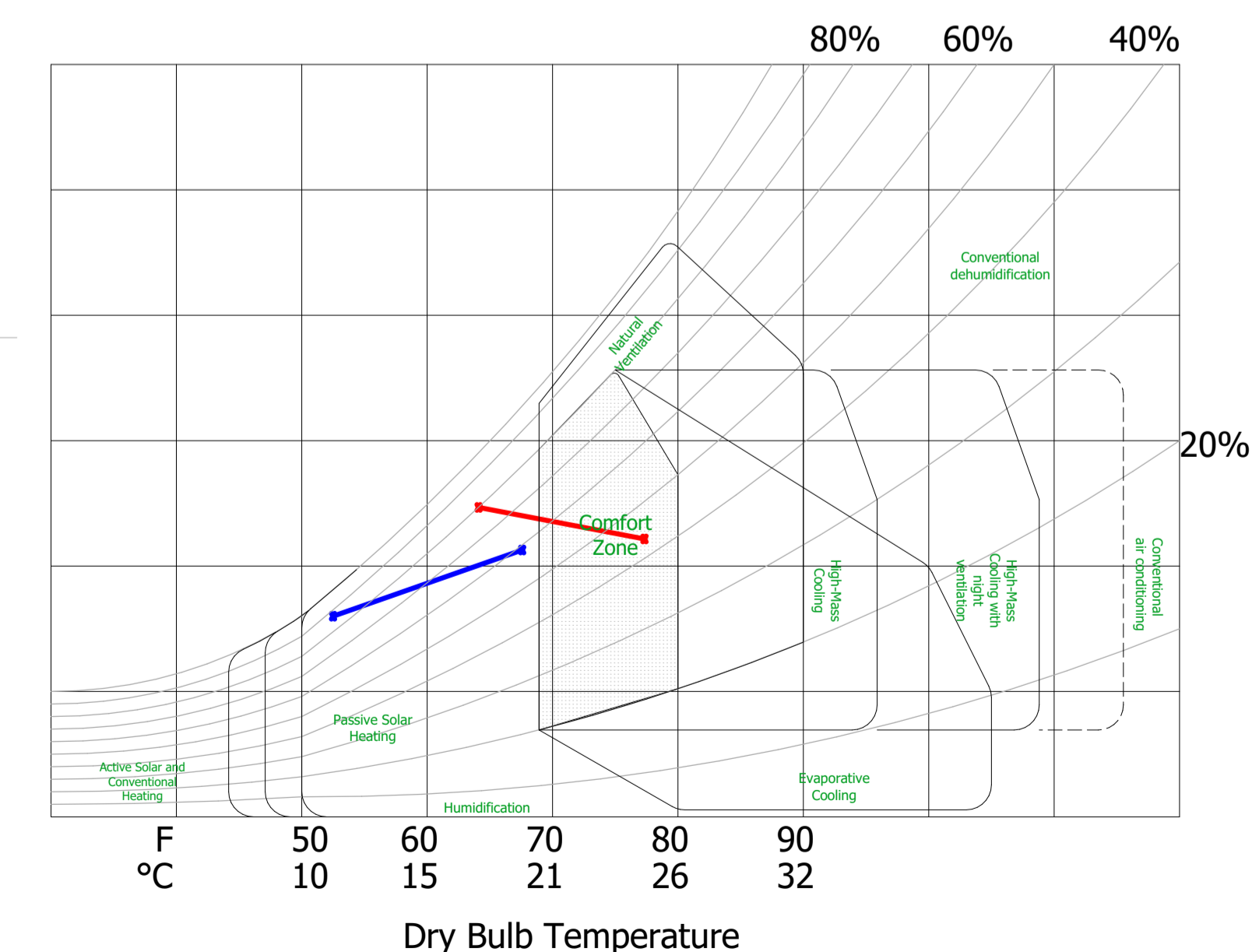
Rainfall (mm)	J	F	M	A	M	J	J	A	S	O	N	D	Total
	73	60	93	211	195	37	19	25	35	52	157	92	1049
Wind Prevailing													
Wind Secondary													

Comfort Levels	AMT over 20°		AMT 15°-20°		AMT below 15°	
	Day	Night	Day	Night	Day	Night
Humidity Group 1	26-34	17-25	23-32	14-23	21-30	12-21
Humidity Group 2	25-31	17-24	22-30	14-22	20-27	12-20
Humidity Group 3	23-29	17-23	21-28	14-21	19-26	12-18
Humidity Group 4	22-27	17-21	20-25	14-20	18-24	12-18

NAIROBI (DAGORETTI CORNER)



Bioclimatic chart analysis.



PSYCHOMETRIC ANALYSIS CHART

BIOCLIMATIC CHART ANALYSIS