

A ROOTS STORY OF THE CITY - DUBAI

AT THE VERY BEGINING IT WAS ONLY A WATER...



THEN THE DESERTIFICATION STARTED TO TAKE PLACE



YEARS LATER MOTHER NATURE CREATED BLACK SUBSTANCE
BUT WHAT IF...
WHICH TURNED INTO „GOLD” AND ACCELERATED THE
DEVELOPMENT OF THE CITY





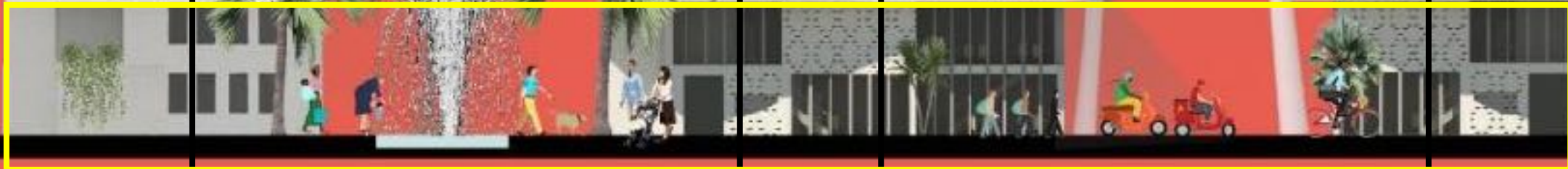
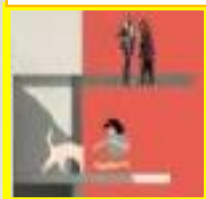
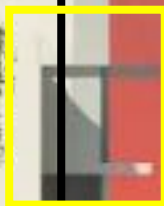
COURTYARDS = SEMI PUBLIC SPACE

MAIN STREET = PUBLIC SPACE

PRIVATE SPACE

SEMI-PUBLIC SPACE

PUBLIC SPACE



ACOUSTIC COMFORT

WELL INSULATED AIR DUCT
AND PARTITION WALLS
 $RA1 = 65 \text{ dB}$ $Ln,w = 43 \text{ dB}$

BUILDING ENVELOPE -ISOVER ACOUSTIC PANELS ,
ACOUSTIC INSOLATED WINDOWS

SLAB -ISOVER ACOUSTIC PANELS

TRIPLE GLAZED WINDOWS
 $TL/g=64\%/0,42$ $U_g=0,$
 $R_w46 (-2, -6)$

PRIORITIES FOR
BIKES AND
PEDESTRIANS
STREET AS
A WOONERF



THERMAL COMFORT



WELL INSULATED
WALLS AND ROOF
 $U_{\text{WALL}} = 0,11 \text{ W/M}^2\text{K}$
 $U_{\text{ROOF}} = 0,11 \text{ W/m}^2\text{K}$

WIND TOWERS
PASSIVE COOLING

BUFER ZONE

TRIPLE GLAZED
NORTHERN WINDOWS

NOT FACING THE SUN

SHADED STREETS

EASTERN/ WESTERN
VERTICAL SUNSHADERS

DAYLIGHT AUTONOMY COMFORT



← SPACES, FOR DAILY ACTIVITIES
FROM THE NORTH - MOST GLAZED FACADE

DAYLIGHT AUTONOMY FOR LIVING ROOM

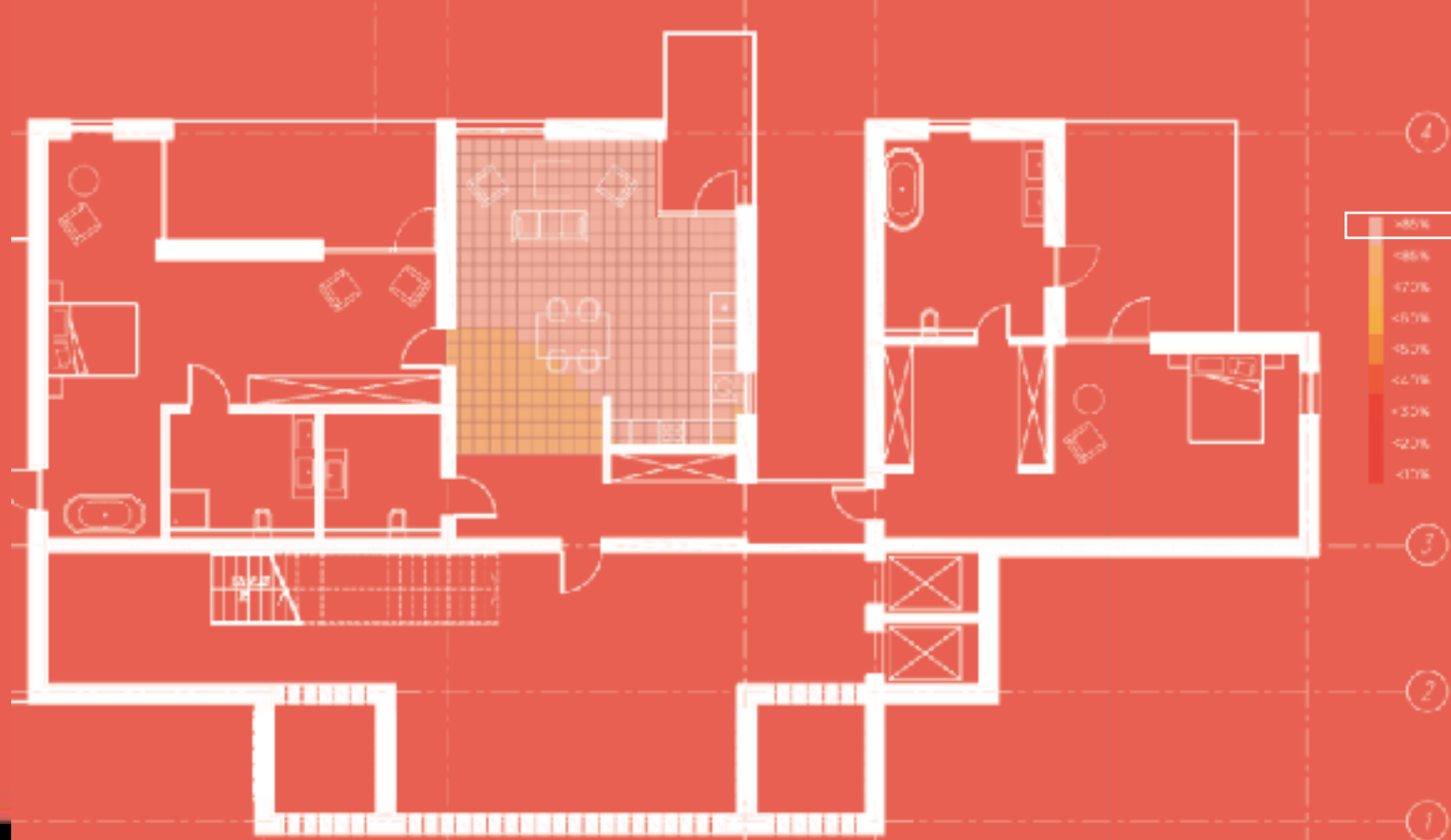
Required illum. : 300 [lux]

Occupation schedule : 8AM-6PM

Maximum : 95 [%]

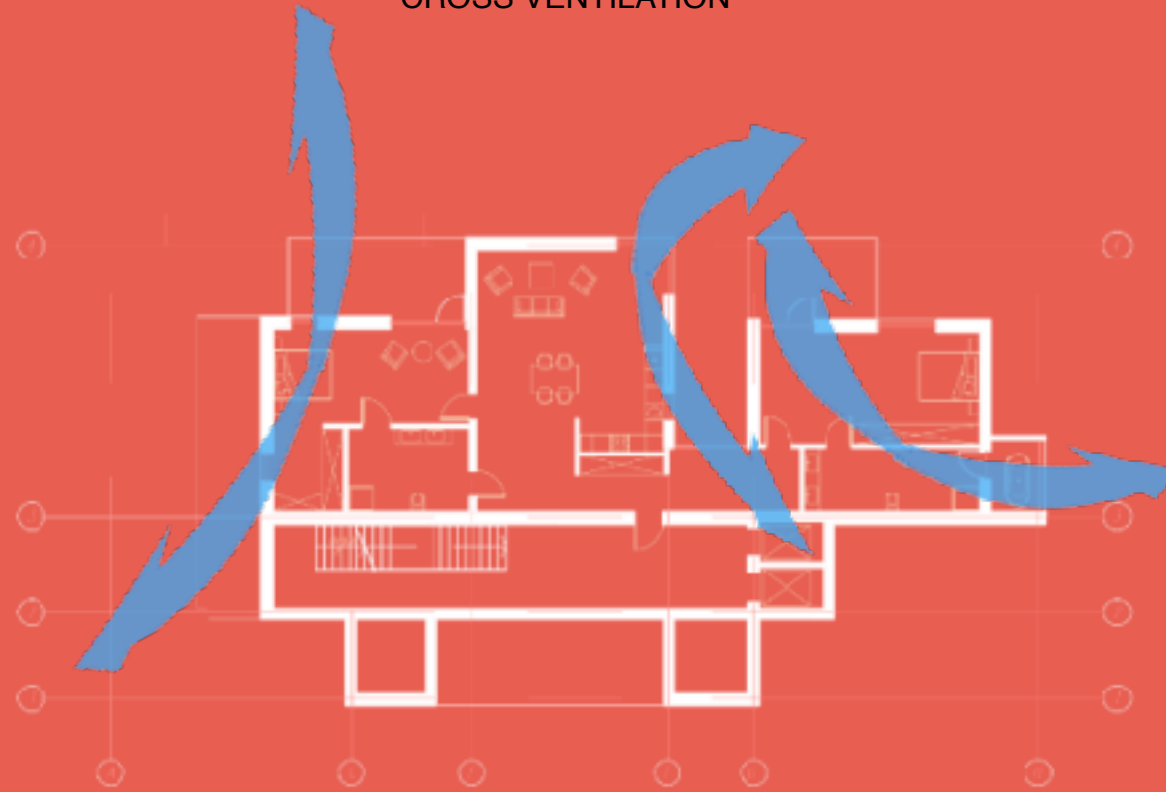
Average : 89.5 [%]

Minimum : 73 [%]



INDOOR AIR QUALITY COMFORT

CROSS VENTILATION



INDIVIDUAL MECHANICAL VENTILATION FOR EACH FLAT

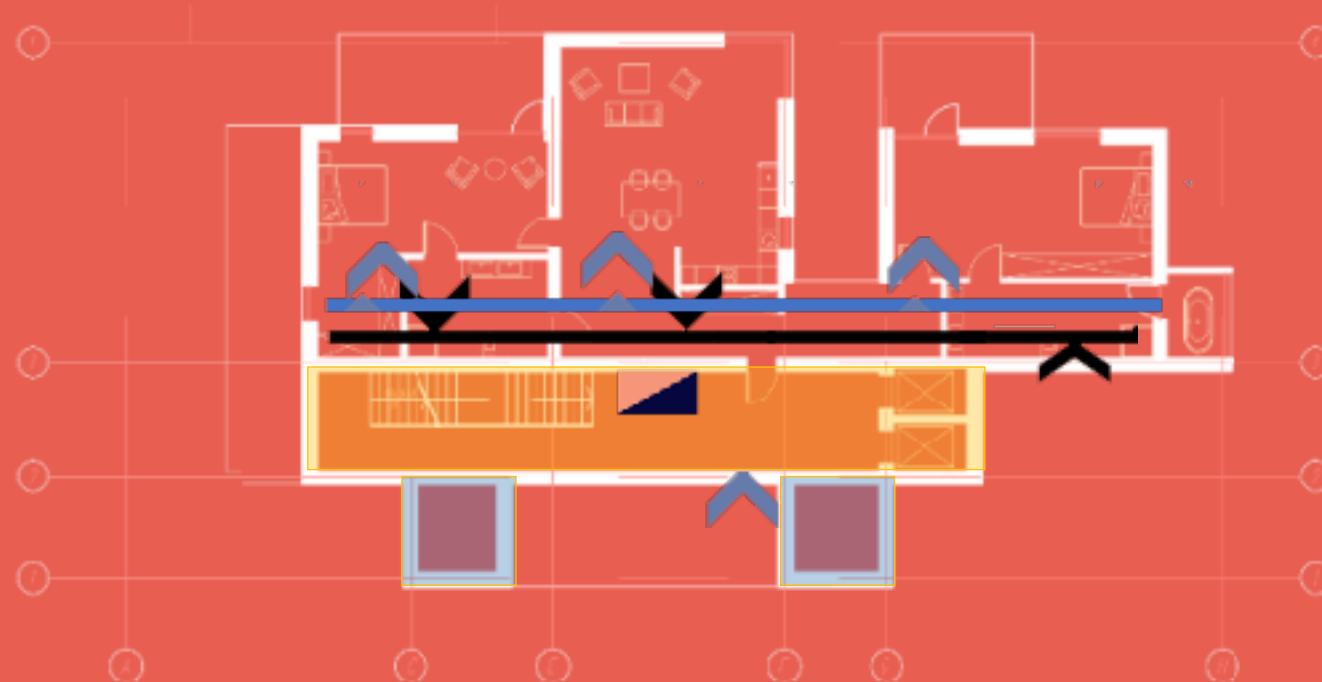
BUFER ZONE
PASSIVE COOLING/ HEATING

WIND TOWERS

COOLING/HEATING
RECOVERY

AIR SUPPLY

AIR EXTRACTED



CALCULATIONS

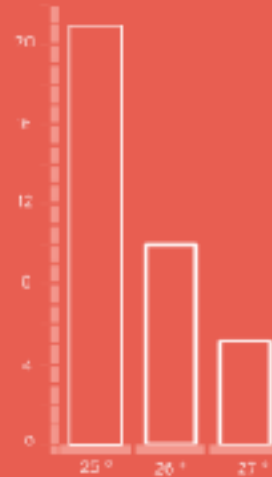
SPECIFIC HEAT DEMAND

TRANSMISSION HEAT LOSSES: 10310 KWH/A
 VENTILATION HEAT LOSSES: 6175 KWH/A
 TOTAL HEAT LOSSES: 16485 KWH/A
 INTERNAL HEAT GAINS: 56212 KWH/A
 SOLAR HEAT GAINS: 8409 KWH/A
 TOTAL HEAT GAINS: 64621 KWH/A
 ANNUAL HEAT DEMAND: 71195 KWH/A
 SPECIFIC HEAT DEMAND: **0.01 KW/H/1M2/30**

OVERHEATING

EXTERIOR THERMAL TRANSMITTANCE: 300.91 W/K
 REFLECTED THERMAL TRANSMITTANCE: 0.54 W/K
 VENTILATION TRANSMISSION AMBIENT: 12.92 W/K
 VENTILATION TRANSMISSION GROUND: 0.03 W/K
 SOLAR APERTURE: 30.21 %
 FREQUENCY OF OVERHEATING: **30.79 %**

ENERGY EFFICIENCY CLASS:



RESULT IN

LOW ENERGY CONSUMPTION , ZERO CO2 EMISSIONS

AND

ISOVER Metac FLP 1 Duratec

ISOVER MULTIMAX 30

ISOVER TDPT



RIGIPS 4PROTM Activ'Air®

CLIMATOP SILENCE, ECLAZ
 TL/g=64%/0,42
 Ug=0,7
 Rw46 (-2, -6)

ISOVER AKU-PANELS

VENTILAM AKU PLUS



HAPPY, SATISFIED, VIBRANT COMMUNITY

