



CONNECTION BETWEEN GENERATIONS

MULTI-COMFORT HOUSE STUDENT CONTEST EDITION 2017 URBAN REGENERATION OF A COMMUNITY IN MADRID

UKRAINE, KNUCA, ALINA HOLOVATIUK



CONCEPT

RENOVATION – COMFORT – COMMUNICATION – AKTIVISATION – SUSTAINABILITY



CURRENT SITUATION





COURTYARD - COMMUNITY ZONE





TTT

-98400 €

102400 €

EXTENTION OF ELEVATORS

SUPERSTRUCTURE OF THE 5-TH FLOOR

WITH EXPLOITABLE ROOF - 840000 €

INCREASE THE WINDOW OPENINGS

AND REPLACEMENT OF THE WINDOWS -



€

111



TOTAL ACCORDING TO THE RENOVATION SHEME: 1927400 € SALE OF THE FIRST FLOORS FOR COMMERCIAL REAL ESTATE: 360M² *2 *3000 € = **2160000** €

ARCHITECTURAI SOLUTION







GENERATIC

COURTYARD:

- COMMUNITY ZONE
- RECREATION
- PLAYGROUND
- PLANTING
- MULTIFUNCTION GROUND



















CONSTRUCTION AND TECHNICAL SOLUTIONS





SAINT-GOBAIN





+15.560

"A"









100x160x4

I 160

MOUNTING

BRACKETS

DETAIL "E"



+15,560

-1.500

15

65

160

30

25

15

15

290

160

M

2,750

750

N

2,500

+1.570 ~

-1.200 ~

400x400

ACOUSTIC COMFORT - FIRE SAFETY





THERMAL COMFORT – VISUAL COMFORT – WATER REUSE









CALCULATION OF THE AMOUNT OF ELECTRICITY FROM SOLAR PANELS: 8 M² OF THE ROOF -1kWh ELECTROENERGY 240 M²(ROOF SQUARE FOR SOLAR PANELS)/8= =30kWh PAYBACK PERIOD(1kW= 0,23€): 1,56 YEAR



CALCULATION OF THE REQUIRED NUMBER OF SOLAR COLLECTORS: $58 \text{ kWh} / 4.57 \text{ kWh} / \text{M}^2 \text{ day} / 0.8(COP) =$ =16 m²- FLAT COLLECTORS PAYBACK PERIOD(350 \in = 2 m²): 0.6 YEAR



CALCULATION OF REQUIRED PERFORMANCE OF RECUPERATOR:

70 m² (APARTMENT AREA) * 2.5M = 150 m³ AIREXCHANGE 60% PER HOUR – 90 m³/h 90 m³/h * 10(NUMBER OF APARTMENTS PER SECTION)=**900 m³/h** PAYBACK PERIOD: 4.9 YEAR

2055-50-5-5852-5-5999-09600



MULTI-COMFORT DESIGNER

A.PROJECT DATA

OBJECT: HOUSING CLIMATE ZONE: MADRID CONSTRUCTION: RENOVATION BUILDING TYPE: RESIDENTIAL USAGE: FOR LIVING DESIGN TEMPERATURE: 20.00°C

B. AREA INPUT

SUM OF LIVING AREA: 2604.95 m² SUM OF HEATING SPACE VOLUME: 6772.87 m² V/A RATIO: 0.38 SUM OF THERMAL ENVELOPE: 3293.86 m²

C. ENVELOPE-OPAQUE ELEMENTS

(AVERAGE U-VALUES) FLAT ROOF: 0.19 WALL AGAINST AIR: 0.19 SLAB AGAINST UNHEATED CELLAR: 0.47

D.ENVELOPE

-WINDOWS AND DOORS

(AVERAGE U-VALUES) WINDOWS: 0.7 DOORS: 0.7

E. QUALITY

AIRTIGHTNESS RATE: 1 THERMAL BRIDGE FREE: YES F. MEAN SHADING FACTORS

NORTH 0°: 0.17 SOUTH 180°: 0.0 WEST 270°: 0.7 EAST 90°: 0.7

OVERHEATING PARAMETERS

KIND OF CONSTRUCTION: MASSIVE MAX. ADMITTED INTERIOR TEMPERATURE: 25

SUMMER VENTILATION STRATEGY

SUMMER AIR EXCHANGE RATE: 0.33 NIGHT VENTILATION: FULLY OPEN WIND +'(25%)'1h DAY VENTILATION: FULLY OPEN WIND +'(25%)'1h

G.HVAC

HEAT RECOVERY SYSTEM: 80.00 % SUBSOIL HEAT EXCHANGER: 25

H.CALCULATIONS

SPECIFIC ANNUAL HEAT DEMAND: 8.80 kWh/(m²a) SPECIFIC ANNUAL COOLING DEMAND: 13.47 kWh/(m²a) OVERHEATING FREQUENCY : 0.00%

OVERHEATING









PARK SCENARIO



AGED 0-100

"WISH BOARD"- AS A MEDIATOR BETWEEN THE PEOPLE AND GOVERNMENT

LEISURE ZONE WITH FOUNTAIN



Tran you OVR FUNDRAISING ACHIEVEMENTS mind to see the good in everything 23 0

INSTALLATION "WISH BOARD"

PARK FOUNTAIN

195 F

1220

15.



THANK YOU!

