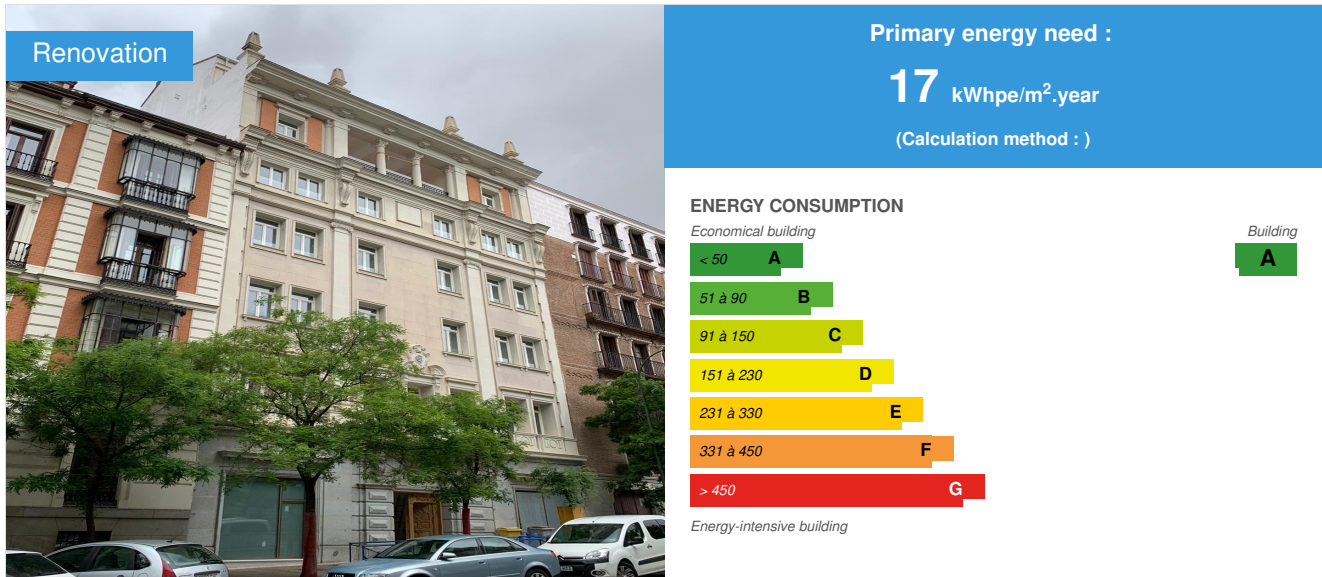


## Restoration of a residential building in Calle Montalbán

by Santiago Bouzada Biurrún / 2021-03-20 09:14:27 / Espagne / 6922 / ES



**Building Type** : Collective housing < 50m  
**Construction Year** : 2020  
**Delivery year** : 2020  
**Address 1 - street** : Montalbán 11 28001 MADRID, España  
**Climate zone** : [Csa] Interior Mediterranean - Mild with dry, hot summer.

**Net Floor Area** : 3 102 m<sup>2</sup>  
**Construction/refurbishment cost** : 8 400 000 €  
**Number of Dwelling** : 9 Dwelling

Certifications :



### General information

The comprehensive energy rehabilitation of the residential building on Calle Montalbán 11 in Madrid is a unique project in our country destined to become part of the artistic heritage of the capital thanks to five key points:

- the historical value of the property, restored and preserved in the intervention
- the unbeatable location next to the Retiro and the cultural epicenter of the city
- its careful interior design in homes and common spaces
- its respect for the environment and sustainability accredited in a BREEAM "Very Good" certificate and an A energy rating
- and, of course, the intervention of the artist Carlos Cruz-Diez with a *Chromatic Setting* in three stages.

### Data reliability

3rd part certified

## Photo credit

José Manuel Gutiérrez for In Situ Art Projects

### Stakeholders

#### Contractor

Name : Fernández Molina Obras y Servicios SL

Contact : 917589972

[Http://www.fernandezmolina.com](http://www.fernandezmolina.com)

#### Construction Manager

Name : Fernández Molina Obras y Servicios SL

Contact : 917589972

<http://www.fernandezmolina.com/>

#### Stakeholders

Function : Designer

Carlos Miguel González Weil

info[a]molior.es

<http://www.molior.es>

Architect author of the project

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Function : Designer

Santiago Bouzada Biurrun

info[a]molior.es

Architect

---

Function : Designer

José Luis García Rubio Jaquotot

info[a]molior.es

Architect

---

Function : Designer

Marta Aranguez González

info[a]molior.es

Architect

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Function : Developer

Italinmuebles SL

910561233

[Http://www.italinmuebles.com](http://www.italinmuebles.com)

Real estate promotion according to sustainable criteria

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Function : Facility manager

JLL España

917891100

[Http://www.jll.es](http://www.jll.es)

Project Management

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Function : Construction company

Valladares Ingeniería SL

917431455

[Http://www.i-valladares.com](http://www.i-valladares.com)

Consulting and calculation of structures and facilities. Work monitoring.

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Function : Certification company

Valladares Ingeniería SL

917431455

<http://www.i-valladares.com/>

BREEAM Consulting

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Function : Designer

Sánchez + Sánchez (Totón Sánchez)

sanchezproyectos[a]gmail.com

<http://www.totonsanchez.com/>

Interior design

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Function : Others

Gunni & Trentino

911960127

[Http://www.gunnitrentino.es](http://www.gunnitrentino.es)

Supply of finishing products

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Function : Designer

Molior Construcciones y Urbanismo SL

Info[a]molior.com

[Http://www.molior.com](http://www.molior.com)

Architecture Studio - Project Development

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Function : Others

InSitu Art Projects

913194011

[Http://www.insituartprojects.com](http://www.insituartprojects.com)

Art Gallery - Works by Carlos Cruz-Diez in the building

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Function : Others

Años Luz Iluminación de Vanguardia SL

915642290

[Http://www.anosluziluminacion.com](http://www.anosluziluminacion.com)

Lighting product supply

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Function : Others

Bang & Olufsen Retiro

911376322

[Http://www.madridexclusive.com](http://www.madridexclusive.com)

Supply of home automation products

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Function : Others

Geoter Geothermal Energy SL

912686626

[Http://www.geoter.es](http://www.geoter.es)

Geothermal probes

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Function : Environmental consultancy

Artur Miró \_ Develop Index Ambiental

Passatge dels Escudellers, 5, 08002 Barcelona

Ecology consulting

---

Function : Facility manager

Miguel Ángel Madrid Soto

mmadrid@vectis.com.es

<https://vectis.com.es/>

Function : Others

Sach - Sistemas de aspiración centralizada

+34 91 633 34 93

<https://sachvac.com/>

Function : Others

Tierra Ingeniería y paisajismo S.L.

+34 91 535 05 47

<http://www.tierra-ingenieria.com/>

## Owner approach of sustainability

The promoter, Italinmuebles, has always shown an interest in sustainability, from the beginning of the project to the end of the work. Low consumption, the search for well-served locations in terms of services, active and passive measures, respectful materials, etc ... have always been sought and validated by the developer and the architecture studio to achieve an optimal and sustainable result .

## Architectural description

The building, built in the Barrio de Los Jerónimos in 1916, was expanded by three floors in the postwar period. Thus, the ensemble coincides with structures made of wood, brick, steel and cast iron, and reinforced concrete. Now we have completed its second major reform, respecting the main façade and the central patio, changing the location of the main staircase (recovering and restoring its most valuable pieces), and creating, through a complete removal, two new basements that include an automatized parking for 32 spaces (five electric). Nine homes, storage rooms, indoor pool, gym, multipurpose room, sauna, hammam, and common patios vegetated with native species complete the uses of its more than 4,600m<sup>2</sup> built (3,300m<sup>2</sup> SR and 1,300m<sup>2</sup> BR). Everything is worked with a careful interior design with materials of the highest quality and proximity.

The sustainability of the intervention is endorsed by the BREEAM Very Good certification, one of the first qualifications of its kind in residential rehabilitation in Spain. Product EPDs, wood provenance certificates, VOC emission certifications, lighting efficiency and many other aspects related to sustainability have been carefully required and reviewed by designers and certifiers. The efficient use of water, with the recycling of gray water for the irrigation of common areas, and the use of natural lighting, with fixed mirrors in small patios that manage to make sunlight reach the lowest plants, are completed with more 70m<sup>2</sup> of green areas for common use, a luxury in the center of Madrid. Regarding energy efficiency, a large number of passive measures have been used (large insulation, energy-saving glazing, low transmittance carpentry, ...) and among the active measures implemented, the use of geothermal combined with low-temperature terminals stands out. and ventilation systems with heat recovery.

The building is completed with something unique in our country: a work of art specifically designed by Carlos Cruz-Diez in three stages. The first is the mural integrated into the *Induction Chromatique à Double Fréquence* hall, the second is a vibrant *Chromointerférence* that can be seen from the elevator car; and the last stage is the *Transchromie* that are located inside the houses.

## Energy

### Energy consumption

Primary energy need : 17,00 kWhpe/m<sup>2</sup>.year

Primary energy need for standard building : 61,00 kWhpe/m<sup>2</sup>.year

Calculation method :

Final Energy : 8,00 kWhfe/m<sup>2</sup>.year

Breakdown for energy consumption :

ESTIMATED:

Heating, DHW, cooling 32%

Ventilation 8%

Illumination 5%

Robotized Garage 21%

Common services 18%

Household appliances and other 16%

More information :

All energy consumption for air conditioning and DHW is electric (geothermal pump plus aérothermal pump)

Initial consumption : 262,00 kWhpe/m<sup>2</sup>.year

### Systems

#### Heating system :

- Heat pump
- Geothermal heat pump
- Low temperature floor heating
- Fan coil

#### Hot water system :

- Heat pump
- Other hot water system

#### Cooling system :

- Reversible heat pump
- Geothermal heat pump
- Fan coil
- Floor cooling

#### Ventilation system :

- Double flow

#### Renewable systems :

- Heat pump (geothermal)

Renewable energy production : 5,45 %

#### Other information on HVAC :

It is a mixed geothermal system with probes in the field + aerothermal both for the generation of heating / cooling and for DHW.

There is no production of renewable energy but a geothermal installation that saves electricity consumption. The production has been calculated based on the electrical savings: over the total of the building, 43% of the production for cooling, heating, and DHW is produced with the geothermal machine.

#### Solutions enhancing nature free gains :

Solar mirrors that guarantee natural lighting in patios, saving electricity consumption for artificial lighting.

## Environment

### Comfort

**Health & comfort :** Luminaires that have LED lamps have been selected to reduce the risk of health problems related to the flickering of fluorescent lighting. User controls have been provided to all dwellings that allow independent adjustment of the temperature of the heating and cooling systems within the building. The improvement of the quality of life of the occupants has been promoted by providing an outdoor space for their use and which provides privacy.

## Products

### Product

Siber DF SKY

Siber Ventilación

902027214

[Http://www.siberzone.es](http://www.siberzone.es)

Product category :

Roof system for dual flow ventilation.

It is a system that we have worked with on several occasions. Installation own reviews. No problem.



Deplosun Patios

Deplosun

656424582

[Http://www.deplosun.com](http://www.deplosun.com)

Product category :

Fixed mirror system to be installed on the façade to transfer sunlight to the back of the patios.

Technical assistance for the installation of the elements in patios. Increase natural light inside narrow patios.



Hubris

ACTIS Aislamiento

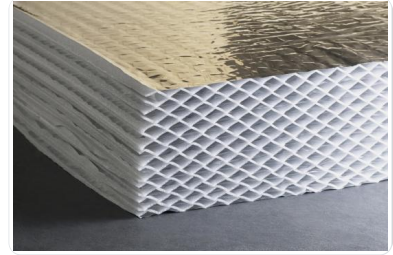
618814348

[Http://www.aislamiento-actis.com](http://www.aislamiento-actis.com)

Product category :

Multi-layer cellular insulation

Requires training for installers, then easy to install.



Torinco wooden windows

Torinco SL

957186085

[Http://www.torrero-torinco.com](http://www.torrero-torinco.com)

Product category :

Wooden windows

High quality windows with their own installers; wood certifications.



Slim Line 38 / Hi-Finity

Reynaers Aluminium

914295599

[Http://www.reynaers.es](http://www.reynaers.es)

Product category :

Anodized aluminum windows and doors.

Assembled and manufactured by Faycer Systems



Baupanel

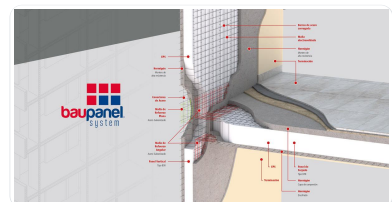
Baupanel Systems SL

951701414

<http://www.baupanel.com>

Product category :

Steel mesh system with built-in insulation to fix and project facades.



Wood interior carpentry

Maderas Hernando

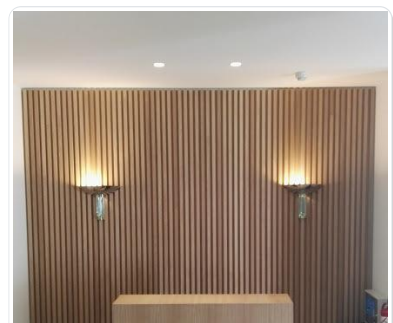
911198644

[Http://www.maderashernando.es](http://www.maderashernando.es)

Product category :

All kinds of interior carpentry and restoration of the wooden elements with patrimonial protection: floors, doors, steps, etc ...

Own assemblers. Custom manufacturing.



## Costs

### Construction and exploitation costs

Total cost of the building : 9 350 000 €

## Urban environment

The building is inserted in a completely consolidated urban environment and with all the services: health, educational, cultural, waste collection, water and sanitation, public transport and other forms of movement such as bike & carsharing, etc.

## Land plot area

Land plot area : 522,00 m<sup>2</sup>

## Built-up area

Built-up area : 100,00 %

## Green space

Green space : 71,00

## Parking spaces

Efficient automatized parking installed on two levels with a total of 32 spaces, 5 of them prepared for recharging electric vehicles.

## Building Environmental Quality

### Building Environmental Quality

- indoor air quality and health
- biodiversity
- works (including waste management)
- acoustics
- comfort (visual, olfactive, thermal)
- waste management (related to activity)
- water management
- energy efficiency
- renewable energies
- building process
- products and materials

## Contest

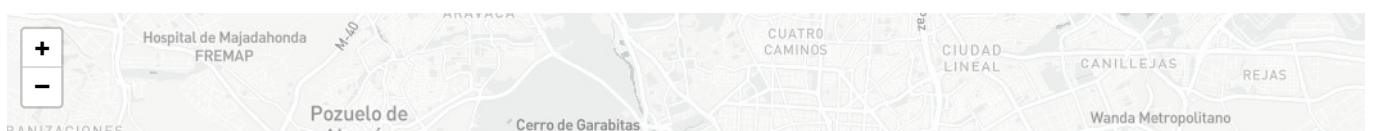
### Building candidate in the category

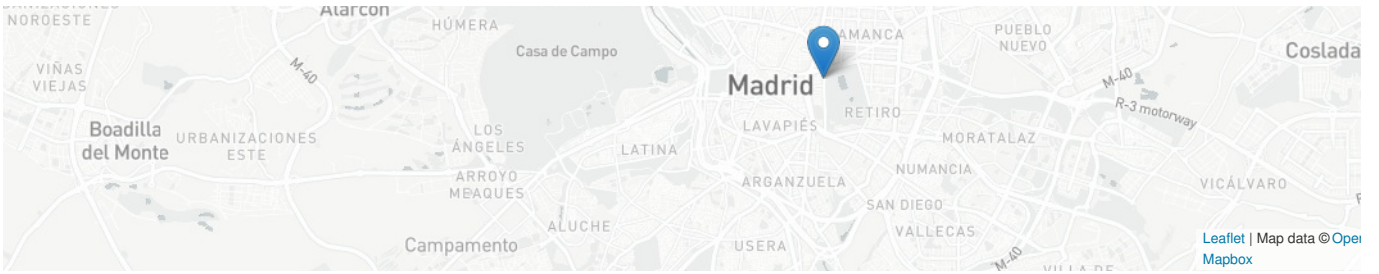


Energy & Temperate Climates



Health & Comfort





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