



### Architects

PERIS + TORAL arquitectes.  
Marta Peris, José Manuel Toral

### Design Team

Guillem Pascual, Izaskun González, Ana Espinosa,  
Maria Megias, Cristina Porta, Miguel Bernat

### Consultants

Jose Luis Velilla Lon, L3J TÈCNICS ASSOCIATS  
SLP, Jaume Pastor (Installations); Bernuz  
Fernandez Manel Fernandez, Meri Blanc  
(Structure); Aurea Acústica Sergi Soler, Grisella  
Iglesias (Acoustics); Albert Sagrera, Luca Volpi  
(Sustainability)

### Client

IBAVI. Institut Balear de l'Habitatge

### Contractor

UTE 43 viviendas Ibiza. Serrano Aznar; Cydemir

### Start and Completion Year

2018 (Competition) - 2022

### Gross Area

3 863,75 m<sup>2</sup>

### Sustainable and healthy materials or systems

Posidonia, patio, earth blocks

### Photography

José Hevia

### Contact and more information

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## Raw Rooms.

### 43 Social Housing Units

**Cases de terra. 43 habitatges socials**

**Casas de tierra. 43 viviendas sociales**

Ibiza, Balearic Islands, Spain, 2022

**PERIS + TORAL arquitectes**

### REPORT. Sustainable and Healthy Architecture

The axes of the 43 social housing building in Ibiza, Raw Rooms, are the use of a matrix of rooms, volumetrically articulated prioritising sunlight and orientation to the sea to seek the prevailing winds; the use of raw earth to achieve comfort by regulating humidity; and a notable reduction of CO<sub>2</sub> emissions. Faced with the problem of energy poverty, it has been sought that the dwellings do not require active heating or cooling systems.

The proposal organizes three units of up to four dwellings per landing around a courtyard, allowing cross ventilation in all typologies. It is a high-density project that concentrates the building in a piece whose scale dialogues with the surrounding buildings, favours the use of roofs as terraces or green roofs and multiplies the number of corners, increasing air velocity and improving ventilation.

The project proposes a system of communicating rooms, inserted between load-bearing walls of compacted earth blocks (BTC). This system enhances the value of the room as a spatial and design unit to promote flexibility and adaptability. Each 4m x 3m module has a surface area of 12 m<sup>2</sup>, regardless of its use. By locating the kitchen-dining room in the centre of the house as a distribution module, corridors are eliminated, and gender roles are avoided. The rest of the compartmentalization, doors and carpentry are made of larch wood, contrasting with the rawness of the earth. Tones close to nature such as clay; yellow tones of wood; or the green tones of green roofs reduce stress and increase the feeling of comfort. In addition, the layout of the electrical wiring is studied to avoid loops and minimise exposure to artificial electromagnetic fields inside the house.

The mass of the walls provides high thermal inertia and solves the acoustics between dwellings. The clays confer a hygrothermal behaviour that regulates humidity and reduces the risk of positive ionisation (electro climate). It is insulated with natural materials such as cork with lime mortar on facades and **posidonia** from local beaches on roofs. All in all, emissions are reduced to 420 kg CO<sub>2</sub>/m<sup>2</sup>, 60% less than a conventional building.

To reduce energy demand in both winter and summer, a roof is placed over the patio that functions as an atrium in winter and a solar chimney in summer. All the houses are south facing and have a solar collector on the façade. The building has an A energy rating, and it has been possible to reduce primary energy consumption to 2.99KWh/m<sup>2</sup>year and CO<sub>2</sub> emissions during use to 0.72kgCO<sub>2</sub>/m<sup>2</sup>year. To increase the catchment area of the atriums, the courtyards are expanded on the upper floors, facilitate access to the roof gardens and promote socialization. Trees, plantings and street furniture transform the passageway linking the three lobbies into a space of interaction for neighbours. Thus, the building integrates social and environmental strategies in a proposal that guarantees comfort in the face of energy poverty, both inside the dwellings and in the spaces in between, providing a solution in line with the comprehensive sustainability demanded by our times.