



Press release

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A rammed earth house in Ayerbe (Huesca, Spain), named as one of the 40 finalists for the Terra Award 2016, the international prize for contemporary earthen architectures

The architect Àngels Castellarnau is currently working on two new and pioneering earth building projects: a luxury hotel in Monroyo, a little town in the picturesque region of Matarraña in Teruel, Spain, and a traditional 17th century Catalan farmhouse in Collbató, Barcelona , Spain.

A new way of architecture is possible, more sustainable, with a lower environmental impact, with natural materials and connected to the land. That is what the architect Àngels Castellarnau, **Edra arquitectura km 0** studio's founder, believes. She has been researching about local traditional architecture for ten years and she has developed renewed technologies, refining old local techniques.

Her most complex project to date is a rammed earth house in Ayerbe, a little village in the Spanish Pyrenees. This project has been named one of the 40 finalists for the Terra Award 2016, the first International Prize for Contemporary Earthen Architecture, from more than 350 projects presented from all around the world. Winners will be elected in mid-July in Lyon. Moreover, the architect is currently working on two new interesting and pioneering earth building projects: a luxury hotel in Monroyo, in the picturesque region of Matarraña in Teruel, Spain; and the rehabilitation and enlargement of a traditional 17th century traditional farmhouse ("masia") in Collbató, at the foothills of the Montserrat mountain in Barcelona, Spain.

The house in Ayerbe, selected for the international prize, has been presented as a contemporary vernacular 21st century house. Rural migration in the region during middle 20th century led to the disappearance of traditional architecture techniques. With this house, the architect Àngels Castellarnau attempts to awaken the interest of the community and the curiosity about this type of sustainable buildings that are strongly linked to the territory. The project has been inspired by old local earthen buildings regarding their orientation, morphology and the use of local materials.

A life cycle analysis has shown a 50% reduction of CO₂ emissions. Local materials like stone, earth and straw represent 80% of the weight of the building. Hydraulic lime, roof tiles, wood and sheep's wool have also been used, obtained from an area within 150 km radius. The house includes passive solar strategies as windows specially designed for an efficient use of natural light, thermo-insulating blinds, cistern for reutilization of rain water, thermal accumulator clay plastering, biomass heating boiler, etc.



With her own home design, the architect has tested all techniques and materials to their limits in order to achieve not only a natural and sustainable house, but also an energy efficient, environmentally and socially engaged building.

The passive solar design used is also allowing research work focused on the thermal behavior of the earthen walls according to their position, as well as the study of a sample of a trombe wall.

As the architect explains, “I aim to achieve what I call building sovereignty, by using local, not manufactured, materials that can be reintroduced directly to nature at the end of the building’s life. All this avoiding the dependence on the industrial building sector and obtaining affordable buildings for everyone that are also healthier for those suffering from allergies and hypersensitivities”

Earth building (rammed earth, adobe...), with very few trained specialists in Spain, offers multitude design options and several advantages: excellent thermal and humidity regulation, acoustic and electromagnetic insulation, low environmental impact, wellbeing, organic materials, efficient energy, etc. It is a growing architectural trend that is attracting attention in a sector that is leaning more and more towards sustainable and environmentally committed projects.

Àngels Castellarnau is already working in two new earth-building projects, pioneers in the touristic Spanish sector. First, a 19th century building that will be transformed into a luxury, near-zero emissions hotel, with 18 rooms, wellness zone and restaurant (Monroyo, Teruel). It will be built of rammed earth and with other local materials. Heating will be provided by a biomass boiler and a greenhouse will warm the old stone walls in order to heat the interior spaces. Second, the restoration of an old 17th century traditional farmhouse (Collbató, Barcelona) that will be transformed into a rural tourist accommodation comprising 8 rooms. In this case, new walls will be built in compressed earth blocks as part of a big trombe cellular polycarbonate wall.

In both projects, the aim is to recuperate the link between man and land, by also working in neighbouring vegetable gardens, olive tree orchards and vineyards.

Àngels Castellarnau has a Bachelor of Science Degree from the ETSA Vallès School of Architecture, (Politechnic University of Catalonia) and is pursuing a PhD in Environmental and Energy research in Architecture. She is researching traditional architecture and management of natural resources and has written numerous scientific research papers at national and international level. She has organized several workshops and has presented in international conferences.

Edra Arquitectura km 0 is part of **Edra Cultura y Natura** along with **Edra Bodega**. Together, both companies undertake projects that combine agriculture and architecture with an environmentally-friendly approach.

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