

THE ARCHITECTURE KM 0 FOR THE BUILDING SOVEREIGNTY OF TERRITORIES

One of the winners of the prestigious [Terra Award 2016](#), the international price for contemporary earthen architecture, is the architect [Àngels Castellarnau](#), with the earth house built in Ayerbe a village in Cataluña Region (Spain).

Àngels Castellarnau founded *Edra Arquitectura Km 0*, and has been working for years on projects aimed at *constructive sovereignty*, using materials at Km 0, which do not need to be transformed, which can be returned to the environment and which are independent from the industrial sector. The approach of *Architecture Km 0* allows to build houses that are more sustainable, healthier, more economic and socially accessible and strongly linked to the identity of the territories.

The house in Ayerbe looks like a 21st Century Vernacular House, inspired to old local earthen buildings regarding its orientation, morphology and the use of local materials. The technique used is the *tapia calicostrada*, an ancient traditional technique based on the construction of main walls using no manufactured earth at Km 0, with additions of straw (*paja cebada*) for an improved thermal comfort. An automated construction process allows to improve execution and economic performance.

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, and they are all at Km0. Hydraulic lime, roof tiles, wood and sheep's wool have also been used, obtained from an area within 150 km radius. Coverings of interior partitions are made by local clay plasters and floors are of pine timber. The beam fillings and solar protection are made by pine wooden planks.

Technical improvements and all available organic materials have been applied to the traditional rammed earth technique to obtain a natural and more sustainable house with low tech, low energy and low impact materials and building systems that are socially linked with the environment.

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.



Detailed characteristics of the building can be found in the [webpage of Edra Arquitectura Km 0](#). The photos of this article and information provided by [Doblestudio Comunicación y Fotografía](#), show the construction process and the quality of the result.

Edra Arquitectura km 0 is part of [Edra Cultura y Natura](#) together with the wine Company *Edra Bodega*, approaching projects that combine agriculture and architecture with ecological criteria.

As underlined in the *Edra Architecture Km 0* web page, the earthen buildings in Spain (with clay, rammed earth and other constructive techniques) offers plenty of design options and multiple advantages: an excellent thermal regulation and indoor humidity control, acoustic and electromagnetic insulation, healthy and environment friendly material, low environmental impact, energy efficiency.

This architectural trend to build sustainable buildings following efficient vernacular principles is attracting growing interest across the country. In October 2016 a first meeting was realized by actors involved in the research and promotion of the earthen architectures with the purpose to build a Spanish network of earthen constructions. The network can enhance the impact of these innovative and sustainable architectures based on the valorisation of cultural and material resources of territories.

To know more

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1^{er} ENCUENTRO para la constitución de la
RED ESPAÑOLA DE CONSTRUCCIÓN CON TIERRA

¿Qué queremos?
Una Red multidisciplinar para promover, valorizar y fortalecer una arquitectura de tierra de calidad en España.

¿Cómo?
A través de la documentación, producción, formación, investigación, difusión e intercambio.

Para seguir trabajando en este proyecto, **PARTICIPA** el próximo **Domingo 2 de octubre 2016** en **CUENCA DE CAMPOS** 16:00 horas en el salón del **ALBERGUE DE PEREGRINOS**

Aprovechando la realización del XIII CIATTI (Congreso Internacional de Arquitectura en Tierra, Tradición e Innovación) y la 3ª Feria de Iniciativas empresariales entorno a la construcción con tierra INNOVA-TIERRA, que tendrán lugar los días 1 y 2 de octubre en Cuenca de Campos. Como cierre de todas las actividades el domingo habrá un concierto de "MÚSICAS DE LA TIERRA"