Case Study X

Case 4 France → Paris: Vertical Forest (Houses)

June 2018

Principal author
Florian Steinberg
With contributions by Stefan Werner
Edited by Kosta Mathéy

Draft Version 2.1

Sarriguren: Scale model

Source:
http://www.navarra.es/home_es/Actualidad/Sala+de+prensa/Profesionales/Documentos/Dossieres+de+prensa/Vivienda+y+Ordenacion+del+Territorio/Ecociudad+de+Sarriguren.htm

CASE STUDIES

Case 10 Spain → Paris: Sarriguren Navarra

Sarriguren Eco City

Problems to resolve: Global Warming, Loss of Natural Environment, Unheathy buildlings

Means: Integrated Urban Eco Development

Secondary Tools: protection of natural areas, energy saving, integration of renewable energies and bioclimatic architecture, priority of public transport cycling and walking.

Pamplona Navarra, Spain: Sarriguren eco-city

Background.

Sarriguren is Spain´s first eco-city, planned as an expansion of the city of Pamplona, located 3 kms from the city. The eco-city of Sarriguren was promoted by the Navarre Government Department of the Environment, Spatial Planning and Housing, and was designed by Fundación Metropoli. It follows ten principles devised in terms of performance specifications, with specific emphasis on the protection of natural areas, energy saving, integration of renewable energies and healthy construction. In 2014, Sarriguren had some 13,000 inhabitants.

Award.

In 2008 Seguren won the 7th European Urban Regional planning Award of the European Council of Spatial Planners. These eco-urbanism criteria are: Nature as integral part of urban design, conservation of rural settlement structure, priority of public transport, cycling and walking, diversity of housing, integration between housing and workplaces, high quality and diversity of public realm, bioclimatic architectural design, commitment to innovation, and high-quality natural environment, with a well-confined physical framework for the eco-city.

Master Plan.

The master plan for Sarriguren eco-city identified strategies for the reduction of green house gas emissions, and proposed innovative eco-measures. The eco-city plan devised eco-design criteria which guided the practical design. Sarriguren became an extension of the existing innovation corridors where high-tech firms are located. Eco-boulevards with sustainable public transport connect the eco-city with the existing urban fabric of Pamplona. The transports system provides for cycle lanes and footpaths to the surrounding nature.

European Urban Development Award 2008

http://www.elmundo.es/elmundo/2008/09/25/suvivienda/1222354317.html

Sarriguren: Proposed extensions

https://www.construible.es/2006/03/23/la-ecociudad-de-sarriguren

Buildings. Sarriguren is to occupy a total surface area of 1,501,906 m2 and some 5,207 homes have been built, 56.81% subsidised housing and 40.81% with controlled housing prices. This social housing has been built by the local housing corporation. It includes a wide range of types and tenure modalities to promote social inclusiveness. Specifications were elaborated in a Municipal Impact Sector Plan (PSIS) related to urban infrastructure. The PSIS adopts a firm commitment to the achievement of energy savings and to maximum energy utilization at two levels: spatial planning and construction:

(i) the building orientation must make it possible to capture direct sunlight in cold periods and to prevent shadow casting from adjacent buildings. For this reason, the height of the buildings gradually decreases towards the south and towards the eastern and western boundaries of the residential development;

(ii) with regard to construction, the bioclimatic regulations make it mandatory to ensure the dual orientation of all the homes to be developed, whilst also demanding a 25% improvement in the building thermal transmission coefficient in relation to the maximum value indicated by the maximum Spanish standard in force at the plan drafting time.

Thus, the buildings were developed using passive and active energy efficiency solutions, renewable energy supply, complete water cycle and innovative smart communication technologies.These technologies were submitted to a certification process to prove their low energy consumption, and low carbon emission characteristics. The building program included refurbishment of the historic village, eco-city gates, viewing towers in the park, blocks of flats, single family houses, and live in work premises.

Sarriguren: Passive, Energy-efficient Buildings in a hot climate

http://transition.web.unc.edu/tag/urban-design/

Sarriguren: Passive, Energy-efficient Buildings in a hot climate

http://www.apezteguia.com/en/projects/110-social-dwellings-sarriguren-ecocity

Green areas.

The eco-city has allocated a surface area of 159,734 m2 to green areas, a highlight of which is the creation of an 86,000 m2 central park and an artificial lake to permit the responsible management of the water resources and which is used for irrigation purposes, rainwater collection and the regulation of the environmental humidity.

Sustainability.

The following aspects can be pointed out concerning sustainability of Sarriguren eco-city:

(i) financial sustainability – since the project has largely been funded by the private sector, and since it is directed at different population groups, it is foreseen that public funds will flow back, and the remaining aspects will be financed by private initiatives;

(ii) social and economic sustainability – expected possible since the eco-city contemplates employment and work opportunities for its target population;

(iii) cultural sustainability – seems likely since the old core of the Sarriguren village has been preserved and given added value through the investments in the eco-city; and

(iv) environmental sustainability – this shall be achieved through impacts of the bio-climatic architecture, the application of renewable energy projects, the ecological corridors which connect the eco-city with the city and the hinterland. [i]

Sources and Further Reading:[1]

[i] http://habitat.aq.upm.es/dubai/00/bp349.html