

Case 1 Grenoble, France: Eco-Quartier De Bonne

Objective: Responding to a national competition, the city of Grenoble made an effort to build the most sustainable neighbourhood in France

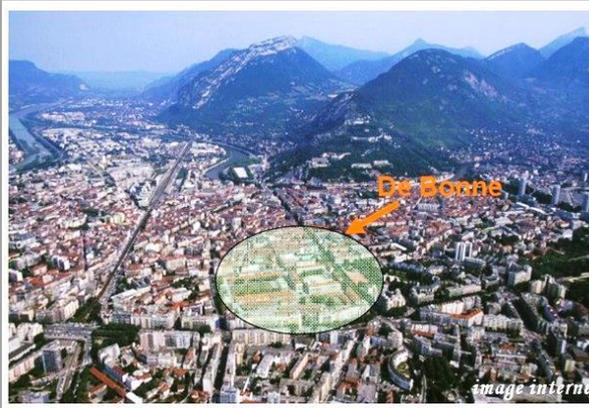
	Secondary Tools
	Energy conservation plus solar energy capture
	Bicycle and public transport promotion
	Waste recycling
	Greening of public space

Background:

The eco-district (“eco-quartier”) de Bonne got its name from the late 19th century military barracks, the Caserne de Bonne, which occupied the site until 1994. This small neighbourhood, in between the Grands Boulevards and the historic centre, is noteworthy for its cutting edge ecological features, which follow the French green building codes of the HQE (Haute qualité environnementale (French) or High Quality Environment). This special development area is France’s leading eco-district. The conversion of a former military brownfield site into a mixed-use district comprising offices, housing, a student residence and a hotel. The project broke ground in 2003 and in 2009, it received the National Grand Prize for Ecological Neighbourhoods in France awarded by the country’s Ecology, Energy, and Sustainable Development Minister. This eco-district till this moment is the only one of its kind in France. It wants to demonstrate solutions to several problems of urban living and growing cities: Solar heating systems shall fulfil half of the area’s hot water needs. Solar panels provide electricity for the commercial and residential buildings. The buildings’ shapes are also compact to reduce urban sprawl.

With 850 apartments—40 percent of which will be social housing for low-income families—the Ecological Neighbourhood is set to become one of Grenoble’s most popular residential areas. The De Bonne eco-district has been planned with a comprehensive viewpoint of buildings, road networks, public parks and the orientation of the blocks in mind. Unlike [other well-established eco-districts in Europe](#) and elsewhere, which were initiated based on community demand, this project was initiated from the top-down with the aim of reducing electricity, heating, promoting resource efficiency, as well as improving community awareness. Perhaps the district is too new to be assessed.ⁱ





Location of Eco-district De Bonne, Grenoble, Franceⁱⁱ



Urban plan for the Eco District De Bonne, Grenobleⁱⁱⁱ

Energy concept. Reduction of energy consumption was the main target and the eco-district makes use of solar energy. Projected savings could not be achieved after termination of the buildings.

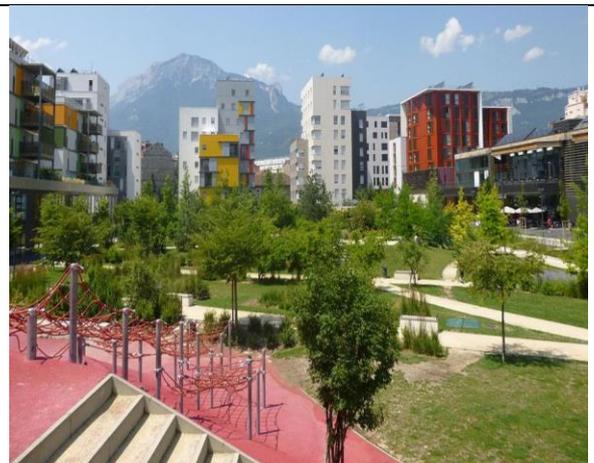
Transport. De Bonne is limiting private car utilization – which inside the project area is not necessary because of the small surface it occupies. But the use of alternative modes of access are facilitated in cooperation with the general city plan: the use of bicycles is promoted through bicycle paths and the provision of secure bicycle parking. Pedestrian routes allow to circulate safely. Tram and bus stops are available throughout the eco-district. A critical review has stated, however, that essential bicycle parking and concrete cut-outs for trees seem to have been forgotten during execution. Streets appeared less friendly to pedestrian uses. Vehicles seem to predominate the district streets, even with the narrow roads and one-way traffic.

Solid waste management. Collection target of waste was 100% and green waste could be composted and used for gardens and green spaces.

Outdoor spaces. The eco-district fosters biodiversity. It supports diversification of local fauna and flora.



Eco-district De Bonne, Grenoble, France^{iv}



Greenery with the Eco Quarter De Bonne^v

Buildings. Construction materials and sites have received special attention (ecological materials, optimized building waste management, reuse of materials where feasible). A pilot construction project experimented with the use of prefabricated wood frame structures.

Environmental certification for La Caserne for outstanding performance. In 2014, an environmental performance certificate at "outstanding level" was obtained for the La Caserne shopping centre. This building applied for a certification under the British Building Research Establishment Environmental Assessment (BREEAM) system. This sets a strong precedent.

Energy use. In terms of energy use, the centre was designed in accordance with the principles of bioclimatic architecture (favoring natural light, orientation relative to the wind, low-E glazing). It is also built in wood in order to benefit from the thermal inertia of the material. The shopping mall is neither heated nor air conditioned. It benefits from heat provided by the shops and from natural ventilation. All of these factors help to significantly reduce the centre's energy consumption, limited primarily to lighting. The centre's shops are provided with heat via the city's district heating system. Fresh air is supplied through a geothermal system, using a groundwater pumping mechanism. In the event of severe heat, an ammonia-based cooling unit is used to provide air conditioning for shops.^{vi vii}

Residents' participation. Residents are involved in the design of the eco-district, and particular importance is attached to socio-economic, cultural and generational diversity. Many diverse actors need to come together. At the city levels there is a multidisciplinary project team (planners, landscape designers, architects, sociologists, consultants in environment) structuring this dialogue with the citizens.

Private sector participation. Other actors required are the developers, investors and managers of infrastructure networks. Landlords do have an interest in seeing energy bills decrease, and they can be important partners. The participation of the inhabitants must be very upstream of the construction or renovation of the eco-district. By taking part in the design of their future place of life, people are encouraged to respect the principles of operation, becoming part of the success of their district. Specific media of communication (internet forum, publication of journal of neighbourhood, debates, seminars, exhibitions) are relevant for interaction. Environmental associations are closely involved.

Recreational activities. The eco-district provides easy access to sports and cultural activities. From the economic point of view, services and businesses will want multi-functional.

Social action and health. Intergenerational, cultural and socio-economic diversity is a priority in the development of a sustainable district.



La Caserne Le Bonne Shopping Centre, BREEAM certified^{viii}



Tram in Grenoble^{ix}

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Sources and Further Reading:

ⁱ http://www.durable.com/actualite/article_l-eco-quartier-de-grenoble-recompense_368; and <http://www.ecoquartier-strasbourg.net/index.php/transition/quest-ce-quun-eco-quartier/quelques-exemples/ecoquartier-zac-de-bonne-grenoble.html>;

<http://ecoquartiergare-trevoux.over-blog.com/article-l-exemple-de-bonne-en-france-98031281.html>

ⁱⁱ Source: <http://chemindetables.over-blog.com/article-grenoble-premier-eco-quartier-de-france-123996594.html>

ⁱⁱⁱ Source:

https://static.wixstatic.com/media/59a5bc_112a766fd7a04610b426cae3c09420a6~mv2.png/v1/fill/w_600,h_383,al_c,usm_0.66_1.00_0.01/59a5bc_112a766fd7a04610b426cae3c09420a6~mv2.png

^{iv} Source: http://archicontemporaine.org/userdata/fp_album/9/9398/500_9398_vignette_bonne-energie-pano.jpg

^v Source: GIZ. 2013. Technical Offer, Europe-China Eco-Cities Link Project.

^{vi} <http://www.breeam.org/podpage.jsp?id=765>

^{vii} This “urban recycling” development project, with high environmental aims, has been selected as the pilot project for the EU’s Concerto initiative.

^{viii} Source: <http://www.breeam.org/podpage.jsp?id=765>, <http://www.worldarchitecturenews.com/project/2010/15020/groupe-6/caserne-de-bonne-in-grenoble.html#sthash.if4Ty5yY.dpuf>

^{ix} Foto: Kosta Math y