

## Ecovillage des Noés

by Peggy ABERT / © 2017-05-10 17:36:44 / France / 16260 / FR

Extension + refurbishment



**Address 1 - street** : Quartier 1, VOIE DU GALION VAL DE REUIL, France

**Gross density** : 21.3 logt/ha

**Population** : 311 hab

**Number of jobs** : 15 emplois

**Starting year of the project** : 2007

**Delivery year of the project** : 2017



4.6 ha

**Proposed by :**



**Certifications :**



### ID CARD

Initially a meeting between the management of SILOGE - social landlord and Mr. JAMET Mayor of Val de Reuil in 2007. Defining the future of the new town, they laid the foundation for an observation: Val de Reuil, New Town since 40, arrives at an age when it must regenerate and continue its urbanization too quickly interrupted. As a continuation of an urban renewal operation initiated in 2001, it was necessary to think of the following and imagine a new mode of development, creating, on the basis of the new city germ, a contemporary leaf.

**To give back to the slogan: "A new city for a new life" all its relevance.**

Located south of Rouen (north of Paris), a few kilometers from Louviers, Val de Reuil is the youngest of the nine "new towns" planned by Paul Delouvrier in the early 1970s and built entirely on bare lands. The development of the "town germ" never met the objectives of the original plans, and the development of the city stopped before reaching the banks of the Eure. The station, major equipment, was detached from the urban fabric. The dynamics of extension of the city, once again on the agenda for several years, led to privilege the junction and integration of the banks of the Eure and the station to the city center.

Thanks to the dynamism of the municipality, more than 60,000m<sup>2</sup> of industrial surfaces have been built in recent years. The jobs generated, mainly in the pharmaceutical sectors, create a need for diversified housing. In addition, the municipality has been involved in eco-responsible development for several years. The eco-Village des Noés is part of this desire for sustainable urban development.

This project consists of 98 passive housing, various services and facilities dedicated to the population. These buildings are spread over three hamlets located on 4.6 hectares, of which 1.5 ha are constituted by an inconstructible green zone, and are part of a global urbanization program in reconquest of the banks of the Eure and nearby Which will eventually lead to the construction of an Eco-quartier of nearly 300 housing units, infrastructure and equipment on 35 hectares.

#### **The principles of the project**

This eco-village project in Val de Reuil was born from the desire to offer the inhabitants a new way of living more respectful of the planet and more in accordance with their aspirations. The eco-village is a particular form of eco-district; The idea is to rely on the ancestral experience of village social life, rather than on its urban form, as well as on its economic foundation: agriculture. The Eure is indeed a department with an agricultural vocation.

The concept of eco-village has been developed with the will to make the neighborhood a place borne by its inhabitants. The project aims to promote the link between the population and the semi-natural shoreline: greenway, views, vegetable gardens, family gardens and orchard, reconstruction of areas of flood expansion. The intensive integration between the economic activities on the site of the Eco-village:nursery, amily gardens, market gardening ... through shared experiences, allows a better appropriation of solidary and responsible uses. Through their daily experience, the inhabitants of the Eco Village will be able to concretely measure the values of solidarity.

In terms of energy, the City of Val de Reuil and SILOGE want to make this ecovillage an exemplary neighborhood that goes well beyond the 2012 regulatory requirements. One of the objectives of this project is to reflect on "the art of living "At the end of which the foundations of the design are laid. Ecovillage will promote and develop friendliness by contributing to the search for appropriate forms of social organization. The functioning of the neighborhood will be based on its social and intergenerational mix. One of the avenues was therefore to envisage a cohabitation of individual and small-scale dwellings, a nursery, shared gardens and a vegetable growing activity, all of which enabled a "generational and operational mix" with a distribution Of roles within space. Land reserves remain available, particularly on the operation located south of the ecovillage, enabling to envisage in the medium term a densification in housing.

The coherence of the project in relation to an overall development and a harmonious response to the water relation (taking into account the PPRI and the flood zones managed by a vegetable garden use, which itself is part of a pedagogical approach ), Make the Eco-Village des Noés a living laboratory serving future development projects. The very nature of the partnership of the initiators of the project allows it to be the driving force for other projects at the level of the Department and the Region.

**The Ecovillage des Noés has been awarded the Grand Prix d'Aménagement 2015 "How to build better in building land that can be flooded" - Silver mark category Major Development Operations.**

## Programme

- Housing
- Public spaces
- Green spaces

## Project progress

- Operational phase

## Key points

- Governance
- Quality of life
- Economic development
- Resources
- Biodiversity
- Energy /Climate

## Certifications

- Ecodistrict national label

## More info

<http://www.eure.gouv.fr/Politiques-publiques/Amenagement-du-territoire-construction-logement/Habitat-Logement-Ville/Developpement-durable-pour-l-habitat-et-la-ville/Val-de-Reuil-EcoVillage-des-Noes#>

## Data reliability

Self-declared

## TERRITORY

### Type of territory

Located south of Rouen, a few kilometers from Louviers, Val de Reuil is the youngest of the nine "new towns" planned by Paul Delouvrier in the early 1970s and built entirely on bare lands. The development of the "town germ" never met the objectives of the original plans, and the development of the city stopped before reaching the banks of the Eure. The station, major equipment, was detached from the urban fabric. The dynamics of extension of the city, once again on the agenda for several years, led to privilege the junction and integration of the banks of the Eure and the station to the city center.

### Climate zone

[Cfb] Marine Mild Winter, warm summer, no dry season.

## KEY FIGURES

### Neighbourhood paved surfaces

Neighbourhood paved surfaces : 9 533 m<sup>2</sup>

### Green areas, roofs included

Green areas, roofs included : 31 348 m<sup>2</sup>

### Public spaces area

Public spaces area : 19 800 m<sup>2</sup>

### Public facilities floor area

Public facilities floor area : 560 m<sup>2</sup>

### Housing floor area

Housing floor area : 7 528 m<sup>2</sup>

### Number of residential units

Number of residential units : 98

### Number of social housing units

Number of social housing units : 84

### Green spaces /inhabitant

100.8

### Public spaces/inhabitant

63.67

### Total of subsidies

Total of subsidies : 2 522 000 € HT

## GOVERNANCE

### Project holder

Name : SILOGE

Type : Private company

**General description :**

The first social housing company in the Eure department, serving social housing since 1929, SILOGE mobilizes 76 employees in the Eure department, located at the head office and in 5 local agencies, contributing annually to : - the construction of 200 new housing units, - the renovation of 150 to 200 other housing units, - the management of more than 7,500 housing units and businesses, present in 95 municipalities. In this way, 35 million euros are invested annually in the management and development of social rental assets. Our experience in the field of ecology: A production oriented towards sustainable development since 2004, with a voluntarist approach applied to all of our construction projects on the town of PONT-AUDEMER, ie 179 housing units labeled "Habitat and Environment". This was followed by the first buildings certified Low Consumption Building in ALIZAY in 2010, and a contribution to the development of the Eco-dynamic Habitat in VERNEUIL-SUR-AVRE, PREY, and FAUVILLE. Since then, a constructive reference system has been incorporating the HQE targets for all new operations. And teams trained and able to mobilize stakeholders from the act of building to environmental quality. Today, several projects of eco-neighborhoods on the department of Eure, of which the 1st and most ambitious: the eco-village Noes in VAL-DE-REUIL. A voluntary approach aimed at taking into account the impacts of our decisions and actions on society and the environment at all levels: social impacts, environmental impacts, economic impacts ... and more generally, the positive or Negative impact on all players involved in your activity.

## Project management

**Description :** This project in Conception, Réalisation, Exploitation, is the occasion to mobilize alongside SILOGE multiple and complementary partners, social housing and environmental protection: the city of Val-de-Reuil, the Community of 'Seine-Eure Agglomeration, the Eure Department, the Regional Council, ADEME, the State, Europe, the Caisse des Dépôts et Consignations, LogiLiance, associate partners such as Les Jardins de Neustrie (Association YSOS ), not forgetting innovative and involved local companies. **Persons consulted about the operation:**

- **The municipality, the technical services and the Community of communes (CASE) were involved in each phase of the project's development.**
- **The inhabitants were questioned in a sociological survey. Information meetings are planned in the next phases.**
- **The Water Police for the management of flood risks of the Eure**
- **YSOS, Les Jardins de Neustrie to define the horticultural and animation project**
- **Lycée General Marc Bloch De Val De Reuil: The Eco-Park project is a subject of study for a second Green Growth class.**

## Project stakeholders

**Atelier Philippe MADEC**

**Function :** Construction manager

Project management of the Urbanism and Architecture project

**Construction21 company page :**

[http://www.atelierphilippemadec.fr/architecture/programmes-complexes/ecoquartier-des-noes-\\_-logements-creche-halle-\\_-qe-bbc-et-zen.html](http://www.atelierphilippemadec.fr/architecture/programmes-complexes/ecoquartier-des-noes-_-logements-creche-halle-_-qe-bbc-et-zen.html)

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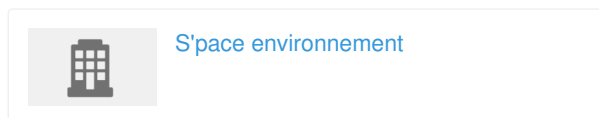
**S'PACE ENVIRONNEMENT**

**Function :** Assistance to the contracting authority

High environmental quality

**Catherine PARANT**

**Construction21 company page :**



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**AMPERE**

**Function :** Environmental consultancy agency

Energy Performance

**Construction21 company page :**

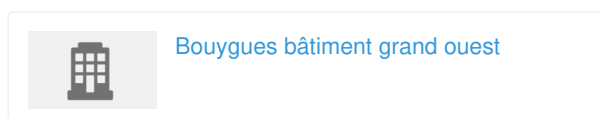
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**QUILLE CONSTRUCTION**

**Function :** Other

General building contractors.

**Construction21 company page :**



## IDEX

Function : Other

Energy Efficiency Group

[Construction21 company page :](#)

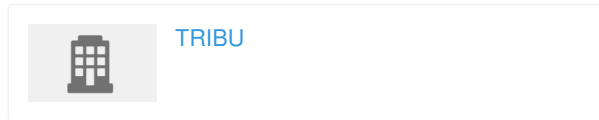
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## TRIBU

Function : Environmental consultancy agency

High Environmental Quality Engineering Office

[Construction21 company page :](#)



## ECOTONE

Function : Environmental consultancy agency

Technical office Biodiversity

[Construction21 company page :](#)

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## BET LECACHEUR

Function : Technical consultancy agency

Technical office for fluid and thermal engineering

[Construction21 company page :](#)

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## SNETA

Function : Technical consultancy agency

Technical office for roads and other networks

[Construction21 company page :](#)

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No

[Construction21 company page :](#)

## SOLUTIONS

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## QUALITY OF LIFE

### Quality of life / density

The site of the eco-village is closely linked to the Eure and its banks of alders. The flooded nature of the area has preserved it from urbanization and leaves a large open space near the city center. Hiking trails or walks, the uses linked to the banks of the Eure are numerous. The implementation of the different types of buildings has been designed in such a way as not to create a confrontation with the surrounding buildings: essentially houses;

also on the periphery of the project are houses and the further away from the edges the higher the density and the heights. The design of this eco-neighborhood in three hamlets also made it possible not to create a single centrality that would have been singular, too different, but three smaller centralities, more on the scale of this district of Val-de-Reuil; the desire is to find the ideal scale, within the framework of a neighborhood based on daily relationships, allowing the creation of a social bond. A particularly sensitive site from an ecological point of view, with 2 ha flooded. The project consisted in making this constraint a real asset, giving birth to a unique vegetable and vegetable ensemble.

## Net density

-0

## Culture and heritage

Valuing the local heritage of a new city in the 1970s may seem like a challenge; But the Eco-village in its name already, preferred to that of Ecoquartier, announces the desire to make the link between the innovation of the new town of Val de Reuil and the establishment of the neighboring village of Léry. A single street separates the small old farms transformed into habitat since and the Eco-village. The project management team has endeavored to respect this characteristic implementation in order to use it as an organizational guide.

Valorize the banal cultural heritage (customs and customs), preserve the memory of places: The method of installation in the territory we have chosen is directly derived from the analysis of the Hamlet of Léry, in the vernacular way of settling in the place: in this neighboring hamlet, a good distance from the Eure, the Houses are oriented to the south, garden to the south and gable facade towards the street, the north façade protecting the cold winds of the Seine valley; The identity of the neighborhood is also the nature and its treatment in the Eco-village: maintenance of the riparian, development of the grove, creation of overflows of the Eure, vegetable garden and gardens .

The identity of the district is to be created and the Eco-village is there to implement services such as nursery, or eventually an organic hall ... The proposed complex has a radiance far exceeding the Ecovillage , It will be federative for the surrounding neighborhoods that are currently on the fringe of the new town. The operation of preventive excavations, carried out in September 2014 by the company Archéodunum (with site visits of classes of the Lycée Marc BLOCH Val de Reuil ), Concerned a nearly 2,000m<sup>2</sup> right-of-way on the Ecovillage site. It led to the discovery of the remains of a polyphase Paleochenal, as well as the ancient archaeological structures associated with it. The latter, meanwhile, furnish furniture to date from the 1st to the 4th century AD. The immediate archaeological environment is very rich. A diagnosis made in 2014 in the south west of the site, on the other bank of the Eure "Chaussée des Berges", showed the existence of a similar development. In addition, 300m from the site is the villa of "Chemin aux Errants" abandoned between the 3rd and 4th century. On the outskirts of this villa, a Gallo-Roman sanctuary is also present. However, no occupation could be found on the left bank of the Eure because of the floodplain.

## Social diversity

Mixed population, mixed housing, mixed activity Mixedness is a founding gene of the city of Val de Reuil: more than 57 nationalities live side by side among the 15 000 inhabitants. It is a commune located in the fields, and has a very high proportion of social housing (70%). A very dynamic city, it has managed to attract leading companies, particularly in the pharmacy sector. . It seemed obvious to the initiators of the project that this mixing was present from the first drafts of the program. The land itself involved the project towards this mixing since part of the floodable and non-building land called for a mix of uses. Area built to accommodate accommodations and facilities. A valuable flood zone for vegetable growing and buffer zones for home gardens and orchards.

From the beginning of the consultations, the partners wished to involve the population strongly. In addition to a sociological study, in order not to isolate the eco-village and allow for a perfect integration of culture and society, public meetings have been proposed according to an effective principle, experienced in the context of the ADDOU procedure, which is An adaptation in the Brittany region of the AUEME approach of ADEME. This ethical approach has the quality of allowing a true appropriation of the project by all those concerned, through the construction of a common culture on the reasons, tools and forms of an eco-responsible urbanism. This approach has materialized during the project implementation period through visiting site visits and active participation phases. The company has also endeavored to take on workers within the framework of an integration contract in order to participate fully in local and equitable economic development.

## Social inclusion and safety

Social mix (rental and accession housing ...) Diversity of uses (nursery, shared gardens, market gardening, hall, ...) Home Prefer the gentle movements and parking spaces outside the ecovillage.

## Ambient air quality and health

On the banks of the Eure and with the limestone slopes of the meanders of the Seine as a backdrop, the landscape offered to the inhabitants of the Eco-village alone fulfills this requirement of a pleasant and healthy living environment. Implementation in this remarkable setting is due in large part to the initial choice of setting up the new town.

## ECONOMIC DEVELOPMENT

### Local development

The intensive integration between the economic activities on the site of the Eco-village: crèche, family gardens, market gardening ... through shared experiences, allows a better appropriation of solidary and responsible uses. The creation of the Eco-village with its components of services and market garden agriculture is entirely in line with a dynamic of local development. With them, this project allows to cover a wide range of activity despite its modest size. Each service remains nevertheless coherent with the whole by creating a common dynamic that applies to the neighborhood

but far beyond the whole of the commune and the agglomeration. This radiance beyond the Eco-village is also one of the main objectives that are set SILOGE and the town of Val de Reuil. It is about making an exemplary neighborhood that benefits everyone and serves as an example beyond the inhabitants alone.

Through their daily experience, the inhabitants of the Eco Village will be able to concretely measure the values of solidarity. Here too, the urban organization of the Eco-Village has its role to play: the layout of the car parks, the periphery, the multiplicity of shared common areas, the pedestrian paths frequented daily between the car park and the house and/or the equipments, promote the perception of solidarity and responsible lifestyles. The collective wood boiler solution is also a choice reinforcing solidarity and responsible lifestyles, solidarity by sharing common and responsible technical equipment through the common use of Renewable energy. The supply of wood chips intended for the 100% wood boiler, exclusively from local sources.

As soon as the project was started, the Eco-village took part in local economic development. The company will take on among its teams, workers under economic integration contracts in such a way as to participate fully in this local and equitable economic development. As a precision of this last point, the Ecovillage project has made possible to access the employment of several people, through the inclusion clause provided for in the group's market. As such, Bouygues Bâtiment Grand Ouest has inserted a significant number of hours of insertion at these sites. In the long term, through the presence of market gardening activities and crèches, several jobs will be present at the Ecovillage site (2 to 3 people are expected to be integrated and their management will be responsible for YSOS and A dozen for the operation of the nursery).

## Functional diversity

Functional and generational mixing is encouraged by the cohabitation of individual and small collective housing, rental and accession, and the activities of a nursery, vegetable growing, shared gardens.

## % of public spaces

43

## Circular economy

All the dwellings are realized by SILOGE. Market gardens, orchards, landscapes and the animation around organic horticulture are managed and maintained by an integration company already established locally. In anticipation, the installation of an organic market fueled by the market gardening activity already on the spot. The trade in organic products from the vegetable garden of the site and the farmers of the surrounding area is integrated into the project for management by the YSOS Insertion Association - Les Jardins de Neustrie. Market gardening production finds its outlets almost entirely on the Seine-Eure territory and thus benefits the local population. The commune of Val de Reuil plans the implantation of an organic market on site.

Construction of a nursery, by SILOGE for the Commune. The nursery has a capacity of 30 cradles and allows the production of 90 meals / day to the town's crèches (central kitchen).

-> Number of jobs planned for on-site term: 12 to 15 (insertion jobs YSOS + jobs generated by the crèche)

## SOLUTIONS

- Circular economy



## TRANSPORT

### Mobility strategy

Val de Reuil as a new town has an experience of differentiated paths, of the separation of the tracks of circulations according to the mode of transport. The issue of displacements for a commune located in a rural department rather arises on the scale of the agglomeration and the scale of the Eco-village (100 dwellings) is too small to significantly influence a scheme Director of Transport. The immediate proximity of the train station on the Le Havre / Paris line encourages soft travels.

Nevertheless, some simple and modest actions will influence the lives of the inhabitants .

- Dialogue for a bus stop at the entrance of the site
- Sweet lanes and bike garages
- Parking lot grouped as a hamlet entrance
- Thinking about self-sharing vehicles
- Coming soon: Deployment pedibus, vélobus, asinobus

## SMART CITY

### Smart City strategy

The eco-neighborhood is totally covered by digital fiber. The TV reception made difficult by the "cuvette" character of the zone, a cable television

network is implemented. The services of SILOGE are available remotely via the website [www.siloge.fr](http://www.siloge.fr); A personal and confidential space, with integrated messaging and payment module online.

## SOLUTIONS

- Digital services

## RESOURCES

### % Paved surfaces

21

### Water management

The saving of drinking water is sought on the scale of the three hamlets by the valorization of rainwater and the installation of hydro-efficient equipment in the dwellings. The ecovillage site being closely linked to the Eure and its alder banks, the objective was to make its floodability a real asset. The management of the waters is done by soft hydrocity. The objective is to recover 15% of the rainwater available. An EP tank of 10 m3 for the watering of market gardens and family gardens has been set up. The rainwater is entirely managed in a gentle way on the site by a system of transverse valleys directed towards a shedding arm of the Eure created in the project management party. Landscaping is fully involved in the management of rainwater.

Facilities: respect of the highest water mark, inconstructible area dedicated to market gardening Flows: valleys and shedding arms Recovery: EP retention tanks

The water consumption of residents is monitored permanently and immediately to alert and sensitize.

### Soil management

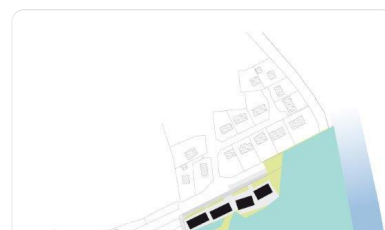
The preservation of soils includes the choice of organic market gardening, the planting of 20 000 plants, eco-grazing and fallow flowers.

### Waste management

Sorting of waste at the source (dwelling), including the creation of compost Waste bins at the entrance of each hamlet with containers for sorting and compost bins Central zone of compost towards the gardeners' house

## SOLUTIONS

- Water management
- Soil management
- Waste management
- Citizen-awareness
- Other



## BIODIVERSITY

### Biodiversity and natural areas

The project demonstrates how to integrate habitat near an area of flood expansion by taking advantage of the latter to establish market gardening areas. The project enhances riparian natural habitats and aims to establish ecological and landscape continuity between the Eco-village and the banks of the Eure. The orchard, in a central position, the family gardens and the park of the banks provide a continuity between the three hamlets and the river. The diversity of these areas and their associated vegetation is likely to attract different animal species and thus claim eco-systemic functionality. The project seeks to preserve the existing remarkable trees as much as possible, restore the original path and make it a major axis of the Eco Village. Green spaces are the subject of differentiated management. 20 000 plants have been planted, following the inventory carried out before work. The choice of species was made by a landscape architect in order to suit the greatest number of animal species, birds and insects and enrich biodiversity.

## SOLUTIONS

- Management of natural areas
- Environmental charter



Company :

Company :



## ENERGY/CLIMATE

### Climate adaptation, resources conservation, GHG emissions

This Eco-village project demonstrates that the scattered habitat to which many French aspires can allow a lesser environmental impact than the dense habitat in the city on a territorial scale, with a view to short circuits. Several characteristics of the project reduce its overall ecological footprint: A preliminary calculation of the ecological footprint of the Eco-village was carried out. The ecological footprint indicator is expressed in global hectares (hag) and corresponds to the area of land needed to compensate for the impact of the lifestyles of a population or an individual. In France, this indicator is estimated at 5.3 hag, while the ecological footprint of the Eco-village would be limited to 2.9 hag. The energy strategy defined for the Eco Village sets a global goal of zero fossil energy (ZEN). A territory ZEN is a territory that, in annual balance, balances, by its production of renewable energy, all its energy consumption all uses (within the meaning of RT 2005). To achieve this ambitious objective, the energy strategy is divided into three complementary components: Optimization of the choice of the urban morphology to enhance the light, water ... Enhanced climatic design of the building envelope Choosing systems using renewable energy sources According to the calculations carried out, the ZEN energy strategy makes it possible to reach a Cep of between 27 and 35 kWep / m<sup>2</sup>.an. This scenario also reduces CO<sub>2</sub> emissions by a factor of 30 compared to a 2005 RT solution.

### Energy sobriety

The typology of buildings, their level and their arrangement with each other were chosen to promote the recovery of solar contributions in winter and to limit the effects of masks. The energy impact of the compactness of the buildings was also taken into account in order to limit as much as possible the heating requirements and the potential losses. The orientation of the buildings retained in the project makes it possible to optimize the solar contributions in winter. The overall opening index for all buildings is on average 20-25%. The most important glass surfaces are on the facades facing south. Solar protection will help to control the solar contributions in summer to guarantee the comfort of the inhabitants. Efforts have also been made to develop the crossing character of housing and promote natural ventilation. To complete this device, dual-flow mechanical ventilation with high recovery efficiency has been planned.

The assembly of this Ecovillage operation was carried out in the "Design / Realization / Exploitation" mode. Therefore, the chosen team has committed itself to performance to be achieved, notably on the consumption of the heating network, and will be responsible for managing it. Technical solutions for individual monitoring of consumption have been planned and will be able to support it in its mission to achieve performance. Gain Bbio from 45 to 55%; Cep gain of 14 to 35% (RT 2012) Collective boiler room wood (100%) heating and ECS Heating requirements limited to 15kwh / m<sup>2</sup> / year (Passive equivalent) Permeability of 0.6m<sup>3</sup>: h under 4Pa Construction: wooden joinery and joinery The inhabitants of the Eco-village are sensitized as soon as they arrive in the area, in particular via an information brochure, and a charter of good behavior and good uses, including a section on energy sobriety. To detect possible problems of technical or behavioral losses.

### Energy mix

Hot water and heat production: 100% local timber through the collective boiler room

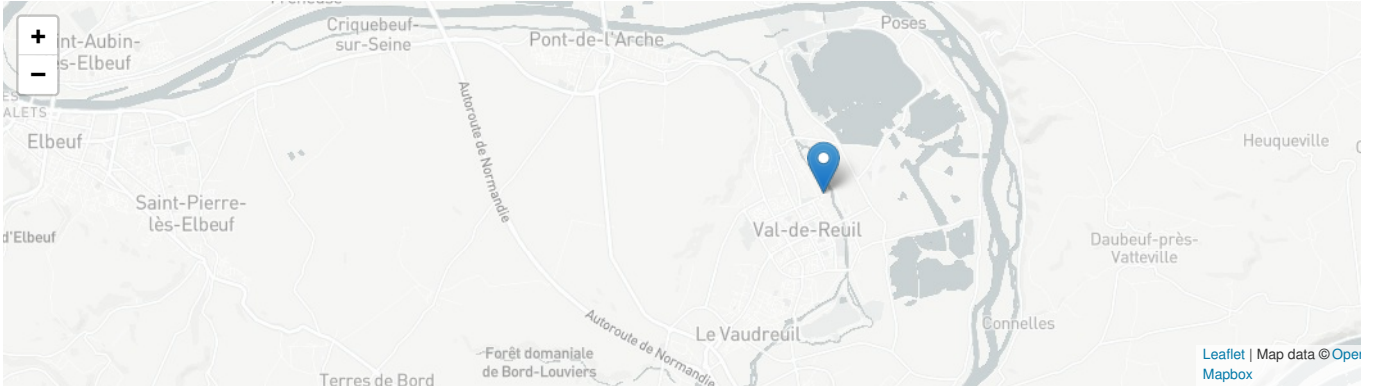
## Contest

### Building candidate in the category



Grand Prix Ville Durable





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