

## Fréquel-Fontarabie ecodistrict, Paris

by Cedissia About - de Chastenet / 2016-06-29 16:50:27 / Francia / 12094 / FR



**Address 1 - street** : 75020 25 RUE DES ORTEAUX, PARIS, France

**Population** : 300 hab

**Starting year of the project** : 2003

**Delivery year of the project** : 2013

**Certifications :**



**1 ha**



**39 674 102 €**

### ID CARD

The renewal process Fréquel-Hondarribia, which extends over an island of 1ha in the 20th arrondissement of Paris is part of the goal of eradicating slums in Paris and improvement of equipment, special equipment dedicated to early childhood.

The project was to transform the industrial wasteland has been converted for a time in wasteland in the heart of island, with reconstructions and renovations "to the parcel" with the objective of maintaining the scale and variety of the frame.

He received the prize in the category "energy sobriety" Contest ecodistrict 2009 and trophy label "eco-neighborhood" of the Ministry of Equal Territories and Housing in 2013. Restructuring of a district combining environmental requirements and technological innovation, social approach and exemplary consultation, architectural quality and sensitive entry in a dense and unhealthy urban fabric: this was the challenge taken here by the city of Paris and its operator, the SIEMP.

Program écoquartier:

- 109 units including 75 new and 35 rehabilitation
- 60 cradles a manger;
- PMI center and local activities and associations,
- a park of about 1000 m2,
- 4 business premises on the ground floor of residential buildings,
- a small square inputs serving equipment and crosswalks.

### Programme

- Housing
- Offices
- Businesses and services
- Public facilities and infrastructure

- Public spaces
- Green spaces

## Project progress

- Operational phase

## Procedure type

- Urban développement permit

## Prescriptions and zoning

- Particular conventions

## Key points

- Quality of life
- Biodiversity
- Energy /Climate

## Approaches used

- Ecodistrict national label

## Certifications

- Ecodistrict national label

## Data reliability

3rd part certified

## TERRITORY

### Type of territory

ZAC is bounded to the north by the Hondarribia street, to the east by the Fréquel passage, to the south by the street Orteaux and west by the Rue de la Reunion.

The operation is part of the PLU, Agenda 21 and the Climate Energy Plan of the city of Paris. The town belongs to a large pole (10,000 or more jobs) Description of the urban context of the island: Regularity of fragmented cutting and diversity of scales built, some recent constructions with very impressive architecture, town houses on a compact plot, street tenements and workshops or low buildings set on deeper plots, description of roads around the plot.

The city of Paris, and the SIEMP OPAC showed strong will to make sector is a pilot site for the implementation of overall DD, including the energy component to approach the RT 2005 -50% or even -70% of primary energy.

The BET Earth ECO, DD specialist has been appointed to develop a specification for the entire operation and its application during the design phase, implementation and management for 3 years. Objectives: Absorb unsanitary, make housing that meets the standards of modern comfort as part of rehabilitation and new construction respecting the scale of the island, enhancing existing facilities and design of public facilities nearby in a renovated environment including achieving quality public spaces.

### Climate zone

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

### More info

[http://www.mairie20.paris.fr/mairie20/jsp/site/Portal.jsp?document\\_id=13758&portlet\\_id](http://www.mairie20.paris.fr/mairie20/jsp/site/Portal.jsp?document_id=13758&portlet_id)

## KEY FIGURES

## Green areas, roofs included

Green areas, roofs included : 980 m²

## Public spaces area

Public spaces area : 1 000 m²

## Commercial floor area

Commercial floor area : 320 m²

## Public facilities floor area

Public facilities floor area : 1 071 m²

## Housing floor area

Housing floor area : 9 150 m²

## Refurbished floor area

Refurbished floor area : 1 071,00 ha

## Number of residential units

Number of residential units : 106

## Number of social housing units

Number of social housing units : 106

## Green spaces /inhabitant

3.27

## Public spaces/inhabitant

3.33

## Amount of the investment taken in charge by the local authorities

Amount of the investment taken in charge by the local authorities : 22 130 125 € HT

## Total of subsidies

Total of subsidies : 9 308 973 € HT

## Detail of subsidies

-Balance Sheet City of Paris:  
Expenditure: 22 130 € 125.58  
Revenue: 1999 € 487.00  
Deficit - 20 130 € 638.58

- Balance sheet CPA SIEMP  
Expenses: 9308 € 973.49  
Revenue: 6784 € 472.00

## GOVERNANCE

### Project holder

Name : City of Paris

Type : Departement

#### General description :

The renewal process "Fréquel Fontarrabie", is part of the objective of eradication of slums in Paris.

## Project management

#### Description :

**The project is characterized by the quality of human resources mobilized**

Establishment of a working partnership involving the City's services, such as DEVE, the DVD, the PSED, CCA, DU, DLH, the DASCO, the DPE, the town of 20, and DU 100% operations taking into account a SD approaches. SIEMP request by the grant and certifications, also SIEMP has approached institutional partners: ADEME, ARENE, IDF and the CSTB. A BET ECO Earth has been appointed to assist the developer and the City in the operation phase of design, construction and management over 3 years. The overall project governance is provided by a steering committee set up by the City of Paris (Urban Development Department) and SIEMP as a developer and manufacturer combining the various technical services of the City of Paris for equipment and public spaces, the city hall of the 20th arrondissement, Paris HabitatOPH as a builder, architect coordinator, the assistant to the prime Sustainable Development work and the various teams of project management.

## Project stakeholders

Construction21 company page :

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SIEMP

**Function :** Assistance to the contracting authority

Developer and manufacturer combining the various technical services of the City of Paris for equipment and public spaces.

29 Boulevard Bourdon, 75004 Paris 01 42 77 20 20

Construction21 company page :

<http://www.siemp.fr/>

## SOLUTIONS

Transversal workshops

#### Description :

Managed by Eco Earth (AMO HQE) as part of a citizens' participation process, they are places of exchange, dialogue, cross-information on environmental approaches of the different operations. It is also a laboratory of ideas for the heat treatment of the facades and the preservation of their architectural quality. It is also a participatory laboratory among all prime contractors and different ways to achieve the objectives of the Paris climate plan on a variety of projects.

- Citizen participation



Company :

Company :

Company :

## QUALITY OF LIFE

### Quality of life / density

Quality of public spaces: a vacant space in the heart of island brings together the buildings, shapes. The fringes of this area will be constructed to provide visibility and identity to this new public space. Passages irrigate public space, promoting new uses (access to school, nursery ...)

### Net density

-0.11

### Social diversity

**The EcoQuartier balance in the social housing supply**

100% of substandard buildings rehabilitated or reconstructed by SIEMP or OPAC: 69 new houses and 41 rehabilitated.

106 created 75 new social housing units and 31 rehabilitated. (PLA-I, PLS, PLUS)

**A habitat diversity**

40% of T4 and more

The reception of specific groups with 90% of housing to suit all handicaps

#### ***Places promoting social interaction are created***

All public areas of improvement area will pedestrians (and allowed the bikes). No car can not circulate inside. A garden is designed in two areas: a public garden and another garden associations.

#### ***Devices are set up to allow access to all***

Specifications approx. ext spaces. : All places (collective and public areas) will be adapted to anyone handicapping condition (wheelchairs, strollers, tracking difficulty etc ...), the choice of flooring materials and their arrangement will provide guidance cues for paths.

The SIEMP has incorporated clauses in tenders to encourage firms employ people through social inclusion. It is planned to involve local residents in the building.

## Social inclusion and safety

#### ***Security-related measures in the project area are taken***

Specifications approx. ext spaces. : The exterior lighting will be designed to strengthen and secure the main circulation and enhance the nocturnal image of the central space visible from nearby buildings.

Phase management, a count will be performed by the DVD in order to assess the number of visitors pedestrian crossings, the plot and the DEVE the garden and a questionnaire will be completed by residents at meetings information to assess the effectiveness of security devices.

## Ambient air quality and health

#### ***Steps are being taken to ensure the quality of indoor air***

Environmental monitoring of the operation Report: MOE will require that they provide ESFD enterprises the products used, or documents to show the environmental performance of products, notament regarding the air quality inside.

Project realization condition Sheet: use of materials not giving off harmful product to health.

Sheet exemplary district: The prime contractors undertake to prescribe only renewable materials, priority is given to wood products or plant-based materials.

- Solid wood: The wood used come from forests subject to a certified sustainable exploitation. They are certified according to FSC (Forest Stewardship Council). The processing of wood should be done with non-toxic products.
- Wood recomposed: For recomposed wood panels, it is required E1 classification, European classification of formaldehyde emissions, including phenolic gluing plywood (low emitting formaldehyde resin).
- Flooring: Flooring will be certified by a European Eco label, they are products that do not emit: volatile organic compounds, formaldehyde, glycol ether or any other compound presenting a risk to the health and the environment.
- The use of PVC is very limited.

## ECONOMIC DEVELOPMENT

### Local development

The balance jobs / housing is ensured through the creation of a nursery and 4 business premises (including a brasserie or a local restaurant) for 105 housing created.

### Functional diversity

A reflection on the needs in terms of equipment, services and business structures to establish a context-specific programming was conducted:

- Surface public facilities: nursery 1071 m2 SHON infant maternal health (MCH) 200 m2 floor area of 980 m² garden.
- Area shops and services: 320m2 SHON.

The entertainment district is favored:

- Creating association premises (ground floor).
- Part of the garden of 1 000m² created will be managed by an association that will offer leisure and sporting activities.

### % of public spaces

10

### % of commercial area

3

## TRANSPORT

## Mobility strategy

### ***A reflection on the smooth flow requirements related to project context was conducted***

The soft movement is reinforced in the area (on the street and Hondarribia on the Passage Frequel) since bicycle lanes are made, and parking for bicycles.

All public areas of improvement area is dedicated to pedestrians (and bikes)

- Each housing program is equipped with a local bike gated and secure full foot accessible and adjacent to the entrance hall with a minimum surface area of 1.5 m<sup>2</sup> / housing (environmental program of buildings). In the case of a failure due to a lack of space, two programs can be shared (units 6a and 6b).
- The crib and PMI feature local strollers can also be used for bicycles staff.
- Two Velib stations are located less than 400m project

### ***Measures are implemented to provide areas dedicated to pedestrian traffic and cycles, free from nuisance***

Within the improvement area, all public roads will be reserved for pedestrians and bicycles. No vehicles may enter the planning area.

The street in Hondarribia will be renovated to create a larger pedestrian zone. The Fréquel passage, meanwhile, will be rebalanced way for pedestrian and bicycle priority. In this context, traffic will be restricted to single, 15-way or 30 km / h.

Cycle paths are also present on the Charonne Boulevard (located about 500m from the proposed development) that connects the Place de la Nation and the north of Paris.

Creation of two new pedestrian crossings that cross the site and thus reduce journeys of distances.

The first connects the street Orteaux the street in Hondarribia.

The second connects the Fréquel crossing the street in Hondarribia.

At the opening of pedestrian crossings, passages on roads are indicated by special treatment to secure pedestrians to auto approach.

These two passages are planted with trees, vines, ...

### ***A close proximity to public transport and individual***

The planning area is located near a metro station, and close to several bus lines. 100%

of homes are located within 300m of a transit stop.

An Autolib station is located within 1000 m of all the buildings in the area

### ***The EcoQuartier limit instead of the car***

At the scale of the operation, one parking space is created for 600m<sup>2</sup> SHON. 17 parking spaces created across the housing 105 for operation. 16% of homes have parking spaces.

Creating a single 17 places parking (lot 1), and pooling of existing parking spaces in the OPAC and those buildings RIVP adjacent to the development proposed transaction is 130 seats against 60 seats identified need.

One study showed that many parking spaces were available within the buildings within the perimeter of the planning area (about 80). The future inhabitants will therefore have to make their own efforts to rent parking spaces available nearby.

### ***Limiting footprint associated with the delivery***

The establishment of a delivery area (between batches 6a and 6b) limits the nuisance and is pooled for local activities for the PMI and the crib.

### ***Devices used to reduce accident-prone areas***

The entire public space and pedestrian path Hondarribia will be work to improve the space for sidewalks and requalify in mixed traffic area limited to 15km / h.

## SMART CITY

## Smart City strategy

In addition to access all buildings to optical fiber, a special sheath to the optical fiber for the crib was placed in the oval.

## RESOURCES

## Water management

### ***An integrated stormwater management***

Water retention provided for each building for watering the garden.

No rejection on the network. Surpluses are evacuated to central storage

(50 m3 tank) below the park for watering thereof.

Waste water for sanitation in the housing

Each batch retrieves and manages storm water for its needs (often in the case of maintenance of private gardens). The rainwater harvesting is done within these tanks in private gardens. In the case of two buildings, there is pooling of rainwater. The rainwater supplements are then sent into the valley retention.

Cahiers of urban and architectural requirements: Much attention will be brought to the collection and guiding runoff and splash (parapet wall of protection against lift, sewers, "water drops", ...).

Processing semi-permeable soils, storm water collected on each project. The waters of the nursery roof is routed to an underground pool in the garden of which the overflow is discharged himself on the public network or infiltrated into the ground via a soakaway pit. The water is stored for watering.

For drinking water, new buildings are equipped with hydroéconomies equipment.

## Soil management

### *Treatment measures of soil pollution*

The SIEMP commissioned a geotechnical study that revealed the presence of contaminated soil to a depth of 5 m. This pollution is due to the history of the site (plant industriles cleaning cloth, tanners ...). There is also the presence of wrecked cars.

Before the start of each project: the SIEMP performs the cleanup of sites where it must build and the passage and the grounds of the nursery, the OPAC will conducted remediation of its sites and the DEVE that of the future garden.

Specifications approx. ext spaces. : Treatment of polluted soils produced on site, this in preference to a surface treatment to prevent the transit of materials by truck in the city.

According to the geotechnical study, no risk to the stability of the soil.

## Waste management

Builder: the environmental quality target set for the site are: limiting noise and dust show's; do sorting and recovery of construction waste; ensure awareness and training companions.

## BIODIVERSITY

### Biodiversity and natural areas

An environmental assessment has identified the flora and fauna ecosystems present on the site. To preserve, to the extent possible, this biodiversity, "environmental charter" and the "Charter outdoor areas" established by AMO sustainable development are applied in the design of crosswalks and integrated into the program and garden project in development. Environmental diagnosis, applying an "Environmental Charter", AMO DD to preserve biodiversity.

## SOLUTIONS

Associative Garden

### Description :

The major element of the environmental quality of this space is set by its altimetry off a soft and relaxing atmosphere. The quality of the project will soil treatment with local recovery of materials (such as pavers) for the infiltration of rain water, the quality of the vegetation (non-allergenic species adapted to the climate of Paris requiring little watering) and the creation of shaded areas in summer and very sunny in winter through the use of tree plantations, deciduous.

- Management of natural areas



<http://www.paris.fr/services-et-infos-pratiques/urbanisme-et-architecture/projets-urbains-et-architecturaux/quartier-frequel-fontarabie-20e-2531>

Company :

Company :

Company :

## ENERGY/CLIMATE

### Climate adaptation, resources conservation, GHG emissions

The city of Paris, the OPAC SIEMP and showed strong commitment to making sector is a pilot site for the implementation of overall DD, particularly for the energy component to approach RT 2005-50% or even -70% of primary energy. The BET Earth ECO, DD specialist has been appointed to develop a specification for the entire operation and viellera its application during the design phase, implementation and management for 3 years.

An environmental quality charter was drawn; it declines the 14 targets of the HQE® didactically and to prime contractors.

Site environmental diagnosis: A geotechnical soil survey was conducted. It helped to highlight the presence of backfill and talus layer and gypsum marl below the range of 8 to 10 meters under the embankments.

***Arrangements are made to fight against the heat island (based on the results of the summer thermography)***

Specifications approx. ext spaces. : Use sprinklers will be developed.

A valley will be created, along the public garden. This valley (waterproof) vocation will accommodate storm water from the nursery (for maintenance of public spaces).

Green roofs will be implemented.

***Measures are taken to protect or benefit from the elements***

A study on the wind direction was made in order to allow the most appropriate possible direction of buildings.

The planning principles adopted for its development that shapes are optimized urban development of a structuring free central area comprising a small square and a garden, crossing the island by two public passages, preserving and confortation the existing urban fabric in its diversity, eradicating unhealthy and improving the quality of the habitat.

Buildings are implemented for the use of the potential present on the parcel, many buildings are oriented South.

Specifications approx. ext spaces. : Consideration of the insured protection against the summer heat by creating a shaded area with a lake, besides the fact that the trees and the water will bring freshness, they will create a much sought hygrothermie in the summer period in Paris.

## Energy sobriety

***The operation is efficient in terms of public lighting***

Specifications approx. ext spaces. : Public lighting will seek to create diversified, attractive nocturnal atmospheres depending on each space to offer in line with the projected night use.

It was applied the requirements of the specifications of the City of Paris in terms of road. Furthermore, it was requested in the tender environmental burdens create a daytime atmosphere, with a markup of light paths by diodes.

Specifications approx. ext spaces. : Lighting will be designed in one respect and a concern for non-disturbance of flora and fauna of the site with a confirmed environmental concern in terms of controlling energy consumption.

Public lighting will be energy efficient through the implementation of energy-saving equipment. Can use for marking paths to lighting systems with LEDs powered by integrated photovoltaic cells directly to devices.

## Energy mix

Energy performance: at least BBC (Cep <65 kWhep / m² shon / year) or Cep <50 kWhep / m² shon / year for new or rehabilitated.

Renewable energies: solar (40-50% of residential electricity needs and ECS), maximizing solar gain in housing, insulation most of time outside (shell 25-35 cm thick), reinforced insulation glazing, with vertical geothermal sensors for heating and the implementation of the Paris well.

On the whole operation there is 263 m² of solar panels and photovoltaic panels in 20 m². They are all installed on the roofs except for lot 7 or they are installed on the front.

All buildings will be connected to gas, CPCU being too far from the site, against the facilities are designed to be interchangeable.

Sheet project realization conditions: Use of solar energy for hot water and electricity production (photovoltaic panels) wherever sunshine allows.

- Use of Canadian wells for cooling air.

- Implementation of heat pump using geothermal energy for heat production in winter.

Copy neighborhood sheet: solar energy which will cover 40-50% of residential needs through the implementation of solar panels to provide domestic hot water and the installation of solar photovoltaic panels for the production of electricity.

Geothermal energy: part of the heating will be provided by this energy with the installation of vertical sensors (thermistors). Geothermal energy will also be used for the implementation of the Paris wells that improve the refresh some constructions.

Lot 4: ECS coverage needs of 56% ST

Lot 7: Coverage ECS needs of 80% by ST

## BUILDINGS

### Buildings

Regarding buildings, the project was designed to achieve the minimum level BBC (low energy buildings) (Cep <65 kWhep / sq.m. / year), or the level of Paris climate plan (Cep <50 kWhep / m² shon / year) for new or rehabilitated housing and equipment (PMI, nursery). To meet the energy performance set out above, the choice of energy resources is directed towards the use of:



- solar energy (photovoltaic or thermal solar panels). Solar energy will cover 40-50% of residential needs through the implementation of solar panels to provide domestic hot water and the installation of photovoltaic solar panels for electricity generation,
- passive solar design with large windows to take advantage of solar gains in housing,
- high performing envelopes having a thermal insulation 25 to 35 cm thick,
- geothermal, via temperature sensors, part of the heating will be provided by this energy with the installation of vertical sensors (thermistors) best suited to this area too small for the installation of horizontal sensors. Geothermal energy will also be used for the implementation of the Paris wells that improve the refresh some constructions.

[Link to Buildings of the area in Construction21 database](#)

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## Contest

### Building candidate in the category



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