

## Ecodistrict Molière - The Mureaux

by Laëtitia MARUEJOULS / 2018-05-31 16:33:15 / France / 13898 / FR



**Address 1 - street** : Place de 78130 LES MUREAUX, France

**Gross density** : 52.57 logt/ha

**Population** : 14 000 hab

**Number of jobs** : 880 emplois

**Starting year of the project** : 2003

**Delivery year of the project** : 2019



70 ha



409 567 545 €

### ID CARD

In Les Mureaux, the project of urban renewal could not be dissociated from a larger project that aims to rebuild a city combining all the urban areas, which were still too disjointed, in the same intensity. This complex work requires conviction of what should be the city and ambition of the project. The Mureaux urban renewal project, subsidized by the ANRU, covers six neighborhoods (70 ha) where 15,000 inhabitants live, ie almost half of the inhabitants of the city. The project aims to support the transformation of these neighborhoods to give them a new attractiveness through the restructuring of public spaces, the diversification of the housing supply, the creation of qualitative local amenities in the perspective of a sustainable urban development.

The design of the urban project (7 large complexes, 70 ha, 15,000 inhabitants) whose first reflections began more than 15 years ago, continued gradually with the operational implementation, culminating in 2017. Installation of Molière Park, the one found in the landscape of the city with its gardens, its tree-lined streets, its squares, these alleys, diversified typologies, islets of freshness. The development of a guide plan entrusted to the architect - urban planner Jean-Marc BICHAT of the JAM workshop and cumulating the challenges in terms of development in particular on the public space nonexistent then and more than 400 million euros of investment were necessary thanks to an agreement signed in 2006 with the ANRU and the partners of the city whose donors for the metamorphosis can be done. The label obtained in 2014 and confirmed on December 19, 2017, the neighborhoods of Mureaux so much criticized now become the ECOQUARTIER MOLIERE.

## Programme

- Housing
- Offices
- Public facilities and infrastructure
- Public spaces
- Green spaces
- Others

## Method used to calculate CO2 impact

Un bilan carbone du territoire a été réalisé en 2011 et mis à jour en 2013. Le rapport couvre l'ensemble du territoire des Mureaux, mais a permis de cibler, entre autres, les émissions dans le secteur tertiaire. De plus, une étude a été menée avec la firme Explicit, et plusieurs données étaient disponibles auprès de différents donateurs, afin d'évaluer les impacts.

## Project progress

- Management phase
- Delivery phase
- Operational phase

## Key points

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

## Approaches used

- Ecodistrict national label
- Agenda 21
- Local charter

## Data reliability

3rd part certified

## TERRITORY

### Type of territory

Located in the Yvelines, and on the left bank of the Seine, between Mantes and Poissy and 40 km from Paris, the city of Mureaux belongs to the territory of Val-de-Seine and since January 1, 2016 to the urban community of Grand Paris Seine and Oise (CU GPSEO).

Formerly, a small village of 2000 inhabitants in 1886, the urban and demographic evolution of the Val-de-Seine is linked to the industrial and economic history of the post-second world war. The establishment of the Régie Renault in Flins and Aubergenville marks a rapid and radical transformation of the physical structuring of the territory. The need to house a constantly growing labor force has determined the urban planning and housing supply of the 60s and 70s. Today, the city has 32,249 inhabitants. The recession and developments in industrial policy have had direct repercussions on the territory, generating unemployment and precariousness. Urbanism has accentuated in space the phenomenon of urban and social relegation of neighborhoods.

Integral part of the territory of the Val-de-Seine, the city of Mureaux was confronted since the 80s with important urban and social problems. Indeed, the legacy of the economic crisis has affected half of its territory. Despite the presence of many companies including EADS, the city had 50% of social housing and 40% of low-

skilled young people under 26, 27% of the population over 15 and without a diploma, a high unemployment rate 16% up to 30% in its southern neighborhoods, urban structure inherited from the successive construction of large social housing complexes made up of 100% social housing!

Since 1996, the city has benefited from ZUS (sensitive urban areas), and five neighborhoods have been classified in the GPV (Grand Projet de ville) system at the beginning of 2000, allowing for the establishment of a global project that has experienced a strong acceleration with an operational objective with the establishment of the National Agency for Urban Renewal (ANRU).

With the law of orientation and programming for the city and the urban renewal known as the BORLOO law of 2003 and the creation of the ANRU, the city and its partners seize the opportunity to contract and commit themselves on a vast program Urban renewal concerns (PRU) concerning 6 neighborhoods (15,000 out of 32,000 inhabitants) in 2006 followed by several amendments.

The city of Les Mureaux has begun a very dense project definition, started in 2001. The urban quality is expressed first through a project of city and territory, the Scheme of Urban Coherence of Mureaux (SCUM) developed in 2003. It is in the SCUM that the territory of the large ensembles is defined as the main site of development for the future radiation of the city. A place of "modern" urban extension in the 1960s, then relegated to the 1980s, this southern district is, because of the land shortage, the possible and privileged territory of urban development for the years to come.

The major project of urban renewal (GPRU) of Les Mureaux implements the main principles such as the land division of the large complex and its corollary, the creation of a public domain and a private domain composed of independent plots, constitutes the basis the planned urban recomposition. It includes 6 major sectors called: the Cité Renault, Ile-de-France, the Bougimonts, the White Vine, the Musicians, the highs of the Great West and whose Master Plan is divided into main principles namely:

To open up neighborhoods by the network of roads,

- Redesign land and build up living units;
- Diversify the housing stock;
- Creates a public domain
- Rehabilitate and build equipment whose situation and legibility in the city is restored;
- Realize development and quality constructions as part of a process of High Environmental Quality.

To the 6 main principles of the urban project and in the perspective of sustainable development stemming from the Municipality's commitment through Agenda 21, water, alongside the plant, takes an important place in the new urban landscape. More generally, the City's challenge is that urban transformations will have an impact not only on the urban setting but also on the interactions and lifestyles in the city.

To the signatory partners of the convention with the National Agency for Urban Renewal around a financial model of 400 million €, we must add other committed organizations whose main is the Seine Normandy Water Agency to encourage the integration of water into the urban project (Financing of the resurgence of the Orgeval reach and the alternative management of rainwater up to 52% or € 1,321,000 out of € 2,505,000 as well as participation in the installation of the BALAD'EAUX MUREAUX.

The urban project aims to be developed as part of a landscaping and typological project that enhances and perpetuates the geographical quality of the site while defining a new urban fabric, integrating both the history of the large ensemble and the development of new residential typologies.

The GPRU des Mureaux has mobilized from its start a dozen owners and twenty architects. Constituting architectural and urban coordination has become one of the essential conditions for achieving the urban project's urban quality objectives. (§ framework of life: further detail the mission of MOU, JAM). The city has a research office, expert in alternative techniques of sanitation and water infiltration namely INFRASERVICES. It has also entrusted the urban development CITALLIOS (formerly SEM92) in the form of mandate while keeping the project management. This choice, despite the complexity of the coordination, allowed the municipal services to take ownership of the project from the design phase and throughout the implementation (differentiated management of green spaces and water management).

## Climate zone

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

## Land price

Land price : 160 €/m<sup>2</sup>

## KEY FIGURES

### Neighbourhood paved surfaces

Neighbourhood paved surfaces : 413 000 m<sup>2</sup>

### Green areas, roofs included

Green areas, roofs included : 250 313 m<sup>2</sup>

### Public spaces area

Public spaces area : 250 000 m<sup>2</sup>

### Office floor area

Office floor area : 6 200 m<sup>2</sup>

## Commercial floor area

Commercial floor area : 12 000 m<sup>2</sup>

## Public facilities floor area

Public facilities floor area : 25 736 m<sup>2</sup>

## Housing floor area

Housing floor area : 274 800 m<sup>2</sup>

## Refurbished floor area

Refurbished floor area : 17,50 ha

## Number of residential units

Number of residential units : 3 680

## Number of social housing units

Number of social housing units : 3 331

## Green spaces /inhabitant

17.88

## Public spaces/inhabitant

17.86

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

Amount of the investment taken in charge by the local authorities : 68 000 000 € HT

## Detail of subsidies

€ 41,358,333 from the City € 1,477,942 from the SIVS / SVCA / GPSEO 1,896,726 from the Department 27,011,550 from the Region € 223,100,174 from the donors € 665,920 from the CDC € 2,070,761 from Europe 1,676 866 € of the State 101 755 473 € of the ANRU 15 294 223 € others (valuations land ...)

# GOVERNANCE

## Project holder

**Name** : City of Les Mureaux

**Type** : City

**General description** :

The city has a sustainable development policy for many years and, in 2001, it has developed in its agenda 21 a plan of structured actions in line with the reality of our territory. The city signed the Mayors' Convention in May 2010 in which it committed to the 3x20 objective: 20% reduction of its energy consumption, 20% of its energy consumption from renewable energies, 20% reduction of greenhouse gases by 2020. It achieved its carbon footprint in 2011 and its action plan to meet its objectives of the Covenant of Mayors. Also, when we started working on the Urban Renewal Project, we worked on all the themes of sustainable development. We conducted an energy strategy study with the firm EXPLICIT which led us to extend the heating network and build a biomass boiler that now supplies nearly 4000 homes. We hierarchized our road network by favoring pedestrians, then bicycles, public transport and lastly the car (approach from a seminar of elected officials), the specifications of consultation of the consulting firms made mention of our approach and asked for example the infiltration of rainwater to the plot and public spaces. And in 2013, we realized that we had worked on all the eco-district themes and that's how we decided to present a label file, a label we obtained in 2014, confirmed in 2017 with step 4. Since then, we continue to develop and continuously evaluate the achievements.

<https://www.construction21.org/france/data/sources/users/11018/le-plan-daction-seap-les-mureaux-en-2020-23092010-lbm.doc>

## Project management

**Description** :

The project of the PRU des Mureaux being the subject of an ANRU convention, the decision-making and validation bodies of the project were formalized around the various partners (State, communities, and donors) who signed the convention.

The recruitment of a project manager resulted in adaptations of the municipal organization to ensure a strong mobilization of the various departments concerned by the production of the PRU. The mobilization of these internal resources is based on a letter of mission between the management of the PRU and each direction of the city of Les Mureaux. It defines contractually the objectives, the human resources, the modalities of collaboration. They also specify the links between each management and the AMO professionals (JAM Workshop or OPC Urbain) or the city's representative for the development of public spaces and the construction of public facilities (SEM 92 became CITALLIOS). The JAM workshop has been working as a project urbanist since the early 2000s and the development of the SCUM, while the planning mandate of the SEM 92 was notified in 2006. Also SETEC is the current OPC Urban.

The project management links the elected representatives to the city services, and coordinates the work of the JAM Workshop, the SEM 92 and SETEC. His concern was to make the general governance of the project legible and to clarify the role of the PRU leadership bodies.

- The annual project review is chaired by the Prefect, Territorial Delegate ANRU. The directorates of the donors and the inter-bailer, the city departments concerned as well as the AMOs and agents, the signatories of the agreement, the animators of the various piloting authorities are members of the project review which makes it possible to follow up the project and the provisional timetable with all stakeholders.
- The Steering Committees (COPIL) are chaired annually by the Mayor. They make it possible to take into consideration the subjects under discussion to co-produce an urban planning and urban renewal anxious to integrate all the expectations of the different stakeholders. The ambition of the steering committees is to define the strategic orientations of the project starting from the previously defined urban development axes (see Commitment 1, which explains how city-wide urban planning documents have led to the development of ERP intervention axes). The directorates of the donors and the inter-bailer, the city departments concerned as well as the AMOs and representatives, the representatives of the financiers are members of the steering committee.
- The semi-annual Technical Committees (COTECH) are chaired by the elected representative in charge of the PRU and led by the project management. They bring together the technicians of the partners named in the COPIL; they take stock of technical subjects, general coordination and the progress of the project.

These three bodies have been completed at the partnership level by a steering committee and rehousing monitoring, a steering committee and follow-up of Urban Proximity Management.

Different points are to be highlighted to understand the singularity of the PRU des Mureaux which has put in place an innovative governance:

- The project management has set up operational committees twice a month to discuss between technicians (city, landlord, planner, developer) and executive committees (more elected operational committee in charge of the UK and urban planning) allowing debate on topics requiring political or operational arbitration.
- The "ANRU" points are also organized twice a month in a small committee around the mayor, and allow strategic and political decisions to be made.
- The sectoral reviews make it possible to meet all the donors once a quarter in order to make a precise point on the progress of their operations on the different themes (land, technology, coordination with the public space).
- Technical meetings are held regularly, and as far as necessary, on the technical coordination between private projects (donors or promoters) and public space projects (presentation of the different phases of the housing programs, and adjustment of the leveling issues; accessibility, connection), bringing together the builders, the JAM Workshop, the technical services of the city, the SEM 92 and its project management on public spaces.

Each of the building owners has integrated complementary decision-making bodies in parallel, to allow a solid management, and structured the schedule of each of the operations.

## Project stakeholders

Germe et Jam workshop

**Function :** Contractor

Design the district master plan, sector plans, draft lot sheets, participate in project management competitions and provide advice, provide APS, APD, PC visas, complete the project master plan monitoring, evaluate materials and implementation if needed.

Jean-Marc Bichat, jm.bichat@germeetjam.com

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[More info :](#) data/sources/users/11018/gouvernance-du-pru.ppt

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Citallios

**Function :** Assistance to the contracting authority

The City has entrusted Citallios (formerly SEM 92) with the public project management for the realization of the public spaces of urban renewal districts. They are therefore responsible for the progress of the projects, their successful completion, the financing of operations and the monitoring of the budget envelopes in coordination with the City departments.

Bertrand BONNECARRERE, bbonnecarrere@citallios.fr

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Jean Luc BOSSAVIT

**Function :** Other

Project Director, he coordinates all stakeholders, organizes and leads the steering committees, technical committees, ANRU points, operational and executive committees ... He ensures the progress of projects, reports to the bearer of project and alert malfunctions or / and hard points. It guarantees the respect of the financing of the financial model, the deadlines of realization and the quality of the urban project.

Jean-Luc Bossavit, jean-luc.bossavit@gpseo.fr

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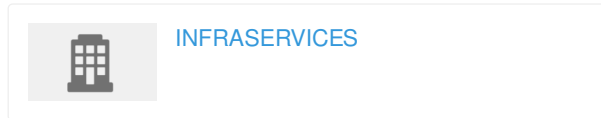
## INFRA SERVICES

**Function :** Technical consultancy agency

Realizes all the studies of the public spaces, controls all the building sites and receives all the operations of public spaces.

Guillaume BERTRAND, gbertrand@infraservices.fr

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public spaces and sustainable development direction

**Function :** Other

is in charge of following the AMO Citallios, to validate the studies. It coordinates all the technical services so that the operations comply with the various specifications. It is piloting the HQE layout file.

Carole LIMOUSIN, climousin@mairie-lesmureaux.fr

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CHARPENTIER Muriel

**Function :** Other

assures the project management of the construction of the Molière cluster and the Mill Workshops for the City

Muriel CHARPENTIER, mcharpentier@mairie-lesmureaux.fr

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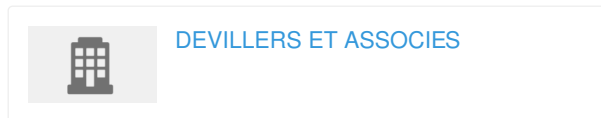
Devillers et Associés

**Function :** Architecture agency

Architect of A1 and B1 operations on the Vigne Blanche sector.

Blandine GIACMONI, tel: 01 40 09 65 37

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OSICA

**Function :** Other

Landlord, builds social housing, rehabilitates and maintains it

Anastasia MURATET, anastasia.muratet@groupesni.fr

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EFIDIS

**Function :** Other

Landlord, builds social housing, rehabilitates and maintains them

Evelyne MONTREDON, emontredon@efidis.fr

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Elisabeth VEIT Architecte

**Function :** Architecture agency

Built the building D2 in the district of Vigne Blanche, project awarded by the CAUE

elisabeth VEIT, tel: 01 43 45 18 38

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## SOLUTIONS

Description :

For the design of allotment gardens, projects on playgrounds and sports fields, work has been done to think of these spaces with the inhabitants, their future users and managers. (see attached document).

*We the association "United Women", when we were presented with the project, we listened but we dared not believe it. Many public meetings were held first in the Media Library, with elected officials, donors, architects, the State. We were presented with projects for tomorrow and then we worked on life stories. Between this city of the future and our past life, the present was hard to live. In hindsight, when we see the result, we say that we have not only been consulted, we have been respected. Before, we took our children to school in the mud! There, we have real streets. It's nice to go to the Pole Molière, the shopping center, the market, the media library. We walk with pleasure! Look at Dolto Street, which goes to the College. Before that did not go down there. What it would take is to pass a bus line. This will prevent people from other neighborhoods from getting around to Albert Street. The changes are real. When we receive guests, they tell us. And we, we feel proud. We are proud too because more and more people come from outside to admire what has been done. Living here today, we feel peaceful! The allotment gardens that are an extension of our residence, it's really good. Some wanted to make a parking!"*(Before - after, testimony of a former inhabitant of the eco-district)

- Citizen participation

Company :

Company :

The specifications and general recommendations

Description :

The specifications and general recommendations outlines the main principles of organization, operation and training of urban fabrics, existing or planned, applicable to the entire eco-district. These principles constitute the common foundation in which each situation will be developed, specified and adapted to the context at the sectoral level. this general book is therefore supplemented by a sectoral study.

- Urban project governance
- Citizen participation

## QUALITY OF LIFE

### Quality of life / density

The eco-district has contributed through urban renewal to improve well-being through the bioclimatic architectural offer and environmentally-friendly urban planning: significant vegetation and the place of water in the urban landscape, diversified typologies, pedestrian access direct from each residence to the park and gardens, pleasant views, a double orientation of housing with balconies, terraces or private gardens, the permanent presence of water in the public space and heart of islets called islands of freshness, allotment gardens, gardens of the senses, shared gardens, filter gardens ... From design to implementation, what guided the architects-urbanists of the urban project is the work on urban quality and the effective commitment of the municipality through the Agenda 21, local declination of the summit of the Rio Land. For them, the city is by definition "this place of experiences, practices, interests, looks that depend on a multiplicity of points of view (inhabitants, elected officials, shopkeepers, technicians, tourists, walkers, etc ...) . The quality of a city is first and foremost the result of an alchemy between a territory, a geography, a landscape and a form of organization of the space linking infrastructures, public spaces, institutions and urban fabrics. " It was a matter of recognizing it, of perceiving its different scales, of revealing its potentialities, sometimes erased or defeated. And to be part of a process of transformation, to capture the dynamics of contemporary development in the service of the "genius of the place" and to inscribe them in the long time of the city. The PRU implements the main principles debated and relatively consensual at the national level. The land division of the large complex and its corollary the creation of a public domain and a private domain composed of independent parcels, constitutes the base of the urban reconstruction, thus aiming at reinserting in the common right and the time of the city. In Les Mureaux, this recomposition was an opportunity to create a balance in density through the formation of a "urban fabric tightened in a more airy landscape". The restructuring of the southern districts, covering ¼ of the urban area of the city and which constitute the possible and privileged place of urban development, has released a free potential of land parcels to lead other projects in the future ensuring social or functional diversity . At the same time, it aims to be developed as part of a landscaping and typological project that enhances and perpetuates the geographical quality of the site while defining a new urban fabric integrating both the history of the grand ensemble. and the development of new residential typologies. The essential condition for achieving the objectives set by the urban project was to establish an architectural, urban and environmental coordination in the form of a design, coordination and debate unit with a multi-faceted mission:

- Finalization and updating of the plan-guide;
- The development of framework documents: sectoral studies, specifications booklet and architectural recommendations, urban and landscape for private plots, book of general prescriptions for public spaces (lot sheets);
- Support and follow-up of projects with project owners and partners;
- Monitoring and production of visas (JAM and INFRASERVICES workshop) on all phases of project management;
- The animation of the urban, architectural and environmental debate, decision support, proposals through feasibility scenarios to open the field of possibilities, ....

Developed to be shared by all stakeholders, the general prescriptions book, urban and landscape remains a document open to debate and amendable unlike the regulatory planning document. The urban project involved an approach articulating all the scales and an understanding of the challenges of evolution with shared fundamentals validated by the different actors. An approach in the long term whose coherence is guaranteed by a permanent coordination, a declination and a continuous self-assessment of the reference system. After having begun the process of urban renewal of residential news, the creation of a generous public space, the project management in this case the city by its requirement won the 1st certification HQE Aménagement granted in France. If the prime contractor is to "enlighten" the client, only the client can carry a qualitative process. This quality extends to the ability to debate and hear the multiple partners that make up the

project of the eco-district. It also seems obvious that it is not possible to produce a qualitative and dynamic project without consultation of the inhabitants-users whose diverse and varied contributions, rich of teaching able to amend certain orientations. The contact between the conception and the lived reality must be structured from the beginning. Because it is exceptional and exciting and despite its complexity, it turns out that operational and financial imperatives have failed to take precedence over urban quality. It can be said, without exaggeration, that it was the project that brought the main actors who initiated it, and remain committed, and enriched all those who have succeeded to implement it. The scale of the project, its exceptional geographical location by the proximity of the Seine, the meandering (reminiscent of a smile that became a real symbol for the City of Mureaux), the wooded hillsides that the large ensemble has generally preserved, have led to the mobilization of actors of the urban project, precisely drawn and declined on all the facets of the development of which a large part represents the 1st phase of what has been realized with the ANRU and will continue in the new national program of the urban renewal (NPNRU) by new negotiations.

## Net density

-0.01

## Culture and heritage

The question of valuing the natural and built local heritage was a guideline for the elaboration of the project of the PRU of Les Mureaux: studies by the JAM workshop or various project managers allowed to identify the state of the neighborhood's heritage (public facilities, buildings of different donors) in order to better integrate it into the urban renewal project and to allow the debate between the various stakeholders to arbitrate.

- The project is part of the general guidelines provided under the PLU concerning the enhancement of the Les Mureaux landscape: to develop the plain, the Orgeval valley and the hillsides. The proposed landscape units are based on large geographical partitions, the boundaries of which are the watersheds of slope runoff associated with slope failure. The Molière Park project will rehabilitate the Orgeval ru which will be an integral part of the protected natural heritage of the district.
- The work of the urban planner has allowed to reconstitute the land into independent and evolving housing units: the appearance of new streets and the demolition of some bars create a different grid and sediment the grand ensemble, between modern heritage and new residential ambitions. This is not to make a "clean slate" of the existing, but to renovate and diversify the housing supply through an articulation between demolitions, rehabilitations and new constructions, in order to promote social mix to the scale of the city, based on the diagnoses made concerning the state of the grand ensemble's heritage. The ANRU convention takes note of all planned residentialization, demolition and new construction operations: 1108 demolished and constructive housing units in nine (social housing reconstruction), 1626 rehabilitated housing units, 2690 residential buildings. Other figures can be given for example: 37% of the housing units of the EFIDIS heritage in Les Mureaux was demolished under the PRU, and 43% was rehabilitated. For I3F 40% of the floor area has been rehabilitated or reconverted compared to existing surfaces.

As the project progressed, various events were held to enhance the PRU des Mureaux site and to work on the neighborhood's identity and memory.

- From 2006 to 2010 in a recurring way: theater workshops giving voice to residents of the Bougimonts district with the creation of 3 shows with tenants, implementation of speech workshops and photographic shots of the neighborhood before and after the rehabilitation of some homes for the creation of a photographic work on life stories and photo exhibition on the theme of removals. The project leader was Antin Residence with various partners and associations of the city.
- In 2008, supported by the media library, the city's development plan and the various donors, the "Mémoires de Bècheville" project enabled the collection of life stories by the neighborhood's young people with a view to setting up exhibitions. and the production of booklets.
- In 2008 and 2009, an inter-donor project on the memory of Cité Renault and Bougimonts neighborhoods enabled the setting up of workshops for each donor's heritage to collect the residents' words and their memories (photographs, objects). organization of an urban walk on the heritage of each lessor on different themes. An inauguration of the photographic exhibition and distribution of calendars "Memory of Cité Renault neighborhoods, Ile de France, Bougimonts" was organized with tenants on December 15, 2009; this exhibition has been promoted at the level of the media library, the neighborhood Gérard Philippe and Efidis agencies, Antin residences, I3F.
- In 2011, the creation of a board game on the history and life of neighborhoods with the participation of the inhabitants "LMX Quiz" (300 reproductions), as well as the variation of the game in life size were put in place by the City with partnerships created within the various donors. The main objectives of the project were to support the inhabitants in the changes related to the urban renewal, to make the memory of the inhabitants alive and that of the city, to value and preserve it, to make the inhabitants actors of this project.
- The chapel "Notre Dame des Neiges" was highlighted with the construction of the forecourt and the layout of spaces around the building.
- The old presbytery was bought by the City, it is an old stone building where the working priests lodged and where the families met. This building, located in the Molière Park, is being rehabilitated to become the Ateliers du Moulin which is to receive a circus school, artists and a team of gardeners responsible for decorations of green spaces

## Social diversity

In PRU neighborhoods, dominated by social rental housing (4% of the housing stock), the issue of promoting social and functional diversity emerged as a major issue from the first studies of the SCUM. The current housing stock consists mainly of medium-sized dwellings (3 and 4 rooms) resulting in a lack of housing for:

- young people living alone or in pairs;
- large families while they are numerous on site.

Some demolitions carried out or planned under the PRU could further widen these gaps, including the loss of small housing. However, the commune has a youth index of 2.18 (in 2007). This index is much higher than all the referent territories. At the scale of ISO, it is 1.76 (1.15 for France). Note that the youth index is very high in the PRU neighborhoods of the commune in urban renewal. The average size of households is decreasing much less rapidly than in the period 1999-2007, which probably means that there is more difficulty in deco living with young people.

In addition, the city of Mureaux is a pole of employment of Seine Aval, comparable in terms of economic vitality to Mantes-la-Jolie and Porcheville. Employment has increased since 1999 (+195 jobs between 1999 and 2007). The employment rate is at 1, that is, the employment / housing balance. But the profile of employment, rather qualified, is out of step with the socio-economic profile of the inhabitants. Only 30% of the working people work and live in the municipality. Les Mureaux experienced very large daily home-to-work migrations (inflows = outflows). The new housing program then sought to take this situation into account in order to produce housing that would allow the park to diversify in order to:

- meet the needs of park renewal and household relocation;



- offer attractive products for the assets employed in the municipality, in conjunction with the other projects of the City Project (culture, shops, services, security, living environment ...) Thus, the PRU and its demolitions / reconstructions have This has been an opportunity to diversify the housing offer in terms of status, producing free rental housing (AFL) and accession, likely to accommodate those leaving the social housing wishing to remain in the neighborhood. This diversification is reflected in two main residential types that did not exist in the project scope:
- the individual habitat, whether in the isolated, grouped or superimposed form, refers to the city's old pavilion tradition (but also the farms or terraced houses) and corresponds to a "living" demand identified on the city Mureaux;
- collective housing, in the form of small plot buildings (R + 2 / R + 3 on average), refers to small isolated buildings or large houses (millstone) existing in the town. The implementation of these two main types can make it possible to engage the "reintegration" of the big ensemble into the urban fabric of the city. It can be a "means" to develop the social mix expected by all partners. The types of the big ensemble (the bars, the towers) must be "integrated" qualitatively in this new urban fabric. This is one of the conditions of their "sustainability".

Nevertheless, the construction program also takes into account the economic reality of Muriatins households. In general, Muriatins have relatively low incomes compared to neighboring territorial entities. So, despite lower real estate prices, accession is only conceivable for a small part of the residents currently affected by the urban renewal project. The meeting of several real estate developers revealed characteristics peculiar to the territory concerned. Considering the social difficulties of sectors with high rates of social housing, these territories, such as Mantes-la-Jolie, Chanteloup-les-Vignes or Les Mureaux, may consider the marketing of new housing under certain conditions:

- guaranteeing quality products at competitive prices: marketing is aimed at residents already on site who want and can access the property at reasonable prices. It also targets a population with modest means outside the municipality, for which prices allow access to Ile-de-France;
- by offering adapted products: small products are more easily marketable. Buyers are local people (70%) who want to invest in stone for their children. They invest in small goods (1 to 3 pieces) in a budget ceiling at 100,000 to 120,000 €. In the individual, plots of 150 m<sup>2</sup>, houses of 75 m<sup>2</sup> can maintain exit prices of about 150,000 €. Larger products (from 0 to 100 m<sup>2</sup> close to € 230,000) are difficult to market because there is a lack of solvent potential.

For example, the city has organized a consultation promoters on the sector of the White Vines, including criteria of selection on the urban and environmental quality but also on the adequacy of the products with the expectations of the city: diversity of the typologies of the housing and fair price appreciation of housing, so that they are affordable for households in the living area. Each promoter had to submit a note describing in particular the types of products offered, adapted to the site and the context, the targeted clientele, the expected exit prices and the marketing technique.

- Foster a controlled and innovative development meeting the needs and qualifications of the resident population. This ambition is driven by the rehabilitation or construction of flagship public facilities: the Molière Pole, which is certified for its high environmental quality, appears as the emblematic example of the implementation of municipal radiation equipment in the heart of the sector. renovation, to promote social diversity, complement the existing high quality equipment and improve existing structures.

Therefore, the particular attention given to the needs of the population necessarily involves consolidating the Mureaux as a major employment center of the living area by creating activities on the PRU site (with for example the creation of a campus of training for the health professions and the professions of help and services to the person, also the terms of reference for promoters require ground floor of activities) and by strictly applying to the works contracts the clauses of social inclusion foreseen in the ANRU programs.

- Renovate and diversify housing supply to promote social diversity: the PRU includes an important component on the issue of housing. The project allows the donors to undertake heavy interventions to upgrade their heritage on energy issues (heating, insulation, ...), residentialisation, and new constructions, with the end of the project 1626 rehabilitated housing, 2528 housing residentialiated , 1108 social housing demolished, 691 homes rebuilt in Les Mureaux and 417 rebuilt in the Yvelines.

Available real estate holdings will be transferred to real estate developers to create housing for accession in the neighborhood. A dual objective is pursued, with both the desire to produce attractive housing conditions on the site by working on the quality of construction, and the desire to address the energy issue: construction and connection of buildings to a collective boiler wood biomass built on the site, improving the energy performance of buildings.

## Social inclusion and safety

The redevelopment of public spaces project has defined new types of lanes that favor soft modes of transport (bicycles, pedestrians, urban transport) compared to the usual use of the private car. All new lanes are accompanied by bicycle lanes. Inter-neighborhood roads become one-way roads to reduce traffic and encourage pedestrian routes. The gauge of the tracks is reduced to its maximum in order to reduce the speed and to thus ensure more security for the residents and limit the noise nuisances. The entire eco-district is in zone 30 with raised plateaus at each connection with the Molière Park. Overall, a work of pacification of the road has been implemented. The work carried out on the sedimentation of the land of the big ensemble, and the opening of the roads to the public domain, made it possible to set up a greater security in the district of the Musicians for example with a greater readability of the space public. The objective of setting up a "Garden City" at the project level also contributes to this same reflection, by creating pathways and pleasant pedestrian paths to reach the local amenities or its housing. The city is equipped with a video surveillance system, cameras are installed at key points and connected to an urban supervisor center. Prevention agents are present at the entrance and exit of the colleges and since this year mediation agents are present in the Molière Park to remind the good behavior.

## Ambient air quality and health

The city of Mureaux adheres to the association of the SPI (Permanent Secretariat for the Prevention of Industrial Pollution). In this context, a zone study has been conducted for several years in a territory encompassing the city of Mureaux. The zone study is an assessment of the health risks for the population. It is conducted on a given territory, in order to identify and prioritize actions, with the aim of taking charge of or controlling these risks or impacts. This study involves studies of soil, water, but also air quality. A study was conducted jointly with AirParif but we do not have any figures on this point.

## SOLUTIONS

<https://www.construction21.org/france/data/sources/users/11018/reserve-fonciere---piston.ppt>

- Promotion of cultural/ historical identity
- Proximity services
- Security

Company :

## Local development

The eco-district benefits from the Urban Free Zone system that was set up in 1996. With 372 economic actors out of about 900, and 880 jobs, the PRU neighborhood now represents 40% of the city's establishments. Since the creation of the ZFU, the number of companies has doubled (from 190 to 372). In just a few years, this sector has become the third economic center of the city after the business areas of Garennes and Airbus. A voluntarist policy of the municipality allowed to amplify strongly the "free zone effect" through the creation of real estate of public companies and the development of a range of services in favor, in particular, of the creation and the business takeover (citieslab, PFIL, support by the city) or recruitment of people in insertion (PLIE, creation of the Area of Economy and Employment). It can also be noted that more than half of the establishments in the sector are older than 5 years, which is a sign of the durability of the economic fabric created in this neighborhood. The urban renewal program has thus made it possible to strengthen, consolidate and sustain this economic dynamic, building on existing systems, notably the ZFU. Similarly, the commercial offer is extremely dynamic in this sector (more than 20% of establishments in the eco-district are businesses), and benefits greatly from the improvements in public spaces and the strategy of diversification of the population. Indeed, the public amenities are reworked around the commercial areas, promoting the smooth and pedestrian paths, thus improving the accessibility and readability of these spaces. Similarly, parking spaces have been redesigned and optimized. Under the impetus of the urban renewal project, consultation, and the city's willingness to promote new uses, while limiting the use of cars and travel, a coworking space has been set up in the area. . This coworking space, installed in the business incubator, opened in June 2013 and offers 5 offices of 3 positions each, as well as an internet connection and access to various administrative services. It is open to the self-employed, but also to employees of companies wishing to work remotely. Positions are available at half-day, full-day, or longer duration from half-time to full-time.

To these direct actions on economic development is also added the strategy of diversification of the population, and in particular the construction of new housing in accession in a park almost exclusively social, and the diversification of the housing supply hitherto very restricted (practically only T3 / 4). This strategy thus makes it possible to boost service offerings and businesses, and also allows entrepreneurs wishing to settle in a corporate hotel in the area to move into the neighborhood.

To affirm this strategy of diversification, and to bring the real estate operators, the commune of Mureaux undertook operations of territorial marketing through a large communication on the PRU and the changes in progress on the sector, and also by taking steps direct from operators: Thursdays of accession. In terms of integration, a very effective system has been put in place to use the program of urban renewal works carried out as part of the eco-neighborhood as a step towards employment, through the use of the clauses of insertion. Thus, 109 people in integration were able to work on the ANRU sites for the year 2013 alone, for a total of 8000 hours of integration. These good results have made it possible to duplicate the process and extend this integration practice to all the public procurement contracts of more than € 90,000 from the city of Mureaux (20 beneficiaries in 2013) and soon from Seine & Vexin, Community of agglomeration. In addition, the ZFU also made it possible to set up local hiring clauses for companies that were setting up on the territory. These clauses provide tax benefits for companies that hire locally. A training center for personal care trades, was established in the Bècheville sector. The idea of the center is based on the observation that the personal assistance sector, even if it is not important in terms of numbers, can create jobs adapted to the socio-economic characteristics of the population. This sector is the most representative of this point of view in the ZFU.

This sector has developed strongly thanks to the creation of this center which federates and offers professionalization and training to both companies and employees. This center has created a shared platform for all businesses in the human assistance trades throughout the northern Yvelines. It develops and is very well structured. It lists a dozen companies in the professions of assistance to the person in the Yvelines but they represent a very high proportion of employees. The PRU des Mureaux has sought to reinvigorate the commercial fabric of the southern neighborhoods in order to develop a quality local commercial offer, fully playing its role of relay in the territory to encourage residents to consume near their homes or their workplaces. , rather than borrow their car to go to the large surrounding commercial structures. This commercial revitalization is organized around several actions:

- The recomposition of the neighborhood centralities around the existing poles: commercial center of Bougimonts, linear commercial along the JJ Rousseau street and Espace shopping center;
- The development of the surface places Bougimonts, as a secondary pole on the south of the city, with notably the displacement of the center Midas in order to reinforce the commercial window of the Bougimonts and to develop the parking offer;
- Reinforcement of the commercial offer rue Jean-Jacques Rousseau: extension of the commercial surfaces located at the entrance of the district on the RD43 with the creation of surfaces in foot of building (services, associations and various activities ..) thanks to the renewal two parcels.

## Functional diversity

The city develops its allotment gardens in the eco-district. With its experience of 40 gardens near the Musicians and 20 in the north of the city, after a consultation with the inhabitants, 52 gardens were built in 2017. After 8 participatory workshops, 43 gardeners and 3 associations were selected to occupy the gardens.

Training workshops (4 half-days) were organized by the City. An evaluation is done continuously by the service green spaces of the City and today all the gardens are cultivated and an association grouping the gardeners is created. The families benefit from their production and the associations benefit the inhabitants of the district.

### % of public spaces

36

### % of office area

1

### % of commercial area

2

## Circular economy

Two projects, which use their activities as support for integration, combine environmental, economic and social objectives.

The Ressourcerie in Ecquevilly works closely with the City through the urban community, a financial partner that supports this initiative and raises awareness among residents of the importance of reuse as an alternative waste treatment solution. This activity is characterized by:

- a waste collection function, adapted to the requirement of preserving the state of objects to allow their reuse, and forming part of the public service for the collection of household and similar waste,
- a function of valuing objects in the workshop, in the form of a preparation for their reuse (control, cleaning, repair),
- a function for selling reusable objects in one or more stores open to all,
- an awareness-raising function, targeting users of the public waste disposal service in the Ressourcerie © intervention area.

House of the Earth is a municipal equipment located on a parcel of 4.5ha near the farm of The Hague. It is home to a Cocagne Garden, an insertion project targeting organic vegetable production and an example of a circular economy.

Several objectives are pursued:

- insertion by welcoming 25 employees,
- an activity room made up of a farm shed, a space dedicated to training, a point of delivery of baskets filled with organic vegetables to consumer members, ...
- a conservatory orchard composed of 24 fruit trees,
- an apiary school.

## SOLUTIONS

TCEP (Territorial Pole of Economic Cooperation) Living the Mureaux

Description :

### Economic leverage: the eco-district, an attractive territory

The strength of the eco-district of Les Mureaux and without doubt its specificity is to be in a low-income neighborhood and with a higher unemployment rate than the rest of the city and department. However, the revival produced by the transformation of the city has created a real citizen dynamic that has been organized in association VIVRE LES MUREAUX (<https://lesmureaux.info/vivre-les-mureaux/>) to carry a TCEP (Territorial Pole of Economic Cooperation). This citizen dynamic has set itself the goal of full employment in 7 years by living well together and by reworking the social bond.



The difficulties are transformed into asset such as the valuation of the 100 nationalities present to present the city of Mureaux as a city-world and its eco-district as a link of encounter and social link. (see the video of the testimony of Audrey Delacroix having participated in a meeting in the eco-neighborhood of a day of living together with 650 people together for 10 hours <https://youtu.be/frGleHxpWc>). This wealth of nationalities is valued with the proposal of an immersive culinary experience at the inhabitant: <https://lesmureaux.info/item/vizeat-repas-chez-lhabitant/> and a work is realized by the PTCE to invite more specifically managers in HR and business owners to test this meeting with the inhabitants which reinforces the professional network of inhabitants, essential to find a job. The quality of the eco-district facilitates and surprises in this meeting. The association Vivre les Mureaux (Largest PTCE in France with 125 founding members including citizens, associations, companies, training institutions, communities) mobilizes these means to attract and strengthen project leaders such as with this bootcamp organized 4 and July 5 (<https://lesmureaux.info/bootcamp>) in the eco-district to the space of the inhabitants. The PTCE is currently working with the French experiment Territory Zero unemployment, to allow that the eco-district can be integrated in the second wave of experimentation that will be opened by the state in 2019.

- <https://www.youtube.com/watch?v=frGleHxpWc&feature=youtu.be>
- <https://lesmureaux.info/item/vizeat-repas-chez-lhabitant/>
- <https://lesmureaux.info/bootcamp>

<https://lesmureaux.info/vivre-les-mureaux>

Company :

## TRANSPORT

### Mobility strategy

A seminar of elected officials decided to prioritize public space for pedestrians and cyclists in the facilities. Then come the users of public transport and lastly the motorists. The objectives are to improve safety, to reduce noise, to limit air pollution, to improve accessibility, to avoid the degradation of public spaces and to improve the flow of traffic.

Then, 25 hectares of new public spaces (including 7.5 ha for the Molière park) have been developed with 12 new streets and the recovery in the public domain of 20 existing streets (previously owned by the lessors), all equipped with soft links while highlighting alternative stormwater management techniques and releasing the Orgeval ruin. The aim here is to reinforce the landscape quality at the city level by bringing nature into the public space, by promoting biodiversity, by creating real ecological corridors. The objective is to develop a Sustainable Garden City, with new sustainable public spaces, ensuring links between residential, leisure, retail and public facilities.

To achieve this, a long process has been put in place gradually.

In 2001, the City adopted a plan of gentle traffic. This consists of a master plan of facilities dedicated to non-motorized modes of locomotion and accompanying actions aimed at boosting cycling practice on a daily basis.

The scheme is already being implemented with the progress of developments along the Seine and the RD 43 in particular. It also couples with a reduction of the place of the road intended for the use of the car on the public space.

The assumption of this approach is to restore the favorable conditions of bicycle circulation, the only ones able to exploit its potential of use in the urban mobility.

As such, the fundamental criterion of the master plan is the improvement of safety and its principle of implementation is the continuity: progressively, we must be able to circulate by throughout the city in safety compared to the traffic and without hindrance pedestrians. This master plan provides planning principles and a toolbox (cuts, zooms, sketches ...). However, taking into account the bike in the projects requires:

- a compatibility with different elements to integrate (function of the way, rights of way, plantations, street furniture ...)
- a certain cycling culture (both technical and utilitarian)

The project was designed with the objective of maximizing active travel.

For this, the developer (SEM 92) has called on a service provider specializing in consulting (BET cyclomore) for the development of the place of the soft movements, and mainly of the bike in the project. His mission was to provide:

- appropriate advice from project owners and project management teams to integrate the soft modes master plan into the definition of public space projects;
- the organization of a bike awareness workshop with project management teams and social landlords focusing on the accessibility of soft modes and bicycle parking.

He also had the task of verifying that the bicycle is appropriately and functionally integrated into the public space, simultaneously meeting the five criteria of:

- security
- commodity
- competitiveness
- compatibility
- attractiveness

In this sense, public spaces have been designed to give a very large space to pedestrians, and cycling, by the systematic creation of bike lanes.

In addition, the City has set up Covoit'ici, carpooling stations that provide additional mobility to public transport lines. From the station, locals can carpool to nearby villages.

The district of PRU des Mureaux is well served by public transport. The project has significantly improved the existing service thanks to several actions:

- The creation of a new bus line that serves the Molière Pole, and which joins the city center of Les Mureaux, as well as the Transilien station
- The restructuring of existing road fabric to improve accessibility and movement in the neighborhood. As such, the route of the existing bus line has been completely reworked to allow better service to the neighborhood, and allow accessibility to bus stops by all.

Lines 1 and 7 serve all inhabitants of the southern districts with bus stops every 10 minutes during peak hours and every 30 minutes during off-peak hours. We note high numbers of stopovers on the RD43 (high population density + many facilities and services):

- average daily rise of 550 passengers at the street level of the Republic
- average daily rises of 590 travelers at the street Louis Blériot.

Lines 1 and 7 represent 1700 climbs per day.

Today studies are underway to optimize public transport lines as 30% more passengers are expected with the arrival of Eole. The station will be arranged for the arrival of Eole in 2024.

It should be noted that the City of Mureaux is the first city to have experienced the priority of buses to fires throughout the municipality.

STIF, Ile de France Mobilités, is currently conducting a study to install a cable car that will connect the station des Mureaux to the station Meulan, a city located north of the other side of the Seine. The mayor of Les Mureaux asks that this line of cable car extends south to the A13 which would further serve the southern neighborhoods.

## SOLUTIONS

soft mobility solutions

Description :

The municipal services therefore worked on a hierarchy of ways and planning principles were validated with the consulting firms:

- bike lanes on primary roads,
- chaudiou on the secondary roads (innovative principle to optimize the road rights of way)
- mixed on the tertiary
- systematic double sense for cycles
- bicycle parking area close to the uses
- zone 30 on all secondary and tertiary roads.

The eco-district has therefore set up a road system ensuring a hierarchical network of routes and soft links that open up neighborhoods. Upstream, the complete restructuring of RD43, the primary roadway, made it possible to begin the project of redevelopment of public spaces within the ERP by linking this sector to the rest of the city.

- Soft transportation
- Parking management

- Other

<https://www.construction21.org/france/data/sources/users/11018/les-mobilites-aujourd'hui-etat-des-lieux.ppt>

Company :

## SMART CITY

### Smart City strategy

As part of a digital city strategy, smart and connected, the city of Mureaux has invested in an ambitious multi-year investment plan, namely

#### *Develop an interoperable interconnection base*

- By renovating its cable network with the delegate in THD to offer packages of digital services (residential triple play) and fiber all of its municipal buildings in THD
  - E-administration and more efficient administration
  - Deconcentration of digital services on other buildings
  - Communication screens: 30
- By developing a connected object infrastructure base of innovative applications
  - Parking or parking spaces connected
  - Illuminated spots and public lighting 2200/4200
  - Video-protection cameras, video-verbalization and reading plates in the city entrance: 67, 11

#### *Building the digital school since 2007*

- Connect school groups to fiber (22 schools)
- Work on connected class concepts and digital binder
  - Wire all classes
  - to install TNI in all the teachers of the 3rd cycle and the other volunteers: 142 TNI
  - install connected trolleys and assign each child an iPad in cycle 3: 1520 tablets
  - facilitate the implementation of the application package with the educational community.

#### *Connected Municipal Policemen*

- Connected radio and geolocation in real time: 27
- Electronic Verbalization and Decentralized Services Package 27
- Pedestrian cameras
- Interoperable radio between CSU, PM, and PN

#### *Central alarm connected*

- Anticipate the removal of the copper network

#### *Connected nurseries, canteens and leisure centers*

- 30 Multi-activity pointing terminals
- Access to the health card in case of accident

#### *IP telephony since 2005: 800 workstations*

Today, with the renovation of the cable network that feeds the entire city and therefore the eco-district, each home can connect to the internet with a flow of 100MB.

A coworking room has been set up in the neighborhood. It makes it possible to favor teleworking, and therefore to limit travel. This coworking space, installed in the business incubator, offers users computers equipped with office software (including the office pack) and an internet connection (wired Ethernet, or WIFI).

## SOLUTIONS

- Infrastructure
- Digital services
- Other

<http://www.seinergylab.fr/> et <http://lesmureaux.micro-foilies.com/>

## RESOURCES

### % Paved surfaces

59

### Water management

**For more than ten years, the city of Mureaux has been working to implement better water management through all its projects. The element "water" is at the heart of its reflection on the renovation of the territory. Historical**

- **In 2006**

The municipality adopts the "zero rainwater network" as part of the urban renewal project and the implementation of new alternative techniques in water management. The objective of the program is the reconquest of the quality of drinking water by moving from a curative treatment of water to that of reducing upstream pollution, especially pesticides, which represent a major threat for future generations . The city of Mureaux has therefore taken the initiative to implement alternative techniques such as valleys, tank structure pavements, drainage trenches ... in order to sustainably manage rainwater by favoring infiltration. These techniques increase the quality of water and help to improve the living environment of all Muriatins in the long term. This special attention to water comes in all forms: rainwater, waste water, drinking water, Seine water, river water ... Today, the expertise of the city of Mureaux in the sustainable management of water is widely recognized by professionals:

- **In 2010**

The "water project" of the city is awarded with the special innovation prize at the 15th FIMBACT festival.

- **In 2013**

The town wins the "Trophy of water in the city" as part of the Departmental Competition of towns and villages in bloom.

- **In 2016**

The jury of the Novatech Sustainable Rainwater Management Awards, rewarded the city of Mureaux for "its operations and best practices in integrated rainwater management", during the 9th International Conference Novatech Lyon Strategies and solutions for sustainable management of rainwater in the city.

- **And since...**

The city organizes regular visits to its facilities with professionals. In the context of discoveries and feedback from technicians, "a course of water" has naturally been drawn on the territory.

## Soil management

The PRU des Mureaux is a project in which many demolitions have been carried out. Thus, many materials could be recovered and reused on site. This is the case for the realization of the pavements of the eco-district, in which the demolition materials were reused. Similarly, during the demolition of the Chopin car park, all the demolition materials were reused after crushing as backfilling. In other areas of the project, road borders were reused after cleaning as new curbs, but also as pedestrian paths in city parks. Concerning the earthworks, the will of the project was to limit as much as possible the excavation of the lands, insisting particularly on the limitation of the earthworks, and the reuse in the project of these grounds (in the public spaces, the park and the donors ). When roads already existed, the project minimized the work to respect the natural terrain and thus allow the re-use of existing structures, proposing a simple renovation of the networks. Similarly, for new structures built as part of the work, it was favored the reuse of materials from the site to minimize the input of materials. As soon as it was possible, it was taken into account the materials in place to carry out a soil treatment in place and with lime and cement. The draining materials used on the underside are either natural gravelly grained or crushed concrete resulting from demolition. Regarding the borders, the architect has decided to implement granite on a large part of the project. This will then minimize rework for the city and promote re-use of existing curbs by cleaning them.

Regarding the development of Molière Park, the challenge has been to respect as much as possible the natural terrain in order to minimize the earthworks and to preserve the quality of the existing landscape and the topography allowing beautiful visual breakthroughs on the vexin. Regarding the development of public spaces, green spaces have been studied with the consideration of sustainable management and maintenance adapted to the community in the medium and long term, in a logic respectful of the environment. The application of the differentiated management model for all plant heritage has been made, with choices on plant diversity, watering reduction (no automatic watering), the limit of the size of the subjects , the application of zero phytosanitary treatment, the reuse of green waste, the limitation of lawns with mowing and the fact of favoring meadows with mowing. The constraints related to climate change have been incorporated into the design of construction projects: H & E labeling of Nexity's operations among others, I3F recovers its rainwater for the irrigation of green spaces, the housing of EFIDIS is made with duplicates orientation and positioning of bay windows for living rooms is favored, for new housing summer comfort was thought in the design of buildings and their orientations, also many heat islands can limit the effect of heat islands. The Molière pole also responds to these issues with a natural nocturnal ventilation through the opening facades (anti-intrusion devices provided detailed on the cuts of the project), a natural daytime ventilation also provided and a very satisfactory inertia on all buildings. Outdoor solar protection on all risk facades by mobile or fixed devices (South cap for 3 pads in particular). The ambition for the Molière cluster is to answer all the questions relating to the adaptation to climate change, which should be concretized by the implementation of a certification on the exploitation on these questions from the reception of the works. Regarding management, the City has not used any phytosanitary products since 2009. The green spaces service is being certified Healthy Earth.

## Waste management

An important anticipation of the management was realized with the service of the cleanliness, the green spaces and the waste. Concerning green spaces, the city of Mureaux has been practicing for several years a differentiated management of these spaces and green waste is brought to the plant (composting platform). Thus, the project took into account the future management of these spaces, in particular by considering the reference systems used by the city of Les Mureaux (EVE and eco-gardening standards). Similarly, for the management of household waste, consultation with the services made it possible to better adapt the project to public spaces in order to optimize collection. The development of waste premises located at the edge of public spaces has been described in the general requirements and recommendations. These premises have been sized to accommodate the various containers for selective sorting (glass, packaging) and household waste as well as bulky items. Bulky items can be taken directly to the dump in Bécheville.

## SOLUTIONS

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

- Other

## BIODIVERSITY

### Biodiversity and natural areas

A phytosanitary diagnosis of the flora was made on the site of the operation by a specialized environmental and ecological service provider (SET Environment) in 2008.

This census and analysis of all the species present in the southern districts sector has made it possible to identify the existence of a number of so-called "remarkable" trees for the following reasons, which deserved special attention. relative to their preservation in the project. These specific trees have been classified according to 2 categories:

- Category 1: This is the presence of individuals of large size and large diameter, more easily identified by their posture and which are of aesthetic interest, and in terms of biodiversity
- Category 2: This is the presence of an alignment of individuals who alone would not be of major interest, but who in alignment, have a stronger and interesting impact.

In the end, more than 1,200 trees were identified and analyzed in detail: species, circumference, diameter, height, age, condition ...

This study was taken over by the Paysagiste grouping of MOE Urbaine (Landscape Workshop group) in order to integrate the different prescriptions into the project, then to decline them in the prescriptions of public spaces and green spaces, and batch sheets. to destinations of operations and lessors.

The green and blue framework existing on the large territory was taken into account during the design of the PRU, particularly through the creation of the Molière Park, as well as its "pistons". Indeed, the Molière urban park constitutes "the backbone" of the urban renewal project. The urban park operation consists of the creation of a 7.5 ha garden linear, in the heart of the southern districts of Les Mureaux, and finalizing and federating all the operations of the Great Urban Renovation Project.

It networks the city's parks, thus promoting biodiversity, and encouraging inhabitants to take ownership of their environment.

The ambition of the city of Les Mureaux is to create a unifying park from north to south, the backbone of the neighborhood and biodiversity support, a quality landscape, staggered between plateau and valley and an integrated park, regulated and appropriate, operating at the same time. scale of the City.

To support this ambition, the park's planning principles, which are being completed, are as follows:

- create a unifying linear garden and ecological continuity, from the Sautour Park to the library and Bècheville Park;
- connect the urbanized valley to the wooded plateau by a logic of "Pistons" gardens that converge on the Molière garden and ensure the park's spread over all neighborhoods;
- Enhance the park's landscape with retaining features that are part of the project design and outstanding points of view
- Leverage relief to create landscape sequences
- re-open the Orgeval stream.

The park has an ecological, educational and fun vocation that will accommodate different spaces and equipment adapted to each: collective gardens, orchards, playgrounds, leisure and sports, square with steps for events, walk along the water, playgrounds. picnics ... In the long term, it could also be the support of specific habitats for certain species such as bees. Four hives have already been installed in Oseraie Park, north of the city.

The alternative water management allows to draw turquoise frames along the roadways.

The goal of the service espace verts is to produce an atlas of biodiversity. The service also plans to send the trainings to its agents to get involved in two observatories Propage and Florilèges. Propage is a protocol for monitoring butterflies, it helps to raise the awareness of personnel and site managers about the problem of loss of biodiversity and the possible actions to preserve it. Florilèges is a participatory science observatory launched in 2015 to improve knowledge of the effect of management practices on the quality of grasslands, but also the dynamics of the evolution of these environments through standardized monitoring of the flora of urban grasslands. .

## SOLUTIONS

- Management of natural areas
- Environmental charter
- Other

## ENERGY/CLIMATE

### Climate adaptation, resources conservation, GHG emissions

Signature of the Covenant of Mayors in May 2010.

The City of Mureaux has proved that it is positioning itself as a leading territory in terms of energy efficiency by developing the SeinergerLab, a major scientific equipment and training and innovation platform on the theme of buildings and smart grids, which strives to establish partnerships with leading manufacturers, universities and schools, competitiveness clusters nationally and internationally. This innovative tool makes it possible to implement continuous evaluation and improvement procedures, concerning the energy performances that have been identified, and to allow the site of the PRU des Mureaux to be a laboratory that produces an environmentally friendly urban planning. .

The work done on the public space consists in the implementation of efficient lighting devices, and in particular on the park with LEDs. These devices, already very energy efficient compared to conventional devices, are coupled by the implementation, already efficient, a system for regulating the light intensity according to the hours of the evening and night. This system (CITYLONE) can reduce by 26% the electrical consumption of the lighting of the public space.

The PRU des Mureaux is a project in which many demolitions have been carried out. Thus, many materials could be recovered and reused on site. This is the case for the realization of the pavements of the eco-district, in which the demolition materials were reused. Similarly, during the demolition of the Chopin car park, all the demolition materials were reused after crushing as backfilling. In other areas of the project, road borders were reused after cleaning as new curbs, but also as pedestrian paths in city parks.

Concerning the earthworks, the will of the project was to limit as much as possible the excavation of the lands, insisting particularly on the limitation of the earthworks, and the reuse in the project of these grounds (in the public spaces, the park and the donors ).

When roads already existed, the project minimized the work to respect the natural terrain and thus allow the re-use of existing structures, proposing a simple renovation of the networks. Similarly, for new structures built as part of the work, it was favored the reuse of materials from the site to minimize the input of materials. As soon as it was possible, it was taken into account the materials in place to carry out a soil treatment in place and with lime and cement. The draining materials used on the underside are either natural gravelly grained or crushed concrete resulting from demolition. Regarding the borders, the architect has decided to implement granite on a large part of the project. This will then minimize rework for the city and promote re-use of existing curbs by cleaning them.

In 2009, a study to define the energy strategy was carried out and it led, among other things, to the installation in 2014 of a biomass boiler in the district (see below detail, in the development of the ENR), to which 4000 homes, and all public facilities will be connected.

Regarding the work done on public spaces, green spaces were studied with the consideration of sustainable management and maintenance adapted to the community in the medium and long term, in a logic respectful of the environment. The application of the differentiated management model for all plant heritage has been made, with choices on plant diversity, watering reduction (no automatic watering), the limit of the size of the subjects , the application of zero phytosanitary treatment, the reuse of green waste, the limitation of lawns with mowing and the fact of favoring meadows with mowing.

The constraints related to climate change have been incorporated into the design of construction projects: H & E labeling of Nexity's operations among others, I3F recovers its rainwater for the irrigation of green spaces, the housing of EFIDIS is made with duplicates orientation and positioning of bay windows for living rooms is favored, for new housing summer comfort was thought in the design of buildings and their orientations, also many heat islands can limit the effect of heat islands. The Molière pole also responds to these issues with a natural nocturnal ventilation through the opening facades (anti-intrusion devices provided detailed on the cuts of the project), a natural daytime ventilation also provided and a very satisfactory inertia on all buildings. Outdoor solar protection on all risk facades by mobile or fixed devices (South cap for 3 pads in particular). The ambition for the Molière cluster is to answer all the questions related to the adaptation to climate change, which should be concretized by the implementation of a certification on the exploitation on these questions as soon as the reception of the works.

In 2014, the establishment of the Local Energy and Water Management Intervention Service (SLIMEE) in Les Mureaux is part of the continuity of actions to combat energy poverty initiated by the City for several years. years, bringing together stakeholders around a single window to better coordinate tracking, home visiting and accompanying households in reducing their consumption.

## Energy sobriety

Energy sobriety has been desired throughout the project, especially on public spaces and facilities, which is a lever of action for the community. In addition, these are new spaces and equipment, known specifically for this purpose. However, private spaces have not been forgotten and there are many interventions to reduce consumption. Indeed, from the conception of the project, a bioclimatic reflection was carried out by the MOE team, which resulted in different prescriptions: in the batch sheets, a certain number of bioclimatic design objectives were pronounced, to make housing built relevant to the issues of sustainable development and adaptation to climate change.

For rehabilitations, the energy gains were mostly achieved through the implementation of insulation from the outside on buildings, with insulation ranging from 12 to 20 cm, the change of heating systems of buildings, and the good setting them.

Regarding new housing created under the RT 2005, the objectives was to target the THPE level for a very large majority of them. In the end, more than 50% of the new housing units will achieve energy performance equivalent to the 2005 BBC level (65 kWh / m<sup>2</sup> / year), with H & E certification, profile A.

In addition to a desire to reduce primary consumption of buildings is added work on the supply of these energy. Indeed, more than 50% of the dwellings are connected, or will be in the future, to the district heating network, whose wood boiler will replace the current boiler room. In addition, a local renewable energies deployment has been carried out on many buildings, particularly for the production of domestic hot water: the implementation of solar thermal panels to ensure 25 to 50% of the needs of buildings. Finally, for buildings that can not implement specific techniques for the implementation of ENR, the installation of efficient equipment (high efficiency) was preferred: in the case of heating and supply of individual ECS, they are gas condensing boilers that have been installed.

An observatory of charges must be put in place and is intended to question the cost of charges, and to reflect on the rehabilitated and the new. It will set up a system of indicators to measure the evolution of loads over time.

Initially, the reflection focused on the creation of an observatory of the charges for the social housing of the districts in urban renewal, so as to be able to identify the possibilities of extension of this observatory to other districts and to other typologies of habitat (copro, individual houses).

Initially, the creation, the data collection and the animation of this observatory were entrusted to the Habitat service and to the AUDAS urban planning agency integrated in the GPS & O urban community, which lead a similar reflection within the framework of the "Living better. " The collection process is essential to identify the buildings for which action on the charges is possible and would have a strong social impact, especially on the most precarious households.



To begin this process, an observatory of charges has been set up by OPIEVOY as an internal tool. It is updated when actual consumption is known (year n + 1) to help regulate the energy consumption and understand the levers of action to achieve a reduction in consumption.

The Molière cluster is also an exemplary equipment in terms of energy saving. Indeed, this building designed under the RT 2005 and having initially a deposit of 50 kWhep / m<sup>2</sup>SHON.an was finally a positive energy passive building was delivered for September 2014 with, for example, a consumption for heating of 9.28 kWhep / m<sup>2</sup>SHON.year. In addition, it is certified HQE, very powerful on the following 5 targets: building relationship with its immediate environment, energy management, water management, waste management activity, maintenance and sustainability of energy performance. This building will also be certified HQE exploitation, to guarantee, in the life of the building, levels of quality and performance equivalent to those of its construction.

## Energy mix

With regard to the heating network, the energy production service was provided during the 2017 financial year thanks to:

- the biomass boiler up to 66.7%
- the gas boiler up to 19%
- Cogeneration up to 14.3%

## SOLUTIONS

Heating network and biomass boiler

### Description :

In 2014, two heat networks were connected to form one and a biomass boiler was built on the Musicians district. Energy production is composed of the following elements:

- a 4250KW combined domestic gas / oil boiler commissioned in 2015;
- a 4250 KW gas boiler commissioned in 2015;
- a 1600KW biomass boiler commissioned in 2014;
- a 4200KW biomass boiler commissioned in 2014;
- a cogeneration plant whose thermal recovery energy is recovered on the heating network (1492 KW thermal)

As of 31/12/2017, the network serves 38 substations connected to the heat network for 20 178KW of total power contracted.

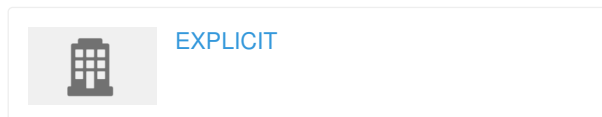


The heating network and the biomass boiler have been awarded the eco-friendly heat network label.

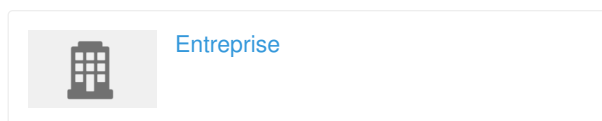
**CO2 Impact :** 4 001,00 tCO2

- Renewable energies

**Company :**



**Company :**



- Climate adaptation
- Renewable energies
- Urban Lighting

## BUILDINGS

### Buildings

#### **A modern, economical and sustainable building: the Molière Pole**

As for the Administrative Pole, the equipment is built in a process of labeling High Environmental Quality (HQE) that makes this building a sustainable equipment for generations to come. In this approach, the Molière Pole is the winner of the BEPOS competition rewarding the most efficient projects in terms of energy saving.

The Molière Pole pursues initiatives aimed at making the city of Mureaux an innovative place in terms of support in the education and citizenship process.

The Molière Pole is financially supported by the National Agency for Urban Renewal (ANRU), the General Council of Yvelines, the Regional Council of Île-de-France, the Family Allowance Fund (CAF), the State through the Urban Development Endowment (DDU), Europe through the ERDF fund, the Water Agency and ADEME.

### The facilities of Molière Pole

Versatile and multi-activity, the Molière Pole is composed of two **nursery schools** (6 classes) and **elementary** (7 classes), a nursery (50 cradles), a **toy library**, a **restaurant** (equipped with a refectory transforming itself into a showroom), a **parents' café**, a **resource center**, a sports hall and multi-purpose halls.



## Contest

### Reasons for participating in the competition(s)

The strength of the eco-district of Mureaux and undoubtedly its specificity is to be in a low-income neighborhood and with a higher unemployment rate than the rest of the city and the department. However, the renewal produced by the transformation of the city has given rise to a genuine citizen dynamic that has been organized in association VIVRE LES MUREAUX to bring a TCEP (Territorial Pole of Economic Cooperation).

This citizen dynamic has set itself the goal of full employment in 7 years by living well together and by reworking the social bond. The difficulties are transformed into asset such as the valuation of the 100 nationalities present to present the city of Mureaux as a city-world and its eco-district as a link of encounter and social link. (see the video of the testimony of Audrey Delacroix who participated in a meeting in the eco-district of a day of Living together with 650 people together for 10 hours

This wealth of nationalities is valued with the proposal of an immersive culinary experience at the inhabitant and a work is done by the PTCE to invite more specifically HR managers and business owners to test this meeting with the inhabitants which allows to strengthen the professional network of the inhabitants, essential to find a job. The quality of the eco-district facilitates and surprises in this meeting. The association Vivre les Mureaux (Largest PTCE in France with 125 founding members including citizens, associations, companies, training institutions, communities) mobilizes these means to attract and strengthen project leaders such as with this bootcamp organized 4 and July 5 in the eco-district to the space of the inhabitants.

PTCE is currently working with the French experiment Territory Zero Unemployment, to allow that the eco-district can be integrated in the second wave of experimentation which will be opened by the State in 2019.

