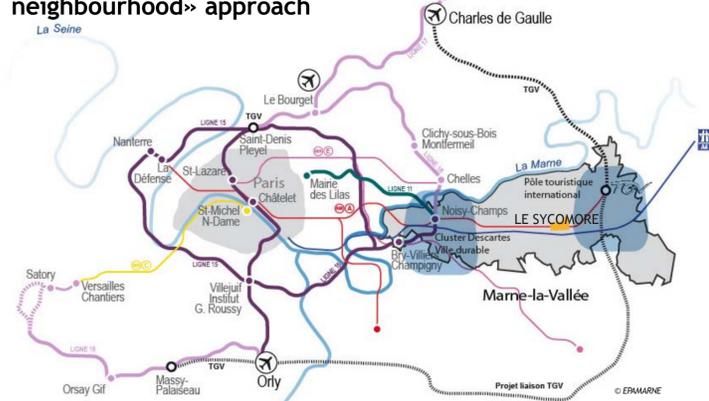


THE SYCOMORE ECO-NEIGHBOURHOOD: FROM THE NEW TOWN TO THE SUSTAINABLE TOWN

2008-2010: THE ECO-NEIGHBOURHOOD APPROACH BRINGS ABOUT A CHANGE IN THE URBAN PROJECT DESIGN PROCESS

> The housing crisis and the French Grenelle Agreement on the environment lead to the emergence of the «eco-neighbourhood» approach



Le Sycomore: a territory at the heart of Marne-la-Vallée which is well-connected to the metropolitan area through the Grand Paris Express metro project (ligne 15 in 2020).

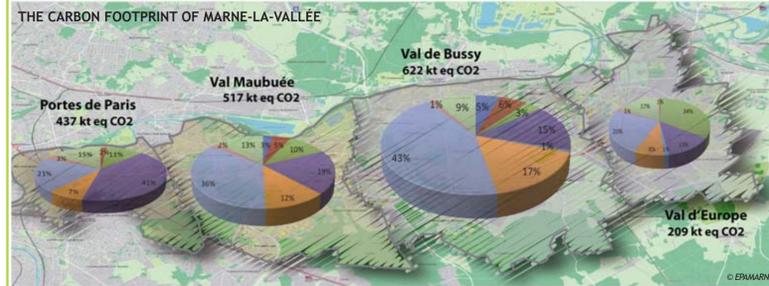
With more than 2,000 housing units built on average over the last 10 years, the 40 year old New Town of Marne-la-Vallée is actively contributing to property development in the Paris region to reduce the housing crisis.

The national awareness of the sustainable development issues brought about by the Grenelle challenges EPAMARNE in its practices as a local planning and development authority. The signing in 2009 of a State/Municipality/Planner tripartite agreement for the development of the Sycomore commits EPAMARNE to change its practices to an «eco-neighbourhood» approach.

The setting up of a State/Municipality/Planner governance made it possible, from the outset, to consider issues and objectives collectively and define a framework for choosing, adjusting and assessing the means of action.

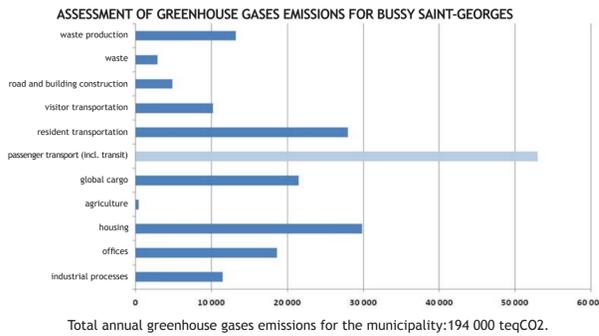
The project is then no longer just a matter of programming, and physical and economic requirements: it also considers how to ensure «social harmony» and reduce its environmental footprint.

> Tools to deal with energy issues



Breakdown of annual greenhouse gases emission by sectors and geographies. Total emissions for Marne-la-Vallée: 1 786 000 t eq CO2.

- energy industry
- housing area
- passenger transport
- industrial processes
- agriculture
- waste
- offices
- freight
- construction



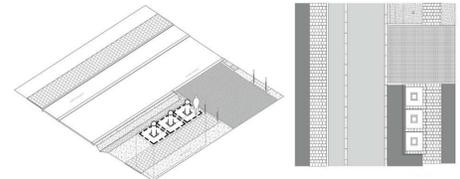
Total annual greenhouse gases emissions for the municipality: 194 000 t eq CO2.

2010-2012: THE QUEST FOR LOW-CARBON MOBILITY AND AN INCREASE OF RENEWABLES IN THE ENERGY MIX SHAPE THE «LE SYCOMORE» ECO-NEIGHBOURHOOD

> The low-carbon mobility scheme as a prerequisite for producing the masterplan of the 117 ha neighbourhood



A mobility scheme in continuity with the existing network



Voluntary waste deposit point on the public space: 3 sorting containers

> The choice of a heating network impacts the pace of development of the neighbourhood



Programming of Le Sycomore and layout of urban district heating network

The population density of the future neighbourhood was sufficient to allow the provision of a district heating network across the «Le Sycomore» area. The team of urban planners thus included the deployment of a heating network throughout the neighbourhood in the layout plan. The boiler was positioned centrally in the neighbourhood to optimise the network distribution and take gradual urbanisation development into account.

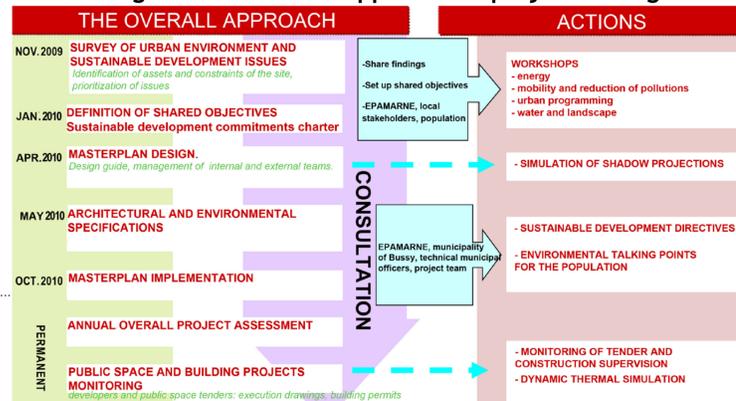


Running of the wood-burning boiler

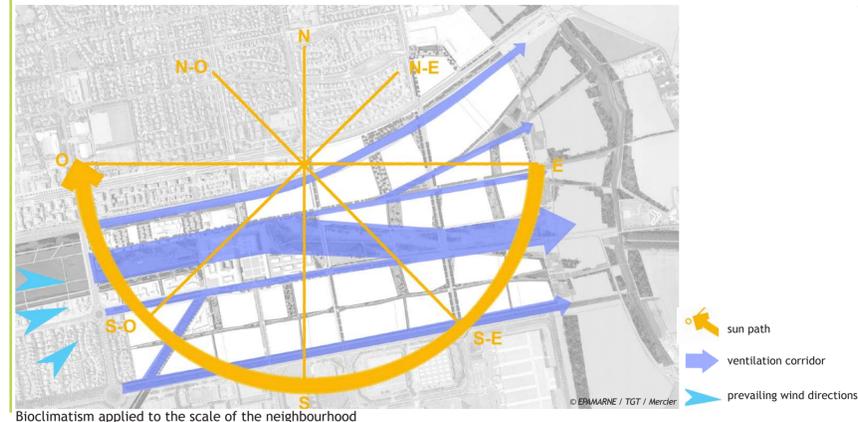
> The urban planner as part of a cross-functional multi-team organisation: a new approach to project management



A management assistant for a sustainable project and a shared methodology



> A bioclimatic design for the masterplan



Bioclimatism applied to the scale of the neighbourhood

The masterplan of the urban project included a bioclimatic design of buildings, to provide healthy, comfortable accommodation, even in the summer, while maximising the supply of free solar heat: south-facing, setbacks in lots to decrease masking, taking into account of shadows, noise masking allowing night-time over-ventilation, protection from prevailing winds.



THE SYCOMORE ECO-NEIGHBOURHOOD: FROM THE NEW TOWN TO THE SUSTAINABLE TOWN

FROM 2013 ONWARDS: FROM THE NEIGHBOURHOOD SCALE DOWN TO THE SCALE OF THE CONSTRUCTION PROGRAMME

> The improvement of the energy performance



Positive energy school - planned for delivery in September 2015



© Crédit Agricole Immobilier / DM Barbara Dumont, Derbasse / EPAMARNE



Housing units with energy performance of 40 kWh primary energy/m²/year - planned for delivery in 2016



© Groupe Pichet / Laisné / EPAMARNE

Approximately 25% of the constructions (4500 housing units, public facilities,...) are engaged and the first housing units will be delivered in 2016. The construction rhythm is about 450 housing units annually until 2026.

The energy performance of housing units has been improved: from 340 kWh primary energy/m²/year, it increased to 40 kWh/m²/year, a performance achieved with no economic or technological discontinuity.

The 1st public facility in the neighbourhood, which is due to be delivered in 2015, is a positive energy school, connected to the district heating network.

> Eco-friendly building materials: emerging sectors boosting local employment



Hemp insulating



Wood-frame housing units

The project governance has encouraged players in the building sector to turn to new building techniques, use products with a low grey energy content, which do not emit hazardous compounds in indoor air, and which do not compromise the balance of natural resources through their use or their manufacturing process.

The specifications set up by EPAMARNE for developers and project managers of public spaces, require the use of low carbon products derived from the enhancement of construction waste from public works, as an alternative to aggregates from quarries.

Eco-friendly building materials should gradually replace rock wool or glass wool. Their use accelerates the development of sectors boosting local employment, in a territory where there is already an agriculture and forestry impetus.

The project also aims to promote wood-frame construction for the few individual housing units to be built, and then impose it gradually in collective housing.

> Anticipating the management of urban public spaces and buildings



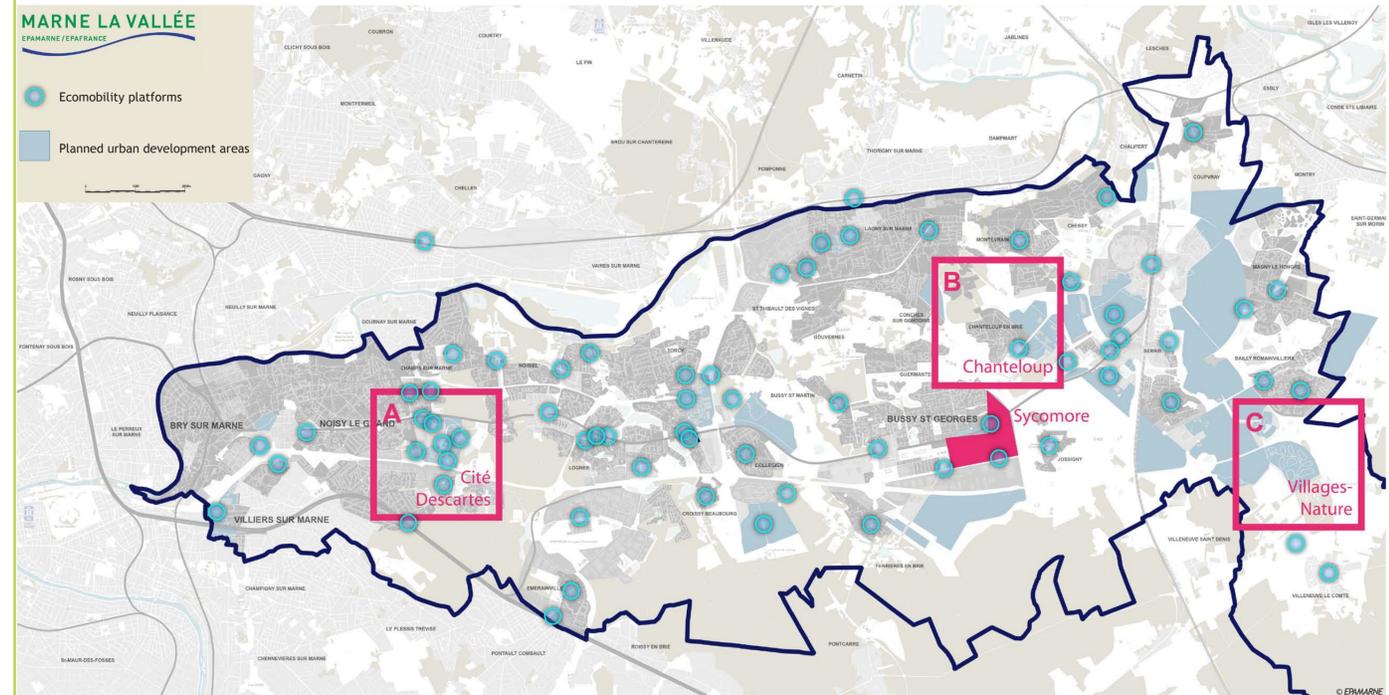
Urban parc of the Sycomore designed to allow for differentiated management of public green spaces by the municipality.

> A project assessment process to ensure achievement of the objectives and capitalisation



Le Sycomore is included in the State national Eco-neighbourhood certification process.

THE «LE SYCOMORE» EXPERIENCE UNDERPINS THE FUTURE PLANNING OF MARNE-LA-VALLÉE



> A: Smart Grid in the Cité Descartes



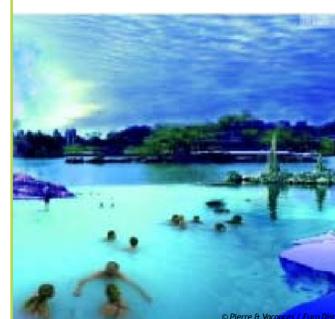
EPAMARNE has signed a partnership with energy providers (EDF, ERDF and Dalkia) to design the first energy demonstrator based on an electrical and thermal smart grid system in Cité Descartes (on about 200 hectares). This involves promoting the real-time optimisation of energy generation based on the neighbourhood's needs, the mobilisation of local renewable energy and energy saving.

> B: Positive Energy Building in Chanteloup-en-Brie



The «Les Lodges» operation in Chanteloup-en-Brie (35 flexible wood-frame housing units) was given an Ile-de-France outstanding building award by ADEME, the French environmental and energy management agency, as part of its positive/passive building call for projects.

> C: Geothermal resources - Village Nature



The Village Nature holiday destination project in Villeneuve-le-Comte (509 hectares) is jointly developed by Pierre & Vacances, Euro Disney and the EPA in accordance with a Sustainable Action Plan. The capturing of deep geothermal resources reduces the environmental footprint of the project which aims to be a positive energy site.

> 85 ecomobility platforms

EPAMARNE is deploying a network of ecomobility platforms across the territory of Marne-la-Vallée. These 85 stations will allow the charging of electric vehicles and will also facilitate the development of car sharing and carpooling, while optimising traveller information.

