European Urban and Regional Planning Awards 2013-2014

A renewed city for a long-term management of energy

Introduction

Medium-sized town 50 km east of Paris, Meaux has 54,000 inhabitants and has known in the past ten years an unprecedented transformation of its urban morphology. Within 5 years, nearly half the population living in the city and in its urbanized area will have benefited from an ambitious urban renewal changing urban forms, the functioning and population of the different areas. With this renewal, the integrated development project of the city is guided by a global reflection on the energy transition to control consumption, to optimize the energy resources of the territory and to face the challenges of climate change.

The urban intensification and energy optimization project is implemented through the use of innovative tools and actions. It is based on a strategy focusing on mobilizing the population and thinking about energy sobriety and efficiency in town planning and housing and using sustainable energy. Making sure the overall project is well-organized and coherent, anticipating constraints - energy constraints in particular- constitute the roadmap for the young town-planners who work on it.

Part 1 - A local strategy focusing on the mobilization of people and on energy sobriety in housing

1.1 The mobilization of stakeholders and inhabitants around the energy challenge

The mobilization of all stakeholders around the topic Housing/Energy, supported by the city of Meaux, is more and more supported by the Communauté d'Agglomération du Pays de Meaux (CAPM : the Urban Community of Meaux), which comprises 18 towns, Meaux being the center-city.

To face the inhabitant's increasing need for information and advice on solutions to save energy and to encourage the use of financial aid devoted to housing improvement, the CAPM has promoted energy saving with for example the creation of the Espace Info Energie (Energy Information Center) in 2010 in partnership with the Maison de l'Environnement de Seine et Marne (Environment Center of Seine et Marne). An aerial thermography of the buildings attracted and made more than 4,000 people aware of the situation at a large exhibition which took place at the CAPM in november 2010. This work was also presented in different towns of the urban area in 2012 and during individual appointments.

Besides, the "Positive Energy Family" contest has stimulated the area for two years now. Beyond the challenge for the families to reduce their energy consumption, this contest strengthened the link between different generations, between people living in different areas and it developed the spirit of sharing.

To inform and to raise public awareness of the need to save energy, annual events are organized: the "Energy Forum", the "National Energy Celebration", they gather many partners and touch a large public. These occasional actions come with a continuous mobilization of landlords, social centers, local associations, representing the whole civil society. These contacts showed the importance of energy renovation in Meaux's housing stock, a true lever for the energy efficiency and they encourage new actions. To this end, for two years now, the city of Meaux has committed itself to co-ownerships through a General Interest Program aiming at improving energy performances with thematic meetings run by the Co-owners Association.

1.2 Local tools focused on housing renovation

The "Energy-Housing" General Interest Program is an incentive action which gets public financial aids to encourage owners to carry out works to improve energy performances. Given the identified needs, in addition to state aid, the city of Meaux allocates € 1.5 million to owner-occupiers, to landlords and to condominium associations. Besides, the city finances the intervention of an operational team responsible for following, animating and coordinating the action. So far, Meaux has more than 400 hundreds contacts with property-owners and follows the situation of more than 100 buildings as part of the "Energy Housing Program". This action is also focused on helping people in a position of energy precariousness and/or living in substandard housing. Partnerships have been created according to the specific nature of each situation.

After one year, the action shows how important it is to involve one of the key stakeholders in the fight against energy precariousness: the building trade professionals. Both in technical and human terms, they are involved in building up the dossiers for owners and their commitment to the process is essential. They can technically advise the owners who undertake works and help them get the best financial offers. To this end, information and exchange meetings are organized regularly with artisans and companies of the area in partnership with the Fédération BTP 77 (BPW 77) and the Chambre des métiers et de l'Artisanat 77 (Chamber of Trades and Crafts). Faced with the challenge, companies redirect their offer to best meet new demands and requirements with a positive effect in terms of innovation and employment for the area (vitality of the BPW sector).

Part 2- An urban development focused on optimizing space and local energy resources

2.1 Rebuilding the city on itself

Meaux inherited a dual morphology with historical and residential areas on one side and large housing estates representing 9,000 housing units built in the 60's and 70's. The objective of reconciling these areas has led the city to consider in 2004, through the sustainable development and planning project of its PLU (Local Town Planning), a development through the polarized intensification of its urban fabric. Moreover, besides this objective, rebuilding the

city on itself had to ensure from the beginning the optimization of the existing infrastructure (road networks, urban heating network, facilities and local service …) and preserve the remarkable natural heritage scattered along the meandering Marne River and the Canal of Ourcq.

Intervening on large housing estates and improving the housing stock and facilities of public spaces led to the demolition / reconstruction in 10 years of 2500 social housing units and the construction of nearly 1,500 private housing units. This heavy intervention started a significant change of image through the diversification of urban forms and statutes (purchase, rental …). From an energy point of view, it contributed to a remarkable improvement of the energy performance of new buildings and existing homes rehabilitated in 2000 under the new energy standards. The modernization of the housing stock and the development of the city on itself continue with the construction of 1,500 additional housing units by 2018 as part of the eco-district Foch Roosevelt. Covering an area of over 80 hectares, it is a pivotal place in the city. This central position justifies densifying housing, taking advantage of the proximity of shops, facilities and urban centralities (administrations …) and adapted to public transportation. This multipolar development has been possible through the implementation of a pro-active land policy of the city for fifteen years now allowing to mobilize the necessary land and to develop under public control. Thus, the governance of the operations allows a good control of the property markets in connection with projects undertaken by the private sector. These areas in urban renewal are a permanent laboratory for the implementation of all dimensions of sustainable development with the improvement of the living environment and the creation of conditions to reduce the energy impact of existing buildings and development projects.

2.2 Promoting local energy supplies

The management of natural resources and energy is at the core of renewal projects mainly with the reinforcement of the geothermal network in service on the city since the early 80's in the areas Beauval and Pierre Collinet. It currently powers more than 16,000 housing unit equivalents with the following distribution: 75% of the heat production for homes, 10% for hospitals and 15% for municipal buildings and schools … The desire for an increased use of renewable energy in coherence with the law "Grenelle 2", supported by the creation of heat funds, led to a global reflection on the future of geothermal energy in the city and on necessary investments.

Within the framework of reconstruction operations related to the PRU and the eco-district project, the city imposes or encourages depending on the place, the connection of new buildings to the urban heating network in order to rationalize energy use and to reduce air emissions. The building programming, largely characterized by blocks of flats (ground floor + 5), makes it possible to use the existing network in areas where geothermal energy can't be used and it ensures the sustainability of the infrastructures which have just benefited from a €20 million investment program to solve the obsolescence problems due to the corrosion of structures: drilling new "triplets" wells and strengthening the power supply network. This investment program reduced CO2 emissions by 11,700 tons per year which is equivalent to the annual emissions of 9,800 cars (40% of the traffic in Meaux).

The works carried out contribute to a more virtuous use of the geothermal resource by reducing the use of gas cogeneration. In 2013, geothermal energy contributes to more than 60% of the energy mix.

The use of these means of production allows to have a CO2 content of 0.167kg/kWh in Meaux heating network and to maintain a competitive offer in terms of price for the users, saving energy thus goes with saving money.

However, for the same production of heat, traditional systems, when working with gas, the most virtuous fossil fuels in terms of greenhouse gas emissions, produce at best 0.256kg/kWh CO2, which is more than 33% greater than that of the urban heating network. Beyond the modernization and the development of this heating network and to diversify the production of renewable energy, the city also carries a project to create a solar park on land unsuitable for any another activity given its industrial past and the proximity of a fabric with a SEVESO classification and subject to a Plan for the Prevention of Technological Risk. The optimization of these 26 hectares will accommodate nearly 48,500 solar panels for a total power of 11MWc, making it possible theoretically to provide power for about 2,870 households or 7,000 people with an expected annual production of 10,035,000 kWh / year. The project received favorable instructions and opinions but is conditional on the call for tender initiated by the government.

Conclusion and prospects

Through their multiple actions, the city of Meaux and the CAPM want to set an example through a coherent development project to save energy, with integrated sectoral policies. This is indeed the coordination and consistency of actions aiming at managing local energy consumption from transport, housing, urban forms or individual consumption and at exploiting energy resources (geothermal energy, solar energy ...), which are involved to ensure the energy efficiency of the project.

Any project, no matter how ambitious it may be, is doomed to failure if people don't take ownership of it daily. In Meaux, since the large-scale urban renewal started, discussing with the locals and all the different stakeholders in the city has been an ongoing exchange exercise. This place of constant dialogue is also a place of training where people develop new behaviours.

At a time when local action is a key step in the energy transition of cities and towns, innovation means now finding relevant technical solutions, a coherent strategy and an efficient governance for the living area. The CAPM, which is given more and more responsibilities, will have to meet this new challenge while ensuring its integration with structural projects across the Region Ile de France and the Grand Paris.