



1ST FOR POSITIVE ENERGY, IT'S COMPLETELY NATURAL

ELITHIS: THE FIRST POSITIVE ENERGY RESIDENTIAL TOWER BLOCK IN THE WORLD



1ST FOR GREATER BIODIVERSITY, IT'S COMPLETELY NATURAL

STRASBOURG, THE FRENCH BIODIVERSITY CAPITAL

1ST FOR CLEAN ENERGY, IT'S COMPLETELY NATURAL

BIOVALSAN: THE FIRST UNIT PRODUCING BIOGAS FROM WASTE WATER

1ST FOR SOFT MOBILITY, IT'S COMPLETELY NATURAL

STRASBOURG: THE NO. 1 CITY FOR CYCLE TRACKS AND THE NO. 1 TRAMWAY NETWORK IN FRANCE



**THE CLIMATE
IT CONCERNS EVERYONE**



REDUCING OUR CONSUMPTION BY 30 %

Among the big cities in France, Strasbourg is the most daring in terms of environment: it is not only capital of biodiversity, but also first as a cycling city and first for the density of its tramway network. And it will be the first French city to build a positive energy tower.

On the occasion of COP21, it is also natural that Strasbourg becomes the first city to sign the Universal Declaration of Humanity Rights, which commits us, collectively, to left to future generations a sustainable planet for mankind.

Roland Ries
Maire de Strasbourg

Each year, Strasbourg consumes almost 500,000 tonnes oil equivalent to meet the whole region's energy requirements: transportation of people and merchandise, production of goods and services, housing, leisure, etc. **The ambition to reduce our energy consumption by 30% involves a drop in the two sectors that consume the most, namely transport and buildings.**

Strasbourg made the strategic choice at the beginning of the 1990s **to develop public transport by focusing on the tramway** to service the whole region. This vision made it possible to take back urban space for the benefit of pedestrians and cyclists with the rebalancing of the proportion of public space. Today, this pioneering spirit is found in other fields of sustainable mobility: **an initial pedestrian plan and a cycling scheme** promoting active mobility (No.1 cycling city in France), **car-sharing, code of the road** (to protect the most vulnerable users) and **shared spaces**. Strasbourg also intends to continue with its role as a laboratory for innovation in mobility, for example by supporting electric and connected mobility.

The building sector requires two types of complementary initiative to achieve energy performance targets.

For new constructions, the community encourages players to go beyond current standards in order to offer buildings or urban projects that **combine energy efficiency, biodiversity, and sustainable mobility**. In this way, a number of innovative building projects with very high levels of environmental performance have appeared in the districts under construction, including an energy-positive tower block in the 'Danube' eco-district, developed by Elithis, and an island of 400 high-rise dwellings constructed on a wooden framework, a first in France. As for the existing buildings, **the mass expansion of thermal renovation** is to be the issue for the next 10 years. There are several encouraging factors: providers of social housing have undertaken to insulate all their social housing stock by 2025, and a **structure (EnerD2) has just been launched to assist with the technical and financial details** of these operations, and the first experiences of supporting shared ownership demonstrate the effectiveness of the mechanism. This sector of renovation has strong potential for energy savings, and is a real opportunity to develop local employment.



↑ Vélohop: Strasbourg offers a bike rental service since 2010

Tramway: Strasbourg, No. 1 tramway network in France



ELITHIS : THE FIRST POSITIVE-ENERGY TOWER BLOCK IN THE WORLD

The 16-storey (50m) Elithis tower block is characterised by a bioclimatic design that optimises its façades and glazed surfaces in accordance with their orientation, so as to guarantee optimal visual and thermal comfort. To achieve this, the following have been implemented: new heat-distribution technology, heat recovery from waste water, and a double ventilation system.



DESIGNING AND CONSTRUCTING ECO-FRIENDLY FEATURES



the new Heyritz district

The exemplary nature of the community with regard to its public facilities can be seen, for example, in the construction of a **positive-energy gymnasium**, or improved public lighting that reconciles the highlighting of UNESCO heritage, the reduction of light pollution, and energy savings.

With regard to the 'facilities' aspect, Strasbourg urban district has, since 2011, promoted an approach to enhance the urban planning, architectural and environmental quality of projects by suggesting to private sector players that they commit to a **'Partnership Charter for Sustainable Development and Habitat'**. In particular, this approach made it possible to apply the objectives of the Climate Plan by the **widespread application of the '30% renewable energy for each project' norm** and by **exceeding current thermal regulations**. What is more, several projected sustainable districts were developed, including the Danube eco-district. These urban projects are a response to the issue of the sustainable city: developed close to public transport systems, consuming little energy, supplied by renewable energy, integrated into green and blue belts...

Furthermore, Strasbourg must **take into account future climate change** to make sure that the region of today can anticipate the constraints of tomorrow. The principal climate-related risks are



Plan Lumière, place de la cathédrale

those of extreme heat and flooding. In both cases, the answer lies in the same solution: **reinforcing the place of vegetation within the city**. This work began in 2008, initially focusing on abandoning the use of pesticides, and continued via an ambitious policy of biodiversity, the restoration of humid zones, the development of a more nutritious local agriculture system, and the creation of a **natural urban park**. The 'Life-Size Strasbourg' approach is to be extended, and has already enabled Strasbourg to be acknowledged as 'Capital of Biodiversity'.

Finally, to guarantee the sustainability of these efforts, the creation of the **Local Urban Planning Plan has transcribed into regulations a number of requirements regarding air quality, low energy consumption, climate and biodiversity**, so that by 2017, future developments will be suitable and compatible with these issues.



DANUBE, AN EXEMPLARY ECO-DISTRICT

At the heart of the Deux-Rives linear development, a district like no other is coming to life on former harbourside wasteland. Everything has been designed to make Danube an exemplary space and a district for people to live in. Here, the water will be everywhere: run-offs, ditches, alleyways, riverside gardens, and the vegetation of the humid areas of Alsace. Highly accessible, Danube relies on a new concept of mobility that prioritises 'soft' transport. All buildings will be, as a minimum, 'Low Consumption', or even 'passive' or 'positive-energy'.

Although the direct climatic impact of the metropolis is fairly limited (with public buildings representing less than 2% of the region's emissions), its influence, on the other hand, may account for as much as 30% of overall emissions. It is in fact the Eurometropolis that decides on the construction of housing, facilities, and places to live and work; it develops public transport systems and handles waste products. Finally, it has to anticipate in order to ensure the modification of the region to meet climate change.



DEVELOPING LOCAL SOURCES OF ENERGY

BIOVALSAN

The Biovalsan programme is a first in France. The sludge produced by the Strasbourg water treatment plant is now transformed into biomethane, which is then injected directly into the gas network at a rate of 1.6 million m3 of 98% purified biomethane per annum, which will meet the requirements of 5000 homes.



Biomass is also part of our regional energy diversification, with flagship projects in which **wood energy is often combined with agricultural products**. The new heating network that serves Strasbourg's international business district, for example, will have 87% of its heat supplied by this biomass.

Waste products are also valued for energy production. This is the case in the **incineration plant and the water treatment facility (the "Biovalsan" project)**, in which these two public facilities become energy producers.

In the years to come, other energies such as solar or micro-hydropower will increase the region's proportion of renewable energies.

Each year, Strasbourg urban district uses 15% renewable energy, thanks to the hydro-electric plant, agrofuels, and the use of organic matter (waste and biomass). To enhance this dynamic, it intends to develop the use of geothermal energy at various depths, plus biomass and the use of waste as a resource.

Geothermal energy allows us to use the natural warmth of the earth at all depths, and offers significant potential. At shallow depths, the use of the Alsace groundwater table is widespread, with heat-pumps

installed in numerous buildings (European Parliament, eco-districts of Rives du Bohrie and Tanneries, etc...). The urban project "Ilot Etoile", a recent award-winner in France, is an innovative example of the use of geothermal energy via its foundation pilings. Finally, the use of deeper-lying hydrothermal resources (4 - 5,000m in depth) is the subject of a number of current projects that will allow us to produce heat and electricity. Drilling will begin in 2016, allowing us to evaluate the wealth of energy that lies beneath our soil. It will only occur as far as security is guaranteed.



Parc de la citadelle, 13 000 square meters in the heart of Strasbourg

TOWARDS A POSITIVE-ENERGY REGION



In order to be effective, the fight against climate change and the energy transition initiative imply that a cap must be set at both planetary and national level. However, it is firstly at local level, in the regions, that the vital process of climate transition must become reality.

ACTING IN THE FACE OF SCARCITY OF RESOURCES

The scarcity of resources, air pollution, and climate change force us to follow, without delay, voluntary policies to ensure our energy autonomy. This is an economic, environmental, social, and public health issue.

AMBITIOUS TARGETS

For Strasbourg and the Eurometropolis, targets have been set; these are ambitious: **reduce energy consumption by 30% by 2020 and greenhouse gas emissions by 70% by 2050**. Convinced of this urgency, the community has already taken concrete measures to ensure this ecological transition as soon as possible. This policy is first and foremost founded on **energy savings and energy efficiency**; in other words, taking action against everyday waste. We are also focusing on **renewable energies**, which must constitute at least 30% of the energy used across the region by 2025.

A POSITIVE-ENERGY REGION

This strategy is taking shape along 6 operational lines:

- the example of the community with regard to reducing its energy consumption, with the thermal renovation of public buildings and energy-saving choices in terms of investment, public lighting and heating.
- a programme of thermal renovation of housing
- a strategy for mobility, making it possible to offer a selection of solutions to meet users' needs.
- innovation and experimentation to anticipate the "construction" of our city
- a plan for the development of employment (non-transferrable) in the fields of the thermal renovation of buildings, waste management, renewable energies, and the circular economy.
- the mobilisation of all our fellow citizens