

Tomorrow's city: **how will it work?**

Naturally, everybody is talking about the city these days because this is where all the great changes appear to be taking place. An in-depth report on a very contemporary phenomenon.



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With the arrival of the new technologies that are set to shake up man's relationship with his environment, pressing ecological and climate imperatives, and small, gradual changes in mindsets and socio-economic patterns, cities are constantly reinventing themselves. But how can we ensure that they develop in a sustainable manner that will benefit future generations? A lot of people have spent a lot of time pondering this matter, with varying degrees of success.

Although the methods and resources that need to be deployed are still being debated, everyone agrees that a new approach is needed to deal with the city and how it works, with a focus on more efficient, eco-friendly models and the welfare of urbanites.

Engineering to the rescue!

For the transition to be a success, an integrated focus is needed along with a different approach to urban design and deploying the innovations that underpin all aspects of urban development. While this is no easy task, it is a familiar one for the engineering specialists, consultants and urban service operators like Egis who have been keeping tabs on the transformations taking place for a number of years now. For engineers, innovation is a powerful catalyst for boosting all measures of urban performance – attractiveness, energy efficiency, resilience, etc. – and this is precisely the reason why teams from Egis are constantly deploying concrete, high value-added solutions in the domains of urban engineering, eco-mobility, economic and spatial planning, and project management, etc.

The economic benefits of such strategies can be detected at all levels of the urban ecosystem.

Moreover, the growing number of “smart city”-type initiatives – frequently more pipe-dream than reality for the moment – are complicating matters still further given the number of stakeholders and new business models involved, governance difficulties, fragmented initiatives, etc.

To help give local and regional bodies a better understanding of the issues, Egis has put together an integrated smart city strategy that focuses primarily on the need to forge a global vision, tailored to each locality or region.



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OLIVIER LEDRU,
Urban Market Director at Egis

As we see it, the city of the future is one that will be able to deal with the massive demographic, energy, ecological and digital transitions currently taking place throughout the planet.



A different approach to energy

Solar mountains, Wind-it® mobile telephony pylons built into wind turbines, Cellter® photovoltaic shelters, and recycling braking energy from metro systems... these are just some of the solutions developed by Egis to boost renewable energy use in urban areas. Its engineers are designing heat networks capable of harnessing even waste heat from industry to power entire neighbourhoods in Paris-Saclay, Rungis, Bordeaux, etc. Thanks to its subsidiary, Elioth, the Group also won a prize in the 2015 French Carbon-light Architecture awards (*Architecture Bas Carbone*) organised in partnership with the Lille 3000 initiative.

In its "Renaissance Factory" project, Egis focused on a specific neighbourhood in Lille (Northern France) in order to assess the transformations needed in the city. The project involved tracing out the energy landscape between now and 2050 by factoring in global warming and the constraints related to cutting greenhouse gas emissions.

Encouraging responsible building practices

Because of ageing structures with poor energy efficiency standards, construction remains France's most energy-intensive sector. Happily, solutions do exist!

In addition to retrofits, green building techniques using bio-sourced materials and energy-positive infrastructures actually produce more energy than they consume. As a party to the future *Bâtiment Responsable 2020* regulations (i.e., sustainable building practices for the future) Egis is very familiar with all of these aspects. Indeed, Egis, Caisse des Dépôts and La Poste group recently set up SOBRE, a joint venture focused on the energy transition, tasked with providing real estate professionals with concrete solutions for tracking and reducing their energy consumption.



Towards win-win mobility solutions

With the digital boom and growth in the sharing economy, new uses promoting smarter mobility and "virtuous" behaviour are in increasing demand. In response, Egis is developing a number of **cutting-edge new mobility** services via numerous partnerships (e.g., with Auchan, Nissan, Shell, etc.) forged to promote **electro-mobility** in France, or to **operate parking services for the City of Amsterdam**. In Rotterdam, Egis has come up with a **positive tolling** system that rewards commuters who are prepared to leave their cars at home during rush hour periods.

The Group has also perfected a **dynamic lane management system on the A48 Motorway at Grenoble and on Saint-Nazaire Bridge** to optimise traffic flow. New schemes introduced in town centres such as the **BikeU® bike-share** scheme deployed in Poland encourage the use of soft mobility solutions.

Eco-friendly urban design tools



Because cities are fluid environments, it is not always easy for public and private stakeholders to test innovations there and this is where design modelling tools come in really handy! Thanks to experience gained on the **Astainable®** project that seeks to make Kazakhstan's capital a showcase for sustainable urban development by 2030, Egis now has extensive urban design modelling expertise in **3D demo modelling, participatory lifestyle research, codesign, crossroads mobility and road sharing, etc.** These techniques make it possible to analyse urban complexity on a manageable scale and validate innovations under real conditions. They also facilitate the take-up of new services and enhance the sustainability of urban innovation business models by confronting them directly with real operating conditions. All practical good sense at the end of the day!