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Sustainable green building strategies in France

From eco districts to creative towns

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There is more to creating a town than simply juxtaposing houses, just like as a set of HQE constructions alone does not make a high-environmental quality neighbourhood. It takes more than the creation of an eco-district to make a town ecological.

Ecology is the science of systems, cycles, interdependencies and complementarities. This science fully applies to towns beyond fauna and flora, habitats and material flows. The concepts of environmental richness and productivity offer new meaning to a town's development. Today we are experiencing a historical era for humanity, where *the time of the finite world begins*, to quote Paul Valéry. The simplicity that infinite expansion offered is no longer admissible, and will be made increasingly costly in all respects, in terms of both finance and resources. Tomorrow's growth will be different from what we have seen until now; it will be founded on the intensification of resource usage, and not on the systematic search for new resources: intensification instead of expansion. This transformation applies to towns, and gives new direction to the planning and installations of the future.

The planning of public spaces reflects this logic. Offering links between the different living spaces, they ensure mobility and landscape, rainwater management, recreation for all ages, spaces for meeting up and social activities, sites of trade and commerce and the welcoming of numerous ground, air and underground networks. Many functions need to be combined in order to obtain an "intense" town. Each new element, whether house, equipment, garden or district, needs to accentuate the town's intensity, a measure of its *sustainability*, both in the original sense of the term and in the sense of its development.

Where towns cannot be rapidly made entirely sustainable, it must be possible to renovate districts or create urban expansion in accordance with sustainable-development rules. It was this hypothesis that gave rise to several districts combining every environmental and social quality imaginable, elsewhere in Europe to begin with and more recently in France. They can be found in London (Bedzed), Copenhagen (Vesterbro), Stockholm (Hammarby), Malmö (BO01), Fribourg (Vauban), Hannover (Kronsberg), Helsinki (Vikki), and many other towns, essentially in Northern Europe – but also in Grenoble (Bonnes urban development zone). Generally, these areas were industrial or port wastelands, on which new districts have been constructed. There are several common traits worth highlighting: the importance placed on public transport (with less room for cars), whereby the infrastructures precede the constructions, well-established land management, a relatively long preparation process, signalling real maturation, broadly calling on the public and potential

inhabitants, and an international impact. Sustainable development also represents an image. From a technical perspective, the word *sustainable* is essentially reflected by environmental performance: reduction of land movements during construction, quest for energy savings and wide-scale use of renewable energies ("passive" constructions, notably), sophisticated household-waste collection and recovery techniques, etc. This quest leads to a profound reworking of the architectural approaches, which take on board the resource-saving and usage-quality requirements¹. The societal aspect is also to be seen in the quest for social, functional and even generational diversity, the encouraging of active citizenship amongst inhabitants, and, in certain cases, analysis of food supply issues. The objective is to greatly reduce the ecological footprint, e.g. by 50% in relation to an "ordinary" district for Bedzed. These experiences enable techniques and innovative practices to undergo full-scale testing. These highlight sensitive points such as the new districts' place within the rest of the town, their inclusion, the manner in which they are perceived by the inhabitants of other districts, and the question of their generalization towards a public that is less motivated than the pioneers of the initial operations. Frequent confusion between "sustainable" and "environmental" also appears. Yet these showcases, demonstrating that towns of another kind are possible and opening up new possibilities, are beginning to be exported further afield.

In France, several large towns have committed to sustainable or high environmental quality district projects. The Grenelle Environment Forum added impetus and quantified the objectives of this movement, thus reinforcing its momentum. In 2009 and 2011, the French ministry for Sustainable Development launched community contests, awarding prizes to the most advanced eco-districts. The level of ambition shown is variable, with each experience representing a specific case. There is no single rule, beyond using powerful environmental techniques for the equipment and infrastructures, and for constructions (residential and commercial). The idea of an "eco-district" label is currently being examined at the initiative of the French Ministry for Sustainable Development. Already, an approach, *HQE for Urban Planning and Development*TM, inspired by the HQE approach designed for buildings, has been available to communities and planners since November 2011. It is not a matter of demanding technical performance levels, which it would be rather difficult to determine outside of the context specific to each town, or indeed to each site where a project is set up. The approach offers a labour contract, an organizational structure, a means of connecting the district to the whole town on the one hand, and to all future constructions on the other. Stringency in a project's management, and contextualised, multi-theme work, subject to certification.

The sustainable town can only be a creative town. It must, of course, satisfy the technical efficiency requirements: it must be low in raw materials and energy, it must source its vital resources, notably its food supply, close by, it must be open to original fauna and flora and it must reduce its impact on the water supply, etc. It must also allow its inhabitants, those who work in the town, and those who, generally speaking, come to visit, to thrive within the town and express all of their talents.

Quality is not measured on a linear scale, and the value of each parameter depends on its importance according to the genius loci. Nevertheless, indications may be given, with methods, to enable individuals to evaluate their own expectations. Provide lists of utilities sought, habitat, activity, leisure activities, landscape, biodiversity, mobility, etc., with their evaluation means. Their level of importance varies depending on the location. The said utilities are placed in order of priority, but they are all present, and it is the combination of

¹ C.f. in particular on this matter, Pierre Lefèvre's book, *"Architectural Resources for a Sustainable Town" [Ressources de l'architecture pour une ville durable]*, Editions Apogée, 2012

these utilities that gives a district its "intensity". The main qualities expected, the main missions accorded to a construction space, which determine its purpose, must not cause the additional missions to be forgotten, the absence of which may be strongly felt. The price to pay for such oversights covers a broad spectrum, from a lack of well-being due to living in bedroom suburbs, to the exorbitant cost - both personal and collective - of mobility to outer lying suburbs, and to the health problems linked to the urban heat island effect and air pollution in major centres. *This means that the density may only be raised if the intensity of the territory is high.* The example of major towns, Paris in particular, illustrates the attractiveness represented by the density within a composite, complex and contrasted context.

Success is the fruit of a smart blend, to be made in accordance with the spirit of the times, striving to draw the greatest possible benefit from the spontaneous movements, desires, offers of services and opportunities. The town's creativity depends on the quality of this blend. It is contact and confrontation that create sparks, that bring about encounters or improbable rapprochements, a source of all manner of innovations, whether economic, social, artistic and cultural or political. The quality of a construction space lies in favouring these, and offering the best conditions under which they can occur. The stakes are particularly high for capital-city regions, which need to ensure metropolitan functions, beyond simply the quality of life of their inhabitants. Meanwhile, the responsiveness to events, the ability to master new techniques, notably in terms of communication, and the capacity to recognize original talents, come under the governance accompanying the territory's organization. An attentive governance, in contact with local life and the major challenges, both nationally and worldwide.

Resource-efficient, the sustainable district is notably so in terms of space. It is a dense district, but it is not sufficient to simply refer to the density. A monotonous density based on a single parameter such as the population, employment or revenue, is not synonymous with creativity. Moreover, the perception of density incorporates diversity. The permissible density thresholds are rapidly reached for territories with a single vocation. Housing exclusivity is poorly tolerated by individuals, just as intensive monoculture is by the surroundings. Meanwhile the combination of multiple activities and a diversity of interests on the same territory enables the density to be appreciated; intensity enables density.

The manner in which the space is organized is one of the keys to creativity, physical and material productivity, and the ability to innovate in cultural and social life. Specialization, the rejection of certain peripheral activities and communication difficulties all represent barriers to creativity. There are, of course, certain precautions to be taken. Proximity must not result in overcrowding. Fortunately, technical progress and our knowledge of human organizations allow us to get past this contradiction should we really wish to. This is a matter of good governance, an essential ingredient for creativity. *Several-fold intelligence*, such is the marker of sustainable development.

A district can only be sustainable if it contributes to the durability of the whole town. A sustainable town is a creative town, a town offering diversity in its structures and activities. It is also a town where every individual contributes to community life. An eco-district is a district where every individual can adopt a *sustainable way of life*. Planning, architecture and governance must be mobilized to this end.

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