

## **Sustainable city - developing world**

### ***Planning rules for sustainable and fairer cities***

**Bernard Aubert**

**To define on a regional scale the limits between the city and the natural zone which surround it – To reconquer forsaken spaces and to help the maintenance of an agriculture around the city**

The evolution of the city can be judged only in one vaster space of which it is interdependent: a balance must be defined between the limits of urbanization and the natural zone which surrounds it, which it needs for its protection and its subsistence. This problem arises today for cities with strong growth which, as in China, did not know to preserve the arable lands which they need.

It is also necessary to exploit the zones in limit of urbanization, misused, often degraded, while putting in the perimeter cultures, reforestation, natural spaces destined to the sports, the leisures. All elements which have a great importance to create microclimates and values of landscape, favourable with the quality of life of the inhabitants.

Agriculture has an essential role to play. Apart from the food provisioning and the supply of certain matters (insolation, construction materials renewable,...), it has a role of protection (floodings), it maintains the biodiversity and preserves the environment of the urban site. This activity is strongly threatened: in France, 165 ha of agricultural zones disappear each day (against 100 ha in Germany). To resist the land pressures, the farmers must increase their exploitations to make them more profitable, or to specialize in cultures with strong added value (horticulture, production of vegetables), which gets employment and requires short trade-circuits (the gathering of the town-dwellers).

This definition of the limits, this improvement of close spaces: all that is dependant on country planning on the scale of the area, taking into account all the data of the environment climate, management of water inside large basins, sets of agricultural areas corresponding to a durable management, forest continuities underlining the elements of the relief.

These plans are for the moment more concerned about the economic development, the execution of infrastructures, by giving possibilities of urbanization often not very precise. New bases must be given on criteria of environment and safeguarding of sites which constitute the inheritance to be bequeathed, while insisting on the exploiting of degraded areas or neglected, such as the industrial waste lands. The denominations N “natural” or A “agricultural” that one finds in the documents of French town planning remain symbolic systems: it is necessary to substitute coherent sets of management to them, while pre-empting the conduct of the projects to come. In this direction, Regional Perimeters of Land Intervention were proposed, to allow the creation of coherent agricultural units.

In the countries where the development of cities with strong growth is not easily controllable, the limits are difficult to define. There too it is necessary to anticipate in all the fields : land

acquisitions by the community, recovery of insalubrious zones, stop of the development of the shantytowns, by supporting their change (sectors of increasing the density with creation of a modular habitat). The “useful limit” depends on the exploiting of agricultural production zones; the problem currently arises in the African continent, partly Southern, where councils for the management of zones of culture are highly solicited, in order to give to the populations the means of managing their territory in the long term.

**To replace the city in its physical context and its history – To exploit the resources of the site - To introduce a new step revealing the stakes of the development.**

To face its growth, the city must reconquer its own site. It should for that be replaced in its physical context: to reveal the basins of the rivers, the small valleys allowing the water run-off; that goes until the putting-back on the surface of a brook, of a river for a long time forgotten. Same manner, it is necessary to re-examine the consequences of the climate at the level of each district: exposure to the winds, sunning, formation of fogs. A fine analysis of the site led to actions such as the execution of planted spaces, constituting networks corresponding to the relief, the search for a better exposure for the housing, the protection of the sights...

The constraints of the ground play an important role at the level of the foundations (the example of SHANGAI based on muds). The knowledge of underground space, its use beyond the drains and infrastructures, also form part of the control of the site: it is for many cities an important potential of planning, concerning the sectors best served, insufficiently explored, a little used.

Testimonys of the history which its inheritance reveals belong to the conducting elements of the reconquest of the urban site. That concerns especially the structures of the old city that must find their effects in the renovated districts. The exploitation of the physical characters of the city and all of the resources which are bound to them, of the traces of the history: all that makes it possible to carry out choices for the zones to restructure, to make denser. That goes hand in hand with the bringing out of the large screens of natural space favorable to the establishment of equipments, with the execution of movements, new elements of life in the recomposed city.

How to set up rules allowing to ensure such a control of urban area? Often, in the start of each study of planning, the “assessment of the initial state of the environment” is satisfied with an overflight of urban space. The obligation of a thorough study of the physical site of the city is essential in order to know all that can influence its planning including the subsoil. In France, the law “Solidarité et Renouveau Urbain” (2000), just as the precepts of the Grenelle II of the Environment, opened the way. It is a questioning of the steps of planning, by revealing two visions: that of physical space and testimonys of the history, to rediscover, and that of built space, fully-equipped, easily perceptible.

**To restructure the city starting from its places of life by excluding any functionalism - To improve the use of what exists – To found again the city from the logic of the district and of its tradition.**

Another shelf, quite as important, is that of the organization of the space according to the functions defined by rules, old heritage of the Charters of planning (that of Athens and a lot of

others). That led to a splitting of the use of built area, prohibiting any renewal favourable with the combination of the functions, only pledge of life for the various districts.

In certain developing countries, the logic of the rules resulting from colonialism is still read, that one which was imposed in front of the traditional structure of the urban site of origin, rich in its places of life. It is the example of Abu Dhabi where follow one another, the periods of nomadism (foundation in 1761) then of sedentairisation with English planning as from 1960, then the Scandinavian experiment, which make little by little forget the city of origin.

The abandonment of “zoning” and of the single interest carried to the built space is essential. A new step requires, at the beginning, the observation of the movements of the inhabitants, at various periods, which makes it possible to recognize the meeting and exchanging places, all that constitutes the poles of life around whose each district is organized. The rule is the same one for the developing cities, it is the example of the African cities stretching by small islands, in the center of which spaces of gathering are found, in particular the market. The project of planning must be organized from now on, around these spaces and movements, on a district scale, while opening largely with all the functions; the objective of quality of life remains essential.

That goes against the economic logic which imposes segregations, while moving away the underprivileged populations little by little. In the European cities, the restoration of the insalubrious districts seeks today to maintain a part of the population, by envisaging, in the assessment of the operation, the corresponding cost.

**To develop the city by the play of the increasing of density, but especially by a better use of existing, by respecting the principle of combination of functions- To renew the district from its potential of life – To implement the regulations of sustainable development.**

The urban development by the reconquest of its territory passes by an increasing of the density of built areas. It is necessary to make at the outset a distinction between two concepts:

= the increasing of the density has as an aim the augmentation in the surface built for the benefit of housing, of activities... in an insufficiently occupied site or which one wishes the change.

= the intensification has on the contrary as an aim to improve the use of existing, in particular by envisaging a combination of uses - it is for example the use of a great volume covered for the benefit of equipment, or the introduction of new accommodation into building in restoration.

The intensification has a very important role to play in the hearts of city: recovery of waste lands, from abandoned or insalubrious built space, old commercial surfaces... It profits from the advantage from the equipment and infrastructures already in place. To increase the density and to intensify are a choice of society, being opposed to the ill-considered creation of districts of individual residences with expensive infrastructures. One currently attends a return, towards the downtown area, of households in the search of equipment and centers of life. A reflection is essential for better doing to take part public spaces in the activities of the

built elements which accompany them; it is the occasion to open the ground floors of the buildings on these spaces for the benefit of activities and trade. The old practice of the passages inherited from the Middle Ages answers the same point.

The scale of the district has much interest for this control of the conditions of development. An attentive approach is necessary to the beginning: analyze of the physical characters, assessment of the occupation, observation of the use of spaces of common life, as well public as private, use of the equipments. The project introduces the balance of density, the recovery of neglected spaces, the search for a combination of the functions; it is based on the scene where the life proceeds, which gives to the district its identity. That requires a control of land, the action of a developer, but also a dialog between the various actors where the inhabitants are found, principal beneficiaries of the operation. Such a project can fall under the step of creation of a “éco-district”, which introduces the energy saving, the management of water, the inscription in a large screen of planted spaces, the development of an inheritance...: all elements contributing to the quality of life of a city, in the condition which the district does not remain insulated, like an experimental site.

In France, the experiment still concerns few cities, interesting very specific urban elements. It is interesting to quote the example of a “Zone d’Aménagement Concerté” (sector of which all the elements are defined in a scheme of detailed planning) located at PARIS, in the district of RUNGIS; the recovery of a waste land, with old hangars, of 3,8 ha, makes it possible to create 250 housings of which a part for students, 19 000 m<sup>2</sup> of offices and various equipments of district, around a garden of 5000 m<sup>2</sup>. The interest of this operation under way is initially to observe all the conditions in the field of energy saving (50 kWh per m<sup>2</sup> and per year), of rain water... but especially to connect themself to the close districts, in particular for the use of the equipments and the continuation of the movements. One can imagine the growth of a city passing by the achievement of such operations, spreading oneself over one period from 10 to 15 years.

**To give rules to introduce a step of sustainable development - To anticipate with the execution of the equipments and infrastructures - To set up a development plan likely to evolve with the growth of the city.**

In the French context, one can imagine that the future “Plan Local d’Urbanisme” concerning a city, an agglomeration, answer new criteria - what besides finds its equivalent in the majority of the other countries. That concerns, as one saw, the physical characters, the quality and the use of public spaces, a better land use, a progressive increasing of the density, all elements which escape the current rules fixing the possibilities of using the ground. To the plan of “zoning” succeeds a plan of land use likely to evolve, specifying the role of spaces which constitute the “negative” of the current proposals for the execution of the built area. That applies to cities “at the adulthood” needing to restructure them, to organize their growth without exceeding their limits.

For the developing cities, a similar step relates to new districts, with modular buildings opened with multiple functions, and service roads privileging continuities of space of common life (parking rejected in periphery). The size of the district corresponds to the perimeter of use of the equipment of proximity, with the image of the old structures. The regulations leading to the execution of éco-districts is essential, as well in the field of the environment as on that of

a new economy admitting several forms of activity, likely to evolve according to the needs. The choice of urban forms, privileging a saving in space, relates to characters of urbanization pointing out the structures inherited from the tradition.

In all the cases, essence is to anticipate, which implies to carry out the infrastructures of service road as a preliminary, to envisage the grounds necessary to the equipments, to constitute continuities of planted space. The principle is to carry out at the beginning the “negative” of built area, all that will constitute the landscape of the future districts. This scheme of planning, contrary to the project based on an organization of “zones”, fixes all that constitutes the base of sustainable development; this project is indissociable of the use of agricultural and natural spaces in periphery of the city. This step falls under the rules and the execution of plans, made compulsory, with the image of the “Zones d’Aménagement Concerté” used in France, defining in priority the built elements.

**To introduce a dialogue with the inhabitants and the main actors of planning to all the stages of the project - To know how to evaluate its consequences on the environment, the economy, the quality of life and how to make it evolve.**

The study of the project, its formalization, as well as the various stages of its carrying out, are as many occasions to permanently maintain a dialogue with the inhabitants concerned by the sites. In France, the dialogue registered in the law “Solidarité et Renouvellement Urbain” remain generally formal; organized on the initiative of the elected persons in charge, it does not allow the desired exchange. The public survey preserves its legal role.

The taking into account of all the characters of the sustainable city, their practical implementation, require an effort of pedagogy, with a progression in the steps of knowledge; thus for a district to be restructured:

= meeting of the inhabitants to take stock of the needs, but also of the potentialities, in their making discover the face of a district, of a site, which they do not see any more by living there.

= presentation of the various forms that the project can take, with simulations – brief outline of the effects on the social plan, the life of the equipments, but also on the economic and financial assessment, which is more difficult.

= follow-up and evaluation in the time of the project carried out and lived, under the responsibility of the elected officials.

That is worth particularly for the refitting of the insalubrious districts; the rule is to rebuild a territory for the citizens, with their support, in the condition of giving again a place in the renovated district to them; for a long time they have “married” the site; they will stay in the district even if another inhabitants come to join them (application of the principle of “mixity”). In much of European countries, apartment buildings (towers and “barres”) are destined to the demolition, which imposes choices, inside districts carried out about fifty years ago: the occasion is given to show the stakes of the project, even to correct it in full agreement with the inhabitants.

In the developing countries, the dialogue is much more difficult to manage, because one does not know the population which will take seat in the new districts, poorest always being

rejected further. The will of the inhabitants of the already urbanized sites, which are making denser, is “to remain between them”, which generates a gentrification excluding poorest. In the most important cities (“megalopolis”), the central districts are subjected to an increasing of density resulting in the construction of towers which accentuates the fracture with the poor districts often very close (the example of the “favelas” of South America).

It is there that the effort of the policy is judged, which must take care of the good balance of the agglomeration and not to solely let itself lead by political opportunities. It is difficult to register that in a regulation. On the other hand recommendations are essential:

= to know how to anticipate, regarding the events that one can imagine, which is registered for example in France in the “Projet d’Aménagement et de Développement Durable”, whose scope was considerably reduced - the principle of this document which is projected in the future, in the medium and long term, must be taken up again with an obligatory character.

= to know how to show pedagogy, as well towards the elected official responsible, and the developer, as the inhabitants who discover the principles of planning.

This dialogue can be based on associations of inhabitants ready to bring their observations and criticisms, which gives place to many recourses. The fact of associating them with the development of the project, and of making them responsible, changes their behavior completely.

The restoration of insalubrious districts, the execution of industrial sectors in hot sites, the choice between several projects of housing of different nature and density...: all that gives the opportunity to help with the constitution of groups of inhabitants who will be associated with the bringing into play of the project. Their knowledge of sites, to which they are deeply attached and to which they identify, is an essential component for the developer.

The occasion is given to introduce into this reflection the principles of sustainable development, while making discover the physical aspect of the site, its constraints from the climatic point of view, the circuits of water...; it is also the occasion to show what represents for the future project the saving energy, the possibility of making it autonomous... All elements accessible to the inhabitants called to come to a conclusion about the project.

In the developing countries where all must be created as soon as possible, this form of pedagogy is addressed to the persons in charge of planning, with all those which have the decision in hands, to which it is necessary to show the structure of the project. Particularly conclusive projects relate to different countries. Generally built on the basis of districts in an orthogonal screen, they are perfectly autonomous on the energy level (solar panels, wind mills), reducing to the maximum the carbon emission. However, all the infrastructures must be realized before constructions of housing and activity. These projects may be applied on the cities where the growth must be controllable. In all the situations, the anticipation is essential. This approach is applicable in many situations, having the great advantage of, right from the start, constituting districts whose scale corresponds as much to the requirements of sustainable development that to those of a good quality of life. A dialogue on the vastest scale, between all the developers, becomes urgent to provide the foundations of a step interesting all the continents.

**To give to the city the means of assuming its growth - To carry out different plans accompanying all the stages of the development - To anticipate for adapt and react to the evolutions.**

The course which has just been carried out, shows that the concept of sustainable city, in a world in perpetual growth, calls into question a regulation framework who does not fulfill any more the requirements of today. New steps are to be set up, at the beginning of any project:

= as regards the region, to be concerned with balance and possibilities of management of the natural zones in limit of urbanization: those which have a role to exploit at the level of the climate, of the control of water, the resources of the ground and the subsoil, those which one reconquers on forsaken spaces that one wants to enhance the value - all elements which make it possible to delimit a coherent border between the urban sites and their periphery.

An inter-municipal approach is essential. In France, it is the objective of the “Schéma de Cohérence Territoriale”, interesting a group of communes, where must be introduced the terms of sustainable development which have just been evoked.

= as regards the urban territories, to put in priority the reading of the physical context with all the actions which result from this, the choice of a density, urban forms, the introduction of a combination of the functions, the description of spaces where will be held the life with its procession of equipments. In France, it is the objective of the “Plan Local d’Urbanisme” by which the step is to be enriched, if not to call into question.

= as regards the district, to seek all the possibilities of better using space and of introducing the objectives of sustainable development, with the obligation to make at the beginning an assessment and to envisage an evaluation of the consequences of the project in time.

These principles constitute the base of a new regulation. For the towns of mature age, obliged to reconquer their territory to escape a hap-hazard building, it is an awakening and the abandonment of images of planning (individual habitat of the allotments - “to go round its house”) which imply a change of lifestyle. The evolution much quicker of the cities with strong growth requires a questioning much quicker, although resting on the same rules. First of all, space with the periphery is not virgin: shantytowns, favelas, all shapes of precarious habitat heavily burden the future of a territory which should be reconquered, which requires thereafter several stages:

= at the beginning, the execution of the infrastructures and all that will constitute the landscape of the new district, then the construction of a modular habitat with the first equipments, by reserving spaces which will become the future centers of life,

= the longer-term execution of more final urban elements, always on the same screen, which allows to increase the density gradually and to introduce activities - public spaces make it possible to produce new equipments.

This step makes it possible in its progressiveness to avoid violent changes eliminating the initial population, in answer to purely economic objectives. Essence is to avoid the social fracture and the ill-considered extension of a precarious urbanization. It is a policy option, but also an awakening: it is a problem of governorship.

In all the cases, essence is to have a planning scheme accompanying all the stages of development of a city while making take part the inhabitants in all the steps. The example is given to us in a certain number of metropolises; the step achieved by the town of VANCOUVER takes again the same terms. “Strategic planning towards a large livable district” aims at:

= delimitation between city and natural zone by ensuring the protection of a vast green zone and agricultural zone related to several regional parks, with the concern of the perennality of the farms,

= the maintenance of a balance between housing and activity in each district, by introducing mixed structures in foot of building,

= development of a zone in downtown area receiving a big part of its growth by the path of increasing the density - use of public transport, of cycle tracks and movements reserved to the pedestrians,

This plan also may find it beneficial to have made take part the general public in all the stages of study and decision makings.

**To know how to make evolve practices of the main contractors and the actors of planning - To introduce a step answering the urgency - a new framework of thought and action.**

In France as in much of other countries, the submission to the lawful practices makes forget the reality of the project, and especially does not fulfill any more the requirements of the urban development. There is initially the absence of vision of all that makes the life of a city, with its movements, its exchanges - the law of town planning emphasizes on the possibilities of building, with well defined functions. It is necessary from now on to imagine the life of a district, the evolution of a sector of the city, either for a reconquest or for the answer to a strong growth difficult to control. It is necessary to anticipate and lead the operation over several years.

There the town planner finds his role of main conceptor and organizer of a set of practices. Its role of pedagogue is also put at contribution in the organization of a continuous dialogue, but also in the support for the project towards the elected official, the policy which assumes the decision. It is necessary also that the services which ensure the administrative follow-up of the project evolve in the same direction. The town planner measures himself with a new challenge: to perceive the elements of a situation, to imagine a project with all its consequences, to propose choices, while making take part the actors of the planning to which the inhabitants will belong, for all the stages of its reflection. This action can be conceived only in the duration: the steps of planning with lawful base intervening in a short sequence of time are not any more able to answer. The future of “sustainable cities” call into question the rules and practices: the town planner has the role of proposing a framework of thought and action.