

DRUPSSUC - Results

Design and renovation of urban public spaces toward sustainable cities

DURATION OF THE PROJECT
01/01/2007 - 31/01/2011

BUDGET
795.169 €

KEYWORDS

Transversality, Sustainable cities, Public spaces, Urban planning, Multicriteria aiding tools, Methodology, Conception guidelines, Urban living, Urban microclimate, Urban acoustics, Urban biodiversity, Urban water cycle, Urban density, Urban sociology, Participation, Mobility, Public lighting

CONTEXT

Despite its crucial role in the implementation and functioning of the societal structures of the city, public space, increasingly privatized and invaded by the car, is becoming more synonymous with nuisance than with well-being. This state of affairs contributes to the exodus of a significant proportion of those urban populations who possess the necessary resources to an extra-urban residential environment that they perceive as offering more advantages.

As well as the loss of inhabitants from the most well-off sectors of the population, which is prejudicial to the city in terms of both finance and image, the process of urban spread that results from their move to the suburbs involves considerable consumption of space and energy, loss of landscape amenity, and a weakening of the social fabric.

These trends run contrary to the need to move to a more sustainable model of development, which, it must be remembered, meets the needs of the present without compromising the ability of future generations to meet their own needs

OBJECTIVES

Faced with the process of peri-urban spread, it is essential to re-evaluate public intra-urban spaces, not only in districts where there is a concentration of deprived populations but also in more affluent areas. The aim of this re-evaluation is to maximise the conviviality, comfort and attractiveness of these urban areas, not only to maintain their level of use but also to initiate a return to them. The city and its layout thus appear to be vital issues in the social, environmental and economic equilibrium of how this land is occupied.

With regard to the necessary transversality of town planning and the principles of sustainable development, a transversal multidisciplinary approach to urban development projects appears to be a key to sustainable urban design.

The design of public spaces should not be limited to simple considerations of aesthetics or functions. It requires a multidisciplinary approach, incorporating urban needs and issues that are as much physical, physiological and psychological as they are social, cultural, political, economic or environmental, and this must take place in a transversal manner in order to bring about "optimal compromises" within the processes involved in developing this type of space.

This transversal multidisciplinary approach is achieved in this study by means of eight non-exhaustive and non-exclusive research themes, namely: users (perception, use, appropriation, and participation), mobility, urban density, microclimate and pollution, acoustic levels, vegetation and biodiversity, water, and artificial lighting.

Scientific approach

At the start of the scientific objective aimed for by the DRUPSSuC study, a grid of objectives common to the various research themes being handled is proposed. Improvement of the quality of life in the urban environment constitutes the basic objective. Meeting the objective regarding the quality of city life, it involves interventions that combine the eight fields of action dealt with as part of this research programme. This basic objective is then broken down into four strategic objectives for the design and renovation of urban public spaces within a perspective of sustainable development of urban areas. This four strategic objectives are:

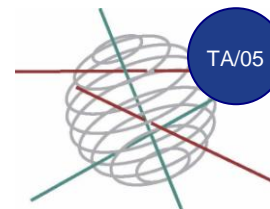
- Developing urban public spaces as places of sociability
- Developing planning and supporting the uses of public spaces which limit the harmful environmental effects and improve the beneficial environmental effects
- Developing urban public space as structuring elements of our urbanisations
- Developing natural spaces and preserving natural cycles within urban public spaces.

Practical aim

The practical aim of DRUPSSuC is the creation of methodological and technical tools to assist decision-making in procedures for the design or renovation of urban public spaces. These deliverables are aimed at being distributed to a wide public

CONCLUSIONS

The DRUPSSuC study was carried out in two phases: an initial phase devoted to the theoretical approach to the subject, and a second phase involving its validation through confrontation with the realities on the ground. A course of bibliographical research, fed by exchanges of knowledge between researchers from varied disciplines, resulted at the end of the first phase of the study in the production of a body of theory. This, drawn up on the basis of a common typology of public spaces and shared objectives, sets out, in the transversal manner required for the various themes, global issues and theoretical recommendations with regard to the development of these spaces.



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The second phase was devoted to the validation of the theoretical approach by means of case studies. This testing of criteria and recommendations for the development of public space arising from the body of theory made it possible to validate them and ensure their ease of use within the tools assisting in decision-making and design, also developed during this second phase of the study.

Transversal structuration

The respective fields of action of the eight themes initially envisaged overlap. In effect, the disciplines and parameters involved in urban development projects reinforce or weaken each other. Urban needs and issues, physical, physiological and psychological as well as social, cultural, political, economic and environmental, come together, clash, and interlock, depending on the nature and content of public spaces. Adding to this the fact that the eight initial themes are neither exhaustive nor exclusive, it appeared necessary to perfect a structure for the transversal approach to public spaces.

The structure selected will still remain imperfect with regard to the complexity of the question of public space and the impossibility of responding to it in an exhaustive and absolute manner. Going beyond this assessment, the structure proposed, in the form of an arborescence, aims to be both adaptable and re-adaptable. In fact, its main objectives are legibility and an ability to evolve.

The first level of the arborescence highlights three scales of analysis and action: context, morphology and usage. The context represents the framework within which the space exists, from the adjoining built-up area to the networks and fabric of the city. The morphology corresponds to the physical characteristics and components of the space. 'Usage' deals with all that is immaterial yet nevertheless creates the space and how it is occupied. The meeting point of these three scales is the public space, envisaged transversally. The principle is shown in figure 0.

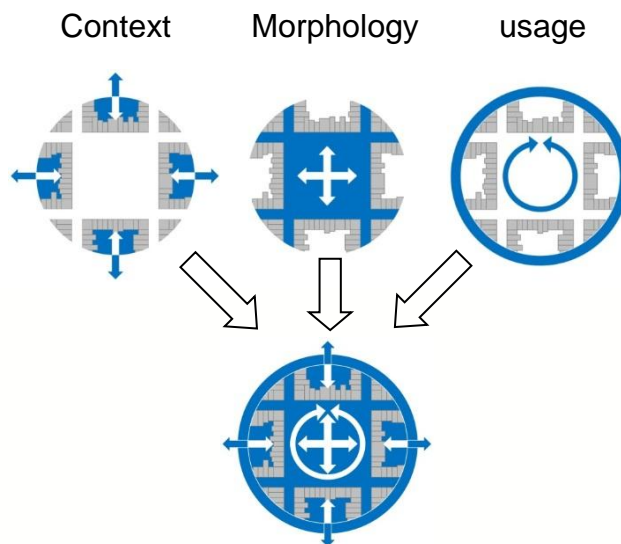


Figure 0: Arborescence first level

Tools

The tools resulting from the DRUPSSuC research program are presented as a set of files, both theoretical and practical. These diverse files implement the transversal arborescence based on the three scales: context, morphology, and usage.

CONTRIBUTION OF THE PROJECT TO A SUSTAINABLE DEVELOPMENT POLICY

In addition of the tools available on the web, some recommendations are a more specific contribution of the project in a context of scientific support to a sustainable development policy:

Defining a global vision of the roles of the city and public spaces : The design and renovation of urban public spaces require the definition of a global vision of the roles which the town and its public spaces are called upon to fulfil. Among these roles, the town as a place for living and the public space as a place for sociability and socialisation for its residents appear to be two essential and inseparably linked roles. At public space level, these fundamental roles are accompanied by a reversal of priorities in terms of mobility by prioritising the movement, stopping and lingering of pedestrians, children, persons of reduced mobility, cyclists and users of public transport. Complementing these priorities, proactive policies aimed at a quantitative and qualitative reduction in motor vehicles circulating and parking in the city must also be developed, both for the movement of persons and goods.



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Defining the networks: Depending on its location, public spaces can contribute to the networks of external spaces dedicated to leisure (parks and other greened spaces), cycle routes and surface public transport routes, which are easily accessible. Planning a public space also contributes to the green and blue ecological networks. These various networks should be defined in advance, at the neighbourhood and city level.

Understanding organisation and dimensioning from basic priorities: The fundamental priority to be attached to pedestrians, children and persons of reduced mobility, and to cyclists and public transport, must be translated into appropriate dimensioning, and the remainder can be allocated to other users and uses. Designing for appropriate dimensioning is also important for certain types of fixtures like trees. In many public spaces, the available area is limited, a further argument in favour of the development of share amenities, whether in residential streets, squares or multifunctional places.

Understanding the choice of components for a sustainable end-result: Whether elements of planting, ground coverings, urban furniture or lighting, each component plays a role in the economic end-result, but also the environmental end-result. In this regard, each element must be dealt with by planning it over its entire lifecycle. In addition to the dimensioning implemented, the choice of plant species must be defined in line with the urban environment in which the plants must survive. Water management in the public space warrants particular attention in order to respect its natural cycle as far as possible. Since permeable ground coverings are rarely appropriate given the activities to be hosted in the public space, this cycle must be met as far as possible by a range of measures favourable to water retention, infiltration and evaporation, in addition to drainage systems.

Acquiring information on the needs of residents and users: Residents are recognised as being the essential players in the sustainable town... Their needs are manifold: in terms of security, mobility, leisure, nature, social interaction, stimulation, belonging... In order for residents to play to the full their role as essential players in the town, it is important that they develop a sense of belonging to the town, to the neighbourhood, to the public spaces and to the community. This sense is founded on symbolic dimensions and dimensions of usage and appropriation. Therefore, the development of the town and its public spaces must stimulate the urban identity.

Interacting with residents and users: Within the context of a study of the development of a public space, acquiring information on the needs of residents and those of users more broadly can take particular forms. Of these, satisfaction surveys and the participative processes constitute two advantageous approaches which are to be encouraged, in coordination with the work of the project designer.

Convergent actions: Although non-exhaustive, the recommendations given above should assist in developing complementary and convergent actions in the fields of land-use planning, urban planning, architecture, mobility and environment, to build towns and public spaces where residents will take pleasure in living, staying, lingering and meeting one another. The implementation of these actions involves social support throughout the process, to ensure that the renovation of public spaces, in neighbourhoods populated by residents in precarious situations in particular, avoids marginalising these populations or prompting them to leave these places for others which are equally sensitive.

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