

Chapter 9

Urban Quality Assessment at the Neighborhood Scale: An Experimental Approach

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ABSTRACT

This chapter describes the approach adopted within the framework of a multi-destination development project; the goal of which is to promote innovative technologies and methods to evaluate the environmental quality of an urban district under construction. This method of analysis has been tested on an area located in the former historic district of the Fiera di Milano, where a series of typical urban functions are inserted within a large public park. The success of the work is represented by indicators (air quality, acoustic, microclimate) that relate to the finished district and that can be compared with average values in the same city. The system may constitute a protocol capable of bringing benefits to local authorities. This type of assessment could be requested of developers/builders for complex projects, resulting in changes to the initial plan if the assessment identifies critical issues related to the design choices (orientation of buildings, green areas, traffic emissions, etc.) with the ultimate goal of creating neighborhoods with better environmental conditions.

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INTRODUCTION

The assessment of urban quality in the European current practice is carried out following legislative requirements or international standards: the Strategic Environmental Assessment (SEA) and the Environmental Impact Assessment (EIA) are the most widespread environmental impact assessment systems at European and Italian level.

SEA is a decision making support process whose main goal is to estimate the environmental effects of plans and programs before their approval (ex-ante), during their implementation and at the end of their period of validity (ex-post). Currently, the SEA is applied in Italy in fields (ex. articles 6 and 7 of Legislative Decree no. 152/2006), such as: water management, telecommunications, tourism, town and country planning or land use. It also supports the planning process at a large scale (at city, regional, national level, etc.).

EIA is referred to the design and authorization of specific projects, even at territorial scale, and aims to assess their environmental impacts (i.e. the changes in status of the environmental components) normally linked to an authorization process.

These evaluations have a static character and do not consider the interaction of several variables and how they react in relation to changes caused by external factors. In particular, in the case of interventions for new developments (greenfield) or re-development (brownfield): construction of new districts, re-functionalization of old industrial buildings, processing of degraded parts of the city, which in the context of environmental assessments are considered interventions at a microscale, no practical tools are available supporting the analysis of the consequences due to design choices and the actions needed accordingly.

As the design activity is affected by the lack of an integrated view (Malatras, Asgari, Baugè, & Irons, 2008), in the current practice the interventions are conducted by specialists and are the sum of specific contributions and not the best result of a real and effective integration of skills. A real integration can only be realized if we can systematize the process of assessing, checking and evaluating the results of the different contributions.

Useful tools are more and more being adopting, especially at regional level, such as atmospheric models, that can now reliably reproduce the spatial distribution of concentrations of air pollutants and therefore are used extensively, for example in the preparation of the annual report on air quality or in the planning and evaluation of limitation measures.

The planning of measures for the remediation of ambient air quality is therefore up to now carried out at the regional scale (e.g. incentives for markets of cleaner technologies) or urban scale (e.g. pollution charge for accessing low emission zones), but little is worked out at the finer scale of a district, also because of the supposed lack

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