

Housing Design in Context: theory, method and applications

by Roderick J. Lawrence

CONTEXT IS USED first and foremost to refer to the composition and structure of language – speech and texts. In this respect it is possible to identify the precise meaning of spoken or written words by analyzing the passages or phrases that precede and follow them. In literature and literary criticism contextual analysis has developed a longstanding policy and practice “of setting a poem or other work in its cultural context”.¹ Within the discipline of philosophy, contextualism is defined as any doctrine that establishes the meaning of terms or emphasizes the importance of the context of enquiry in solving problems.

These definitions of context and contextualism are cited here in order to compare them with their common interpretation by architectural academics and practitioners. In contrast to the above definitions, which explicitly mention cultural dimensions and underline the relativity of meaning, “contextualism”, “contextual compatibility” and “contextual fit” are increasingly used in contemporary architectural publications to refer only to the massing, formal composition and aesthetic treatment of buildings, and their façades in particular. Furthermore, practising architects have been provided with guidelines and pattern books that are meant to serve as “contextual design strategies”. Yet these are only based on the external appearance of buildings, sometimes in relation to the formal composition of the elevations of neighbouring buildings. This paper begins with a summary of this current architectural orthodoxy, in order to show that because it only considers buildings in terms of architectural aesthetics, it is a restrictive interpretation of context and contextualism that ignores cultural, societal and historical dimensions. Furthermore, this paper argues that this interpretation fails to account for the complex nature of architectural and urban design, and it ignores the multiple functions and purposes of buildings that exist in addition to the formal

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*Roderick J. Lawrence,
University of Geneva,
Switzerland.*

composition of façades. Although this orthodoxy is nurtured by formal architectural education and professional debate, this paper argues that key epistemological, philosophical and political principles concerning the design, the meaning and use of buildings can provide the foundation for the reorientation of current debate particularly in relation to housing. The paper addresses terms including context, design, and citizen participation, in order to develop principles for a more comprehensive understanding of architecture in context. These principles are currently being applied in an ongoing study of the qualitative aspects of urban housing, which is briefly presented before the conclusion of the paper.

The aesthetic bias

During the last two decades terms such as “contextual design”, “contextual compatibility” and “contextual fit” have been used by architects and urban designers to describe the relation of new infill buildings on urban sites to their immediate surroundings. It has been widely accepted by academics and practitioners that “contextual design strategies” depend on the composition of building mass and the treatment of façades, or the replication and reinterpretation of the specific architectural features of the elevations of neighbouring buildings. From these viewpoints, buildings are treated primarily from the standpoint of observers, and “contextual design” is interpreted in terms of composition, massing, orders, and ornament, that are related to building materials, colours and visual texture (Brolin, 1980; Smith 1977).

The recently inaugurated extension to the National Gallery in Trafalgar Square, London, is just one of many illustrations of the current architectural debate about “contextualism”. Yet, this case has become a notable one because Charles, Prince of Wales, criticized a proposal for the extension, which he likened to “a carbuncle on the face of a much loved and elegant friend”. Not surprisingly, the architectural profession in Britain have responded to this Royal affront – stated during the banquet of the Royal Institute of British Architects’ in 1984 – with a tedious debate about the merits and pitfalls of the viewpoint of the project architect and the Prince, solely in terms of the aesthetic criteria deemed appropriate for a new extension to the National Gallery. This debate illustrates the current focus of the architectural profession on the appearance of buildings: the profession upholds that it is the task of practitioners (as opposed to all others, including the Prince) to prescribe assemblages of visual effect devoid of a concern for social need, environmental or ecological principles, public or citizen participation in urban affairs, and either energy or economic parameters.

This current architectural orthodoxy has a long history as some authors including Collins (1965) and Macleod (1971) have shown. In general, styling rather than architectural design has dominated archi-

tektural debate since the foundation of the profession as it is known today. The predominant argument is that either:

1. visual continuity is important between buildings and it is a highly valued quality of urban streets (cf. Cullen, 1961; Smith, 1988); or
2. new buildings need not have a degree of replication of neighbouring structures, but they should evoke associational and symbolic references (cf. Venturi, 1966; Venturi, Brown & Izenour, 1972).

Since the 1970s, these arguments have not been limited to the treatment of new buildings, but also increasingly applied to the conservation and restoration of old structures that may present inaccurate interpretations of particular architectural styles. These kinds of arguments underline the preoccupation of the architectural profession with styling. Yet, as Harries, Lipman and Purden (1988) have noted, the intentions and goals of contemporary architects ought to be contrasted with those earlier in this century: Although the partisans of the Modern Movement in architecture did debate the aesthetic and formal composition of new buildings in detail, concurrently, they also challenged static formalism and they sought to formulate and apply new principles of spatial organization, as well as the innovative use of materials, science, and technology. In contrast to this approach, current architectural debate considers aesthetics at the expense of other principles or parameters, and it does not examine precedent in a critical manner. Rather, it reduces precedent in architecture and urban design to a warehouse of aesthetic and formal traits, from which a designer can freely select and duplicate according to past or current fashions, or personal preference.

This paper is not meant to overview the dilemma of styles in architecture, but to address and correct current widespread misunderstandings of contextualism. Therefore, following the above critique it is necessary to stress that according to current architectural stylists, the appearance of buildings is decontextualized to become both acultural and ahistorical as well as devoid of any environmental, economic, political or other dimensions. Unfortunately, this interpretation of architecture has been supported by some studies of people and buildings including urban housing. Some of these contributions will now be briefly discussed.

Misreadings of meanings

Since the 1960s, many studies have evaluated the built environment in relation to the intention of the designer's brief, and the appraisal of the people who use it (see Figure 1). The underlying intent of many studies has been to make the architectural design process explicitly accountable for "the anonymous users". Within this vast field of enquiry some environmental psychologists and architectural re-

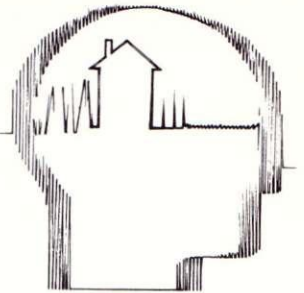


Figure 1. Despite the large volume of studies about people and their residential environments, today there is no consensus about what theoretical frameworks or research methods should be applied.

searchers have studied the built environment solely in terms of aesthetics which, it is claimed, "... clearly falls within the area of environmental psychology that is commonly labelled environmental meaning" (Groat, 1988, p. 216). From this perspective, and to use Groat's own terms, "the study of environmental meaning is about how people perceive, make sense of, feel about, and in general, interpret their environment". It is noteworthy that studies of this kind examine 'how people perceive, make sense of, feel about, and, in general, interpret their environment in terms of aesthetic and formal characteristics' (Groat and Canter, 1979; Kaplan, 1977; Nasar, 1988). Currently, the qualitative characteristics of the immediate surroundings of buildings (such as the propagation of noise and air pollution due to vehicular traffic, or views from within buildings to outdoors as well as overlooking from outside into the interior) are not considered.

Some authors including Bonta (1979) challenge the misconception of many contemporary environmental psychologists and architects who maintain that the meaning, or functional use of buildings can be derived from their formal characteristics. In contrast, Bonta underlines the fundamental principle that meanings do not reside in material objects. Rather, all artefacts including buildings are attributed meanings by people who are part of a specific cultural and societal context. From this perspective, people are not passive agents, nor mere receptors of aesthetic meaning. On the contrary, meanings are constructed socially because they define and are mutually defined by specific cultural, societal and historical contexts. Rather than being innate, both the meanings and uses of buildings are attributed to them by groups and individuals, usually in accordance with sets of rules and conventions that are not unilateral in a specific society at a precise point in time. Consequently, the term housing, for example, is assigned a wide range of images and values: the meaning of housing, like the meaning of home, is variable from person to person, between social groups, across cultures, and during the course of time. Dwelling units are commonly attributed an economic value, an exchange value, an aesthetic value and a use value, whereas in addition to these, a home is usually attributed a sentimental and a symbolic value (Lawrence, 1987). Whereas real estate agents are primarily concerned with the economic and exchange values of residential buildings, homeowners will not only share this concern but also complement it with an interest in aesthetic, use, sentimental and symbolic values that cannot be quantified and compared in monetary terms. All these values are not simply expressed by individuals, but they are acquired, nurtured, transmitted, reinforced, or modified, by interpersonal communication.

The preceding discussion enables us to identify why the design, the meaning and use of any building, and housing units in particular, are quite different when viewed by architects and urban designers



Figure 2. Examples of recent public sector housing constructed by the Municipality of Amsterdam. These dwelling units are not only designed to account for the built environment around them, but the future tenants were also able to participate in the design process and the formulation of a housing allocations policy. (Photo: R. J. Lawrence.)

from “the top down”, and by laypeople from “the bottom up”. From these perspectives it is important to distinguish between the explicit professional know-how of designers (in which theory and practice are distinguishable yet often interrelated) from the tacit know-how of laypeople (in which theory and practice are indistinguishable). These two types of knowledge should be considered in a complementary (as opposed to a competitive) way. Just how this has been achieved has been a moot point for architectural academics and practitioners (Lawrence, 1982).

Any commission to design or renovate a building provides two distinct opportunities for professional designers to account for the point of view of laypeople (see Figure 2). First, by incorporating diverse groups of people in the design and planning processes. Second, the observation and systematic evaluation of a building in use over time enables designers and social scientists to test assumptions

and hypotheses, formulate scenarios and account for projected costs and benefits. One of the great anomalies of the architecture and town planning professions as they are (and have always been) conducted is that buildings or larger projects are not evaluated with any rigour once they have been constructed and occupied. It has been argued elsewhere that this custom must change (Heath, 1984; Lawrence, 1987; Markus et al., 1972). Bearing these arguments in mind, the following sections of this paper will discuss ways of developing a more comprehensive understanding of the design, use and meaning of residential environments which explicitly account for the point-of-view of diverse groups of people.

Cues for a reorientation

In contrast to the preceding contributions a different kind of approach was applied to housing studies in Britain, nurtured by government institutions during the 1960s, with the public funding of architectural and sociological surveys by individuals and private institutions.² The merit of these studies is that the Ministry of Housing recognized the need for a comprehensive approach that accounted for the viewpoints of diverse groups of people including the inhabitants. Beyond a concern about the physical characteristics of dwelling units, site landscaping and services, these publications also addressed the interrelations between the supply and construction of housing (e. g. housing costs, subsidies and rents) and the designers' brief in relation to the wide range of roles and functions of many professionals involved in the design, management and maintenance of housing estates. In this respect, many material and nonphysical circumstances beyond the boundaries of the site and its immediate surroundings were examined.

This approach is explicitly contextual because it endeavours to account for the interrelations between the circumstances that define and are mutually defined by the design, meaning and use of residential environments. Nonetheless, this kind of approach has been absent from most housing surveys published since 1970. Rather, the authors of these surveys have preferred to examine behaviour and preferences largely in relation to the design and layout characteristics of specific housing projects. Their aim has been to formulate design checklists which can be used as recipes for the construction of future projects. These guidelines usually focus on the material characteristics of these projects, and they are frequently isolated from those administrative, economic and political parameters which define the contextual conditions of housing.

It is not the intention of this paper to consider the rationale underlying design guidelines. What is noteworthy, however, is that this approach was adopted by some housing sociologists and architects at the same time that some environmental psychologists examined the meaning of buildings solely in terms of aesthetics. Concurrently, a

growing number of architectural academics and practitioners have discussed “contextual design strategies” only in terms of the external appearance of buildings. Each of these three sets of approaches are reductionist, because they select and isolate features of the specific projects from the other constituents of these buildings which, in turn have been isolated from the broader environmental and societal context of which they are part. Clearly, some principles that enable a reorientation of future contributions ought to be formulated and applied. These principles concern the epistemology and practise of design, the multiple functions and purposes of buildings, and the wide range of costs and benefits of alternative design proposals. Each of these sets of principles will now be discussed.

What is design?

Despite the growth of studies related to design methods and practise in recent decades, architects and urban designers have given little attention to enriching our current understanding of decision-making during the architectural design and urban planning processes. One reason for this may be the clear distinction between one interpretation of design as product (i. e. the study of designed objects including buildings) and a second interpretation of design as process (i. e. a human activity over time). Unfortunately, this common either/or interpretation of design hinders the development of design theories and methods, as noted by Heath (1984) and Lawrence (1987).

In contrast to this dichotomous interpretation, it is suggested that the term design can denote:

1. The ordering of the built environment both spatially and temporally.
2. A process of decision making based on human communication, negotiation and simulation in order to define a shared goal.
3. A scheme of action and plans to achieve defined goals.

These definitions of design encompass the simulation and evaluation of specific projects. In addition, these definitions indicate that design has an explicit political dimension if by politics, we refer to the activities and intentions of people who seek to attain defined goals. In essence, design always occurs in a human context which defines and is mutually defined by a wide range of cultural, societal and individual human factors. Design is intentional, hypothetical and predictive. From this perspective, design is much more complex than the art of aesthetic composition, as the partisans of styling in architecture would have us believe. Indeed, the complexity of design raises critical yet often undebated questions, such as:

1. What parameters are pertinent for a specific design problem, such as a new housing project?
2. Whose values, goals and intentions are to be identified and designed for?

3. How and when will these goals and intentions be achieved?
4. What will be the costs and the benefits of particular design solutions at diverse points in time?

In order to answer these kinds of questions a comprehensive reference model of the multiple functions of buildings should be borne in mind, and the application of simulation techniques during the design process should enable the assessment of alternative projects.

The complexity of building functions: which criteria?

During the last three decades the contributions of a small group of scholars including Cowan (1978), Lawrence (1987) and Markus et al. (1972) have shown that buildings serve multiple functions, which can be synthesized, and related to the interpretation of housing design, in the following terms:

First, any building defines and delimits spaces – outside from inside, public from private – that may include or exclude certain human activities. The way in which the interior of a building is simultaneously separated and linked to its immediate, external surroundings is a fundamental characteristic of architecture.

Second, the building envelope acts as a filter between the enclosed spaces and the external surroundings. An efficient filter will sustain acoustic, illumination and thermal conditions within prescribed ranges of human comfort, which vary between cultures and societies, and have changed during the course of time.

Third, buildings have environmental and economic implications in terms of their initial construction (the use of raw sometimes non-renewable materials, labour and energy) as well as the ongoing use of these resources during the whole period of the occupation and life-span of buildings.

Fourth, buildings have an ecological impact on the biological environment, specifically with respect to the microclimate they create, the consumption of resources for their maintenance, and their effects on the health and well-being of many people, not only those who use them.

Finally, buildings are attributed a range of values and uses which are relative rather than absolute. From this perspective, buildings are endowed with meanings that reflect, transmit and communicate human values. These values can vary from person to person, between social groups, across cultures, and through the course of time.

This multi-dimensional model of buildings underlines the limitations of those appraisals of housing projects which only consider aesthetic and/or functional features of buildings at the expense of other dimensions or criteria. In contrast, the five sets of dimensions ought to be considered in a complementary way. From this perspective, a wide range of simulation techniques are now available for any project to be evaluated in terms of these sets of criteria, prior to on-

site construction. These techniques are not limited to traditional architectural drawings and full-scale models, but also include building science equipment, computer-aided design programmes, small-scale modelling kits, cost-benefit analyses, and environmental impact assessment techniques (Marans and Stokols, 1993). The application of these techniques is a topic of a complex ongoing debate in environmental design evaluation.

Accounting for costs and benefits: whose criteria?

All architectural projects, whether they are new buildings, or changes to existing structures, generate a range of costs and benefits which vary in kind and magnitude according to the type of assessment that is made and the point-of-view of the assessor. In this respect, professional groups, including architects and urban planners, should become aware of the wide range of costs and benefits resulting from specific projects. Nonetheless, the calculation and monitoring of costs and benefits is a fundamental, controversial task, because quantitative and qualitative parameters ought to be accounted for. Moreover, the vested interests of client corporations, institutions, individuals and groups of citizens should be considered. Consequently, laypeople should have the opportunity to participate in the calculation of the costs and benefits of alternative proposals before the implementation of any project. However, there is much evidence today that this still is not, and rarely has been, common practice (see Figure 3). Indeed, citizen participation is still challenged by many architects, urban designers and public administrators.

Following a review of citizen participation in architectural projects and environmental planning (Lawrence, 1982; 1993) it is apparent that few opponents of citizen participation in decision-making considered it appropriate to question whether it was participation per se, or the specific tools and methods used to induce participation, or the (sometimes) conflicting aspirations and goals of different individuals and groups of participants, that could be identified with the success and/or shortcomings of specific participatory planning projects. Fortunately, this limited, indeed biased, critique of citizen participation has been corrected, at least in part, by Castells (1983), Lawrence (1987), Susskind and Elliott (1983) who have identified five sets of prerequisite conditions for citizen participation in community affairs, including architectural projects and land-use planning. These are institutional, technical, social, and political circumstances, as well as the personal characteristics of the participants. These prerequisite conditions define and are mutually defined by the contextual circumstances in which housing design as product and process occurs. Consequently, it is instructive for the housing designer, manager and researcher to identify the nature, meaning and relative importance of contextual circumstances in precise situations.

Figure 3. Too many residential buildings and neighbourhoods have been constructed by professionals who have not enabled lay-people to participate either in the design or the management processes. The critique of architects in this figure indicates that not all public sector tenants in a suburb of Melbourne want to be treated as voiceless beings. (Photo R. J. Lawrence.)



Housing and home in context: a study in Geneva

The preceding sections of this paper have requested a reorientation of architectural research and practice in order to develop a more comprehensive understanding of housing design in context. One way in which this goal can be achieved will now be briefly illustrated by an ongoing study of the qualitative characteristics of rental housing in the Canton of Geneva³. This research comprises two interrelated studies:

1. First, an historical study of the evolving design and use of public, collective and private spaces and facilities in residential quarters built between 1860 and 1960; and a longitudinal study of household size and composition, the local housing stock, and housing tenure during this period. As this study has been published in French and English (Lawrence, 1986; 1990) only brief reference will be made to it in the remainder of this paper. Here it is noteworthy that this study

Table 1. Contextual conditions of housing.

<p>Land use and building regulations Planning and building construction laws; Government fiscal incentives for construction and renovation; Available land for construction; Building stock for renovation; Provision of public amenities and services.</p> <p>Economic and political factors Roles of public - private, and formal - informal sectors; Land and housing ownership and management; Bank interest rates and inflation; Subsidies and taxation for construction and renovation; Cyclical nature of building stock cycle; New construction and renovation costs.</p> <p>Socio-demographic factors Population characteristics by age, gender and nationality; Vocational distribution and employment status of population; Household and personal incomes and debts; Social assistance, poverty and delinquency; Morbidity and mortality rates; Fecundity and natality rates; Marriage and divorce rates; Household formation and structure; Immigration and emigration.</p> <p>Subjective and qualitative factors Availability of services in the neighbourhood and the city; Diversity of housing, services and employment; Choice in local market for house owners and renters; Evolution of 'comforts' and housing standards; Changes in lifestyles and domesticity; Societal values attributed to neighbourhoods and building types. Societal values attributed to housing tenure Residential history of the local population</p>
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has identified many contextual conditions pertinent to housing in Geneva which are summarized in Table 1.

2. Second, an ongoing study of how inhabitants in the Canton of Geneva qualify the constituents of their residential environments and aspects of their daily lives. This study comprises a survey of 525 households from a representative sample supplied by the government statistical office. The survey includes plan analysis of residential buildings and their immediate surroundings; documentation of changes to the layout and furnishing of dwelling units; an interview with directed, semi-directed and open-ended questions about the daily activities of the household, and each respondent, both inside and outside the dwelling unit; his or her residential biography; and questions about the dwelling unit, the residential building, the immediate surroundings, and the neighbourhood and its facilities and services.

The content and structure of this ongoing study warrant consideration, both in relation to those principles stated above and with respect to the initial results being obtained. The main issues include:

1. How does one define and delimit the subject of enquiry?

Initial results from the ongoing study indicate that although the physical constituents of housing units define and delimit space and facilities for the members of households, these material characteristics not only enable shelter and privacy but they also simultaneously define and are defined by the administrative, judicial and political rights and responsibilities of building owners, tenants, neighbours, visitors and strangers (Lawrence, 1990). Consequently, the design, the meaning and use of housing (like any other kind of building) should be examined in relation to sets of material and non-physical factors. These are contextually defined in relation to civil law, building legislation, local administrative policies, as well as cultural and social rules and conventions that are an integral part of daily life. From this perspective, architecture and urban design are inextricable associated with economic, political and other societal factors. Hence, this study challenges recurrent interpretations of housing that isolate one variable (e.g. tenure) while ignoring so many other interrelated factors. Such a bias towards tenure status ignores, for example, the aspirations and values of a large portion of the Swiss population who choose to rent their residence.

2. What are the units of analysis?

This paper has argued that one should not assume that aesthetic dimensions alone determine how or what meanings are attributed to buildings, in general, and housing units, in particular. The ongoing study confirms, for example, that there are no conceptual or physical boundaries that enable a researcher or designer to predefine what housing or home is for citizens of Geneva. It is necessary to formulate and apply a method of enquiry that can account for the multivariate meanings and uses of residential quarters, from the geographical scale of neighbourhoods to that of dwelling units. This is currently being done in the ongoing study.

The initial results indicate that the way respondents qualify the environmental constituents of their dwelling, its site, and its immediate surroundings is different to the way they qualify the residential building in which that dwelling unit is located, as well as the neighbourhood and its services. Moreover, there is no linear relationship between the pertinence and appraisal of environmental constituents at these three different geographical scales. Reasons for this finding are still being examined.

3. How does one account for consensual meanings and uses as well as individual differences?

The interrelations between people and their residential environment can be examined on four interrelated levels which have been presented in more detail elsewhere (Lawrence, 1987). First, there are material and non-physical characteristics of the built environment and daily life which are universal in a society. These include building regulations and some protocols for human behaviour in specific situations.

Second, there are material and non-physical characteristics which are consistently shared by members of a community or a group during a specific period of time, such as prescribed ways of preparing and eating food.

Third, there are other characteristics shared by a few individuals, such as a household, an extended family, or a club, that can only be known and acted upon by those few individuals who are insiders.

Finally, any individual has certain ways of behaving which are idiosyncratic, and it is necessary to account for individual differences that mediate the ways people perceive and construe domesticity.

In order to accommodate these interrelated levels, the ongoing study is currently examining the responses to all sets of questions in relation to:

- age;
- gender;
- nationality;
- profession or occupation;
- housing management issues;
- length of tenancy;
- access to a secondary residence;
- appreciation of environmental problems;
- presence of kith and kin in the same neighbourhood.

The preceding discussion illustrates that the kind of approach currently being applied challenges some assumptions and raises several questions that have not been addressed by the majority of published studies of the qualitative aspects of housing. It is anticipated that many questions will be answered by the application of qualitative and quantitative approaches that explicitly incorporate a temporal perspective.

4. How can a temporal perspective be applied?

A small yet growing number of architectural and urban designers, housing administrators, and social scientists have refuted static interpretations of the relationships between people and their residential environments. Some share a viewpoint expressed by Michelson (1977) that challenges these static, postivistic, empirically based studies of a wide range of subjects, such as residential satisfaction, privacy, security, well-being, "user-needs", and residential mobility.

Roderick J. Lawrence is Master of teaching and Research at the Centre for Human Ecology and Environmental Sciences at the University of Geneva. His qualifications are: Bachelor of Architecture Degree from the University of Adelaide; Master of Letters Degree from the University of Cambridge; Doctorate of Science from the École Polytechnique Fédérale in Lausanne.

Although a temporal perspective is rarely incorporated in contemporary housing studies, it cannot be ignored. To correct this common shortcoming, this study aims to identify and define one or more the following processes:

1. Those design related decisions prior to and during the planning of housing units and residential quarters.
2. The history of the built environment from occupation, including all those modifications to its structure by the owner and/or the tenant.
3. An understanding of the residential biography of the inhabitants in terms of their aspirations and goals and their stage in the life-cycle.

Conclusion

This paper explicitly challenges current architectural research and practice which is supposedly concerned with context and contextualism. It has argued that there is a need to improve the relevance of architecture and urban design in a world that is increasingly complex. This paper also implicitly requests and suggests a redefinition and a reorientation of ongoing architectural debate. In order to achieve that goal it has been argued that the nature, meaning and relative importance of contextual conditions as well as the inter-relations between them, need to be comprehended.

Finally, it is important to underline that professional designers do not act autonomously, but in relation to a wide range of constraints that vary in scope and strength according to the specificity of each design problem, including the time and place in which it occurs. Consequently, those principles presented and briefly illustrated in this paper indicate that the role of the professional designer should be redefined to focus much less on styling and social engineering in order to become a catalyst for creating and monitoring a civic and environmental order that enable both individual freedom and communal consensus to be actively present. In sum, this paper underlines that it is possible for professionals to design with and for people by using a contextual approach that accounts for the multi-dimensional nature of design in conjunction with the aspirations, emotional commitment and values of diverse groups of citizens.

Notes

1. The definitions of context and contextualism presented here are taken from the *Oxford Reference Dictionary* (ed.) J. M. Hawkins, The Clarendon Press, Oxford, 1986, p. 185; as well as the *Oxford English Dictionary*, 1989, p. 821.
2. The precise references to these contributions are: Hole, W. & Attenburrow, J., *Houses and People: A review of user studies at the Building Research Station*. Her Majesty's Stationery Office, London, 1966. *Ministry of Housing and Local Government House*

Planning: A guide to user needs with a check list. Her Majesty's Stationery Office, London, 1968. "Housing: The Home in its setting", in *The Architects' Journal*, 11 september, 1968, pp. 493–554.

3. This study has deliberately examined rental housing because this sector is the dominant form of tenure in Switzerland, generally, and in Geneva, in particular. According to official census returns in 1980, 11% of the housing stock in Geneva was owner-occupied, 3.5% was cooperative tenure and 83% was rental tenure, and these proportions have changed insignificantly since 1960. The reasons for this structure of the housing stock are examined in Lawrence (1986).

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