A Conceptual Framework for Values in the Built Environment

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Along with formal knowledge and technology, individual, professional and societal value systems are fundamental determinants of numerous aspects of the built environment. Despite this importance, there appears to be no well-established, coherent and systematic framework for a discussion of value related issues in environmental analysis.

This paper addresses the problem by considering the fundamental concepts that may be used in a discussion of values and interrelates them to form a conceptual framework. The preliminary discussion is centered around the need for and the importance and effect of value systems in the activity of designing, constructing and using the built environment.

The concepts that form the elements of the framework are based on a process model describing the life-cycle of the built environment. It is claimed that the values held by planners, designers, builders and users have significant effects on this process. Concepts such as value, value judgement and value system are discussed and illustrated in environmental terms through examples. Further discussion concerns the origin and formation of values, their nature and types, codification; the expression and transfer of value judgements, changes in and conflicts between value systems. The paper concludes with suggestions for possible topics of research related to values in the built environment.

Keywords: values, value analysis, built environment, theory.

INTRODUCTION

Among the cultural factors that affect various aspects of the built environment, individual, professional and societal values are probably the most influential. This is so not only because they determine how the built environment is evaluated by users, but also because they form the basic precepts through the use of which the built environment is designed and resources are allocated to it in competition with other socio-economic needs. Despite this importance, there appears to be no well-established, coherent and systematic framework for a discussion of value related issues in the analysis of the built environment. The issue of value has received attention in the behavioural sciences, where "[n]umerous books have been written on the subject, but [even there] often the reader comes away more confused than enlightened because the author has not defined his terms and has used the concept so loosely and broadly that his meaning cannot even be inferred" (Kilby, 1993:31). Some study in values has also been directed at the allocation of resources to "the conservation of environmental assets and the improvement of environmental quality" (Pearce, 1994:1329) in an environmentalist sense, but not from a built-environment studies perspective.

In this paper, an attempt is made to address the problem by considering the fundamental concepts that may be used in a discussion of values and interrelating them to form a conceptual framework. The discussion is based on the place and importance of value related concepts in the life-cycle of the built environment, consisting of the activities of planning, designing, constructing and using. Although the model used appears to be founded on the conception of a professional, industrialized building process, some reflection will reveal how it can, in reality, be applied to many different instances of the building activity.

THE LIFE-CYCLE OF THE BUILT ENVIRONMENT

In a manner similar to that of a majority of human activities, the life-cycle of a building consists of a four stage process: problem formulation, problem solution, implementation and use. This process is cyclic; most building reaches the end of its useful life for some reason or other and, thereby, leads to a repetition of the cycle in the form of renovation, remodeling, re-adaptation of use or new building. The duration of this repetition is variable and often indeterminate.

In formalized professional (i.e. non-

vernacular) building, the stage of problem formulation comprises the planning and programming stage. Here, a misfit is recognized between the present state of the built environment and some ideal conditions that are deemed to be desirable for that environment. The first of the two components that define this misfit, namely the present state of building, can be described in terms of state descriptors which range from simple quantitative variables such as the average thermal conductivity of the building shell or qualitative behavioural descriptors such as spaciousness to complex composite descriptors such as quality. The other component that describes the misfit, namely the conditions that are desirable, express what kind or level of the stated variables are acceptable or ideal. These conditions are obviously bound to value-related statements and they form the subject matter of this paper.

This misfit that underlies a problem may result, on the one hand, from an observed lack or deterioration over time of the conditions defined by the state descriptors. Alternatively, people's conception of the desirable conditions may change over time, thus leading to a subsequent misfit, as would happen, for example, because of changes in fashion or socio-economic status. The definition of the problem may take an explicit form or may be felt implicitly. In today's architectural construction, the problem will be made explicit through a definition in terms of the stated descriptors that make it up and the conditions under which such misfit will be deemed to be resolved. This statement would correspond to an architectural brief or the architectural program.

The next stage, that of problem solution, corresponds to the stage of design in building. In this stage, decisions are made as to how a projected state of building should be so that the misfit between the stated descriptors and the desirable conditions shall no longer exist. Here, the design's outcome will reflect the designer's interpretation of the problem, as well as his own understanding of the desirable conditions that he deems fit the situation.

The period of the actual construction of the built environment is where a major transformation of materials, energy, finance and manpower into the building product takes place, based on the decisions made in design. This is the stage of solution implementation. Being a stage which is characterized by an intense concentration of economic resources, construction will necessarily reflect the interests of the parties concerned with it. What is now considered to be desirable is likely to be quite different from the interests of the owner or the designer.

The stage of use is the longest stage in the life-cycle of the built environment. However, very often the user, who will be involved for the longest time in the life-cycle, has very little to say about its formation until he occupies the building. It may even be the case that he remains unknown until much later.

These four stages of the built environment exist in a medium of environmental and cultural factors with technology, knowledge and value systems being components of the latter. Neither environmental factors, nor knowledge or technology, however, determine on their own or together, the nature of a building problem or the outcome of a design or the quality observed by the users to any fundamental extent. What does determine these, however, are the beliefs that owners, users or professionals hold as to what is desirable and acceptable. It is these beliefs that form the ultimate perceptions that are related to the built environment and how the built environment is evaluated by people is dependent on these beliefs.

VALUES, VALUE JUDGEMENTS AND VALUE SYSTEMS

The question of how preferable conditions are conceived and expressed by professionals involved in the built environment and by people who are users of it is a question related to values. A widely-quoted definition given by Kluckhohn sees a value as a "conception, explicit or implicit, distinctive of an individual or characteristic of a group, of the desirable which influences the selection from available modes, means and ends of action" (quoted in Kilby, 1993:32). This definition stems mainly from work that involves people's personal, social and moral values in affecting their behaviour and has continued in that vein (Rokeach, 1973; Schwartz and Bilsky, 1987 & 1990). Closely related are studies of attitudes in that they determine people's behavioural intentions and actual behaviour (Fishbein & Ajzen, 1975). What is characteristic of values understood in this sense is that the thing valued and the act of valuing it are integrated into the same notion.

There are, on the other hand, conceptions of value in other fields, such as engineering and economics, which are directly related to issues in the built environment. Biddulph (1995), drawing on Gottdiener (1995), discusses, for example, the structure of the relations between use value, exchange value and sign value. Issues of meaning of the built environment (Rapoport, 1990) are also very closely related to values in this sense. The manner in which values are examined in the behavioural sciences is not a convenient approach to considering these concep-

tions. Kilby, working from the behavioural science perspective, states explicitly that he ignores all of the technical meanings of value except the one in behavioural science (1993:31).

Studies of the value of the built environment, however, need a wider conception of value since the different parties involved in the life-cycle of a building do not see the question of value in the same way. Furthermore, it should also be possible to incorporate the notions of worth and measure since the built environment is intimately connected with economic, engineering and artistic phenomena. To do this, we need to introduce interpretations of three concepts into the analysis of value-related questions in the built environment: value, value judgement and value system. These concepts and their interrelation will form a framework in which further discussion may proceed.

In Kluckhohn's definition, we may interpret the "conception of the desirable" as a belief that guides a choice or preference behaviour. This is a judgement on the acceptability of some state or entity. For the built environment, this quality or quantity is one of the various stated descriptors that define its characteristics. Thus, we now define as a *value* any stated descriptor which forms the subject matter of a belief in the correctness or preferability of a choice. In this manner, the act of valuing is dissociated from the value itself. Also, it becomes possible to allow for different people to hold different beliefs of preferability based on the same value.

Values that can affect the nature and outcome of human activities may be classified under general categories. Among these, those that can be called *technical values* are predominant in the formation of the built environment. Three such technical values in this context are reliability, efficiency and compatibility. Reliability is a measure of the probability that a solution will perform its function satisfactorily.

In the built environment, this may be interpreted, for example, to mean the probability that a building will provide enclosure and the necessary meso-environmental conditions. Efficiency concerns the ratio of the utility obtained to the amount of the resources supplied. In the built environment, efficiency measures may be such quantities as amount of useful space or quality obtained per unit of investment, or the efficiency of the heating system provided. Compatibility is a value related to the inverse of the degree of conflict that the solution implemented will create with the users, as well as other beings and entities in the environment. A foremost example of compatibility is safety.

Also affecting the formation and perception of the built environment are *perceptual values*, among which we may mention stimulation, dishabituation and aesthetics. Stimulation is a measure of the extent to which the senses, emotions and thoughts of observers and users are invoked by the solution. In the built environment for example, such stimulation may consist of giving an impression of monumentality or historical continuity, invoking feelings of homely coziness or community, or creating a display of light, shade, reflection and colour.

Dishabituation is a measure of the novelty and the creativity of the solution. In a building this would correspond to the provision of novel spaces through new uses of materials, vistas that people are unaccustomed to and novel uses of space, materials and other architectural elements. Aesthetics comprise qualities that are conveyed by formal aesthetic characteristics such the unity of the design, the refinement in details, the degree of perfection attained in design and construction.

The form and range that these general values take depends on the area to which they are related. In the built environment there are many values ranging from structural parameters to acoustic variables, from material costs to formal aesthetic measures. Several different values fall in the same category: for example, how safe a building is against collapse due to poor design and construction or during earthquakes, safety from household accidents or toxic emissions from building materials, the degree of blockage of sunlight by neighbouring buildings are all instances of compatibility values, which exist simultaneously in building. The diversity in the range of these values is a major problem in studies of the built environment.

Another major problem concerning values appears to be their measurement. Whereas some values can be measured on a binary basis, others are measured categorically or on a continuous scale. Many of the values related to engineering and economic aspects of building are usually measurable as continuous variables. Though some scales of measurement for values have been developed such as the Rokeach (1973) scale of values, for a majority of the behavioural and perceptual values involved in the built environment, there appear to be no established procedures of measurement.

Values are characteristics of the built environment which are used by people in valuing things. By themselves, they do not determine how people are to make their preferences. What people need are beliefs, often expressed as rules of behaviour or decisions, regarding the desirability or acceptability levels or conditions of these values. Re-wording Kluckhohn's defini-

tion to read "beliefs, distinctive of a group of professionals or users, of the desirable conditions which influences their decisions and perceptions" would provide a definition of such a belief. We may call such beliefs *value judgements*.

Examples of value judgements that may be expressed explicitly are specifications regarding the structural requirements of strength and deformability, conditions of thermal comfort or the performance criteria of building materials. Social status criteria such as location of housing or fashion or other preferences guiding choice of style are examples of implicitly held value judgements. Interests, not usually considered to be value components, also have to be considered as value judgements because they affect the manner in which decisions and choices are made.

Depending on the type of measurement that is associated with the corresponding value, value judgements may be prescriptive, selective or of a threshold type. Prescriptive value judgements hold the existence of a specific binary value to be preferable. An example may be judging a sea-view in a house as valuable. Selective judgements dictate a choice among alternatives, whereas threshold-type judgements express levels of acceptability such as maximum total cost or minimum indoor temperature or total observed quality.

Many of the value judgements in a building are explicity stated, as we have in the clauses of professional standards, building codes and other codes of practice. Ordinarily, such clauses are not considered to fall under a behavioural science understanding of value, but they are, nevertheless, totally consistent with the definition of value judgement given above. Other judgements that do not appear in an explicit manner are carried implicitly by professionals in their individual style of practice and design.

Value judgements are formed mainly through the accumulation of successful professional examples and the practice of criticism. They are transferred through the professions by processes of education, professional guidance and control and through society by processes of enculturation. In parallel with the range of cultural phenomena, value judgements vary in time and in space. Whereas judgements related to technical values have a tendency to remain fairly constant, those judgements that concern other values change more often and are variable from group to group and society to society.

The value-related features that characterize specific groups and societies are not the value judgements that they hold regarding individual values, but rather their value systems. A *value system* may be defined as a collection of value judgements held by a person or a group regarding various values involved in a phenomenon. Within a value system, value judgements do not exist independently of each other; there are bound to be interactions and conflicts between the various value judgements, as formulated, for example, by Schwartz & Bilsky (1987). The conflicts that exist between quality judgements and economic interests are very real examples of such conflicts.

Two main problems appear in the formulation of value systems: how to compromise two different value judgements and how to aggregate them. Regarding the first, the value system must contain additional rules that prioritize value judgements and dictate when precedence may take place. In the case of conflicting judgements, the value system must contain ways of resolving this conflict. Regarding the problem of aggregation, it is helpful to find a value to which different values may be converted thus reducing to value analysis to a common basis. Cost is one example of such a value. In a case where such a common value cannot be formulated, various value judgements may be aggregated by weighting them and forming a composite. Stern, Dietz & Kalof (1993: 328), for example, have used such an approach to model the motivation to act on the environment. Value judgements may also be aggregated to form composite values such as quality. Quality in the built environment is a composite value incorporating all other values, both technical and perceptual values. It is a composite value that is continuous and variable throughout the life cycle of a built environment.

SOME VALUE-RELATED ISSUES

Because the value systems held by various groups guide the formation and the use of the built environment, many of the problems that generate debate may be reformulated in the light of value systems. One such issue concerns the conflict that is observed between different groups. For example, there appears to be a constant conflict in the needs and approaches of professionals versus users, in the attitudes of architects versus engineers, in the interests of contractors versus users. A re-analysis of these problems in value-related terms may help not only in understanding but also in resolving these differences.

Another occasion where value systems and some of the problems associated with them become apparent in the built environment is during architectural competitions. Competition documents expressing the problem are prepared by a planning/programming group that also set

performance criteria and acceptable standards. The actual choice of the solution to be implemented, however, is governed by the value system of the jury. It is very easy to foresee that different winners would emerge if different juries were to judge the same entries.

The perennial complaints by designers that documents are not clear, or too restrictive, or have not been taken into consideration by the juries are likely to find grounds for explanation when viewed in a value-related perspective.

Education constitutes one of the main issues of debate in built-environmental discourse. A major portion of the energies that are devoted to education go towards building up the value systems of the student. This effort would be better guided by a consciousness of value systems through an understanding of the values involved, their formation and an examination of past and present value systems held by different groups. Similarly, value-related analysis may be used in the studies of designer attitudes and behaviour. Probably designers make adjustments in their value systems when dealing with specific design solutions, disregarding some judgements or giving preference to others.

CONCLUSIONS

The discussion in this paper has the purpose of providing a framework for considering value related issues in the built environment by suggesting concepts that may be used in the analysis. Some aspects of these concepts have been examined in relation to built-environmental issues.

It may be suggested that further progress in value-related issues can be attained by the following studies:

1 Identifying and specifying values in the built environment and developing operational procedures for their measurement.
2 Examining and documenting value systems of different groups involved in the process of the built environment, taking into account variations in cultural background.
3 Observing and documenting changes in value systems of different groups involved in the process over time and the manner in which these changes take place.
4 Studies of the formation of value systems.
5 Investigations of the transfer of value judgements between generations and groups.
6 Studies of user groups to document their preferences in choices of their buildings and their attitudes to it.

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The Conceptual Framework explicitly discusses this need as well as the need for information that helps users assess the prospects for future net cash inflows to the entity. To make both these assessments, users need information about both.Â The process of capturing for inclusion in the statement of financial position or the statement(s) of financial performance an item that meets the definition of an asset, a liability, equity, income or expenses. Recognition is appropriate if it results in both relevant information about assets, liabilities, equity, income and expenses and a faithful representation of those items, because the aim is to provide information that is useful to investors, lenders and other creditors. The SED Conceptual Framework builds on a framework initially developed during the 1997-98 academic year. That Conceptual Framework was carefully crafted through a process of collaborative deliberation, initiated by the teacher education faculty during their program redesign efforts.Â Harmonious development means facilitating an individual's development in the physical, social, and spiritual realms in addition to the intellectual development. â€œEducar es Redimir,â€ a Spanish phrase meaning â€œto educate is to redeem,â€ communicates both the spiritual nature and global focus of our work in the SED. A Conceptual Framework originates in the financial reporting of accountancy. This is a default setting for practical problems to be tested objectively. Thus, in a Conceptual Framework, fundamental financial issues are dealt with, including â€˜what useful features does the accounting needâ€™, â€˜which basic elements are we dealing with (assets, liabilities, equity, etc.)â€™ and â€˜what variables are needed for the preparation of the financial statementsâ€™. Testing research.Â In addition, the type of research determines whether it is wise and useful to work with a Conceptual Framework. In testing research, the use of a Conceptual Framework is customary. Based on hypotheses, a certain idea can be shown.