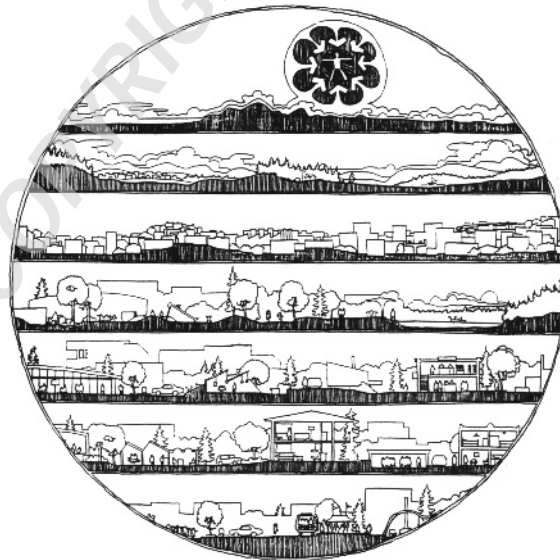P A R T I

Introduction: Definition, Design, and Development of the Built Environment

The Built Environment: Definition and Scope

Tom J. Bartuska

We all build and therefore make important contributions to the built environment. We design and build our lives from one experience to another. Based on those experiences, components of the built environment emerge from human needs, thoughts, and actions. Sometimes the substances of human actions are grand, and we design and plan quality life experiences for ourselves and others. At other times, human actions are shortsighted, creating uncomfortable situations that are less fit for healthy human activities and negatively impact the environments that surround us and with which we are in constant interaction.

There are many reasons to design, plan, and build. Each aspect of the built environment is created to fulfill human purpose. As those purposes and actions are manifold, so too are the reasons to design and build. Where you are sitting while reading this page, you are surrounded by hundreds of human-created objects, all contributing components of your built environment. The words on this page, this book, your chair and desk, the nearby stereo, the cell phone and Internet that connect you to many others throughout the world, even the walls, floor, and ceiling of the space are humanly made or arranged and therefore part of the built environment. These components are constructed by dozens, hundreds, even thousands of material products and production systems. Look further afield and observe the variety of objects and environments out of the window. Buildings, automobiles, roads, bridges, the landscaped areas, parks, and the surrounding city are also part of a human-made or -arranged built environment. Imagine the range and complexity of environmental components, the magnitude of environments beyond your home: cities, highways, and other transport systems, parcels of agricultural land, even domesticated plants and animals—all are to some degree the products of human artifice and should be included.

All people everywhere are surrounded by an abundance of components of the human-created world. It may actually be harder to find environments that are completely outside the built environment, *not* made or arranged, maintained or controlled by people or society, if such still exist on this planet. The sky, weather, free-flowing rivers, and wilderness areas may seem untouched, but none are totally free from human intervention and impacts.

The cumulative results of the changes people have made in their surrounding environment are extensive expressions of past and present cultures. A large percentage of humanity lives in urban metropolitan areas. These massive urban and suburban developments are the largest, most complex human systems ever created. Perhaps less evident but equally extensive are human modi-

Figures 1-1 and 1-2   Reflections of the built environment—outside and within. *The Cloud Gate*/2006/Anish Kapoor, Millennium Park, Chicago, Illinois. Courtesy of the artist and Gladstone Gallery, New York. (Photograph by Jon Bartuska)

fications of the rural regions of the world: farmlands; domestication and genetic alterations of animals and plants; manipulation and management of forests and wildlife; dams built on a multitude of rivers for power, navigation, and flood control. The count is endless. The built environment fills every nook and cranny of the everyday world; it strongly influences human lives concurrent with their creation and modification of it.

To meet their most basic needs, people first created tools, harnessed fire, and developed shelter to survive in the wilderness. Once human survival needs became less uncertain (though that uncertainty still afflicts many even now), people turned their attention beyond survival and continued to modify the environment at an accelerating rate to make their lives safer and more comfortable, productive, and enjoyable. Times have changed, change has accelerated, and populations have exploded, but the basic reasons for creating a built environment remain essentially the same as people design and construct tools and products, modify and manipulate space, build structures, plan and shape landscapes and cities, and manage regions and the Earth.

Certain questions, though, can never be asked too many times, if only to remind us of the power we have to change environmental conditions. Why do humans make such extensive changes to their surroundings? Do we take equally extensive responsibility for the actions or changes involved? How often do we consider the long-term consequences of these actions? Are we concerned enough about the overall effects these actions have upon neighbors or upon the Earth, its finite resources, and its complex ecological systems? What are the limits to human intrusions on natural systems? How can meaning

and significance be created and maintained in the built environment?[1]

Movements to protect or restore the environment have focused somewhat narrowly on natural systems, neglecting the idea that the environments with which people interact most directly are often products of human initiated processes. Collectively, these products and processes of human creation are called the **built environment**. This term is comparatively new, but it describes in one holistic and integrated concept the creative (and not so creative) results of human activities throughout history. The term emerged in the 1980s and came into widespread use in the 1990s.[2] To illustrate, the term built environment is an integral part of a new definition of landscape architecture approved in 2003 by the International Federation of Landscape Architects. Tasks considered to be central to their work include the "planning, design, management, maintenance and monitoring of functional and aesthetic layouts of built environments" and "identifying and developing appropriate solutions regarding the quality and use of the built environment in urban, suburban and rural areas."[3] These are broad goals for a profession long considered to be focused on yards and gardens, yet typical of the recognition by the design disciplines today of the need to be more collaborative and inclusive.[4]

Most of society's knowledge of past civilizations is derived from remnants of the built environment. Similarly, present cultures will be judged in the future by what they have created. Will the results, and the remainders, be profound and expressive of the very best of society or condemned as careless of healthy human-environmental relationships?

The primary purpose of this book is to develop an appreciation and understanding of the objects and places (even the organisms) built and modified by humans, how they are created, and how they affect life on the planet. Increased involvement in and awareness of the design of the built environment should lead to human actions that influence our lives today, and those of our descendants, in a positive, contributing way. Quality tends to encourage more quality, more personal enjoyment, enrichment, productivity, and greater involvement, which in turn should improve quality. Poor quality creates apathy and has negative impacts on human health and well-being.

Every person is immersed in environments, including the built environment. Since the built environment is manifested in physical objects and places, it is relatively easy to observe and study (if not so easy to understand). It is critical for the reader to participate in, to visualize, and to experience real environments. This involvement can more easily be achieved by paying attention, by being aware, by directly experiencing and analyzing the many examples that exist in your local environment, home, and community, as well as throughout the surrounding region, country, and world. This book encourages your active participation and tries to increase your interest in and sensitivity to the wide range of variables in the built environment. The best way to create better environments is to actively engage with those environments, perhaps especially those we shape so intimately and so extensively. Get involved! Your active participation in this exploration will increase your appreciation, enjoyment, and success. And ours!

A working knowledge of the built environment, and of the design and planning professions that help shape it, is vital for all responsible citizens. Such knowledge allows a citizen, the reader of this book, to be aware of, search out, and help create more positive aspects of the built environment. Better understanding enables citizens to be more effective in taking corrective measures to eliminate or change the negative aspects. In general, better environments are created when people work together in cooperative ways. Any puzzle is easier to understand when the pieces are designed to fit together, and when people understand how and where they fit. It is urgent to realize that we are all interdependent participants in the collective building process; we can all effect positive change. Citizens and politicians, bankers and lawyers, engineers and planners, designers and scientists are all indispensable and influential parts in the design, planning, and management of a quality environment for all.

Definition and Scope of the Built Environment

The built environment is certainly pervasive (look again out that window), but both the term and its reach and implications are evasive, more comprehensive, and far-reaching than most of us realize, even though we live in it every day. It may be helpful, then, to start simply and define the built environment by four interrelated characteristics. First, it is extensive; it is *everywhere*; it provides the context for all human endeavors. More specifically, it is *everything* humanly created, modified, or constructed, humanly made, arranged, or maintained. Second, it is the creation of human minds and the result of human purposes; it is intended to serve human needs, wants, and values. Third, much of it is created to help us deal with, and to protect us from, the overall environment, to mediate or change this environment for our comfort and well-being. Last, an obvious but often forgotten characteristic is that every component of the built environment is defined and shaped by context; each and all of the individual elements contribute either positively or negatively to the overall quality of environments both built and natural and to human-environment relationships. These impacts are almost always local, and more and more are experienced at every scale, including global and even planetary.[5]

The simple but inclusive diagram in Figure 1-3 is intended to help visualize and define the built environment by these four interrelated characteristics.

The triangle (Δ) is intentionally used to symbolize the designed/built aspects of this definition. The triangle looks like a structure. It is the most stable geometric form
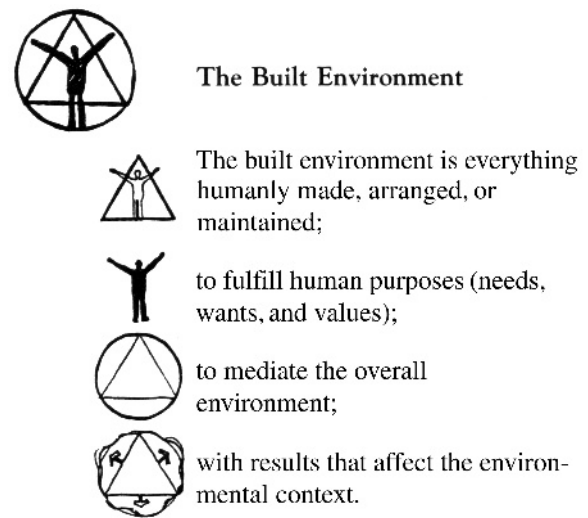

The Built Environment

The built environment is everything humanly made, arranged, or maintained;

to fulfill human purposes (needs, wants, and values);

to mediate the overall environment;

with results that affect the environmental context.

Figure 1-3 Definition of the built environment and its four related characteristics.
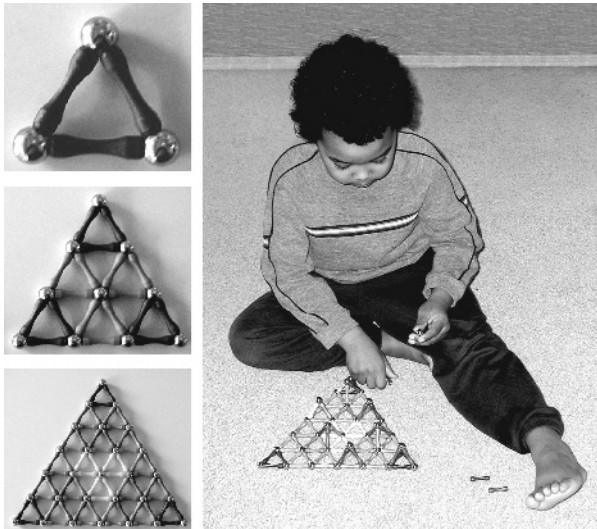
Figure 1-4 Exploring the interesting qualities of the triangle.

and unites three distinct sides and three points. It is used later in this chapter and others to integrate three sides of an issue and/or three points of view.

Components of the Built Environment

Understanding of any subject is advanced when it is organized into sets and subsets illustrating interrelated parts and wholes.[6] The variety and scope of the built environment, its diverse content, and its subtle contexts are organized in this book into seven interrelated components: products, interiors, structures, landscapes, cities, regions, and Earth. The sum of the seven defines the scope of the total built environment.

1. PRODUCTS

Products include materials and commodities generally created to extend the human capacity to perform specific tasks: graphic symbols such as the Western alphabet (letters form words, sentences combine into paragraphs and chapters, such as in this book); tools (pen and pencil, hammer and saw, peace pipe or weapon); materials (bricks and mortar, wood, concrete and steel, polymers and plastics); machines (radios and stereos, televisions and telecommunication systems, calculators and computers, roller skates and automobiles, aircraft and spaceships).

2. INTERIORS

Interior spaces are defined by an arranged grouping of products and generally enclosed within a structure. They are generally created to enhance activities and mediate external factors (living room, workrooms, private rooms, public assembly halls, stadiums, etc.).

3. STRUCTURES
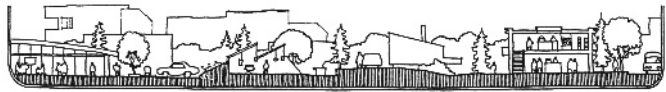
Structures are planned groupings of spaces defined by and constructed of products; generally, related activities are combined into composite structures (housing, schools, office buildings, churches, factories, highways, tunnels, bridges, dams, etc.). Generally, structures have both an internal space and an external form.

4. LANDSCAPES

Landscapes are exterior areas and/or settings for planned groupings of spaces and structures (courtyards, malls, parks; gardens, sites for homes or other structures; farms, countryside, national forests and parks). Landscapes generally combine both natural and built environments.

5. CITIES

Cities are groupings of structures and landscapes of varying sizes and complexities, generally clustered together to define a community for economic, social, cultural, and/or

environmental reasons (subdivisions, neighborhoods, districts, villages, towns, and cities of varying sizes).

6. REGIONS

Regions are groupings of cities and landscapes of various sizes and complexities; they are generally defined by common political, social, economic, and/or environmental characteristics (the surrounding region of cities, counties, or multicounty areas, a state or multistate regions, countries, continents).

7. EARTH

The Earth includes all of the above, the groupings of regions consisting of cities and landscapes—the entire planet, the spectacular, complex, beautiful, still mysterious Earth, which, as human power expands, may be considered the ultimate artifact.

These components can be better understood as connected layers or levels of varying scales interwoven together to form the built environment. These seven layers, this nested set of components, provide the organizing categories for this book, conceptualized in Figure 1-5.

The listing and descriptions of the seven components illustrate a significant overall theme: the interrelationships of each component with each of the others. The content of each component consists of a combination of smaller components. In turn, each component is a part of a larger context and contributes to the next larger component. For example, products can be considered the content for interiors and, for those products, interiors are the context. The **content-component-context** hierarchy is a useful tool in this book for organizing and presenting component parts and the myriad ways seemingly individual elements interrelate to form the whole of the built environment.[7]

In an age of specialization, many have lost sight of the interrelationships among the components of the built environment, including those who actively participate in the creative processes. Complex webs of elemental interrelationships are critical in creating a quality built

environment and require considerable understanding, forethought, and collaborative planning. Too often, designs have been project specific and bounded by disciplines. There is an understandable tendency for product designers to talk primarily to their own colleagues, for engineers to discuss common issues with other engineers, for architects to seek solutions from other architects. But the designs, and the built environment, that emerge from a limited or channeled discourse tend to be fragmented and isolated from the context. Designers need to establish common ties that bind them, and their ideas, together and help integrate content-component-context linkages within the built environment. A lack of integration often results in a fragmented and chaotic environment. We all suffer the consequences.

Reminding the design and planning disciplines and professions of their common base and shared goals is an important objective of this book.[8] The term built environment is presented as a holistic concept formed from the integration of separately designed components. Understanding this is necessary to acknowledge the interdependencies not only among the many components, but also between people, their professions, and areas of study.

Fortunately, increased numbers of designers, both educators and practitioners in various fields, are combining their talents in interdisciplinary teams to strengthen
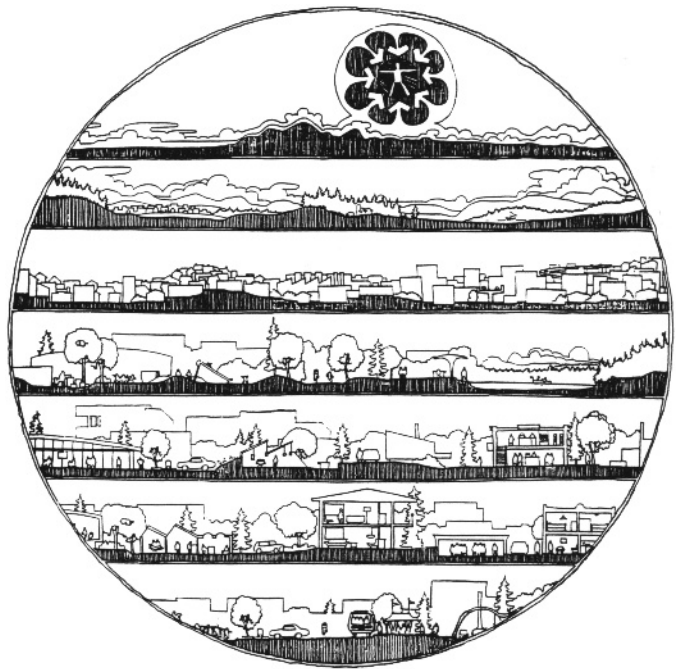

Figure 1-5 The layers of the built environment (the integrative or composite symbol design by S. Recken; the linear graphic formats by J. Singleton).

interrelationships. Societal and governmental pressures are encouraging more integration. National, state, and many local environmental policy acts mandate interdisciplinary analysis and citizen participation in addressing complex problems. Environmental reviews and approval processes mandate more collaboration. There is, however, significant room for continued improvement in education and practice.[9]

The arts and sciences, traditionally organized in a taxonomy of separate disciplines, are sharing their understanding of the environment through renewed awareness of ecology, study of the interactions of organisms (including humans) and their environments. Concurrently, the applied design and planning fields, which have also traditionally been organized into separate disciplines, are combining their talents into a general field of environmental design, often specifically expressed as a focus on the built environment. Robert Reekie, an English planner, architect, and educator, and author of one of the first books on

the built environment, emphasizes this need for integration, participation, and interdisciplinary collaboration:

> [We all should] intelligently participate in the urgent task of abolishing ugliness, dreariness, squalor and also offensiveness from towns, villages and countryside, and in restoring and producing [human] pleasure in the environment, so that life can be lived therein more healthily and happily. . . . One of the points made in this book is that environmental design, now and in the future, is and will be a matter of expert teamwork supported by public appreciation and participation. . . . Integration may well be the key word in good design. Not only does it mean the correct combining of parts into a whole, but also it implies . . . integrity, soundness and honesty.[10]

Why Humans Build

An encompassing definition of the built environment can also provide some understanding of why humans build. There is a clear cause-and-effect relationship between human purpose and the things we create. An eloquent historian and English Prime Minister, Sir Winston Churchill, forcefully expressed this: "We shape our buildings; thereafter they shape us." Another noted historian, Arthur Cortell, conveys this same interdependency by claiming: "Tell me the landscape you grew up in and I will tell you about yourself." To aid in understanding this relationship, it is useful to explore more specifically the nature of human needs, wants, and values.

Human Needs as Manifested in the Built Environment

To survive, all organisms must satisfy certain basic needs. Humans are no exception. Abraham Maslow,[11] a psychologist, outlined a well-known hierarchy of human needs.

The most basic set of needs are physiological—those required for proper functioning of the body and mind. Maslow's idea is that we humans concentrate on the most basic needs (at least to a significant degree) until those needs are met with some degree of certainty and satisfaction. Then we turn our attention to those needs not strictly essential to body function and survival. The same transition occurs at each level of the hierarchy; humans become concerned with psychological needs, such as the need to belong to a group or to achieve self-realization, when they reach some level of provision of physiological

Figures 1-6 and 1-7 "Continuum," 5,000 images expressing the human, environmental, and technological history of the city (B. Brother, 2003, Seattle, Washington).
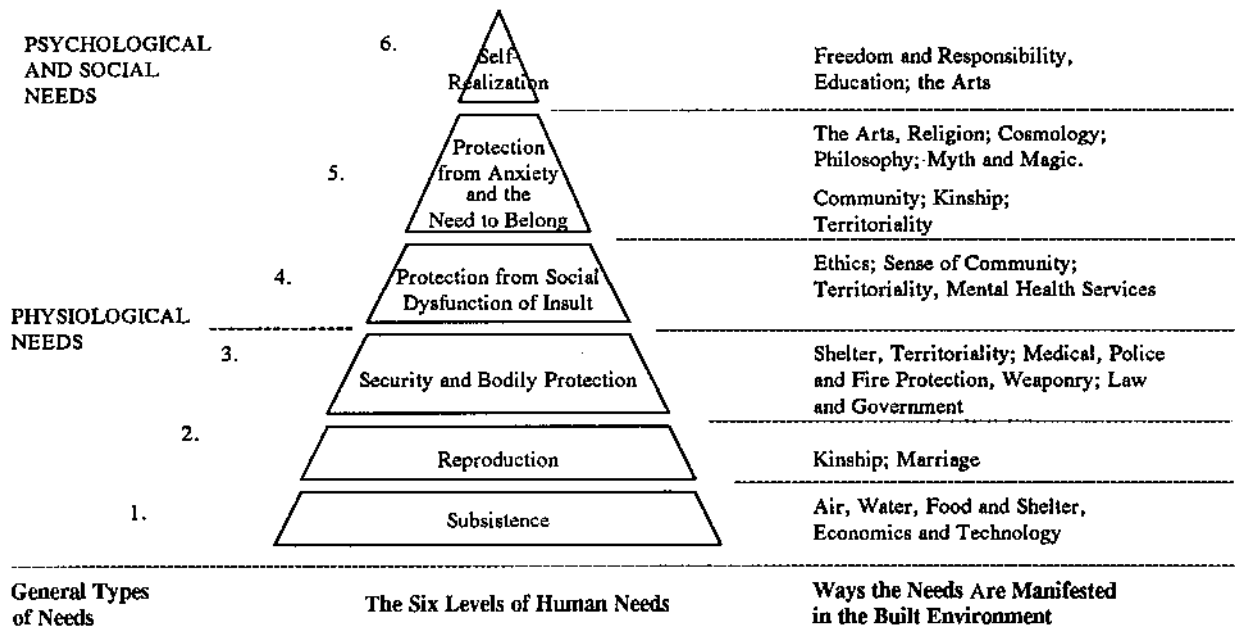
Figure 1-8 Human needs and various ways they are manifested in the built environment.

needs. Maslow's ideas, of course, are only a model of reality, a deliberately simple sketch full of overlaps and uncertainties; humans in all but the worst situations are concerned with several (if not all) of the levels all of the time; concern is a matter of degree and emphasis. But the hierarchy is useful and does underline the fact that elements of the built environment do correspond, often directly, to expressions of human needs and wants. Figure 1-8 identifies the general types of physical and psychological needs (on the left), the hierarchy of six levels of human needs (in the center), and the way these needs are expressed in the built environment (on the right).

Beyond the realm of needs is that of wants, those material goods that are not really needed at any level but that emerge from the desire for self-gratification. For example, we biologically need food and water, but instead of beans and rice we may want gourmet foods. We need clothing but many want expensive designer brands. We need efficient transportation systems, but we may want a car; we may even need a car in the context of where we live, but we want a newer, bigger, or faster car. Market forces, especially energy prices, are pushing people again toward more energy-efficient cars, and designers and producers are responding with gas/electric hybrids.

Comparisons in the needs hierarchy can also help us better understand many of the social differences in the world. It is naive and hypocritical to think that the millions of people in the world suffering from malnutrition and starvation are very concerned with the ego gratifica-tion gained from a louder stereo, designer clothes, or a bigger car.

For every need and want, there must be an adaptive response, an **adaptive design strategy**. The need is satisfied (by every human) through exploitation of the environment, processes that form complex varieties of human-environmental relationships. These relationships are established through the use of various technologies (see Chapters 6 and 16). The design response also requires the use of material and energy resources and the combining of various components into some portion of the built environment. Recognizing that needs are generally more basic than wants helps to establish priorities in order to minimize costs, to reduce the use of finite resources, and to mediate human impacts on the environment.

Since needs are similar and reoccur, many of them based in the biology of the organism, they are quite predictable throughout every life span and in each succeeding generation. The adaptive design responses then become organized, institutionalized, and slow to change. It seems obvious, but is often forgotten, that the most fundamental needs are air, water, and food. One can only live a few minutes without air, a few days without water, and a few weeks without food. These are the fundamental building blocks of life, and they must be protected from harmful substances throughout the world. Part of the food for humans comes from agriculture, a human endeavor. Though still rooted in natural systems, a field of grain is an artifact of the built environment, as is the grain itself, usually a highly developed hybrid far

removed from its origins in a wild plant. All of the other adaptive responses necessary to modern agriculture (equipment, fertilizers, pesticides, etc.) are also modified or created and operated by humans.

To satisfy reproductive needs, every culture develops kinship systems, including the institution of marriage. For bodily protection, we have developed various systems of microenvironmental control: clothing and shelter, the medical professions, even weaponry. To protect ourselves from social dysfunction, we have developed law and politics, and for protection against anxiety, we have developed the varied institutions that deal with art, science, technology, religion, philosophy, etc. Every culture has such institutions in some form; it is the way societies have elaborated these institutions that makes them different. Much of that elaboration is expressed in the various created forms in the built environment.

Human Values as Manifested in the Built Environment

The built environment is an expression not only of human attempts to fulfill personal and societal needs and wants, but also of personal and collective values and aspirations. Human values may be more abstract than needs, but a general understanding of them can enhance our sensitivity to the attitudes people have about the built environment. Value-formed attitudes manifest themselves in the way we relate to our surroundings, the way we solve problems, and consequently are expressed in the intrinsic characteristics of culture. Human values are subjective—they deal with beliefs, opinions, and attitudes. They influence the setting of priorities and are analogous to the value or the price we are willing to pay for something. In objective terms, money can serve as a measure of value, but some objects, concepts, or places may be difficult or impossible to measure in economic terms. How can the value of beauty, quality, freedom, equality, a mountain range, the ocean, or even an ecosystem be assessed objectively? Many attempts have been made to assign prices in such areas, but their value remains subjective and elusive.

Values affect subjective attitudes, and many of these find expression in the built environment. For example, many Americans place a high value on individual rights and freedoms. On the face of it, that should be as good, but it has a range of ramifications for the built environment. The individual house on its own site is an important value to many, but detached structures can create energy inefficiency and sprawl. The same is true of transportation: The United States has developed a very exten-sive auto-oriented lifestyle and a complex of systems to support it. So far, North Americans have been willing to pay the high costs in taxes and energy for these sprawling, auto-driven land use patterns. Such attitudes or values can blind people to consideration of other alternatives; many other countries judge such patterns as wasteful, even as antisocial. Also, in U.S. and Canadian cities, private corporations and commercial interests dominate the cityscape; the tallest buildings dominating contemporary skylines are those owned by banks, insurance companies, and large investment firms. In some cities in other countries, the most prominent features are public spaces, civic structures, or cathedrals.

Values fundamentally affect people's perceptions of the built environment. Values and the ethics emerge from every decision in shaping and reshaping the built environment: decisions on selection of sites and materials, environmental impacts, energy use, and sustainability.[12] Despite this, there is too little conscious effort to deal with human values openly and directly, yet they are at the heart of the design professions' contribution to society.

Lawrence Kohlberg, extending the work of Jean Piaget, gives clarity and utility to the understanding of various human values.[13] Kohlberg constructed a useful scale of six levels of moral development, illustrated in Figure 1-9. Each level is referenced to what are considered conventional norms (on the left). The hierarchy of human values (in the middle) is similar to the human needs scale. The implied attitudes formed are also included (on the right).

In very general terms, human values affect personal philosophy and how we set priorities or solve problems, be they individualistic or based upon popular style, on functionalism, on humanistic ideals, or on a total integration of all concerns. Kohlberg's conventional values represent the general operational level of people in market-based urban/industrial nations. These people live and work in an arena of laws, codes, and economics. Success derives from reality of individual and market conventions. But societal values emerge at the postconventional level and give greater weight to equality and public participation. Though conventional values may lead to individual success, they aren't necessarily as successful in the public realm. Conventional and postconventional values don't need to be in conflict if people can incorporate both into their perspectives and actions. Kohlberg's scale has been criticized as too Western, too male-oriented, and even anticaring and anticommunity. We are not recommending using the scale to measure people, but we present it as a visual
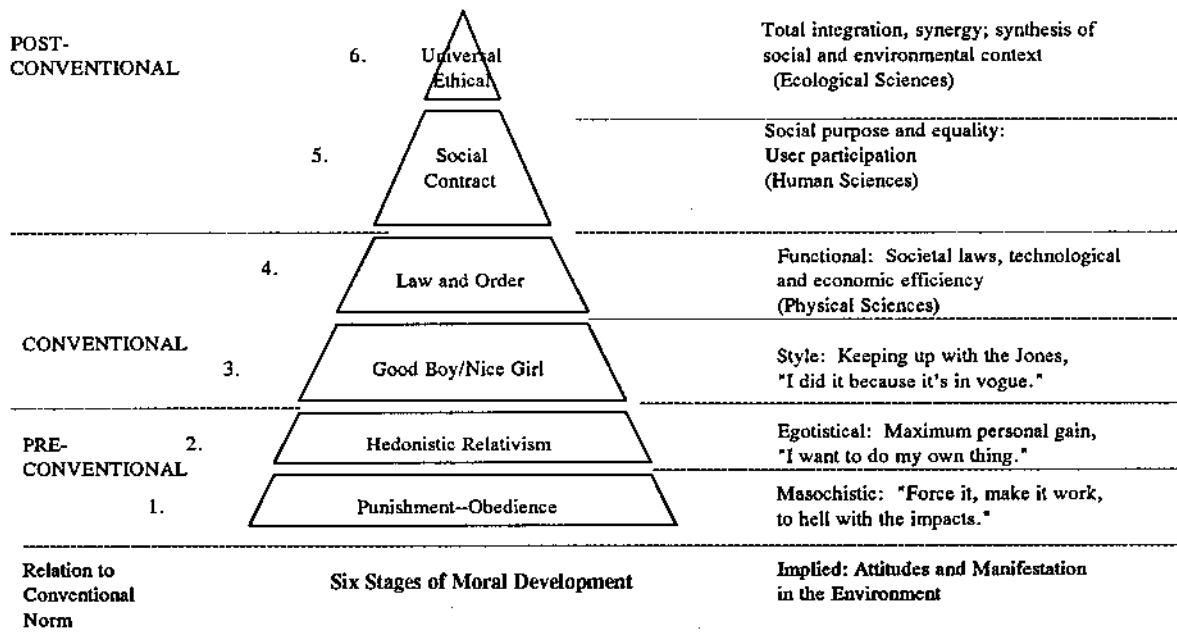
Figure 1-9 Human values (levels of moral development) and various ways they are manifested in the built environment.

tool for people to achieve what they can and should transcend conventional values to help realize a better environment for all. Looking at the visual depiction of this value scale, we may get a better grasp of where people are coming from when ideas are in conflict over issues of design or of life.

Thematic Ideas and Ideals

Social, Environmental, and Technological Issues

The built environment involves a fascinating and challenging set of issues. Human/social and cultural issues deal with why people build. Environmental issues deal with the natural and built context, locally and globally. And finally, technological issues deal with the materials, energy and financial resources, methods, and systems required to establish interrelationships and construct the built environment. All the authors of this book will expand on these triad relationships in various ways in order to create unifying themes throughout this study.

Integrative Design: Issues, Art, and Science

The best design and planning decisions respond to a comprehensive set of issues. Design and planning can be defined as the art and science of creatively resolving issues, of solving inherent conflicts in human–environmental relationships. Creative design and planning allow us to be agents of change rather than victims of it. Interrelationships between issues, science, and art are expressed in the triangle in Figure 1-10. Design and planning occur at all levels and extremes; they can be expressive as pure art or pure science but are usually expressions of both.

Any of the three extremes can lead to designs that are expressive and to objects that at times are favored by the public and the press. But, ideally, integrated design and planning embrace an inclusive design process—the middle of the triangle. Designers and planners of the future need to accept the challenge of attempting to understand and integrate the full range of this complex triad of relationships as they work to create new integrated layers of the built environment.

Design and Planning

Throughout this exploration into the built environment, the terms **design** and **planning** play important and reiterated roles. They are action-oriented words that express human intentions to engage in the creative process. Design is a process to plan and implement an idea in a creative, intentional, and skillful way; planning is the design or formulation of a scheme for making, doing or arranging something [in a skillful way].

Although there are subtle differences between the two terms (design tends to be more specific, planning

more general), for the purpose of this work they are equally important and at times are used interchangeably. Design requires careful planning; planning requires careful design. More specifically, design tends to deal with three-dimensional development of smaller-scale components (products and interiors, structures, and landscapes), whereas planning tends to deal with two-dimensional schemes for larger components (landscapes, cities, and regions). The medium-scaled components tend to use both terms (landscape design and city planning, urban design and planning).

Inclusive, Interdisciplinary, Integrative and Involvement

This collaborative effort sets a model for modern design and planning; it attempts to be inclusive, interdisciplinary, and integrative while encouraging user involvement. The term and definition of the built environment are inclusive: all things designed, planned, and managed by humans. The book is interdisciplinary, written by a variety of authors from all the design and planning disciplines. Throughout the book, integrative concepts weave the content and components of the built environment together. The goal throughout is involvement; greater involvement increases each person's potential to realize his or her objectives; public participation can greatly enhance understanding and thus the quality of the resultant built environment.
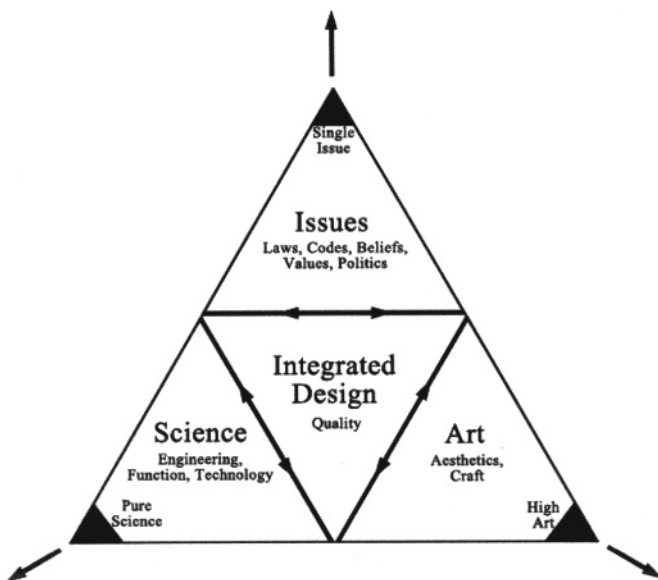

Figure 1-10 Integrative design—analysis and synthesis of issues through science and art (W. McClure).

As emphasized before, aspects of the built environment are everywhere. They are readily accessible through the Internet and discussed daily in various local and national newspapers and radio and television programs. Take advantage of the model provided here; take advantage of all the resources available. People learn more if they are engaged and involved. The more venues the better, because we all retain information in different ways and in different percentages, though some generalizations can be made. Some studies estimate that people retain approximately 10% of what they read, 20% of what they hear, 30% of what they see, 50% of what they see *and* hear, 70% of what they say, and 90% of what they do. So, get involved! Personal participation may be the most critical action the readers of this book can take to improve the quality of the built environment for themselves and for others.

Organization of the Book

To reveal and clarify the complexities and challenges of design of the built environment, the book is organized into four parts.

I. Introduction: Definition, Design, and Development of the Built Environment

The first chapter discusses the purpose, definition, and scope of the built environment. The second chapter establishes four general traditions expressed in the evolution of the built environment and explores the meanings of each development.

II. Central Human-Environmental-Technical Dimensions of a Quality Environment

The first chapter in Part II explores the concept of the word environment, its meaning and its complexity and hierarchical relationships. It also addresses quantitative and qualitative dimensions of the built environment. The next three chapters introduce the importance of designing with human, environmental, and technical aspects of the built environment in mind. Designing with the human aspects of this triad relationship is explored in the second chapter of Part II. How to design with the natural environment is introduced in the third chapter. The importance of technology is explored in the fourth chapter, and how people attempt to compose, order, and give

meaning to the diverse characteristics of their environments is addressed in the final chapter.

III. Design and Planning Components (Levels of Integration) in the Built Environment

The third and main part of the book organizes the built environment into seven components and explores in greater detail the human, environmental, and technical aspects of each. Each component is defined and then explained in terms of the past, present, and future: past precedents (historic developments), present developments including discussion of contemporary design issues, and future design challenges. In particular, Part III examines the important contributions the design and planning professions make in helping to shape the built environment. Although the seven components must be considered as integrated together, individual readers may elect to concentrate on one or more of the following seven components, which include the following:

1. **Products:** Industrial and Product Design
2. **Interiors:** Interiors and Interior Design
3. **Structures:** Architecture, Engineering, and Construction
4. **Landscapes:** Landscape Architecture and Planning
5. **Cities:** Urban Design and Planning
6. **Regions:** Regional Planning and Management
7. **Earth:** Global Policies, Planning, and Management

IV. Challenges: Designing/Planning a Quality and Sustainable Environment for All

Part IV offers a brief concluding perspective, one that hopefully will foster further insight and increase involvement in meeting the challenges raised throughout the book, challenges for a quality and sustainable built environment for all. The overall purpose of this book is to foster interest and involvement in the built environment. It seeks to open a series of doors that invite a more thorough understanding of the fascinating complexity, intricacy, and multilayered structure of the built world. Most chapters conclude with a list of references to encourage further investigation and study. Readers are encouraged to further investigate the concepts and components of the built environment in that literature and within their local communities.

Acknowledgment

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