An Early Summary of "The Timeless Way of Building," 1970*

The fundamental problem of design is to create environments which are real. Something that is real in this sense has no pretensions; it is direct and simple. How can one make cities more real? Cities are not built by just a few people but by millions. How can each person share in this sense of the real? To be able to answer these questions, this paper first defines a whole or real environment, and then explains both how we can see our environment as an integral part of ourselves, and how millions of acts of building can achieve a coherent whole. Every environment is formed from combinatorial systems of images which are defined as pattern languages. The patterns we use today are unwhole and thus cannot be used to create whole environments. It is possible, however, to create pattern languages which are whole and which any person can use to create environments which are themselves whole and real. All builders of the environment can gradually come to share a common pattern language.

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What is the fundamental problem of environmental design? It is to create an environment which is real, utterly real. The Alhambra, a tiny gothic church, an old New England house, an alpine village, an ancient Zen temple—what is it that they have in common? They are beautiful, ordered, harmonious—yes, all these things. But especially, and what strikes to the heart, they are utterly real. By comparison, the works of modern architecture and the developments in modern cities are mostly not real. Does anyone really want to live in a house of glass and steel and concrete unless he is trying to prove he understands modern architecture? For me these buildings are unreal and false, like people who are not fully real.

What is something which is real? It accepts itself; it is true to its own nature; it has no pretensions; it is whole, and that means only that it must be direct and simple. It is the simplest thing in the world to make something which is real; yet it calls on the utmost inner resources to do it. In order to be that simple, I must be able to throw away all superimposed ideas; I must first see myself, and my own feelings, so clearly that I can then enter into a situation outside myself and see that clearly too.

This book started simply as a part of my own struggle to make buildings more real. But then, of course, even if I myself succeed in making a few small places real, that is almost nothing compared with the vastness of our environment as a whole. How will it

ever be possible for the entire environment, all the places we live in, to be entirely real also? Of course, no one person can help the reality of a city by a few individual acts of design; so I began to wonder if there was any way in which this quality of being utterly real could ever find its way into the city at large, and into all the houses, of all the people who live in it.

To make the city real—real for all the people who live there—that is a problem of design also—but not the kind that you can do with a pencil. If it was fully real, the city would be immensely orderly—but not with a visible, straightjacketed order—more with a kind of subterranean order, like the order you can feel in a man who is at peace. How would it be possible for this kind of order to find its way into a city?

I realized right away that the city is not built by a few people who could graciously give this kind of order to it. A city could only become real if all the millions of people in the city, whose acts of building and design create and re-create the city constantly, could all be suffused by this kind of reality; and this, of course, could only happen if each one of them could do what I want to be able to do myself—to make places which are utterly real.

So I saw, then, that the task of giving the city coherence and order, as a whole, meant simply that every single person living in the city—not just a few architects—could share this same sense of the real, and could create it: in short, that any person in society could do what the greatest architects and Zen masters have always dreamed of. Is this impossible? I do not think it is. I began to see that the problem of giving this ability to all the people in society was exactly the same as the problem of giving it to myself; since if I could find a way to give it to myself, then anyone else could have it too.

These two threads run throughout the book. On the one hand, the book is my own effort to find a way of making buildings which are more real. On the other hand, there is the larger question: since my own designs, or anyone else's, are just a few drops in an ocean, what guarantee is there that our environment will ever be real and coherent as a whole?

This second, and larger question is a much greater intellectual challenge than the smaller one. In scientific terms, it is rather like the classic problem of biology: *How are the growth and repair of billions of individual cells in an organism coordinated to make the organism whole at every stage of its development?* For the environment: *How can millions of personal acts of building cooperate in such a way that the environment which they create, though changing constantly, is coherent, whole, and real, as a totality, at every moment of its life?*

This problem cannot be solved until we have answers to three questions:

1. What exactly is an environment which is whole and real? And under what conditions will an environment become whole?

2. How can we see our total environment as a single whole, in which the larger-scale layout of forests and roads, the location of building, the design of houses, and the detailed design of windows in the houses, are all part of one great integrated picture?

3. How can the millions of personal acts of building which create the environment be coordinated to produce a coherent whole, without totalitarian control, in a way that leaves each individual free, and personal?

At present, we do not know how to answer any one of these questions. These are the questions which I try to answer in this book. To answer them, the book has three main parts.

The first part deals with the question of wholeness. It has three sections. First, I define the concept of a "whole" environment as one which allows all the people in it to become whole as persons, by their own efforts. Then I describe the process by which an environment gets formed, and show that every environment, whether whole or unwhole, is always formed from combinatorial systems of images, which I call *pattern languages*. Finally, I show that when the patern languages which the builders of an environment use are private and unwhole, as they are today, it is inevitable that the environment which they generate will be unwhole. To make our environment whole, we must find a way to share our pattern languages, and a way to make them whole.

In the second part of the book, I try to show how we can build a sharable pattern language. First, I define the concept of an explicit pattern, and define a sharable pattern language as an ordered system of explicit patterns. Second, I define such a language as whole when it covers every feature of an environment, and has the

capacity to generate a whole environment; I show that a language can become whole, gradually, by the piecemeal evolution of its individual patterns. Third, I show that any person, not just a designer, who uses a shared pattern language which is whole can use it to create environments which are whole and real.

In the third part of the book I describe the evolutionary process by which all the builders of an environment can gradually come to share a pattern language which is whole. First, I show, in practical terms, how the creation, evolution, and use of a whole pattern language can pass gradually from the design profession into the hands of all members of a society together. Second, I describe the fact that the communal creation and evolution of a shared pattern language is the evolution of a culture: our attempt to evolve a picture of a way of life in which we can be whole. And last, I restate the central change of attitude which all this requires. Design is not merely the creation of individual objects: it is genetic— its purpose to create genetic processes from which a whole environment can grow, just as a plant grows from a seed.

Now comes a more detailed summary, chapter by chapter. I have written one paragraph to summarize each chapter. By reading the paragraphs in order, you can get an idea of the whole book. In the finished book, each paragraph will also appear, in bold type, at the head of its chapter.

PART ONE: WHOLENESS

Section 1: The Concept of a Whole Environment

The book begins with the fundamental idea that any system, whether it is inorganic, a living organism, or a society, can be whole, or less whole. Wholeness is not an extrinsic criterion, but intrinsic: The wholeness of a system, and the process of becoming whole, is different for every system; it is a process of becoming true to its own nature, a kind of self-consistency. A system is whole when it is at one with itself, and when all the forces which emerge from its own nature are in balance. A system which is fully whole is utterly real: the less whole it is, the more unreal.

An environment which is whole is one which allows each person to become whole, by his own efforts. A person can only become whole in an environment which is whole. This follows directly from the previous definition. Since most of the forces which occur in an environment are the ones which people experience inside themselves, and since these forces are not in balance unless people are themselves whole, it follows that an environment is whole only if it allows people to become whole; and that a person cannot become whole, except in an environment which is whole.

Finally, I show that a whole environment will always have the geometry of nature. There will be infinite variety: each part of it, at every level, will be unique; yet, as it is in nature, this variety will be of the most simple kind. Like a forest, or an ocean, it will have far-reaching morphological laws, repeated infinitely many times, but always differently combined—and just as every leaf and every wave are different, every place will be unique.

Section 2: How Is an Environment Formed, in Fact?

Before asking how we can make our environment whole, we must first find out how an environment, in fact, is formed.

I begin with the idea that every environment, large and small, is the three-dimensional embodiment of a culture. It is an arrangement of culturally defined categories in space—where each category defines an activity, or place, or thing, and its associated human behavior. This definition of an environment includes the geometry of the purely physical objects in the environment, but also includes the organization of social institutions—since the activities which define each social institution are themselves always anchored in space. The categories of space inside a house embody the culture of its family; those in a city embody the culture of its people.

The morphology of an environment is given to it by a system of endlessly repeated spatial relationships among its spatial categories: its morphological laws. What makes different environments recognizable as London, Paris, an English house, a Japanese garden, an American gas station, is given to them by their particular collections of morphological laws. And even the unique qualities that any one particular English house has are given to it by the unique interaction of the same morphological laws.

Every environment gets its morphology from millions of personal acts made by its builders; and these acts

are themselves guided, exclusively, by the combination of images which the builders already have in their heads, at the time of the act. This is true at every scale of an environment; it has been true for all environments in history; and it remains true for all environments today.

When we examine these combinatorial systems of images, closely, we find that they are exactly like human languages. Both are systems which allow a person to produce an infinite variety of unique combinations, by means of his own creative act. For this reason, I call these systems *pattern languages*. An ordinary language such as English allows you to create an infinite variety of one-dimensional combinations of words, called sentences. A pattern language allows its users to create an infinite variety of three-dimensional combinations of activities, places, things, and called environments.

The system which allowed a traditional barn builder to build barns was a pattern language. The knowledge which allowed a traditional Japanese farmer to design his own house, the citizen to participate in the creation of a medieval city, the knowledge which created the Georgian terraces and squares of London, all were pattern languages. Today's developers, freeway builders, and city governments, all have their pattern languages. And the same is true for every architect and city planner: Frank Lloyd Wright, Aalto, Le Corbusier, Mies van der Rohe have all created their designs by using pattern languages. And you, yourself, also create your designs by using a pattern language.

Section 3: Why Our Environment Isn't Whole Today

Going back now to the definition of wholeness, it is easy to show that our own environment today is not whole. Although there are one or two corners of modern cities which are whole, there is no city on earth today which is whole as a totality. On the other hand, many traditional environments were whole: entire villages, buildings, and their details. Since traditional environments and today's environment both get their morphology from the pattern languages used by the people who build them, the reason for the difference must lie in the pattern languages.

What is the peculiarity which pattern languages have today that makes our environment unwhole? The answer is: An environment can only become whole if the pattern languages which its builders use are themselves whole, *and this can only happen if these languages are shared,* In today's society, almost all the pattern languages at work are either private, or highly specialized: they are not shared. So long as this state of affairs continues, it is quite impossible for the environment ever to become whole. To prove this, I now define five conditions which must hold in any environment which is to become whole.

1. All the deepest society-wide psychological needs must be taken into account: the inner needs associated with birth, infancy, childhood, teenage years, family life, old age, and death. So long as pattern languages are private, many of these deeper social and psychological needs are not reflected in the environment, because no one private language has responsibility for the whole.

2. Human feelings, climate, engineering, social problems, ecology, transportation, economics, must all be integrated. They can only be integrated if it is possible to express the contribution which each one makes to the environment in comparable terms. So long as they are expressed in specialized terms, neither one man, nor any team, can put them together.

3. Each person needs access to a shared pool of experience. A person whose pattern language is private must rely entirely on his own experience, and cannot possibly know, or foresee, all the different possible kinds of failure that can occur, even in a simple building; so his buildings will inevitably be full of mistakes.

4. One hundred percent of the acts of building which make the environment contribute to its wholeness. Today architects and ecologists, who are perhaps most concerned with wholeness, build less than 5 percent of our environment.

5. The environment must be built by the people who live in it. So long as pattern languages are specialized, great parts of the environment will be built by mass processes. These mass processes must inevitably lead to endless sameness, and will be utterly insensitive to the local variation and uniqueness of each place, each family, each person.

In a traditional society, all five of these conditions are satisfied. That is why the action of the pattern lan-

guages at work in a traditional society made the environment whole. But in today's society, not one of these five conditions is satisfied. So long as the pattern languages which people use stay unwhole and private, these conditions must stay unsatisfied, and the environment must inevitably stay unwhole.

Yet the definition of a whole environment tells us that we cannot become whole in an environment which is not whole. The conclusion seems inescapable. For our own sake, if we ourselves—you and I—want to become whole, we must somehow find a way of sharing our pattern languages so that the environment can be whole again.

PART TWO: A PATTERN LANGUAGE WHICH IS WHOLE

Section 1: A Pattern Language Which Can Be Shared

In this first chapter, I described a sharable language in outline. It is a system of explicit patterns, so organized that all the patterns relevant to any given context can be obtained in the order most appropriate for design, and then combined, by simple combinatory operations, to form a whole.

The most important elements of the language are the patterns themselves, which correspond to the rules of grammar in a natural language. Every pattern is essentially a re-usable design idea for the environment. Anyone who has an idea about the design of the environment, and tries to express his idea in such a way that someone else can reuse it, will find that he has to define three things: The problem which this "idea" solves; the range of spatial arrangements which solve this problem; and the range of contexts in which it makes sense to re-use this "idea." In short, anyone who tries to express a design idea in such a way that someone else can re-use it, will find himself creating something which is a "pattern" exactly like the patterns in traditional pattern languages.

Patterns can be stated equally well for the human details of buildings, the overall layout of a building, ecology, large-scale social aspects of urban planning, regional economics, structural engineering, building construction. In this chapter I include examples of explicit patterns at all these scales: the distribution of subcultures in a region, the layout of major roads, the organization of work groups in an industry, the arrangement of trees at the edge of a forest, the design of a window, the planting of flowers in a garden. A sharable pattern language is organized so that it can include all patterns, at all scales, within a single framework.

Although precise, each pattern is a fluid image which does no violence to the uniqueness of the designs in which it appears. It is the carrier of the spirit and the feeling of a particular kind of spatial order; but it will appear in a slightly different concrete form, every time it appears, according to the way that it is combined with other patterns.

Finally, every pattern is always tentative. It is a current "best guess"; it will change constantly, and improve cumulatively, under the impact of fresh evidence. In this sense, patterns play the same role in environmental design that hypotheses have played in science.

Section 2: The Wholeness of a Pattern Language and the Balance of Individual Patterns

We cannot share our patterns, or improve them cumulatively, without a shared moral principle to judge them by. The only moral principle common to all individual values is the morality of wholeness.

I define a pattern language as whole if its use will generate a whole environment. But a language is not created all at once; and it cannot be made whole at once. It evolves slowly, by a piecemeal process, one pattern at a time. A language can therefore only become whole if we can find a way of making sure that individual patterns always get improved in such a way as to increase the wholeness of the language and of the environments which that language generates.

A pattern contributes to the wholeness of an environment only if that environment contains a system of conflicting forces, and if this pattern is able to bring these forces into balance, without creating new imbalance among other forces. I call such a pattern *balanced*.

The concept of a balanced pattern is directly related to the concept of a whole environment. I have already defined a whole environment as one in which people can become whole. In a whole environment, the

stresses which a person experiences are ones which challenge him, which extend him, and which he can ultimately cope with. An environment is unwhole when a person experiences conflicts which are beyond his capacity. These unresolvable conflicts do not challenge him. They merely reduce his capacity to cope with further conflicts, and so lead to a spiraling deterioration in which he becomes less and less able to cope with conflicts, and less and less able to grow.

It is easy to see that every balanced pattern makes life more full, since it sustains people in their effort to become whole. But since every unresolved system of conflicting forces reduces people's capacity to cope with further stress, the balanced patterns are not merely pleasant; they are essential. An environment cannot be whole unless all of its patterns are balanced, down to the last detail.

The wholeness of a pattern language and the balance of its patterns are subtle questions, but they are questions of fact. Of course, there can be a great variety of different languages which are all whole—as many as there are cultures—and the ability to cope with conflict varies from person to person even within a culture. However, the balance of a pattern and the wholeness of a language do not depend on subjective estimates of what ought to be, or personally stated goals. The ultimate test of any pattern, or any language, is its reality.

Section 3: Using a Pattern Language to Create New Designs

A person with a whole pattern language can create any part of the environment. He can equally well contribute to the planning of a city, design his own house, or remodel a single room, because in each case he knows all the relevant patterns, he knows how to combine them, and he knows how the particular piece he is working on fits into the larger whole. He does not need to be an "expert" to do this. The expertise is in the language. Any normally creative human being can use a pattern language to design an environment which is whole.

The creative power of a pattern language hinges on the ordering of patterns in the language, and on the integrative ability common to any normal human mind.

I show that, for any set of patterns, there is an order which allows you to take the patterns one at a time, and build up a coherent mental image of a design which contains them all.

A language is so organized that a person who has a particular context in mind can obtain all the patterns appropriate to the context from the language, in the order most suitable for combination. This ordered set of patterns, in the proper order, is called the *sublanguage* for that context. Every culture has its own language which defines the total environment for that culture. Every subculture in a culture, and every institution in a culture, has its own sublanguage, a sublanguage of the language for that culture. And every particular building problem, because it has a unique client and a unique context, itself has its own unique sublanguage, again a sublanguage of the language for the subculture it belongs to.

A person who uses the language for a given context will be able to build up a three-dimensional design appropriate to that context, simply by combining the patterns in his mind. The order given by the sublanguage will make the image of the design come together by itself, in the person's mind; he will not even need a pencil, except to put the finished design down on paper.

Each design created by a person who uses a language will be different. It will be different, because each design is created by the interaction of the language with a specific local context. And if two people use the same language, for the same context, the two designs will still be different—because each person will create combinations that are unique to him.

The geometry of a design created from a language which is whole will be like the geometry of nature: a subtle multiplicity of patterns, in which no one pattern stands out more clearly than another, many many patterns balanced against each other, all simultaneously visible and present, yet no one dominant. In a perfectly conceived whole, every single part of the design, at every scale, and every gap between the parts, will be both whole in itself and part of some greater whole.

Finally, although it is true that anyone can use a pattern language to create a whole environment, the language will never create wholeness automatically. The patterns in the sublanguage for a given context

give a rough idea of the relationships which that environment needs in order to be whole; but the sublanguage cannot ever be complete. Every combination of patterns creates new circumstances; so the use of the language always depends, in the end, on your ability to bring the spirit of the patterns into situations for which patterns don't exist—on your intuitive knowledge of the difference between what is real and what is not real. Your ability to know the real, in a given context, may start with the language: but once you know the language, you must always go beyond the language.

PART THREE: EVOLUTION
Section 1: The Evolution of a Society-wide Language Which Is Whole

In the second part of the book, I have described a kind of pattern language which can be shared, and have shown that anyone can use a language. However, so far, this sharable pattern language is still a theoretical construct. Now the question is: What practical steps must be taken, to make this theory work? I have shown that an environment cannot become whole until all its inhabitants are actively involved in the evolution and use of a shared pattern language. How can a whole language evolve? And, above all, how can it evolve in a way which leaves each person free, not deluged by a mass of impersonal information, and not diminished by a system which he did not create?

It requires a dual process, partly public, partly personal. On one hand, individual patterns may be published through normal channels of publication. The full presentation of patterns, the criticism and debate concerning patterns, evidence concerning the validity and testing of patterns, may be collected in archives in various libraries, offices, universities, and other centers.

On the other hand, it is essential that each person feels that his language is personal, and "his." For this reason, the public archives themselves will never be used, directly, to design buildings: They will merely be sources, from which each person creates his own personal language. To make your own pattern language, you create it, literally, for yourself, by re-creating every single pattern in your own personal way. You may draw

upon the archives, or upon someone else's language; but every pattern in your language will be yours, even if someone else invented it, and even if a thousand other people share it, because you create the version which is yours. This is just what happens when we learn our mother tongue. The rules of grammar and meaning are not given to us predigested: we re-create them for ourselves, in our own minds, so that for each of us, our language is both personal and shared.

The beauty of this arrangement is the following. Without any monolithic, totalitarian, or centralized control, the shared personal languages which people have will gradually evolve towards greater and greater wholeness. The good patterns will spread widely; the bad patterns will eventually drop out. The mere existence of a common format for patterns is enough to guarantee widespread sharing, and a slow evolution towards wholeness.

This evolution of a sharable pattern language creates a natural framework for learning and research, since all learning and research which really helps the design of the environment is concerned either with the evolution of individual patterns, or with the process of combining them. As more and more people publish their intuitions, and ideas, in pattern form, the archive languages will gradually contain patterns on all the problems which occur in the environment.

As languages evolve, the barriers between professions will disappear. Each designer who uses a language will have, at his command, all the intuition and design knowledge of ecologists, structural engineers, architects, planners, transportation engineers, economists, sociologists, and psychologists. He will be like a modern Renaissance man.

Finally, the distinction between professional designers and nondesigners will disappear altogether. When all the intuition and knowledge needed to build environments is embodied in a language, every person in society will be able to design any part of the environment. Everyone will be a designer.

An environment will be fully whole when it reaches this last stage. Only then, when each place is designed by the people who know it best, will each place have the proper balance of generic patterns and local uniqueness.

Section 2: A Pattern Language As a Picture of a Way of Life

In early times, the city was an image of the universe—its form a guarantee to each person who lived there of a whole and coherent picture of a way of life. A pattern language too is a coherent picture of a way of life. It shows each person his relationship to the forces which occur in him, his culture, and the nature which surrounds him.

A pattern language is, in short, a picture of a culture. And each personal version of the language is a work of art: a personal effort, by each person, to create a single picture of his culture which fits together and makes sense of life. If all of us, together, try to create such personal languages, and share them, then the evolution of our shared language will be a continuous communal effort, by all of us, to create an integrated picture of a future way of life, in which all of us can, communally, be whole.

And then, at this stage, when each of us has his own personal version of a language which is shared, there is some hope that the fundamental problem of environmental design may be solved. From millions of personal languages which all embody a shared urban order, there is some hope that a shared urban order can emerge. A new urban order—in which not only buildings will be there, but all the architecture of community, no leftover space, every spot useful for life, ordered by common consent, created not by a design elite, but by the harmony of thousands of acts, all working with a common intent.

Section 3: What Then Is Design?

All this requires a fundamental change of attitude.

If you want to make a living flower, you do not build it physically with tweezers, cell by cell; you grow it from the seed. If you want to design a new flower, you will design the seed and let it grow. The seeds of the environment are pattern languages. The only serious way of influencing the environment is through the pattern languages from which it grows. If you want to improve your own ability to design, improve your pattern language. If you want to influence the larger environment, plant your ideas in the pattern languages which other people use. In the end, the only way we can possibly hope to create a whole environment is to join hands, and together create a pattern language which will be the seed of our environment.