



4 / EXAMPLES OF LIFE-CREATING PROCESSES
FROM OUR ERA

When I write down in protocol language what is happening in a living process, as I have done on page 4, it possibly sounds too much like a formula. Obviously, I am not proposing that we go through life repeating this formula each time we do something, like blind idiots, just so that we can claim we are doing “a” living process.

Nevertheless it is true that the processes required to make a living thing are, at some very deep level, always similar in their essentials.

Even in the manufacture of objects, when it is done right, the fundamental process will appear. I show here a contemporary example of the use of process, lasting a few weeks, during which

one of my colleagues and I designed a set of drinking glasses for the Royal Dutch Glass Works of Leerdam, Holland.

Here, in the process of designing a wine-glass, I started with a sketch. Already in this sketch several major centers that were to come were visible. Then we made many turned wooden mockups of the glass, getting the feel of the immensely subtle way that the sensation of the shape changes, even with what look like tiny variations in the curve and profile. Once again, it is living centers that I was judging — this time in relation to my hand as I imagined the glass when it had lemonade or wine in it.



Step 4: Final glasses as made in the Royal Dutch glassworks

EVOLUTION OF A SET OF DRINKING GLASSES: FOUR STEPS SHOWING A LIFE--
CREATING PROCESS EXTENDING OVER A FEW WEEKS



Step 1: My first sketch. The bowl is given its first approximation as a strong shape and as a strong center; at the same time, to support it, several smaller strong centers are delineated.



Step 2: Wooden mockups for the glass turned in our workshops. To distinguish the effect of these different shapes, one may see how the essence of the emotional impact lies in the new centers formed at the bottom, in the lower corner, of each different bowl shape.



Step 3: Rough sample glass blown in the Oakland glass-blowing shop of Dan Reilly. Here color, shape, and ornament were achieved for the first time, giving reality to the emerging centers, allowing us to see them concretely so that we could then improve them.

Step 1. A sketch, in which we first tried to identify the main centers of the glass, and to get its resulting form from the general character of these centers. The centers are visible and strongly marked. They form the core of the design: the center of the bowl, of the foot, of the base of the foot, even the ornaments on the glass. All were already roughly defined at this early stage, and serve to accentuate the centered aspect of the form.

Step 2. A series of wooden forms—about 20—which were turned in my office by my assistant Katalin Bende. Here we tried to find out which of these glasses was most comfortable in the hand, most comfortable in the feeling of its weight, balance, and appearance in three dimensions.

Step 3. A stage in which a single rough glass was blown for us by Dan Reilly in his glass-blowing shop in Oakland. Here we tried to find the glass whose overall feeling, weight, appearance, color, came closest to the impression caught in the wooden molds.

Step 4. A stage in which we made a mold for the glass factory in Leerdam and in which Henk Verweg, the glassblower, blew a number of these glasses to the shapes I asked, using different thickness and layers, and which I then left plain, painted with gold paint, and remade with application of gold leaf (opposite page).

Throughout these steps, I did need to have the *reality* of centers in my mind while I was working. But I did not have to talk to myself in the jargon of centers to be successful. What actually happens in detail, in different projects, is unendingly varied. I hope that will be clear from the examples in this book.

CONSTRUCTION OF A GATEWAY LEADING TO FIVE LOW-COST HOUSES IN MEXICO: ANOTHER SMALL EXAMPLE OF A LIVING PROCESS

In another instance, an ultra-low-cost housing project where people built houses for themselves, with our help. Cost, \$3,500 per house. When we were finished, I encouraged the users to use living processes to build further components of the project, as we had built the houses with them, using living process, paying attention to their feelings, and the way the centers helped support their feelings. They built gates, extensions to the houses, gardens, porches, a barbershop.

One gate they built during this later period is shown below. The families and amateur builders themselves made this rudimentary gateway. Here again, in a modest, even crude form, still the process kept on creating living centers. Crude as it is, we see living centers in the symmetry of the arch, in the ironwork of the gate, in the weight of the big column on the right as a result

of their effort to form a boundary there. Because of these touches, the place has life. It may be crude, dirty, but at least for the time being such is the lot of many people. And it does have undeniable feeling—very different from a developer-built project (for all its mechanical cleanliness), much nicer, much closer to the heart. This came about, I believe, because making the gateway they used, more or less, the following simple sequence, and kept their own wishes and their feelings in mind throughout.

1. *First, after locating the lots and house positions, they chose the POSITION of this gateway.*
2. *It is locally symmetric and leads to the middle of the common land.*
3. *The width and height of the gateway were determined, again making the gate itself symmetrical.*
4. *The family members then decided its char*



One very ordinary gateway to a small housing project I built in Mexicali, Mexico, 1978. The families, laying out and building their own houses, followed an approximation of the fundamental process. This picture shows the gateway to the five houses, twenty years after the houses were built and occupied, still splendid, in a world where people are very poor. The same five families are still living there. The right-hand picture shows a celebration at the inauguration of the project, when it was first occupied.



An interior part of the housing project we built in Mexico

acter, height and width. Students who had worked earlier on the project helped the families to build the gateway.

- 5. Next, columns were built in positions to form a positive space within the gateway itself.*
- 6. Then beams were built over the columns,*

each beam symmetrical in itself, and a roughly symmetrical vault was woven over the entrance and plastered.

- 7. As years went by, the gateway was painted, patched, and modified by the way the families used the place.*

CONSTRUCTION OF AN APARTMENT BUILDING IN DOWNTOWN TOKYO

The description of this process — comprising some fifty steps, for initial planning, conception, building design, and building construction — is given at length on pages 166–73. What is especially interesting, is the fact that the steps, even for such a relatively complex building, are very simple yet lead to such a complex design almost without effort.

- 1. The first step establishes the building walls as along the street — even though they are at an awkward angle.*

2. The next step decides the orientation of the inner courtyard, towards the sun.

3. The third step makes terraces step back inside

4. The fourth fixes the entrance. . .

And so on, for fifty steps, until a simple, but complex arrangement arises from nothing except common sense, and a little bit of structural engineering knowledge.

See the photo on the next page, and the explanation of the unfolding sequence in chapter 5.

A VISION OF A LIVING WORLD



After snow: The Emoto apartment building in Tokyo, Christopher Alexander with Ingrid King, Hajo Neis, Miyoko Tsutsui, 1987. An apartment building generated by sequential application of fifty steps. The building helps to keep the neighborhood alive because the processes used for designing and building were living ones.

A VARIETY OF OTHER PROCESSES, ALL SIMILAR IN FUNDAMENTAL CHARACTER

In yet another instance, I may look at a proposed new bridge we are designing and ask what shape of bridge, what shape of span, what shape of tower, is harmonious with the land-forms and water that it passes over. Analytically, I may well be looking for the center (in the space between the bridge towers) which most enhances the water which the bridge is passing over. Am I thinking about it this way when I do it? Generally not. I try to make the bridge in the best way I can, and I rarely talk to myself explicitly about the centers — unless I feel I am going off the track and need to bring myself back on track.

Another time I may be talking to clients about a room that is to be built, listening to hear what they are really trying to say. That is yet another way I might try to get insight about the living center which they are searching for.

In another case, looking at a new building site for the first time, I drive along, gazing at the trees and the spaces they form, and wondering

what it is about these trees. I could be looking at the trees, thinking about the way they form a structure that is objectively present in the wholeness they help to form, trying to grasp their essence so that I can take new actions which preserve their structure.

Or, if I am painting, I may look at the light on a distant mountain and try, within the painting, to put a patch of color in that place so that the color shines, and lights up the landscape in a way that is reminiscent of the real place's character. Again, if I force myself to be analytical, I can say that I am at that moment trying to construct that flash of light as a center which illuminates and strengthens the center which is the mountain, and that this in turn is being done so as to strengthen the center of that landscape as a whole. But what I am really doing is trying to get that patch of light just right so that the colors work together, concentrating on *that*. That, too, is an instance of a living process.

DESIGN FOR THE INTERIOR COURTYARD OF A CIVIC CENTER
FOR THE CITY OF MOUNTAIN VIEW, CALIFORNIA

The building on the next two pages — a picture of the interior courtyard in a commissioned design for the Civic Center of Mountain View, California — shows an example of a large public project, conceived and designed within the framework of living processes. Again, all the steps needed to reach the design depicted here, depended on having the right sequence: patiently, one step at a time, elements — aspects of the whole — were introduced into the design, until it was complete, always, at each step, asking what fitted best, and what did most to preserve and enhance the structure of the whole that was already there.

Consider the following steps, which occurred during the making of this courtyard.

1. *The courtyard was located, first, by a vision of a dome arising from the place, the dome hovering over the street, and over the courtyard.*
2. *The courtyard was located, next, in more detail and rough position, by relation to the street and to the park, forming a bridge between the two.*
3. *Next the size and height were fixed: first the size — formed by walking out the proper diameter, standing in that place on the land.*
4. *Then the height, 3 stories, worked out partly by reference to the area of office space needed, but more important, worked out as a height, felt by people in the courtyard, hovering above them, and giving dignity to the green dome.*



Interior courtyard of the Mountain View Civic Center; gouache on paper, 60 cm by 90 cm



Note frieze of giant glazed terracotta horses, Christopher Alexander, 1987.

5. *Next the covered arcade, depicted — generous, high and wide, and facing the dome.*
6. *Then the color of the whole, its yellow plastered wall.*
7. *Then the blue horses, a frieze of huge ceramic horses all around, dominating the feeling, subsidiary to the dome*

8. *Then the paving, alternating with grass, worked out on a model, and once again sized by walking in the real place and deciding the 'just-right' size of the bits of lawn and alternating bits of stone and concrete.*

Further details of this building and its courtyard are given on pages 109-11.

CONSTRUCTION OF A VISITORS CENTER IN SOUTHERN ENGLAND

In another instance I built a visitor's center in England (these pages). Every step taken in the building, over a period of many months, defined some subtle condition which was shaped, perfected, and adapted by some further step of observation, mea-

surement, mockup, discussion and construction. The process of designing and constructing that building is described at length in Book 4 (pages 118-29), with discussion of the contracting details in this book (pages 145-47 and 240-41).



Some of the multitude of centers that were created in the West Dean Visitor's Centre, West Sussex. Not only the beautiful windows, their arches, the fan shape of their glazing bars, the splayed reveals, but even the tables in the room, the table legs, the chairs, even the chair backs, all form living centers there — hence the profound harmony of such a scene. This was created by a multitude of living processes over time. Christopher Alexander and John Hewitt.



The multitude of centers that was created in the West Dean visitor's center, Sussex, built in 1996. Not only the beautiful arches and floral spray windows, but even the paths, the stone, the apple trees, posts in the water, the bricks themselves, the steps, all form living centers there — hence the profound harmony of such a scene.

More generally, chapters 3 to 20 contain descriptions of the kinds of professional, institutional, contractual, and construction processes needed to bring such buildings to fruition. Each process is different. The variety of living processes is literally endless and one must learn to nurture this variety. Deep down, it is true that in all these varied cases we really need to be occupied with the system of centers and with the feeling of the whole — always. But there is nothing formula-like about the actual activity itself. Each living process, for each new project, is fresh and new.



From the inside, looking out towards the garden



5 / THE CONTINUOUS FLOW OF CREATION IN A REGION OF THE WORLD

Using the concept of living process, we may make a picture of the whole environment, natural and built, as something continually growing, continually developing, continually in flux, yet maintaining itself in a living state. We are familiar with the human body as something which exists in flow, not as a fixed object. The molecules in my body change constantly. After seven years, all the molecules — except those in certain brain cells — have changed. Much the same is true of a city or a neighborhood in the vision I am depicting. The city is being continuously built and un-built, rebuilt, built, destroyed, modified, built, added-to, improved, destroyed, and rebuilt again.

Imagine this single process, this unfolding process, endlessly repeated, always creating centers, always unfolding the existing wholeness. This process, like some imaginary needle carrying a single thread, but in a thousand hands, dipping down, now sewing a seam at the largest level, now dipping down to some detail, now plunging across the thread to stitch the middle-level seams.

What I offer you is a conception in which all of these acts of repair, design, construction planning — all of them, large or small, local or global — are guided by the fundamental process.

Of course a city is built by millions upon millions of acts, by millions of people. If we try to list all the different man-hours of construction labor that continuously create a city, it comes from millions of different sources. It includes the professional construction labor of the construction companies. It includes the public works department fixing roads. It includes the telephone company placing and replacing telephone cable. It includes agriculture. It includes people working in their gardens. It includes someone painting the fence on the weekend. It includes cleaning the house, sweeping the house, rearranging furniture

inside a house. Thus the environment is built, and rebuilt, from a colossal number of different kinds of operations working together, continuously, to build and rebuild the city.

What we think of as the city, in its life, is the continuous flowing whole which is created and recreated daily by *all* these events together.

If the city becomes alive, it is because these processes governing various small bits and pieces — many of them together — are creating life locally. But because the fundamental process has, at its core, the idea that the life of any center only comes about when this center is making life in some larger center, by definition, then, the coherence spreads upwards and outward, from each small act of construction or repair, to the larger entities that are being nourished and created.

The process can be highly variegated. It can include agriculture, road-building, new construction, people repairing and rebuilding their houses, engineers building bridges. It can include someone buying and installing a lamp in the kitchen. It can include someone who paints a picture and hangs it on the wall. It can include the plowing of the fields and the pruning of the trees. It can include installation of highway signs, industrial development, manufacture of tiles, a thousand people painting their front doors.

This vast and variegated process may contain, as sub-processes, thousands of individual processes of thought, design, art and construction. It can include the making of individual buildings. It can include the process of someone planing a board. It can include someone painting or carving an ornament. It can include the human process by which a group of people sit down together and plan their neighborhood: and the more modest process by which they sit down together to decide which tree to plant at the end of the street. It can include, of course, the rather

big and imposing process of building large and important buildings. It can also include the more delicate process of furnishing an individual office or a study in someone's house. It can include the placing and building of a bench by a fish pond. It can include, too, the act of stocking the pond with fish, and the act of planting a bush beside the pond. It can include, even, pruning the bush, fertilizing it, sweeping away the leaves.

And the process also includes, of course,

what we normally think of as destruction. Cutting down a dead tree, breaking out a piece of abandoned roadway, demolishing a derelict building — all have their place. Clearing and building go forward together to create and maintain the world.

This huge process of order-creation contains millions of strands. Yet it is, in the whole, a single process which can move forward to create and maintain the health and structure of the world.



6 / WIDELY SPREAD LIFE-CREATING PROCESSES

From the material presented in this book, I hope that you may get a glimpse of what is possible, a goal, a target, a hopeful sense of our beautiful and comfortable Earth as it may be in the future, and where we may one day more deeply make our home.

It is true that what I have accomplished is modest. But, for nearly forty years, I have been building, planning, making works of art and craft — all efforts, in one form or another, to test the idea of living process in the real world and to see what can be accomplished by it.

I have tried to build a body of evidence, a body of building where people may see a new spirit, a new way, a new atmosphere.

Above all, I hope I can convey to you that what I call living structure not only is more beautiful, more alive. I hope that I can also convey, and sometimes even demonstrate, what I claimed in Book 1, namely, that this kind of structure supports human life better than other structures. When human beings are part of a world of living structure, they can sometimes reach the best that they are capable of, sometimes become free to be themselves.

People say that what I propose is difficult to do. But I have been doing these things for a long time, trying as hard as I could, often succeeding, though admittedly often failing.

From thirty years of experiments, some described on the following pages, you may see something of what can be accomplished. The hundreds of completed examples in the pages which follow also show *how* it can be done. I show six hundred pages of built examples to convey to you that life-creating processes are general, can cover inconceivably many problems and situations that do occur in different cultures and different circumstances, and still create coherent structure as a result. I hope that you can extrapolate from these few hundred pages and invent thousands of new processes of your own.

In each case of a new process that you yourself initiate, the details — what makes it a living process — are likely to be different. That, too, is part of what I want to demonstrate. It is important to understand that one has constantly to be inventive. Life-creating processes take an endless variety of forms; there is no way we could exhaust the forms of all possible processes, and this book is not a catalogue of possible processes. It is only a tiny sample of a universe of very different processes, all in some measure embodying some combination of the fundamental process repeated many times.

Nevertheless, each chapter does show, matter-of-factly, some of the features which are

likely to follow from a general use of living process. In a sense, the nineteen chapters as a group cover the main features of a world generated by living process. I have focused attention on the particular features which follow when living process is applied to them because, together, they

encompass some — not all — of the more important architectural consequences which come inevitably from repeated use of living process.

The examples show why this “new” character is likely to appear whenever living structure is allowed to unfold.



7 / CONCLUSION

I would ask you to come back, for a moment, to the title of this preface. I have called it LIVING PROCESSES REPEATED TEN MILLION TIMES because I want to say with this title that a living region, even a living village, can be created successfully only if many, many, many of the people in that society cooperate to make it happen — many individuals, acting in their own way, yet acting together.

For this to happen in different places of the Earth, for it to happen in the place where you live, it virtually requires that you, too, whoever you are, must play some role in it. So I want to suggest that you, no matter who you are, no matter what your work in daily life may be, if you have the inclination, choose to make yourself part of this process.

It is my hope that the transformation of the Earth, through millions of acts, will come from people acting individually and in small groups — from all of us, from all our hands, from yours and mine and the next person’s — all over the world. This is not an empty expression of a romantic ideal. It is, in my view, unlikely that a living world can be created in any other way.

Please note: I do not say that the world which I depict OUGHT to exist. What I wish to say is something more fundamental than a moral lecture. I am simply describing, as matter-of-factly as I can, what kind of living world WILL follow from the widespread and repeated use of adaptive living process to unfold the world IF LIVING AND ADAPTIVE PROCESSES ARE REALLY USED.