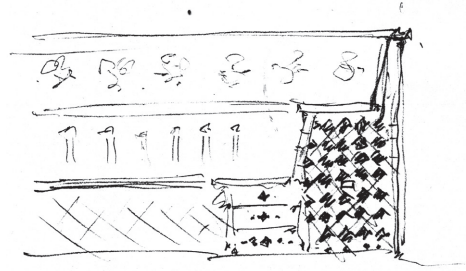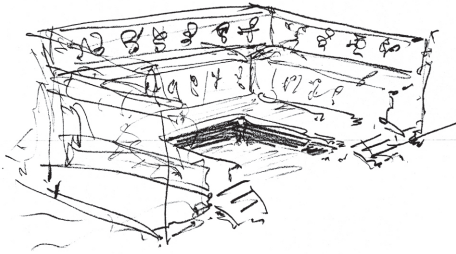# 7 / THE FORT MASON BENCH

My first sketches for the project

In the kind of dynamic process I have in mind, where each act that is taken, is related, in a structure-preserving way to the whole, and takes its place in a long time-line through a long sequence of events, each part, then, is carefully shaped and placed into the whole, making the whole more than it was before.

Here is an instance which shows the use of unfolding through structure-preserving transformations — in a communal building project within a neighborhood. I was asked by Stewart Brand and Irmine Stelzner to give a workshop in which all these ideas of living structure in the context of democracy would be demonstrated. I suggested that we build a bench at Fort Mason, for the City of San Francisco. After my first visit to the place, I had a very rough idea about the bench, and got clear in my mind how to build it. This is reflected in the squarish pen-and-ink sketch shown at the top of the page.

In April we began the real work of building the bench. There were about twenty student ap-prentices in the class. We had three-hundred concrete blocks on site, and used them, first, to make a simulation, and then to build the final bench itself.

From the very start, the fundamental process with its emphasis on centers and structure-preserving transformations, dominated every phase of the process.

Step 1. Mockup of the overall shape. I used the blocks to have people sitting around, using their intuitive common sense to find a format which was comfortable for everyone. It became clear that the sharp U-shape I had drawn was much too extreme and that the bench needed a concave format. We tried it and it was most comfortable. When we had about twenty people sitting to-gether on the bench it seemed that a much softer feeling was the one which felt most comfortable for the people sitting there. I directed people to move blocks, keep sitting on them, until the overall shape was comfortable. It was a gentle concave C-form. See photo on page 356.
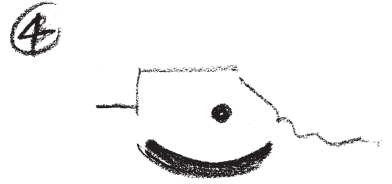

Step 1: Getting the concave shape of the bench

Step 2: Modifying the shape to fit the site

Step 3: Detailed fitting to the site

Step 4: Introducing a second element within the concavity

Step 2. Main curve of the bench. This concave shape then had to be fitted to the site. The site itself had the following features. First, a beautiful view of Alcatraz Island, which dominates one's feeling there. Second, a very strangely shaped railing, along the rocks, with a peculiar and awkward asymmetry. When we began to examine the way that a group of people wanted to place themselves in relation to these existing centers, we found our gently curving bench needed to be roughly oriented towards the island of Alcatraz, but slightly more pointing towards the open sea See photo on this page.

Step 3. Adaptation to the shape of the railing. Now came the hardest part. The peculiar shape of the existing iron railing, produced a very complex asymmetrical system of centers. It was extremely hard to find a way of making the bench itself feel like a single center by being symmetrical and not weird — and also to respect the complex syncopated rhythm of centers produced by the railing. Many complicated solutions were tried and failed. Finally, a very simple one turned out to be the best. The "best" was the one which left the situation most alone. See photo on page 354.

Step 4. An additional center in the form of a small table. Once this shape was clearly established, there was one further step to take. The bench, by itself had a relationship to Alcatraz. But there was


Fort Mason Bench, San Francisco, Placing dry-stacked concrete blocks to get the right arrangement of the bench. Christopher Alexander and students, 1988.

Last look at mockups, deciding the right shape and size and height, before starting on the work of building the actual bench. Fort Mason, San Francisco, 1985.

After the mockup showed us where to place the bench, we used the same blocks to build the armature.
Here, people are beginning to pour concrete into the first course of blocks.
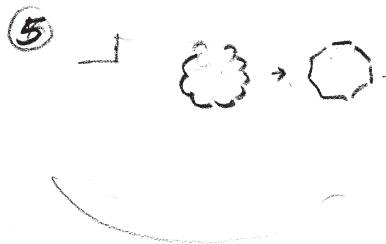
Step 5: The shape of the table is chosen to leave the view alone as much as possible.
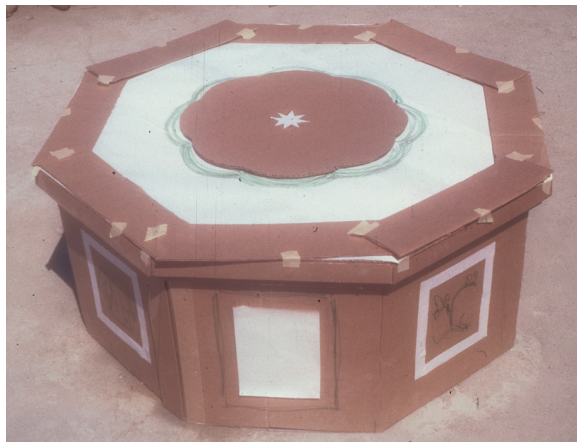
Detailed cardboard mockup of the octagonal table made by Christopher Alexander and students, San Francisco, 1988.

a feeling that people sitting on it, were too much oriented outward, a view-like thing, too much towards the water, towards the island. Since a group had a desire to let people talk to one another, what could be done? One of the students proposed another structure facing the bench. We tried many versions of it. In some way they were better, because they created the possibility of a dialogue among people sitting on the bench, but these solutions disturbed the system of centers which we had already created. Then we found that a small table-like structure (above), placed in a particular position off-center, left the relationship with Alcatraz and with the railing intact — but also helped (with the bench) to focus the possibility of people sitting opposite each other.

This human process, when carefully controlled and disciplined by continuous attention to the fifteen transformations and the fifteen properties, then gives rise to the simple but well-adapted form shown on the right.

Step 5. Detailed shape of the table. And now once again we had to find a shape for this structure. At first I tried a round table with a scalloped edge (diagram on page 355). But it seemed too complicated and too sweet. I tried different shapes for hours, and thought about this shape for a whole day. Finally, when I asked myself which of these shapes left the beauty of the open water, and of the great Bay, most definitely *alone*, the answer was clear. The pure octagonal table did the most to leave everything in peace (visible on page 357). Although it seems to be a stronger and more definite structure, it is the one which interferes least with the existing structure of the water, and the Bay, and the railing and the bench.

In every case, the search for the latent centers in the place, and the effort to take the next step which created new centers that were most structure-enhancing, was done as the most likely way to intensify the depth and feeling of the bench.

8 / DOING WORK TOGETHER

When people work together, in small groups, how then does the unfolding process work?

Or, stated another way: How is it possible to have cooperative, communal, decision-making of the kind that is needed to deal with decisions in a town, or in a neighborhood, or in a public building? Indeed, the same question arises even for the smallest thing. How should a group of people work together, successfully, to make anything together, even a fountain or a bench?

In Books 1 and 2, I have spent a good deal of energy explaining that that degree of life is rather objective, that people deep down have similar instincts, that the decision about which way to build a building, place a window so that it has the most life, is an objective one!

The beautiful forms that arose from the process of placing dry-stacked concrete blocks to get the right arrangement of the bench. The steps were put in spontaneously, late in the game, to give access to the upper tier of seats.

That is all well and good. But the thesis comes to the test in dramatic fashion as soon as we have a *group* of people designing something together. What happens when we face the classic problem of the elephant designed by a committee? Each person has an opinion. No one quite knows where to start. They want to express themselves; they want to express their own individual ideas; yet they want to work together. How to curb the bounds of individualism, when to give in, when to insist? It is extremely hard.

People who have done it know just how hard it is. Questions! Problems! The process does not easily hang together.

If, for example, we are to place a bench in a neighborhood, and say there are quite a number of people involved in it. And suppose, for the sake of example, that two alternatives are placed before us. Choice is (in theory) the classic tool of democracy. It is open-ended. It is democratic. So let us — together, perhaps thirty or forty of us — try to decide which of the two benches is better for this place, bench A or bench B.

The problem is that bench A and bench B differ in so many different ways, on so many di-mensions. One bench is wood, one bench is metal. One is blue, or is black; one has a more comfortable profile than the other does, perhaps A is comfortable, B is more formal. On the other hand, A, which is more comfortable, is perhaps made with a shape not entirely pleasing to the eye; while B, less comfortable to sit on, is very delightful in its shape.

So as we, the thirty of us who want to decide this thing, set out to work together, how can we decide whether A or B is better? Of course we cannot. Inevitably some (paying attention to comfort) will choose A; others (paying attention to shape) choose B. Those who pay attention to color may be attracted or repelled in different ways by blue, and black. The material again! The difference between metal and wood will have different adherents. In this maelstrom, how can we ever get through it to a happy resolution? The difficulty comes from the size and extent of the decisions we are trying to agree on. Choice among alternatives, as a strategy, does not work realistically.

The answer, the solution to the difficulty, lies in the use of the fundamental process, ap-

The finished bench. Fort Mason, San Francisco, 1985

plied over and again, *focusing on very limited, tiny decisions taken one at a time, in sequence*. Why is this critical, and why is this different? Because when we lead the group consensus through very small steps, and try to reach decisions about these steps one by one, one at a time, the steps can be made so small and so particular that for each step the thirty of us will find it possible to succeed in deciding among the possibilities, what is best, by checking versions, testing them, trying things out.

For example, should the bench face the view or not? Well, we just try this one question by itself, until we get the answer clear. Our decision will depend on the place. But if it is a particular place, then we ask ourselves, all thirty of us, "In this place, is it better when the bench faces the view, or better when it does not?" Because this is an extremely limited subject, not now overlaid with complex extraneous questions, nor very dependent either on opinion, it turns out that we

can usually reach some kind of agreement very fast. We only need to answer this one limited question, Will the bench have more life if it faces the view in this place, or not?

This question, we can *settle*. We are capable of settling it. Together, we can take this question and reach a conclusion, usually (in my experience), rather fast, especially if the questions are asked in the right sequence of unfolding (see Book 2, chapter 13). We can then answer other limited questions, until in the end we generate a complex whole, communally agreed upon, without ever having to make a big choice between imponderables.

Even when the whole is as big as a building, or even a portion of a neighborhood, the complex of answers optimizing a group consensus can be arrived at by arranging the whole evolution of the form, as a sequence of smaller questions. Provided the smaller questions are taken in the right order, step by step, resolving

The finished bench, San Francisco, 1985. The very unexpected form of the bench which came into existence is visible, and one sees (or senses) how the whole of it is a result of the structure-preserving transformations in the fundamental process.

one step at a time, in a manageable way, we shall be able to reach agreement even as a group. But the end result of these limited agreements will not be a single choice among a half dozen alternatives (inevitably a phony choice). It will be a unique thing which has been generated, truthfully, as a product of twenty or fifty or a hundred true answers to unique questions — thus mathematically, a choice among 2^{50} alternatives — but generated by asking questions in a very particular order. To these questions, asked in the right order, successful group answers could be given because the questions were small enough and reasonable enough, not arbitrary, so that people could discuss them, feel them the same way, settle them, move on to the next, and thus gradually approach consensus on the emergent whole.

9 / SOME MORPHOLOGICAL INVARIANTS THAT WILL TYPICALLY BE GENERATED BY THE FUNDAMENTAL PROCESS IN AN EVOLVING NEIGHBORHOOD

I hope the range of examples in this chapter has persuaded you that the fundamental process — when it goes step by step, making transformations which enhance and preserve the structure of the land — works in practice.

Repeated use of the fundamental process, dynamically creating and recreating a new community, will generate layouts in which the following geometric features are typically present. Streets are likely to be irregular, reflecting adaptive growth, not pre-planned layout. Streets will follow lines of least effort on con-