

CHAPTER 21

SHAPING ONE BUILDING

From a sequence of these individual patterns, whole buildings with the character of nature will form themselves within your thoughts, as easily as sentences.







We are ready, now, to see just how a sequence of patterns can create a building in our minds.

It happens with surprising ease. The building almost "makes itself," just as a sentence seems to when we speak.

And it can happen as easily within an ordinary person's mind, or in a builder's mind. Everyone, builder or not, can do this for himself, to make a building live

Assume, to start with, that we have a language for a house.

Look at the patterns in the order they come in, one at a time.

Add nothing, except just what the patterns demand.

Slowly, you will find that an image of a house is growing in your mind.

Here are the rough notes I wrote down during the week it took to design a small cottage in this way.

I decided to build a small cottage/workshop at the back of our office. A place large enough to live in; a place where guests might stay; and a place where someone could live and work, as a workshop; and a place we could rent to a friend, when it wasn't occupied by one of us.

There is a large house in front; another cottage behind; an old garage; outside stairs leading to the upstairs of the large house. I decided that it would not be practical

THE WAY

to spend more than about \$3000 for materials. At \$8 per square foot for materials (I knew that we would build it ourselves so labor was to be free), we could build a cottage of 400 square feet.

Here is the language I chose for the building:

WORK COMMUNITY
THE FAMILY
BUILDING COMPLEX
CIRCULATION REALMS
NUMBER OF STORIES
HOUSE FOR ONE PERSON
SOUTH FACING OUTDOORS
WINGS OF LIGHT
CONNECTED BUILDINGS
POSITIVE OUTDOOR SPACE
SITE REPAIR
MAIN ENTRANCE
ENTRANCE TRANSITION
CASCADE OF ROOFS
ROOF GARDEN
SHELTERING ROOF
ARCADE
INTIMACY GRADIENT
ENTRANCE ROOM
STAIRCASE AS A STAGE
ZEN VIEW
TAPESTRY OF LIGHT AND DARK
FARMHOUSE KITCHEN
BATHING ROOM
HOME WORKSHOP

SHAPING ONE BUILDING

LIGHT ON TWO SIDES OF EVERY ROOM
BUILDING EDGE
SUNNY PLACE
OUTDOOR ROOM
CONNECTION TO THE EARTH
TREE PLACES
ALCOVES
WINDOW PLACE
THE FIRE
BED ALCOVE
THICK WALLS
OPEN SHELVES
CEILING HEIGHT VARIETY

The first thing was repair.

The existing cottage is disconnected. The garage is a bit derelict; the trees and grass at the very back need pruning and are very overgrown. Above all, the people who live upstairs in the main house, and at the back, have no overall sense of connection to one another. Also the most beautiful part of the garden—which faces south, and is under the locust tree, is unused, because there is nothing near it or around it, and no paths which naturally go to and fro to make it naturally usable.

To solve all these problems, I tried, first of all, to make a building which created SOUTH FACING OUTDOORS and POSITIVE OUTDOOR SPACE.

THE WAY

For SOUTH FACING OUTDOORS, I imagine a nice big terrace, out towards the back of the main house, in the sun. If we put it to the south and west of the cottage, it will be in the other opening in the trees, and get plenty of sun: a good place to work, make things; perhaps we can put a workbench out there in good weather; and a place for a couple of chairs and a table, where we can sit and have a drink. We need to spend a day on the site, watching the sun, to identify the exact places where sun falls (SUNNY PLACE); it is tricky, because the sun comes through the trees, only in a few special places, and we must be very accurate about placing them.

All this puts the cottage as far to the north as possible. To form POSITIVE OUTDOOR SPACE, I also place the building well back into the site, so that it leaves a well-formed space between the garage and the trees in front. In that position, there is space for a cottage, running north-south, up to about 13 feet wide, and up to about 25 feet long. As far as connections with the existing cottage are concerned (BUILDING COMPLEX, CONNECTED BUILDINGS), there is no bathroom in the existing cottage, so it will be a great help if we build a bathroom which the two cottages share. There is a natural place for that, right between the two buildings.

Next NUMBER OF STORIES, CASCADE OF ROOFS, SHELTERING ROOF, ROOF GARDEN *give me the overall shape of the building.*

Mostly it will be a one-story building; but we want to try the two-story structure, and it would be nice to have

SHAPING ONE BUILDING

a sleeping loft upstairs. This two-story part of the thing should naturally be to the north end, so that it forms a ROOF GARDEN to the south. Given its position, it makes sense to think of this sleeping loft as about 8 x 13, opening out to a flat roof to the south, over the one-story part of the cottage. This goes some way towards creating the CASCADE OF ROOFS. So that our neighbor to the north doesn't have a high wall right next to his garden, it makes sense to imagine lower, alcove roofs falling off to the north. And the same somewhere to the south perhaps, and the same again where the entrance is, there might be an entrance porch. This will make a number of lower roofs, low enough to touch, around the edge of the building (SHELTERING ROOF and CASCADE OF ROOFS).

Within this overall shape, CIRCULATION REALMS and WORK COMMUNITY tell me how to complete the site.

CIRCULATION REALMS is not good; and the connection with the main house needed by WORK COMMUNITY isn't good enough. The main trouble is this. There are two paths to the back: one up the driveway; the other through dark bushes. The one up the driveway is OK, but not a direct connection; and the main house's back porch goes out sideways to it; not direct. To make the connection clear, and the circulation, we will open up the back of the back porch, so it connects directly to the terrace of the cottage. It will only be a few feet, then, from the back porch, to the coffee, umbrella, chairs, workbench—or whatever else we put on the terrace—and it will be natural to go back and forward all the time. We can lay

THE WAY

tiles into the earth, to make the connection; also, looking at the bushes under there, which are so dark—we need to prune them, cut out dead wood, to bring *móre* light in along that path. We might even prune out enough dead wood so grass could grow there, with the trees just standing in the grass.

SITE REPAIR tells me exactly what to protect around the building.

The tree to the north is down, as our neighbor wanted; in exchange we will, I hope, be able to build up to his fence—since he can get sunlight all the way onto his lawn now. It is a shame cutting down a tree: but the trees at the back grew too thick; one less and the others will grow stronger; and, most important, it helps to repair his garden to the north of ours, by giving him **SOUTH FACING OUTDOORS** too.

In clearing the site, the little apple tree next to the garage seems more beautiful than ever; and the wild onions, with their white flowers, growing around the foot of it are lovely. We have put stakes around them, to protect them while we build: they get trampled very easily (**SITE REPAIR**).

Combining **SITE REPAIR** and **ROOF GARDEN**, I imagine the roof garden about eight or nine feet up, beautifully framed and surrounded by the lower branches of the trees to the east and west: on the site I stake out the rough position of this roof garden, so that it will fit just right into the trees.

SHAPING ONE BUILDING

Now I begin more carefully to work with my eyes closed, to imagine how the patterns will be, in their best, most natural, most simple form, as the building comes to life.

MAIN ENTRANCE *gives me the approach to the building, and the position of the entrances.*

There are two ways to approach the cottage—either from our back porch of the main house, or up the driveway. Where is the entrance and what is it like, to make these two approaches work? In both cases I come across the terrace in front, to reach the entrance. I had originally thought of an entrance with a porch or arcade: but it seems too dark in there. As I close my eyes, I see a front door, standing forward a little from the main room of the cottage, just behind the bramble bush, and next to the acacia which is still standing. I imagine a small seat on either side of it: a natural place to sit in the sun: and the entrance frame elaborated, perhaps carved or painted, not much, just slightly, perhaps bulging forward. Since I know that the bathroom will be to the back, next to the existing cottage, towards the north, and I assume there will be a short arcade connecting the two buildings, and giving access to this bathroom, I am not certain of the relation between the main entrance and this arcade behind it. Also I am not certain if the entrance is at a slight angle, to face the driveway more, or if it faces due west. Before I thought it ought to be west, but clearing the site has made the diagonal seem possible. Somehow it seems natural that it should occupy the little diagonal

THE WAY

between the apple tree and the acacia. There is also the question of the stair. Shall it be near the entrance going up—perhaps even outdoors—or shall it be back in the far corner, tucked away (OPEN STAIRS, STAIRCASE AS A STAGE)?

INTIMACY GRADIENT *and* INDOOR SUNLIGHT *give me the overall layout of the inside.*

INTIMACY GRADIENT doesn't mean much in such a small building, except perhaps for the following ideas. (1) A small seat or window seat inside the front door, (2) the stairs far enough back so it is a secluded "bed" area, and (3) the stairs placed so a person can go out to the bathroom without coming through the front door—in other words a kind of back access out to the little arcade that gives onto the bathrooms. INDOOR SUNLIGHT tells me that main usable spaces are towards the terrace, towards the garage, towards the main house—and that the north side, over towards our neighbor, is kept for dark closets, storage. It may make sense to place a whole row of storage alcoves over on the north side—this will also help to accomplish NORTH FACE. This may include kitchen counter and stove if they are added later.

STAIRCASE AS A STAGE, ZEN VIEW, TAPESTRY OF LIGHT AND DARK *give me the position of the stair to the upstairs.*

Standing inside the main room of the cottage, it feels as if the stair could go up on the side opposite the entrance.

SHAPING ONE BUILDING

This makes the most sense; it helps form the room then, and its roof, which will stick up slightly, at the back of the roof terrace, and form a nice angle with the two-story section—a beautiful corner, facing south-west, nice to sit in to enjoy the roof. This means that the stair will go up, perhaps towards a window at its top, which looks out onto the neighbor's garden to the north (new view—the only place from which one can see out that way); and gives LIGHT TO WALK TOWARDS. Other aspects of TAPESTRY OF LIGHT AND DARK—there should be light, where the back area (kitchen area) opens out to the door which leads to the arcade—perhaps a little fountain or court there, forming light, inviting us out towards the small existing cottage. And, of course, from inside the main room, looking out towards the front door onto the terrace, is also looking towards light.

ARCADE tells me how to connect the building to the cottage west of it.

As far as the little arcade at the back is concerned, between the “kitchen” and the old cottage, with the bathroom off it, I talked to Susie in the cottage: we looked at the window of her bedroom, where I had hoped to make a door, and it was clear to both of us that if we made a door, it would ruin the inside of the room—it is so small, the second door would make it like a corridor. So, I suggested we leave the window frame where it is, and put a step on the inside, and two steps on the outside, like a stile. We will put a casement window in the window frame, perhaps make the windowsill 3 inches lower; and

THE WAY

she can get out to the bathroom by going over the stile, down the two steps, into the arcade.

SLEEPING TO THE EAST helps shape the roof in detail, because of light.

I looked at the light through that window. There is a danger our new cottage may take away her morning light; so we will place bamboos to mark the roof line we expect, and move it, until there is still plenty of morning light coming in through that window. Looking out of the same window, it seems more important for the roof to pitch to east and west, with gable ends at north and south, so that the slope of it allows the light to come down easier into her cottage. The gable end makes more sense for the sleeping loft anyway—it can open directly onto the roof garden (SHELTERING ROOF).

ENTRANCE TRANSITION shows me how to arrange the area in front of the building.

I haven't been careful enough with this pattern—have left it a little too late. I have been thinking about the possibility of a TRELLISED WALK, or TRELIS anyway, to help close off the terrace to the south, and help protect it a little from the big house to the south. This will also make the terrace more of an OUTDOOR ROOM, and help to make the direct connection to the house more important than the one from the driveway. So I close my eyes, and imagine coming up the driveway, passing under a jasmine-covered trellis, which ties into the garage, through into the brighter

SHAPING ONE BUILDING

light of the terrace, which forms a kind of anteroom to the main entrance. Then this whole terrace becomes a kind of room. The trees, which form its corners, also help to emphasize its character as an OUTDOOR ROOM.

FARMHOUSE KITCHEN *gives me the character of the main room inside.*

Even though the cottage will be a workshop, and place to live, it makes most sense to think of the inside as a FARMHOUSE KITCHEN, with a big table in the middle, chairs around it, one light hung over the center, a couch or armchair off to one side When I start to imagine this, and imagine entering it, I realize that it is more important than I realized to keep it back, slightly, from the door, to make something out of the ENTRANCE ROOM that lies between—even though, in a building as small as this, this ENTRANCE ROOM may be shrunk to almost nothing. I imagine coming in, between two seats, into a glazed place, with light coming in, and then passing through a second doorway, perhaps a LOW DOORWAY, into the main room of the FARMHOUSE KITCHEN proper.

CONNECTION TO THE EARTH *and TERRACED SLOPE help me to complete the way the building's outer edge is formed.*

Of course, the terrace gives the connection to the earth. But I have been trying to imagine how to make the edge of the terrace, where it meets the earth. If the terrace itself is made of tiles (laid either in earth, or grout—not

THE WAY

sure yet), the edging could be a SITTING WALL—but that seems too formal, too enclosed—or perhaps better, it could be made by a simple concrete block surround. This seems a bit stark. I close my eyes, and see the slight step, with blocks that are filled with rock-garden flowers—these form the edge except at the few particular places where there is an actual step to the path beyond.

The slope of the ground is not enough to need a TERRACED SLOPE; but there is a definite fall of a few inches from the back of the site to the front of the terrace. We decide to place a natural step, along the contour line, wherever it makes sense—so that we do as little earth moving or filling as possible, and the house sits just the way the land is.

As far as the connection to the earth goes, there are still two big unanswered questions. What exactly happens around the little apple tree to the south? And what exactly happens along the west wall of the building, between the entrance area and the bathing room arcade? It is possible that the place under the acacia tree might be blocked completely by a WINDOW PLACE which forms part of the entrance, or falls just inside it. In this case one would not be able to walk along this edge of the building, and could only get to the bathroom arcade by going into the building. Not sure if this is right; perhaps too tight.

WINDOW PLACE *and* ENTRANCE ROOM *fix the detailed arrangement of the entrance.*

In order to make progress on all this, we went out to the site, and looked around, trying to imagine all this more

SHAPING ONE BUILDING

concretely on the land. We started especially with the front door. Should it be angled, to face the terrace, or facing west (into the acacia tree, or facing south, towards the garage)? Although facing south is less direct than when it is angled, it seems best—it creates a slight sense of ENTRANCE TRANSITION, doesn't allow such a complete view of the inside from the terrace—it uses the little apple tree very nicely, to one side: and it leaves the WINDOW PLACE to the west, just perfect, inside the front door, helping to form the ENTRANCE ROOM. We staked it out, with seven-foot-high stakes, so we could begin to feel its presence. There is a need to protect the apple tree and wild onions, from trampling—so it will be natural to make a low wall at a slight angle, perhaps curving out, to form the approach into the door—this will make the FRONT DOOR BENCH.

ALCOVE then generates a further differentiation of the inside room.

Now we stood inside the room, looking towards the door, towards the counter area at the back, to make the actual shape of the room work out just right. The WINDOW PLACE to the right of the door works beautifully. Another ALCOVE to the left of the door, on the left-hand side of the apple tree seems just right too.

Now STAIRCASE BAY shows us how to stake out the four corners of the stair, so that we get a realistic look at its effect on the room.

THE WAY

I imagine it very steep (7 feet horizontal run, for a climb of 8'6"), and no more than about 2 feet wide—since it only leads to a sleeping loft. We fix the top of the stair, by knowing that the back counter of the kitchen will come in three feet from the north face of the building, and that the upper story will rise directly from that line. If the sleeping loft is 7 feet north-to-south, enough for a bed—and the stair comes up inside it, with a 3 foot landing at the top, this allows us to fix the top of the stair 6 or 7 feet south of the property line—and the bottom of the stair 14 feet south of the line. When we look at the stair, it blocks the south-east alcove a bit—so we splay the alcove, around the apple tree, to connect it better with the main room. A splay of two feet makes an enormous difference. We stake it out also, and imagine a window in it, looking west towards the apple tree (WINDOW PLACE).

THICK WALLS helps me define the inside edge of the farmhouse kitchen.

Now, standing in the middle of the room which is to be the FARMHOUSE KITCHEN, I imagine another seat or closets under the stair; perhaps a window under the stair too, looking towards the garden to the east: small windows over the counter to the north which forms the main THICK WALL. Talking about the second story, we realize that the load of its southern wall will fall right over the vault which forms the FARMHOUSE KITCHEN: it will probably need a rib in the middle, and this rib can give us a nice center to the room, a place to hang a light (POOLS OF LIGHT).

SHAPING ONE BUILDING

CEILING HEIGHT VARIETY *completes the upstairs and the downstairs.*

This pattern is satisfied almost automatically by what has gone before. For the main room, I imagine one big vault, perhaps 8'6" high at the center. The back wall, where the kitchen counter is, the main alcove to the south, and the window place by the door, all spring off the perimeter beam, which will be at about 6'6"—going down to 5'6" or 5'0". Upstairs the sleeping room is low anyway, under the roof; and it has a still lower section, over to the west, where the bed is in an alcove which has no more than a 4'6" to 5'0" ceiling.

All in all, the design took about a week of continuous on-and-off thought.

I mulled each group of patterns, in turn, as the notes show. Sometimes, I spent as much as an hour thinking about one pattern. In these cases, I didn't actively think how to do the pattern for an hour. I did all kinds of other things, drove the car, played music, ate an apple, watered the garden, etc., waiting for the pattern to form itself in my mind, by taking on shape appropriate to this particular site and problem. In many of these cases, I got the key insight by walking into the design, so far as it was completed, and then asking, what would I see over there if this pattern I am now thinking about were in the building? Very often, the answer came almost immediately. But it only came if I was really there, could touch and smell what was around me.

THE WAY

And I never made a drawing of the building.

The design was done completely in my mind.

Only in the fluidity of your mind can you conceive a whole. As the design unfolds, and the new patterns are brought into play, according to the order of the language, the entire design has to shift and resettle itself in your mind with every new pattern. Each new pattern in the sequence transforms the whole design created by the previous patterns—it transforms it as a whole, it shakes it up, and realigns it.

This can only happen if the design is represented in an utterly fluid medium; it cannot happen in any medium where there is the slightest resistance to change. A drawing, even a rough drawing, is very rigid—it embodies a commitment to details of arrangement far beyond what the design itself actually calls for while it is in an embryonic state. Indeed, all the external media I know—sand, clay, drawings, bits of paper lying on the floor—are all far too rigid in this same sense. The only medium which is truly fluid, which allows the design to grow and change as new patterns enter it, is the mind.

Representation there is fluid: it is an image, yet an image which contains no more than essentials—and it can change, almost of its own accord, under the transforming impact of a thought about a new pattern. Within the medium of the mind, each new pattern transforms the whole design, almost by itself, without any special effort.

SHAPING ONE BUILDING

Imagine trying to build sentences by shuffling words around on a piece of tracing paper.

What terrible sentences. The act of speech is a spontaneous, and immediate response to a situation. The more spontaneous it is, the more directly related to the situation, and the more beautiful. This spontaneity is governed by the rules of English which are disciplined and ordered; but the use of these rules, and the creation of a totality from them, takes place in the immediacy and fluidity of your own mind.

Just so with a pattern language. The patterns are disciplined; and the order of the language is disciplined. But you can only use these patterns in that order if you are willing to combine the discipline they give you, with the spontaneity and immediacy of direct experience. You cannot create a design by patchwork, on pieces of tracing paper. You can only create it, as if it were a real experience of a real building: and that you can only do in your mind.

It is only in the mind's eye, eyes shut, not on paper, that a building can be born out of the vividness of actual experience.

In the cottage I have been describing, we even built the building without the use of drawings—simply by staking out the building, as I saw it in my mind's eye, and then using a pattern language for construction, in the way described in chapter 23.



THE WAY

Of course, this little experimental building is still immensely far from the great beauty and simplicity of the houses which are shown at the beginning of the chapter.

It will take years more of experiment, with ways of building, before we can do that.

It is too loose, too informal, the construction patterns which control its detailed shape are not harmonious enough, not disciplined enough . . .

Yet still, this building has just the beginning of a spirit, a hint of a touching quality, which is at least a few steps down the road.

Anyone can use a language to design a building in this way.

No matter who does it, the buildings which are made like this will be ordinary and natural, because each part in the design is formed by its position in the whole.

It is a primitive process. The primitive farmer spends no time "designing" his house. He thinks briefly where and how to build it, and then sets about building it. The use of the language is like that. The speed is the essence. It takes time to learn the language. But it takes no more than a few hours or days to design a house. If it takes longer, you know it is tricky, "designed," and no longer organic.

And it is just like English.

When I speak English, the sentences form themselves in my mind as fast as I can say them. And this is true of pattern languages also.

The quality that makes a building feel as though it has been there for a thousand years, the quality that makes it feel that it has flowed like writing from a pen, comes almost automatically when I relax my mind, and let the language generate the building freely there.

I still remember the first time I used a pattern language in this way. I found myself so completely caught up in the process that I was trembling. A handful of simple statements made it possible for my mind to flow out and open, through them—and yet, although the house which came was made by me, born of my feelings, it was at the same time as though the house became real, almost by itself, of its own volition, through my thoughts.

It is a fearsome thing, like diving into water. And yet it is exhilarating—because you aren't controlling it. You are only the medium in which the patterns come to life, and of their own accord give birth to something new.

THE
TIMELESS WAY
OF BUILDING

Christopher Alexander

*with love and thanks
to Ingrid, Sara, and Peter*

NEW YORK
OXFORD UNIVERSITY PRESS

1979