



## 18 / START OF CONSTRUCTION

WE STARTED CONSTRUCTION IN OCTOBER 1990.

The idea of the house, as far as we knew it at this stage, was encompassed by the model shown on this page. In these days of working drawings, it seems peculiar to say that what we knew, at that moment, was what is visible in this rough model and little more. But that is the truth. We understood the broad configuration, and we understood, at this early stage, approximately how we were going to make it. Not much more. That is the honest truth.

Uncomfortable as it may be to admit it, in this age of hundreds of detailed working drawings for a comparatively simple building, that

just is so. But I want to insist that the existence of this limited and partial knowledge, not full knowledge, at any given stage of the unfolding, *is of the essence of the unfolding process*. In a true unfolding process, you know certain things at different stages, but what you know about what is going to happen more than a few steps ahead, is always rather limited. That is the essence of unfolding.

And that is necessary in order to allow the unfolding process to occur. Rough as it is, this model showed us what we truly *knew* at this stage, together with a few construction details. Everything else was still unknown, and had yet to be unfolded.



*Rough model of final conception, as we imagined it before we started to build*



## 19 / THE RETAINING WALL

THE MOST IMMEDIATE PROBLEM WE HAD TO SOLVE WAS THE CONSTRUCTION OF THE RETAINING WALL TO HOLD UP THE MAJOR HILL BEHIND THE HOUSE.

In this building, the cost plan for the retaining wall and foundation was enormous: a subcontract of \$90,000. We had already spent a lot of time getting ready for this subcontract to start, once again from the point of view of cost. Most bids for the work had been very high, on the order of \$140,000. In our cost plan, we had allocated some \$90,000, and not a penny more. To conform with the cost plan, we now began a search for a flexible method of doing the huge retaining and foundation job within the \$90,000 budget.

While this work was getting prepared, we were making final changes in the way the piers would be drilled, to keep within the budget. There was a huge technical problem: the back of the retaining wall. How were we going to

build it without massive formwork, and in such a way as to build a \$140,000 retaining-wall system for about \$90,000. The problem was that if we excavated the hill, it would need massive shoring to hold it up while the retaining wall was being formed and poured. This was aggravated by the prospects of rain, a wet hillside, and the weight of the existing house directly above, which might cause a cave-in.

With Stanley, our foundation subcontractor, we worked out an ingenious method which involved drilling long deep piers, reinforcing them, pouring them, excavating around them, and then filling in between with a poured retaining wall. The piers were big enough and close enough together to hold the hillside temporarily while the final wall was formed and placed between them. The photograph shows this technique, when the piers were half built and being excavated.



*The piers exposed after drilling and pouring, and ready for forming the foundation and retaining wall between the piers*



## 20 / MANAGEMENT AGREEMENT THAT FEELING MUST GUIDE EVEN THE MOST TECHNICAL ASPECTS OF CONSTRUCTION

THE NEED FOR FLEXIBLE DECISION-MAKING IN THE SEQUENCE OF CRITICAL CONSTRUCTION OPERATIONS FORCED A HIGHLY FLEXIBLE APPROACH TO CONSTRUCTION MANAGEMENT.

I had a talk with James Maguire who was then running the construction for CES. He told me about some problems he saw coming, including the position of underslab plumbing, the framing contract, setting the foundation boards, and a few others. In the course of discussion, I reminded him that he must be as relaxed as possible about the small details, which could always be solved one way or another — but that the big questions about the building, especially the most important open questions about coming major centers, must be kept open and flexible, with our minds constantly on them.

For example, the plan of the kitchen wasn't right yet. We didn't know if the room was OK or not. It had a strange shape on the drawing. If

kitchen and living room weren't good, the house would be a failure. We therefore had to make sure that Stanley, the foundation subcontractor, was coordinated with our schedule. I wanted to have at least ten days of decision time set aside after he made his cut into the slope, so that we could stand on the real land, before he started drilling. Why? Because when he began to drill his front line of piers, that would essentially fix the front structural wall of the house.

If it was going to be necessary to make any changes in the shape or size of the two main rooms, that was the last time we would be able to do it, since it might turn out that we would have to modify the front line of drilling, or the front foundation form, to give the two main rooms a more beautiful shape.

This is a perfect example of how, within the fundamental process, feeling must enter even into major technical decisions.



## 21 / SETTING THE MAIN-FLOOR LEVEL

THE FINAL POSITION OF THE MAIN-FLOOR LEVEL CAME FROM A PROCESS DONE STANDING ON THE SITE.

On October 30, 1990, we set levels for the benching process. Walking on the site, standing on buckets, planks, judging the right height for different parts of the floor. After trying different dimensions the main-floor height was judged to be best at 24 inches above terrace height, instead of the 30 inches shown on the drawings.

This judgment was based, in part, on a straightforward combination of comfort and psychology. It simply *felt* most satisfactory. But this explanation does not fully explain the coher-

ence which it created. To grasp it more fully, this “right floor height” that was finally chosen may also be understood as creation of a living center. It was the dimension which made the space between the terrace and the main-floor positive and comfortable. If you imagine the terrace as several steps below the floor there was, floating above the terrace, a slab of space, the same size and plan as the terrace and — depending on the decision that was to be made — either 30 inches or 24 inches thick. This slab of space hovering above the terrace, and connecting it to the main floor, had the potential to become a center, and was judged to be best, most life-supporting

within the project as a whole, when the offset was 24 inches. At that dimension, the whole configuration created the most POSITIVE SPACE and GOOD SHAPE. This could be assessed by the methods described in Book 1, chapters 8 and 9, according to the feeling of wholeness which it created in us, the observers.

You see how even this very simple decision — like nearly every other in the process — was based on experiment. It was the choice of that dimension which created the most profound sense of life, well-being, wholeness in us, the observers — and was experienced by all of us, jointly, in that way.



## 22 / EXCAVATION

A MINOR CRISIS. WE HAD TO KEEP THE FOUNDATION SUBCONTRACTOR'S METHODS CONSISTENT WITH THE PROCESS OF UNFOLDING, NOT WITH HIS USUAL MODE.

I went up to the site and found that Stanley, our foundation subcontractor, had dug far too much away from the back of rooms, in order to prepare for pouring the retaining wall foundation. He had — before he started — been specifically told not to do this, but did it anyway because he had a convenient piece of equipment up there, and wanted to use it as much as possible.

I insisted that he hadn't had the right, and that according to our contract it had been agreed that we would look at the ground-floor plan of the house (and perhaps modify it) while excava-

tion was going on, so that we could check details of wall positions. Now he had made this impossible because the site was so deeply cut up that no one could walk about: there were 3- and 4-foot drops, and we couldn't even stand on any one level bit of ground to imagine floor levels and so feel the reality of kitchen, front entrance room, and living room.

It was a difficult situation. Several days of phone calls; some upset. Finally, I was able to persuade the contractor that his crew had violated our agreement. They built plywood platforms for us, very cheap temporary ones, over the areas they had cut in error. This accomplished, we were in a position to start the fine-tuning of the ground-floor plan.



## 23 / FINE-TUNING THE PLAN AS WE FIXED FORMS FOR THE FOUNDATION WALLS

NOVEMBER 9. A NUMBER OF MAJOR DECISIONS WERE NOW MADE JUST BEFORE FOUNDATION FORMS WERE SET AND BUILT.

*Kitchen fireplace position.* The kitchen fireplace position (as drawn) was terrible. It could not be built where it was shown on the drawing since, as now became clear, it would ruin both halves of the room and split them. It had to be moved back. We moved it back 18 inches. From this, an entirely different feeling. Now the fire-

place didn't jut into the room; it was comfortable for the sitting area, and nice to look at from the doorway. We also moved it six inches to the north so it fit nicely between two of the massive piers in the retaining wall.

*Kitchen porch.* As it turned out, the porch on the south face of the kitchen (on the real site) was narrower than we thought by about nine inches. I felt it was too narrow now to be pleasant. We had the option of extending the retaining wall

out to make the porch, or to abandon the porch altogether and make it a pathway. It wasn't a natural place to sit anyway, as it turned out. I decided to give up this porch altogether.

*Workroom floor level.* The offset from the workroom level to the main floor was 15 inches as cut. We made the workroom nine inches lower, and dealt with drainage problem and waterproofing problem at the French window.

*Spare room at the end.* The spare room was a beautiful place. I was sure Stephanie would end up using it for herself. Very nice, nestled down low in the site. To keep this nestled feeling, we left its level as it was cut.

*Stair coming down to the workroom.* This interior stair needed to be further back, away from the workroom, to create psychological space. We started down by the bathroom door, and put winders in the stair to make that possible.

*Living room bow.* Quite a surprise. The bow of the window was bigger than on the drawing. Don't know why. It was very splendid. Was going to get lots of light. Moved the center of gravity of the room toward the south where this splendid bow was. Left as is, though surprising. Serendipity.

*Living room door.* We moved the door of the living room back from the house front door, to make a more generous and sensible center in the living room, on the right as you go in. Now the main fireplace to the left as you walked in (as shown on the drawing, on the back wall) seemed silly. Too squashed. It was impossible, by the look of it, to get significant light in above the retaining wall. We proposed moving fireplace to the long wall of the living room.

*Main fireplace position.* I asked Randy if it would cause chaos if we moved the chimney



*We started to understand the position of the fireplace in the kitchen, and began making adjustments in its position. It was a situation where a foot in one direction or the other radically changed the feeling of connection between the kitchen and the big bay window eating area; and this fireplace was itself hampered in position by the back wall of the house, which was a major retaining wall that had to be built at the very start. Because the fireplace needed its own foundation, this position was critical very early on and had to be decided.*

away from its position on the back wall, as far as the upstairs was concerned. No, he said, it was just taking up valuable space now. So we did it.

*Line of doors.* Tried moving the door from entrance room to living room even further back

in the entrance room. It didn't help, somehow made the room seem funny inside. By moving doors, the line-up between living room door and kitchen door was no longer quite as nice. So we didn't change it.

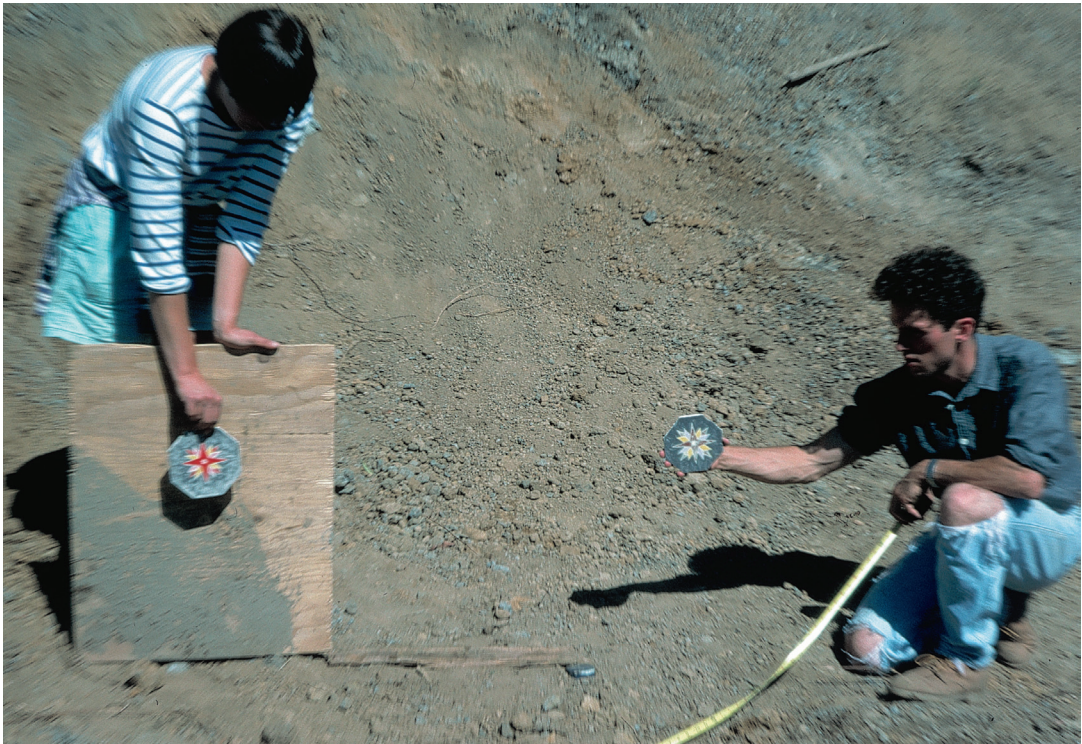


24 / THE LILY TILES

THERE WAS A BREATHING SPACE DURING THE NEXT FEW WEEKS. DURING THIS TIME, THE BUILDING AS IT HAD DEVELOPED SO FAR NOW BEGAN ALLOWING ME TO GENERATE THE CHARACTER OF CERTAIN ORNAMENTS.

While the work on the floorplan changes was going on, I started to think about other details that would affect the house. I had been enjoying the idea of making small tiles to put in the front foundation wall. The first sketches I made

of these tiles were of a small black octagon, with a yellow, red, and lilac star on it. I sized it against a bit of real concrete, and then made a tile sample. It seemed rather crude. Then I started wondering if the form of the insert should be tall and delicate, not squat and hard like an octagon. When I had first seen the site, there had been several tall pink lilies growing there. They suggested lilies as ornaments which might decorate the lower part of the foundation: I started to



*Early experiments with an octagonal tile and a lily tile, to see which one fit better into the landscape and into the wholeness of the site*