

from THE NATURE OF ORDER

Christopher Alexander

In Mexico City there is a beautiful house called the House of Tiles. It is a huge house, more of a palace really, built by a famous count, near the very center of the city two or three hundred years ago. The outside of the house is almost entirely covered with hand-painted tiles, mainly blue. In the distance the house shimmers with flickering color.

When I decided to go and have a closer look at the tilework, I found an amazing thing: The tiles are ordinary, about nine inches square, handmade and hand-painted. They cover the exterior walls, but the way they are laid is extremely surprising. There are ridges between them, huge valleys. Nor are they all in the same plane; many are not even vertical, meeting in the roughest possible way. By contemporary American standards, it would be considered a lousy job. And yet this is one of the most beautiful houses in Mexico City.

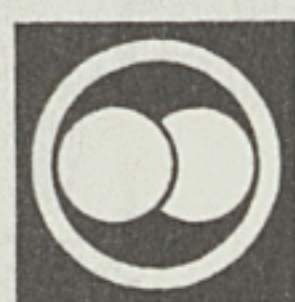
We have become used to almost fanatical precision in the construction of buildings. Tilework, for instance, must be perfectly aligned, perfectly square, every tile perfectly cut, and the whole thing accurate on a grid to a tolerance of a sixteenth of an inch. But our tilework is dead and ugly, without soul.

In this Mexican house the tiles are roughly cut, the wall is not perfectly plumb, and the tiles don't even line up properly. Sometimes one tile is as much as half an inch behind the next one in the vertical plane.

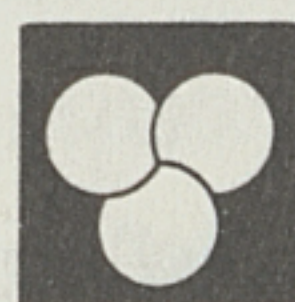
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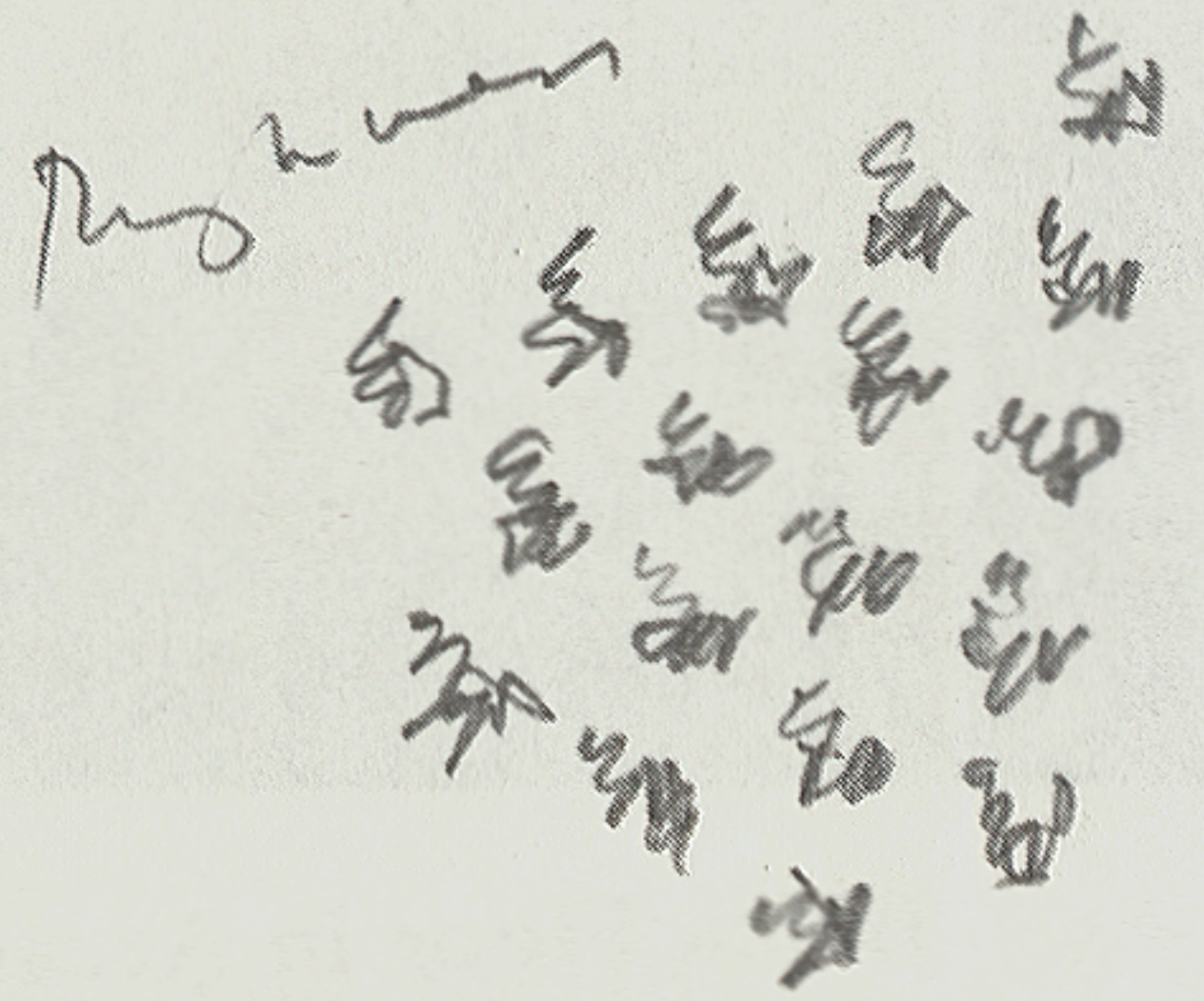
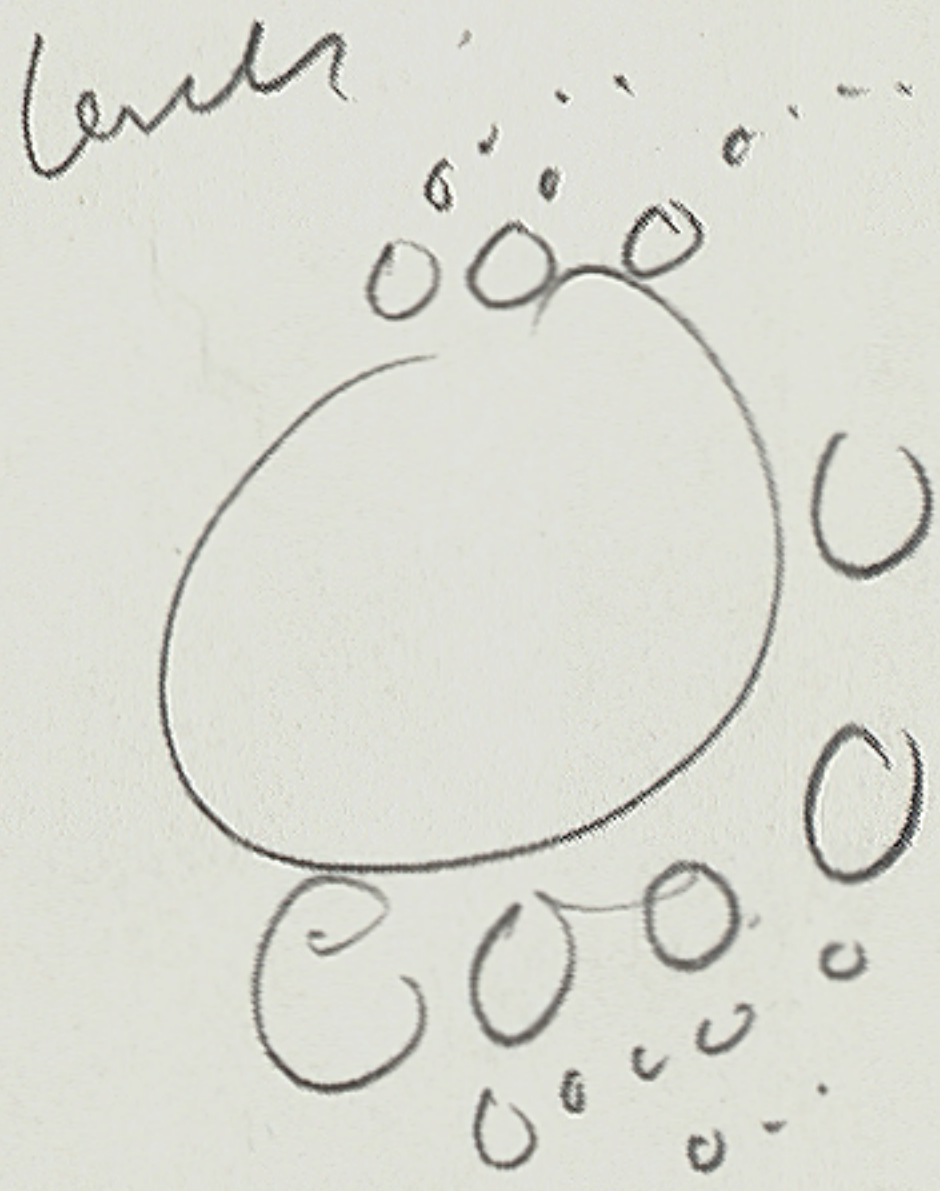
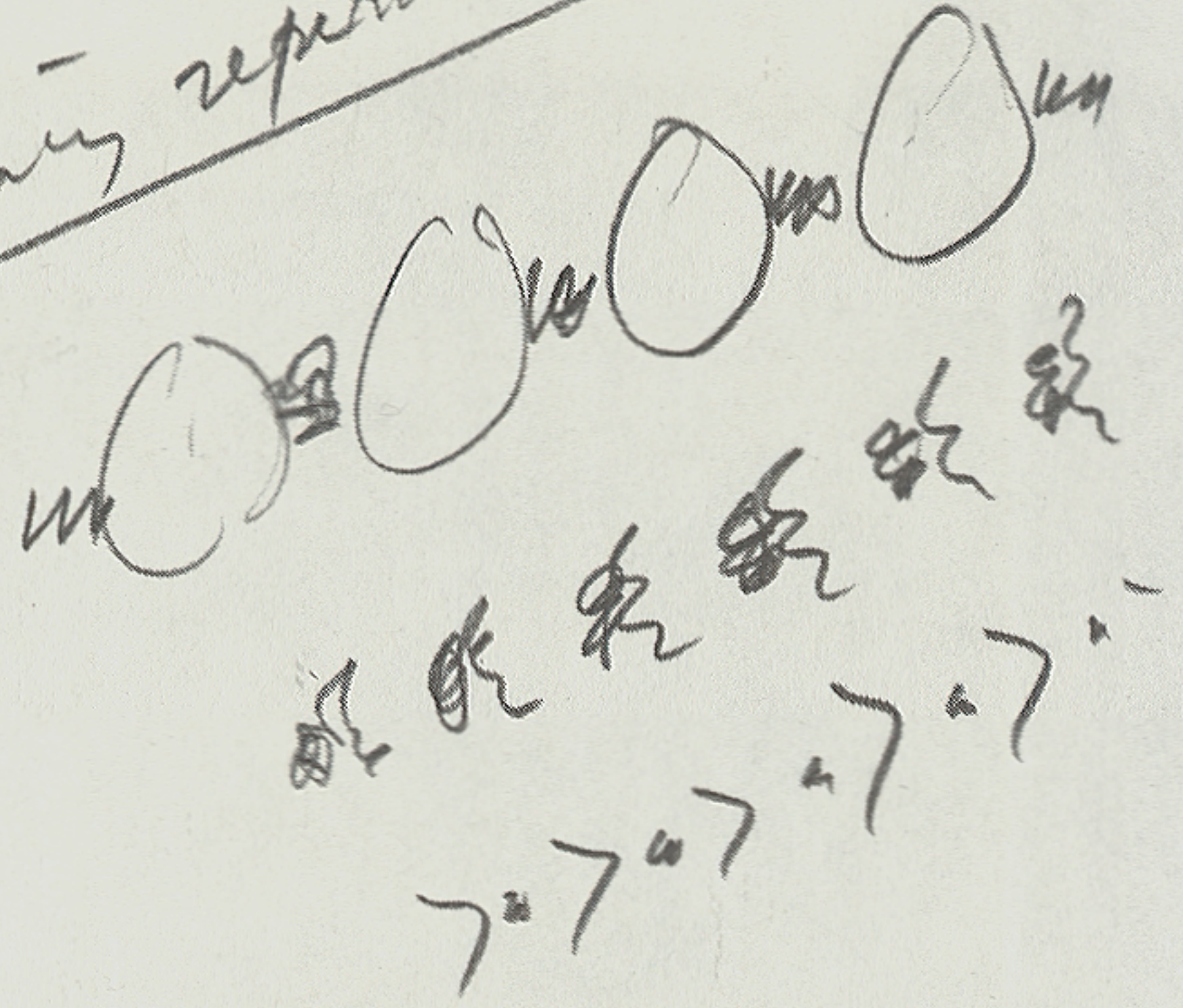
Brick Floor in Arcade (low-cost experimental housing, Mexicali)



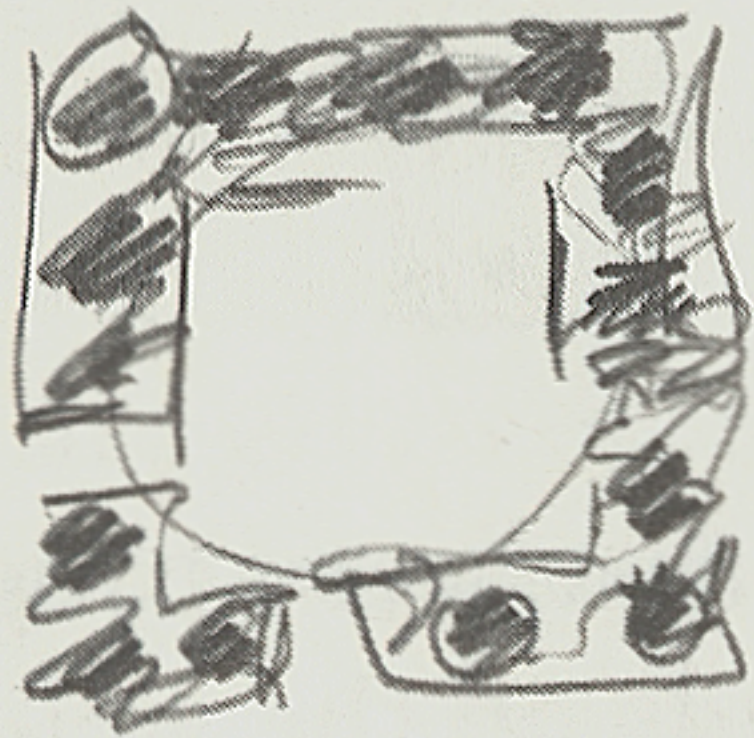
It is useful to understand that, very roughly, the wholeness of any given part of space depends on the well-ordering or relative wholeness of the other parts of which this part of space is composed, and of those parts that are near it. Understanding this gives us a picture of a whole as an enormous system of wholes, layered, overlapping, large, and small. Somehow, the structure of a thing becomes whole, or not, according to the way these smaller and larger wholes are disposed.



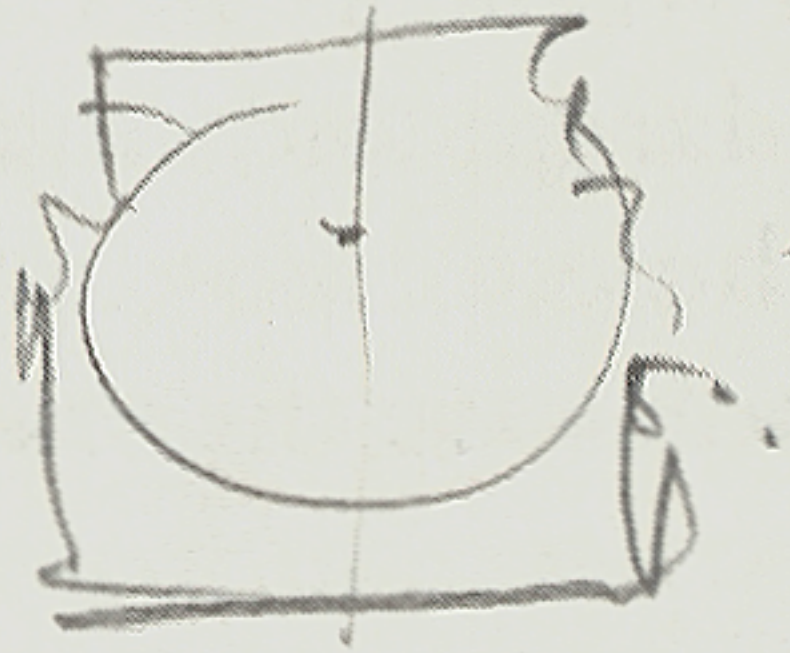
Alternating repetitions



Boundaries



Center



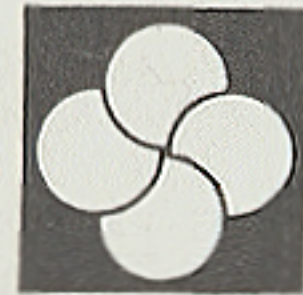
Alternating Repetitions, Levels of Scale, Roughness, Boundaries, Centers

The 15 properties of arrangement that describe the way smaller wholes form a system are structural—definite geometrical features that exist most strongly in things that are geometrically whole. The properties are:

1. Levels of scale
2. Centers
3. Boundaries
4. Alternating repetition
5. Positive space
6. Good shape
7. Local symmetries
8. Deep interlock and ambiguity
9. Contrast
10. Graded variation
11. Roughness
12. Echoes
13. The void
14. Inner calm
15. Not separateness

Each of these properties helps establish the whole as a system of other interlocking wholes.

It is the texture or fabric of this interweaving that is wholeness.



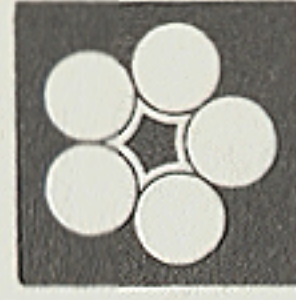
In every project, at the stage before the site plan exists, we have two different systems of centers.

On the one hand, we have the system of centers that exists in the *site*. This system is created by the land forms, the roads, directions of access, natural low spots, natural high spots, and existing trees.

Second, there is the system of centers that is defined by the language that describes the project. In the case of the Eishin project, the language defined the main building blocks or centers from which the new school and university were going to be made. They included the entrance gate, entrance street, *tanoji* center, home base street, main square, back streets, and judo hall.

It must be emphasized that both systems exist at the time one

starts the site plan. The first system exists on the site. The second system exists in the minds, and in the reality, of the people who are going to have the new school. Each of the two systems is real.



Getting colors for the Great Hall in the Eishin school in Japan was one of the most exhausting things I have ever done.

While I was designing the building, I always had two feelings. First, that it was very dark inside. Second, that in the darkness colors were somehow glowing. I imagined bright colors—reds, yellows, blues—on the columns and capitals. But they were darkly glowing in the darkness, never bright. This was my starting point.

When I went to Japan, the building shell was finished. All the columns, capitals, beams, walls, and windows were there. The darkness also was there. So I stood for days in the dark hall, trying to imagine concretely what colors would create the proper feeling. It was incredibly hard work. Nothing obvious came. Most of the first colors seemed wrong.

Then, after several days, I spent almost a whole day sitting in the bath—my eyes closed—simply trying to see the inside of the hall. I sat for hours and hours. Finally, I began to see the inside of the hall and its columns as black. It was startling and unexpected—not something that had ever occurred to me. But it had the marks of an authentic vision. On the surface of the black, something glowed faintly.

I made a first sketch, very hastily.

The vision maintained itself. The chevrons on the column, which had been in my mind ever since some earlier sketches, now seemed dark red. By chance, as I had made the sketch in the train on the way to the site, the drawing was done in ball point. This had left faint bluish lines, even after I had painted the red and the black. The faint bluish aura was important, essential to the way the color glowed.

Now we began full-scale mockups in the building, painting huge pieces of paper and covering the real columns. It was very hard to get the right colors. The black I wanted is actually dark, dark gray, not black. Black was too harsh. The red was even



Sketch of Great Hall, New Eishin School, Tokyo

harder to get. At first, simple reds had a terrible, bright, decorator-like quality, completely different from what I had imagined. Finally I began mixing a series of reds that had an extraordinary amount of black in them. I myself could not believe that they would seem red. They had so much black that I couldn't persuade my assistants to mix them correctly. They kept making them too red, not black enough. And yet, on the column, it was these blackish reds that glowed in the right way.

However, once again I realized that the inner vision was lacking. So once again I sat in the water of my bath with my eyes closed, looking. After many hours I began to see a shimmer of black and white—something entirely different in quality and feeling from what I had been trying to paint. But time had run out.

I had no more than a few hours left and was in a total panic. I told Hosoi I couldn't finish. He was very nice, and told me to relax. If it wasn't finished on time, it wasn't finished.

I went over to the hall, certain that I had failed. In my moment of failure I grabbed a brush and angrily, hurriedly splashed some colors on a mockup of the main beam, a sheet of paper 3 meters long and 70 cm high. On the beam, amazingly, the mockup fit perfectly. It was a new animal, something different from the dark, intensely glowing black columns, but with just the right life to hold its own against them, yet support them at the same time. It was solved.

Once again, the key was not the actual painting, the trying different things. It was the shimmering sense of black and white that I saw after immense effort, sitting in the bath.



About 10 years ago I made a coffee stand for our office. As I made it, I was aware that clients would be coming in and see it, and be impressed. Finally the thing I made was too clever. I wasn't trying to please myself; I was trying to please these clients and impress them.

If I had made it to please myself, I would have made it much less clever. I would have put it on two brackets, for example, instead of one. I would have made a little hole where the spilled

coffee could be wiped off. I would have painted it red and yellow. But instead I made it with a single bracket, without a hole, in natural wood, and with that innocuous good taste that goes in architects' offices.

At the time I was only vaguely aware of this issue: I worried too much about our image and our office. I worried whether it would fit with the other things in the office. So my simple little exuberance, which I could have had if I hadn't been worrying about these things, was lost.

This simple little exuberance is hard to find, precious, and easily trampled; it takes enormous daring for it to show itself. It is the part that people can most easily laugh at, the part that can most easily be trampled, and the part that good sense most easily, most quickly censors.



Imagine that you are on a hillside, a dirt road, on a grass-covered hill. It is very quiet, a hot summer night. In the silence, far away, over the hill, you hear the sound of a flute. You strain your ears. You slowly recognize a haunting melody carried on the wind. Learning to see wholeness in a thing, when we are making it, is not unlike the process where I strain my ears to catch that haunting melody.



Our carpentry shop in Martinez is an ordinary structure with massive wooden columns and beams. After making it, I saw that it was fine, simple, and straightforward, but somehow lacking.

I spent several days trying to imagine the building filled with life. After a few days I began to get a clear vision of the building with a great white star on the central bay.

In the office I tried to explain it to one of my apprentices, but I could not make him understand. At a certain point I picked up an old piece of styrofoam. With a penknife, without making any measurements, I very quickly cut a big star from the sheet. I hacked it out as fast as I could. The star was crude and jagged, not all the points were pointed. The arms had different lengths and angles. I went outside and put a single nail through it, to

hang it up. The whole thing took no more than 40 seconds. It brought the building to life.

Then a surprising thing happened. I had assumed that this crude star was just a mockup, that we would use it to cut a perfect star. In its place we began trying various exactly regular nine-pointed stars. My apprentice and I tried for three months. None of the stars we made had the same life in them.

Finally, I gave up. I acknowledged that the irregular, jagged star has some kind of life in it perfectly in tune with the building and that I had been lucky to find it. It was best to leave it alone.



A while ago I went to a Haydn mass in Salzburg's great cathedral. The high point was the Sanctus. A full choir, slowly increasing rhythm, deep sounds of the organ and the basses, and high song of the trebles, the filled church, the air tense as if on the edge of some awakening. At this most awe-inspiring moment, a young American pushed forward to a telephone mounted on one of the columns of the nave. He picked it up and listened. The telephone was tied to a tape recording giving interesting facts for tourists. He listened to the tape recording of dates and facts while the Sanctus blazed around him.

This man became a symbol for me of the loss of awe, of our loss of sense. Unable to immerse himself in the thing that surrounded him, unaware of the size and importance of the sounds that he was hearing, he was more fascinated by a tape recording.

I realized that this young man summarized what my efforts have been about. All the efforts I have made, at their heart, have just this one intention: to bring back our sense of awe, to allow us to begin again to make things in the world that can intensify this awe. □



First sketches of a House in Berryessa, now under construction

And why? Is it because these Mexican craftsmen didn't know how to do precise work? I don't think so. I believe they simply knew what is important and what is not, and they took good care to pay attention only to what is important: to the color, the design, the feeling of one tile and its relationship with the next—the important things that create the harmony and feeling of the wall. The plumb and the alignment can be quite rough without making any difference, so they just didn't bother to spend too much effort on these things. *They spent their effort in the way that made the most difference.* And so they produced this wonderful quality, this harmony . . . simply because *that is what they paid attention to, and what they tried to produce.*

A modern American tile-setter, who has learned to get his satisfaction from the perfection of squareness, the perfection of plumb, and the perfection of the regularity of the tiles, *can never achieve the same result.* He cannot achieve it, even if he knows the field of centers and understands it.

The reason is simple. So long as his mind is occupied with the technical perfection, he cannot concentrate his mind on the field—and so the field will not happen in his work. There is not room for both. This is not because they are inconsistent. It is simply because you cannot concentrate on two goals of this magnitude at the same time.

In our time, many of us have been taught to strive for an insane perfection that means nothing. To get wholeness, you must try instead to strive for *this* kind of perfection, where the things that don't matter are left rough and unimportant, and the things that really matter are given deep attention. This is a perfection that seems imperfect. But it is a far deeper thing.



Although the process of order-making is a formal, geometric process, it is nevertheless a process that pays deep attention to problems of life. Its roots are in the existence of the wholes as centers in the world in their control of existence and their production of order.

Shallow concern with styles or images, which is typical of post-modernism, is another thing altogether.

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NOW COMES the photographer Robert Dawson with alleged evidence. Gathered from I-15, the main drag between L.A. and Vegas, directly south of Death Valley. Said signified being formerly a Depression-Era deco health spa on a dry lake, now a desert-ecology research station administered by Cal State Northridge.

It is this journal's contention, notwithstanding, that words beginning with doubled consonants are illegal, immoral, and inadmissible in English, despite *llama*, which is from the Spanish and vowel-like.

May it please the reader to refer to the original sighting of the *zyzzyva* in Brazil, *Memoirs on the Coleoptera*, Thomas L. Casey, (Lancaster, PA, 1922): "In this singular genus the body is oblong-oval, convex and clothed very densely and uniformly above with parallel, ochreous-yellow scales, those of the under surface less dense, shorter, whiter and very narrowly separated. The beak is short, thick, rapidly but gradually tapering distally and carinate above, not separated from the head by an impression. The mandibles are peculiar, being large, flat and triangular, arcuate externally, their truncate inner margin obtusely quadridentate. Antennae slender, slightly ultra-median, with long scape, the first two funicular joints elongate, the second the shorter, all the succeeding joints a little longer than wide, the club small, oval, as long as the three