

they have still not given us a form language capable of letting us make a living architecture. The *geometry* they have created is inadequate. They have not shed enough light on the actual *shape* the built

world must have if it is to have true life. Nor have they yet increased our consciousness of the fact that the geometry of the world is the absolutely indispensable underpinning for all living process.



5 / THE STYLE NEEDED FOR UNFOLDED, LIVING FORM

Why did the experimental form-languages of the 20th century not work? The reason is not hard to see. It is rather as if someone gave you a ruler and T-square, and said "Use these drawing tools to draw a human face." You would say, "But that is almost impossible: the ruler and the T-square create the wrong kind of geometry. A human face is made of different shapes and different relationships than can be drawn with these tools."

Just so with buildings that have living form. Of course, most buildings have a more or less squarish character, not so often rounded; and of course the situation in the buildings of a city is a little more complex than drawing a face. Nevertheless my example is appropriate. It is an apt comparison. The kinds of shapes which appear as a result of unfolding when it is done right, and which occur as a result of the processes we have been studying from chapter 6 to chapter 15, are highly specific in geometric type and character. The shapes are mainly rectilinear, but they include roughness, they include shapes in which angles are nearly square but not quite square; they necessarily include imperfect repetition, where one column and the next and the next are almost the same, but not quite the same, and each one is placed to make space positive, requiring that things were bent, adjusted, made carefully to fit the nature of an emerging whole. Twentieth-century form language did — and could do — none of this.

The kind of thing that is required may be seen in the stair shown on page 436. Here, the gradual forging of the geometry came about through acts of construction, not only design. The example, once again, is small, but real. It is

an unfolded form, *visible* as unfolded form yet with a definite physical character. It is coherent and geometrically whole, yet it is almost without a conscious, artificial style.

There isn't anything exceptional to this stair; it is fairly humble. But there is unfolding visible in its geometry. When we look at it, we can see the trace of a smoothness of process. We see the result of continuous stepwise adaptations. We can see that, one by one, its features have unfolded. I should like the reader to try and grasp what I mean by this. If we look at the stair, and try to imagine the decisions being made in time, we can see that the placement of the stair was established first, followed by a true unfolding. The stair is brisk, spare in outline, but has the character of accurate formation that follows from the proper adaptive unfolding of architectural form.

First, the landing was established; then the walls and their banisters were established in relation to the stair; then the ornament, which forms the top, was established in relation to the walls.⁸

All this may sound obvious, but it is not. If you concentrate on it, I believe you will *feel* the unfolded character of what is there. We can feel that one thing was established, then another was established in relation to the first, and so on like that. Each smaller thing has been given its shape after, and in relation to, the larger thing that was established first. It is *that* which creates the harmonious feeling, since it is that which makes each part adapted and comfortable. The stair is gently ornamented, but simple. Each part is, more or less just right.

As a result, the building form has a very definite character. Yet it is a character without conscious or deliberate imagery. It is nearly what



Unfolded geometry: A stair on the George house, 1998, Christopher Alexander and Randy Schmidt

one might call a formless form. It arises from unfolding of differentiations and symmetries, and little else. This kind of form is *necessary* in order for unfolding of a building design to occur smoothly. A prefabricated stair, for instance, cast in one piece in a factory, and lifted in by crane, could not have this quality. It cannot look as if it has unfolded. And it cannot have the deep adaptation typical of an unfolded structure.

Perhaps one is led to wonder if unfolding is even possible in our era of modern construction. Yet the stair in the photograph is an entirely modern construction, built in 1998 at a modest budget, using conventional concrete blocks, sup-

plemented by poured concrete ornaments poured into styrofoam molds, and a wooden portion cut out with modern saws and tools.

The form language which can support the creation and emergence of such an unfolded thing, must be made from elements and transformations which support, one by one, the various steps in the emergence of a whole. That requires something simple, and direct, but above all something which corresponds at every step to the kinds of thing which happen when a living structure is unfolded by differentiation from its context.

What kinds of new form language might help us achieve this: might let us create simple



*Twentieth-century form language: The schemata here are not useful for creating living structure.
Daniel Libeskind, Felix Nussbaum Museum, Osnabrück*

and unconscious, unfolded form for all the thousands of types of buildings we deal with in the world today?

If one were trying to make a staircase like the one shown on page 438, by combining schemata mentally, what kinds of schemata would they have to be? What language is needed, even to be able to *draw* such a building, or —

equally — to be able to build such a stair? The answer is: It would have to be a language of shapes, forms, differentiations and symmetries, which go just exactly to what is needed at each subsequent step. They would need to be simple, modest, small. And, certainly, the rules of the game needed for such a purpose are not the schemata which are being introduced today.



6 / WHY TWENTIETH-CENTURY FORM LANGUAGES WERE NOT HELPFUL

In chapter 4, I described the way in which modern forms that are not structure-preserving to their environment, are so obsessed with images that they cannot be achieved by structure-preserving steps.⁹ They are conceptual, but are not

attainable in easy, natural steps which arise from the context.

To see that clearly, we need only look at examples of buildings which were considered avant-garde in 1998. The two shown here are by