would depend on the preliminary design I had in mind, which in turn depended on his first rough findings, and that I needed to keep the question and answer process going, dynamically, between myself and the engineer, while the work went forward. I insisted, therefore, that it was necessary for me to control the soils work, and to pay for it. They would not allow it.

In another project, the Frankfurt housing, I asked that we have the structural engineers involved from the beginning, since to meet the cost we had to perform actual engineering calculations. For two years, the client refused to start the engineer (even though contract demanded that engineering be paid by them), because, as in the other case, they wanted the engineer to be brought in later, when the first architectural scheme was already complete. This made genuine and effective cost-squeezing impossible during the early design process — the very phase of work when it had to be done in order to be effective. Yet the essence of the project was the requirement that

high-quality buildings were to be built at low cost, and this needed the most sophisticated design from the beginning in regard to structural members, floor design, and wall design.[7]

Most amazing of all, throughout this two-year long discussion, the client insisted that I provide a guarantee of building cost — something I most warmly wanted to provide — yet he could not understand or accept that we could not provide the necessary cost assurances without benefit of engineering.

This man was not silly, as this story makes him sound. He was simply caught in the rigidity of contractual separation between different professions, thus making workable and responsible attention to the whole impossible.

In both instances — Mary Rose Museum and Frankfurt apartments — this kind of damaging compartmentalisation and refusal to allow processes to unfold in the right order, had negative impact on the shape, form, cost, and life of major buildings.

6 / FURTHER DIFFICULTIES OF INAPPROPRIATE SEQUENCE: THE NEW JERSEY WETLANDS

An experience I had once in New Jersey, may serve as a more subtle and more extensive example of this complex yet massive point.

A client asked us to build about a dozen houses on a site of 15 acres in Mendham Township, New Jersey. I went to look at the site, with the idea of getting a first rough idea where the houses would best be placed.

When I got there I was astonished. I had forgotten how lush and overgrown New Jersey is. The site was completely overgrown. A pond at one end, bushes, thickets, a maze of thick undergrowth, and trees everywhere. There were several thousand trees, saplings, and bushes, large and small.

As I stood there, struggling even to walk through it, one thought was constantly in my mind. How are we going to get started?

I tried to explain the problem to Karl, my client, and found the greatest difficulty in communicating it to him at all. I was trying to imagine the actual machinery we would use, what kind of task it was to clear this site, without damaging it. He said, "What's the problem?" I suppose he was imagining that I would make a plan on paper, and he would then get a group of bulldozers to clear it. That was the normal process in 1989. But I was trying to imagine it, *actually*. I stood there, and realized that this one task was a task of two or three months at least, just to do selection of trees, culling of trees, and designing. The longer I looked at it, the more difficult I realized it was, and the more complex the problem, because I realized that as things stood it wasn't even possible to decide where to place the houses. You couldn't see enough of the

land, to see where to put the houses. Just to decide where to put the houses, one had to clear some trees, some underbrush, grade some land. And in doing those elementary first steps, to see where to put things, one was already making decisions, merely in the act of finding out how and where to make the decisions.

I explained it to Karl another way. He had brought me into this project because he wanted to learn how to preserve the natural wetlands of New Jersey, and show how houses could be built without destroying the natural wildlife. This meant, a process of selective cultivation . . . a process in which one thinned out and tamed the wild land. But not a process which is *too* respectful of nature. Rather, a kind of process of establishing a form of nature, half-tamed, half-wild, where human settlement, houses, gardens could interact harmoniously with nature, not by leaving it alone, but by creating a mixed, balanced continuum in which gardens are wild and nature is tamed . . . something rough and natural, but also cultured and tamed and formal.

To make this thing, it was necessary to have an intelligent process, in which each act of cutting a bush, pruning a sapling, removing trees, grading a small stretch of land, was being done in a dynamic way so that the complex and beautiful finished reality would arise from the process itself.

It would have been impossible to create a sensible drawing of this complexity, showing the future of each one of 5000 trees. Imagine drawing 5000 trees, and marking on the drawing which ones to leave, and which to take! But it would also have been inherently impossible because, when done correctly in a living process, it would be the *sequence* of cutting the trees, one by one, alternating with the sequence and process of choosing lots, deciding house positions, seeing what is left, cutting one or two more trees, finding the position of the next house, then cutting again, at the right distance . . . *all this, which would make the beauty of a successful building project in which a dozen houses could be harmoniously related to the land*.

Today, no such process exists as part of the kit of tools in the architect's tool-bag. Within the mainstream profession of architecture, no one knows the rules for such a process — especially not if time and cost are taken into consideration as a relevant part of the issue. It was this that made me marvel, and stop in astonishment as I stood at the edge of the wood that day, wondering how we were going to do it. The complex intelligent process (not too costly) in which people, bulldozers, equipment, and care and love for the forest would all interact to produce a new half-forest half-garden, in which the right balance could be struck. And the fact that this process had to be dynamic, and could not be predetermined by drawn plans.

To imagine what this process might be like, one has to imagine a process of gardening — especially in an old and rather wild garden, where the pruning, gardening, weeding, are all selective, and where the wild plants and cultivated plants grow together, and emerge from the act of gardening itself. It is then the dynamics of the process in time, and the intelligent and motivated process of reacting to successes and failures, which creates the final whole . . . not some static image, which can be drawn on a plan at the beginning.

It is a coordinated process of decision-making, coupled with the use of heavy equipment, in a delicate and selective fashion, together with basic decision-making that has the authority to place lot lines, and house-footprints, while the pruning, and cutting is going on. The process is then able to create positive space among the trees, sites that get sunshine, sites that are visually protected from each other, and sites, gardens, and views, which benefit from the natural lie of the existing trees, and the existing lay of the land.

This is a new kind of process, not consistent with existing processes. And because of the way such a process works, it is not practical to create this life by first making a drawing, and then asking someone else to build it. That division of activities is not consistent with the inner logic of the process.