ASPECTS OF INTERACTION

The plays presented in this book generally seek to enable you to interact successfully with your peers. In this chapter a few aspects of peer interaction are highlighted to illustrate how central this is to our operating in everyday built environment and to our ability to make it bloom.

TRANSFORMATIONS

We come from a venerable, millennia old tradition in which time and change were the enemies of architecture.The church, the mosque, the temple, the palace and the castle were supposed to last.

Modernity changed all that. For the first time in our professional history, whatever could be built, was declared worthy of architectural attention. Since then, common houses, factories, schools, office buildings, shops, and much more make for the bulk of our output. That expansion of the architectural claim was not only quantitative but implied a basic reorientation of the way we work.

The entire built environment is subject to slow, but continuous renewal, adaptation, modification and replacement under the pressure of ordinary human needs and preferences. The very durability of cities depends on their ability to change and adapt, while staying coherent and maintaining identity. Dealing with everyday environment means that change over time now must be an integral dimension of architecture. It therefore is important to consider the various ways in which we meet the time factor in our practice to be able to adjust our work methods and our theories accordingly.

It does not take profound observation to notice that some parts of the built environment last longer than others. We find it natural that buildings can be taken down and new ones be built while the street they are situated on remains in place. Or that we easily move around furniture but think twice before we displace a wall in our house or install a new kitchen.

One reason for such differences can be technical complexity. We may move a wall in our house sooner when it is possible to simply retract its edges and slide it to a new place to click it in place again -assuming that its size can remain the same. but even when we could easily displace the wall, we may find that it contains cables for power and data that need to be removed before the wall can go. By the same token, we may want to displace an electric outlet and find it annoying that we must take apart the wall in which the cables are embedded. Apparently, walls and cables, when integrated, inhibit one another's deployment. Such technical impediments can be solved by innovation. The separation of subsystems so that they can be re-deployed without disturbing one another has become the major pre-condition for technical flexibility.

But technology appears to be the minor issue. If somebody else occupies the space on the other side of the wall, its flexibility is to no avail when that person objects to what is basically a territorial move. In the same way, neighbors along a street will jealously guard the line where their properties meet. Usually we find fences and walls, but even when lawns touch, the boundary line becomes

visible when one neighbor mows the grass and the other waits another week, but it cannot be shifted unilaterally. Such territorial conventions are not technical at all, but do make change of physical things a matter of social interaction and negotiation.

To appreciate the importance of social convention as the determinant of patterns of change in the built environment it is instructive to compare cultures. In the historic Arab town citizens expected social consensus. There were virtually no written rules nor a jurisprudence of precedent, anything could be transformed as long as neighbors agreed. It was even possible to build a second floor room over the street, indeed it could even be agreed that a citizen's territorial expansion actually blocked a street as long as all who were affected by such a move would agree. In contrast, in the Western world a top down control is assumed and taken for granted. There are externally imposed rules as to what is permitted and if they are broken a higher authority is expected to act.

But the idea of a higher order limiting lower level action is not exclusively a matter of rules. A shared configuration like a street network will inevitably disturb a lot of parties inhabiting the space it provides when it wants to transform itself. This can slow down or even block a proposed transformation. Without consensus higher level change demands the exercise of power, as for instance when prefect Haussmann had the Parisian boulevards carved out of the medieval fabric, causing major disturbance.

Yet, Haussmann had to wield power because he had to obey the laws of form. A larger framework, like a street network or, for that matter a structural framework of a high rise building, cannot be changed without disturbing the many smaller entities that depend on it. Thus, what we call dominance among forms, is a given: physical laws, like gravity and containment, force us to interact in a certain way. The properties of physical form make parties relate in terms of dominance simply by *what* they control, entirely independent of *who* is in control. We play the game the way we find it.

However, dominance of one form over another is not always imposed by the laws of form as is the case with the relation between streets and houses or between buildings and interior partitioning. If, for instance, you design a table with four chairs around it, and you say to a friend, "let's move this table" she will rightly assume that you expect the chairs to go with it. If, however, you say, "let's move this chair to a corner of the room", she will not expect the table to follow the chair. Indeed, the a-symmetric relation between that table and its chairs, is the same as between a street and its houses. One form dominates a number of dependent ones. When it moves, the others must follow, but when a dependent one moves, the dominant one just stays. Nevertheless, in case of the table and chairs, the dominance is purely a matter of human convention. Dominance by convention is pervasive in our designing. Once you are aware of it, you will find many other examples while you are designing.

In sum, when we change a form we may encounter technical complications, we may get involved in territorial issues, we may disturb a number of other parties forced by gravity or the laws of form, or we may obey form relations imposed by human convention. All this together makes handling form in the build environment a complicated business. It's a heady brew one needs to study if one wants to intervene successfully. If you are interested to learn more about these multiple aspects of form and human control, you may want to consult my book "The Structure of the Ordinary, Form and Control in the Built Environment".

All this together may also make it clear that change and its laws and conventions is not just something we are free to avoid, it is the very essence of designing. It is not only that we change the physical or social context in which we intervene, but the very search for the appropriate form is a matter of transformation too. Control of form begins with controlling acts of transformation of the form itself, without territorial or other social conventions, and this, in turn, demands our knowing how physical form behaves under such acts. For that reason we will consider in the first seven plays the issue of 'making moves'; that is to say, to change a form for purely formal reasons, in a step by step controlled way. In subsequent plays we will then consider relations between controlling parties.

VARIATIONS

The things we make as part of the built environment come in families the members of which we recognize as similar but at the same time never entirely identical; each one a bit different from all other forms in that family. We tend to say that forms of such a kinship illustrate a type or a pattern. The familiarity of these terms and our recognizing them in historic environments tells us that the making of variants is something the human spaces has been doing for a long time.

But what identifies two forms as being variants of one another? Generally, we may find that they have identical parts although not all parts of the one are found in the other. We also find that these shared parts seem to have certain constant relations to one another although, again, these shared relations do not inhibit a good deal of relational variation as well.

Patterns tend to be very limited in their composition. One like "make sure that the family car can be parked within sight of the front door" has only two such parts - front door and parking place - and a single relation between them - visibility from one to the other. Types, particularly house types, can be much more complex with many more parts that are found in each variant and distinct spatial relations between them. The Pompeiian house, for instance, has three defining spaces - atrium, peristyle, and garden - that always are found in that sequence when we enter from the street. But many secondary spaces of different kinds and in different numbers relate to the three

major ones. To make things even more complicated, many houses have no garden in the back, and the poorest among them may not even have a peristyle or only a truncated one. Yet, although it turns out to be difficult to satisfactorily define a house type, we easily recognize an example when we see one. Students, when given images of a number of variants of a house type have little trouble to make a reasonable variant of their own, but find it difficult to agree on the rules that determine the type. This suggests that we have a knack of reading form like a language without knowing its actual structure.

Although I suggest that types and patterns seem to differ mainly by the complexity of their formal organization, it may well be possible to argue the existence of simple types and complex patterns. Since we are here interested in what unites them we must avoid semantic questions and I will call them all specimens of 'thematic behavior' of forms in built environment. When we see such specimen we see a common *theme* in a series of forms. The phenomenon is not unlike the use of themes in music. The interesting question is how such themes emerge and what sustains them.

The very difficulty to pin down the actual theme that unites a series of variations, seems to tell us that the latter reside in a social body that produces the variants unmediated by any explicit or formal rules. Variations of a given theme are not forms produced by a rule book but by transformation of existing specimen. Given a number of variants establishing a certain type or pattern, I can make another one by transformation of one I am looking

at. But not any transformation produces a valid variant. We call the result of a transformation a variation when it is recognized as another member of the family. That call may be accepted or can be disputed by others familiar with the same. The range of agreement depends on the social body within which the theme resides. One may be more tolerant than the other.

If themes reside in a social body, we have here evidence of thematic environment as the inseparable and immediate interaction between physical form and humanity. If the two are separated, thematic forms will mutate into mindless uniformity as happened in mass housing in Modern times, or may, in the opposite extreme, degenerate into the inchoate as happens when designers insist on only doing their own.

The most resilient themes are those that are entirely implicit and unquestioned. When I first visited the United states I asked friends why front yards in suburbia had no fences in contrast to most other environments on the planet. This always stumped them; proofs of a deep seated theme; the self evident is never explained because it is never questioned. Once increasing traffic and urbanization compels a citizen to set up a fence to protect his privacy, neighbors may protest and propose a rule to preserve the habitual. Explicit rules tend to come about when ingrained themes are violated by changing circumstances and debate ensues........ or where no thematics yet seem to exist. In our dynamic and fast developing contemporary world thematics may need more explicit seeding before the self evident kicks in. In

times like ours, where environment is in flux, we need to learn how to stimulate thematic behavior of form. This is first of all a matter of attitude, but nevertheless, as the plays in the second and third set may illustrate, cultivating thematic form takes certain specific skills.

POSITIONING

To work on the built environment as a complex composition of many subsystems, all subject to change over time, each under control of another party, ways to indicate the position of a physical part in space are needed to help us organize the complex spatial distribution of sub-systems and to avoid conflicts between parties controlling their own while sharing space with others. In negotiations among designers coordinating their work, information about what goes where or what might go where is of course the main topic. Means of positioning, therefore, are vital in environmental design.

Generally, positioning of things in space is done by means of some kind of grid combined with certain conventions about the placement of parts in it. Such a system can be ideosincratic if only intended to organize your own work. Frank Lloyd Wright, for instance, for some of his buildings used a hexagonal grid in which walls were placed with one side touching a grid line. In principle any designer is free to choose a grid and set a placement convention. Such a specific one-time solution has the advantage not only to organize a specific design but also to facilitate the making of details as well as the on-site execution.

However, once we need to coordinate our designing with that done by others with whom we share the space we are working in, it is necessary to use a common grid and agree on positioning conventions related to it.

The subject of positioning merits its own methodological exposition. But this is not the place for it. However, a few general principles can be stated that should enable you to set up simple means to organize your own form making as well as your interaction with other designers.

Basically, apart from simply locating a given part by its distance from another part, there are three means of positioning building objects on a horizontal plane. (once you are familiar with them you can easily apply similar means in the vertical direction) These three are: single grids, band grids, and zones.

Plain single grids are best applied for structural systems to locate the position of columns and load bearing walls. Objects are placed relative to the grid lines. Usually it is preferred to have the centerline of a column or wall coincide with a grid line but, as the Frank Lloyd Wright example already shows, other positions relative to the grid lines can be taken. And, moreover, any position within a grid can easily be defined by giving distances to grid lines.

Band grids usually show a grid where the distance between lines produces wide and narrow bands alternating in an a.b.a.b. fashion. Here, objects are located not relative to a line, but by occupation of

one or more bands. In the design of floor plans the narrow band may be the location for partitioning, while a+b is the design module. A partitioning wall, for instance can be located in a narrow band while a heavier load bearing element can span a wide band. A good general rule is that all parts always 'end' in the narrow band. Thereby the location where things join is known which is important information when two parties seek coordination.

The advantage of such a placement convention is that the exact width of elements need not be determined in the early stages of design, when it is sufficient to know that it will not exceed the bands they occupy. At the same time we also know the nominal size of the space between objects, being the sum of un-occupied bands. Whereas, in architectural design, we want to read material as well as space, this is helpful. Moreover, once we know that things meet in the narrow band, we can draw on a smaller scale by making the narrow band a single line - actually hiding the band grid behind a single grid - and sketch parts from line to line while indicating partitioning by tracing a single line. A sketch like that can easily be blown up into a band grid again.

Where a grid is useful to position material elements, zones and the margins between them can be used to organize the location of objects of a certain kind or spaces of a certain function. Where grids offer a homogeneous framework to place things in it, zones interpret a given physical context for possible occupation.

In the 17th century maps of the city of Amsterdam we find in the newly laid out extension zones that show the location and the depth of the buildings to come along the canals. Still today it is useful to give 'built zones' in an urban design indicating the minimum to be built area with margins indicating the allowed maximum. In general, zones represent, in an abstract manner, a certain given context; as such allowing us to assess the capacity of a given situation for the kinds of things we are interested in, according to our norms. In the design of a base building, therefore, zones can identify areas in the given building that receive daylight, and others that do not; or areas reserved for public use as distinct for those for private occupation. Zones, in short, help organize the location of things we want to distribute in space.

For that reason, zones can have any shape or size we deem appropriate for the use of the situation they interpret. In contrast to grids, their deployment need not be regular. Grids are neutral and preferably continuous, helping relate objects in space. Zones are not neutral but normative interpretations of a given situation as we assess it and as we want to use it. But both allow us to deal with the positioning of things in space.

In the plays given here, therefor, use these tools only to the extent that you find them helpful and learn to see them as means of communication as well as organization. But also learn how and when to depart from the conventions they represent.

Thematic Design

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