The idea of an environmental pattern system raises many questions. We shall set down immediately those questions which arise most frequently. The questions are:

1. Why should the pattern statement be so physically specific? Aren't performance standards a better form for general statements about the environment?
2. Aren't the "tendency" statements too much of a straightjacket? Isn't it enough to list simply the program objectives, and then decide whether or not the building meets the objectives?
3. How can imprecise, human requirements be put into the precise format demanded by pattern statements?
4. How do you design a set of patterns?
5. How do you know that the patterns prescribed for a given situation are all that are needed to insure a functional organization?
6. On what is the decision based to make one pattern from a design idea, instead of two or three?
7. How can you be sure that even the best patterns will generate a functionally sound environment? Isn't it possible that smooth functioning depends largely upon solving particular, circumstantial problems, problems that are unique to a setting and non-generalizable?

The following are very rough drafts aimed at answering some of these questions. Since these questions - and others - may come up during the seminar, these pages should be taken as a basis for discussion.

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1. Why should the pattern statement be so physically specific? Aren't performance standards a better form for general statements about the environment?

[redacted]

Performance standards are a list of activities, or needs, or functions that a given building must house. The standards almost always have the form, "the building should allow 'x' to happen," or "'x' conditions should be present in the finished building." However, performance standards never state how a building should be organized so that 'x' conditions will obtain. They are, in effect, only an organized attempt at stating environmental problems; they are never more, they are never solutions.

The performance standard concept is weak then, since standards alone do not insure that a finished building will work according to specification. To overcome this weakness, we must construct statements that indicate not only what conditions should exist, but exactly what kinds of physical arrangements will permit such conditions to exist. This is exactly the intention of individual pattern statements.

For a building specification to be complete it must specify actual geometric arrangements for the environment. If we settle for performance standards alone, we are not

doing our job. We must gradually construct an organized catalogue of enviromental problems and corresponding solutions. A body of problem statements, no matter how precisely stated, is not enough; the physical relationships in a building that are solving the problem must be abstracted, and stated as patterns.

Unless we state solutions along with problems, in a general format, there is little hope of ever improving our efforts in any cumulative way. It is difficult to criticise and modify lists of performance standards; almost everyone always agrees with them. But since standards do not go far towards solving environmental problems this kind of agreement is superficial.

[illegible]

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Once patterns are stated along with problems, agreement vanishes; there is a strong chance that the solutions, or patterns, may be wrong. But it is only by going out on a limb, by chancing mistake, that we ever get moving toward ~~xxxxxx~~ correct pattern specifications for the environment.

(1) Are'nt the "tendency" statements too much of a straightjacket? Is'nt it enough to list simply the program objectives, and then decide whether or not the building meets the objectives?

Designers usually acknowledge that the success of a building, in functional terms, depends on its capacity to accomodate stated building objectives. The listing of objectives, or criteria, always precedes the first stages of design. The idea of explicitly setting down program objectives is part of the general trend toward rationalizing the design process and insuring the functional quality of buildings. But there is one critical problem with the program objectives strategy: There is no way of knowing whether or not the objectives listed are the right ones; why should the building function according to them, instead of some other, slightly different, list?

Thus the arbitrariness of a [redacted] program objectives list is a threat to the possibility of truly functional design. Every designer knows that whole "solutions" can become shaky once the relevance of program objectives becomes open to inquiry.

[redacted]

[redacted] The "tendency" concept is an attempt at overcoming this problem. It implies that behind every [redacted] building objective lies a potentially active force; that these active forces [redacted] shape the environment, and make up the true functional program for any building. The active forces are stated as individual tendencies and accompany each pattern statement. [redacted] It is assumed that under specified conditions, each tendency, or force, will operate on the

[redacted]

environment. It is always possible to test the accuracy of a proposed tendency, since, unlike program objectives, they do not have the character of arbitrary inventions. Thus, if a building objective states "In a service center, young mothers, waiting to be interviewed, need to be near their children in the child-care area," it is difficult to know exactly what demands are being made on the building form. Will mothers want to wait near the child-care area, or would they prefer to wait away from their children, relaxing with a cup of coffee before their interview? Do children need to see mother, or should they become thoroughly absorbed in the child-care activities?

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The objective seems arbitrary. Shall we design a child-care area woven through a waiting zone, or separated from the waiting zone by glass, or should child-care be visually enclosed, and waiting be part of a coffee lounge? The original objective gives rise to so many questions and possible interpretations that a functional solution based on objectives alone seems remote.

~~But if we look for the active forces underlying the objective the problem becomes clear.~~ instead of objectives

But if, instead of objectives, we look for active forces underlying objectives, the problem becomes clear. "Mothers will try to stay within 10' and in sight of their children while they are waiting for appointments." "People waiting for appointments will tend to wait in thst part of the waiting room associated with the location of their appointment." Both statements are hypotheses. They may be right or wrong, but they can be tested. If they are right, they will actively influence the shape of the environment. The environment can either accomodate both forces, or place them in conflict. Let us examine the conflict possibility since it is here that design is required.

The second tendency is the more general, and includes "mothers"; if mothers cannot stay in view of their children and in an area associated with the location of their appointment their will be conflict. Reshaping the form eliminates the conflict: Child care should be within 10' of waiting areas, the waiting areas fanned out, each associated with an appointment area.

With design objectives, the connection between form and objective is always arbitrary and unclear; with tendencies, a truly functional building grows out of the human forces at work in the environment.

3. How can imprecise, human requirements be put into the precise form demanded by pattern statements?

It is not necessary that all patterns be stated with equal precision. It is only essential that each pattern describe unambiguously a physical relationship.

Some design ideas lend themselves easily to precise numerical statements; for example, the statement of the pattern for house signs has this character: The minimum size for house numbers can be stated precisely because the tendencies and derivation were stated in precise, quantified terms. Other patterns do not lend themselves to such precision; for example, the pattern concerned with the introduction of preschool children to primary school calls for a small park and pedestrian path running through the school, near classrooms and linking up to the community at two points. This pattern does not give exact numerical distances or geometric positions, but the relationships it does state are unambiguous in their own terms.

It is important to note that even in these cases, where a pattern does not easily lend itself to precise formulation, it is still possible to state the key relationships with perfect clarity. There are two reasons why each pattern must be stated unambiguously: First, it is only when the pattern is stated clearly -precise in its own terms- that we can determine whether or not a given piece of the environment conforms to the stated pattern.

Second, it is only when the pattern is stated without ambiguity, that we can criticise it, and modify it; vaguely stated patterns can never be easily amended and improved when they are wrong.

~~How do you design a set of rules; how do you know that the rules you prescribe are all that are necessary for a functional arrangement?~~

4 How do you design a set of patterns?

~~There are no rules for the design of rules.~~ Like scientific hypotheses no constraints ~~need~~/should be placed on ~~how they are developed~~ the invention of patterns; it is only important that once patterns are developed they become/open to criticism and revision.

Most generally there seem to be three ways ~~of getting~~ to arrive at patterns. In the first case there is some building or setting in the existing environment that appears well-organized and seems to be solving a ~~problem~~ problem (though perhaps you cannot say just what it is). There may be a number of such places all/which seem to be ~~well-worked out~~ intuitively well-worked out. The job is to abstract from this place ~~or number~~ (or number of places) just those relations between parts which are essential to its functional success. What characteristics of the buildings physical arrangement really matter? Which relations, if repeated on another site, would reproduce the same feeling of good organization? This abstraction process generates a set of generalized arrangement statements; these statements ~~become~~ the patterns that govern the organization of the object; they are a set of instructions for producing new objects. The second way of getting at patterns is/nearly opposite in one way, the first. Instead of starting with an existing environment that feels right, we begin with a feeling that there is

something seriously wrong with an existing arrangement: that the arrangement must be creating a serious conflict between human tendneices. The job here is to decide just what it is about the existing arrangement that is bothersome and what tendencies are being thwarted. With the analysis goes the development and refinement of an idea for rearranging some parts of the environment. As the idea matures it becomes a pattern statement and governs a new pattern in the city, a pattern that eradicates the original conflict.

A third way of getting at problems begins less with a sense of good or bad physical arrangement than with an instance of human misfit. Again, this process starts with a strong intuition, an observation, perhaps, of some point of friction in human affairs. The question here is, "What features of the physical environment are helping to sustain tha problem?" (Or, conversely, if some event seems full of life, what features of the environment are helping to sustain the health of the situation.)

The generation of formal tendencies and design rules follows the intuition in much the same manner as above.

It is interesting to note that in all three cases begin with a strong feeling and only later move to formalization of patterns and arguement.

How are you sure the rules you prescribe are all that are necessary for a functional arrangement?

(6)

How do we know mow much to put into ONE pattern?

A. Given two patterns, how shall we decide whether to combine them, or whether to leave them separate.

B. Given one pattern, how shall we decide whether to split it apart, thus making two or more patterns out of it.

These two questions are equivalent, since B can always be phrased as if it were a case of A.

[illegible]

[illegible]

Let us call the two patterns in question, P and Q.
We may now answer the question A, by answering the following question:
Are there any contexts [illegible] in which we should want to use pattern P but not Q, or pattern Q but not P. If the answer to this is YES, then the two patterns should be left separate. If the answer is NO, so that there is no context where one of the two is desirable, but not the other, then the two patterns should be combined.

Another way of looking at this: [illegible] Are the two problems solved by P and Q [illegible] independent or not. If they are causally interwoven, so that they always occur together, then the patterns are not separable; if the two problems can occur independently the two patterns are separate.

(NOTE: the question is whether we want to use P and Q , not whether we can actually do so. There will always be some situation where, even though we should like to use both P and Q, some local constraint actually makes one of them impossible: this would be true for any P and Q, and would not help us distiguish separable pairs from non-separable pairs).

How do we know how much to put into ONE pattern.

A. Given two patterns, how shall we decide whether xxxxxx to combine them xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx or whether to leave them separate.

B. Given one pattern, how shall we decide whether or not to split it apart, and make two or more patterns out of it.

These two questions are equivalent, since B can always be phrased as if it were a case of A.

~~CONDITION 1.~~

~~xxxxxxxxxxxxxxx~~

~~If the two patterns can be applied separately, one without the other, in any imagineable situation, then the two should xxxxxxxxxxxxxxxxx left separate.~~

If there is any context where one pattern would be appropriate, and the other would be inappropriate, then the two patterns should be left separate. This means the two problems can occur independently.

~~CONDITION 2.~~

If the problems solved by the two patterns are quite different problems, then the two patterns should be left separate. If, on the other hand, these two problems are causally interrelated, then the xxxxxxxxxxxx patterns should be combined.

EXAMPLES:

Combine the two statements of the house sign position. It would be possible to apply either one, without the other, but xxxxx it would only make sense because constraints make one impossible - not because there is any context in which one xxxxxxxxxx problem could occur, and the other not.

Separate the two xxxxxxxx systems in CONTACT, one of see in living rooms, the other for xxxx density - one concerns dropping in, the other childrens groups - there is no necessary functional connection between them.