

eliminated wastes of time and money which plagued the group throughout the summer.

The changes necessary to bring about successful group action must begin on an individual level, with a realistic assessment of private goals, individual merits and liabilities. From there, one must evaluate how these things relate to existing and potentially larger movements—an evaluation which poses such questions as: Is this the direction I want to move? Is this the best direction to move? If I join this group can I really contribute to it? I may assume I can make a contribution, but what will I do if the group thinks otherwise? It means approaching oneself and others in as egoless a way as possible, being as objective as one can, and willing to treat every encounter as a learning experience, rather than a trial.

## EXPERIMENTAL TESTING OF THE EFFECTIVENESS OF THE PATTERN LANGUAGE AS A DESIGN TOOL AND AS A GUARANTOR OF ORGANIC WHOLENESS: RESEARCH IN PROGRESS

During the past few years the staff of the Center For Environmental Structure has been developing a design tool called the Pattern Language. Their work is based on the belief that not only will the act of design be facilitated by the use of the pattern language, but that the resulting designs will possess that quality of organic wholeness which is perceived objectively. This note describes some recent research by the author on the experimental testing of these two hypotheses.

One of the difficulties with trying to test any design tool is the fact that the act of design is an act of the whole personality. It is a fragile process which thrives in the freedom of the real world, but which can be aborted, stifled, or at least greatly altered in "laboratory" conditions. Our approach to these difficulties has been to introduce pattern language materials to students already involved in a design problem in the studio. The students are then free to use the materials if they so desire, and the design process is left to develop naturally. The author made the pattern language materials available to the 13 students in his beginning architectural design course with the understanding that these materials were only one component in the total teaching process. They were told to look over the materials and to use them if they appeared interesting or useful.

Two major findings resulted from this work:

(1) *Three of the top five students (as judged by both subjective and objective criteria) ranked the*

*develop one's own ideas, do one's own work, but the model presented of the real-world role of the designer may not be the best one. Consider the methodology of Kenzo Tange's URTEC team: it is a team not without specialists, in that every man has unique skills, but it is not a team of specialists, for each man develops a given project as far as time will allow, then from this point, with many solutions to the same problem to evaluate, the entire team works as a group to develop the optimal solution. Thus the individual retains the freedom to experiment and possibly fail, but the final design, and hence the interests of the client and the environment, is served. Creative individualism is likewise made possible, but its dogmatic aspects are curtailed, along with the egotism and egoism of the individual designer.*

*pattern language materials #2 in terms of usefulness among a set of 7 typical teaching methods, while a fourth ranked them #3. The other methods included individual conferences with the instructor (ranked #1), lectures, other texts and references, tours and observation of existing buildings, communication among the students, and juries.*

(2) The patterns were then used to construct an objective set of criteria which could be applied to the students' design. *The agreement between the class' subjective composite ranking of the final schemes and the rank based on these objective criteria was excellent (using the Kendall coefficient of concordance as a measure of the agreement), and the instructor's subjective rank also agreed very well with the objective rank.*

We now want to refine our techniques and to get answers to the following questions: Can we replicate these findings in other design studios? Which section(s) of the pattern language are responsible for increasing students' effectiveness as designers? Do the pattern language materials affect students' level of commitment or level of interest? Statistically significant results have not yet been obtained for these last two questions. Anyone interested in obtaining a more complete discussion of this experiment, or anyone interested in attempting to replicate these results in his own design studio, should contact the author at the Department of Architecture, University of California, Berkeley.

—Max Jacobson