

Summary of Accomplishments: Research Project on the
Perceptual Form of the City

In June of this year, the M.I.T. research project on the Perceptual Form of the City will terminate. Beginning in September of 1954, and originally scheduled as a three-year study, it was extended for two years, without additional grant of funds. A report on the first year of work, together with an outline of the work to be carried out by the project, appeared in a mimeographed "Progress Report and Plan for Future Studies," dated June 1955. This earlier report, since it outlined the original plans and expectations, will be taken as a basis for this memorandum, and will extensively referred to. A copy is attached.

At the inception of the work it was assumed that the sensuous form of the city environment has a significant effect on the satisfaction of those living within it, and that these potential satisfactions included a sense of continuity and meaningfulness, as well as a sense of choice, rhythm and contrast. It was felt that the city today is out of scale with the citizen, largely beyond his reach or comprehension. One need is to find a means of clarifying and ordering this chaotic region.

Yet the sensuous ordering of the city was felt to be a problem of a new order, due to its size and complexity in space and time; the way it enfolds the observer throughout much of his life; and the peculiar sequential nature of its perception. The study therefore took as its field the quality of a city as it is directly communicated by vision or the other senses, and the effects of this quality on the inhabitant. This broad

and almost untouched field had first to be explored, and the most promising parts selected for deeper study.

The objectives of the work might be summarized as follows:

1. A testing and development of the basic ideas mentioned above.
2. A comparative analysis of the visual form of various city areas.
3. An understanding of the perceptual effects of the city, and of the individual's psychological orientation to his environment.
4. The development of analytical tools for examining the urban visual scene, as well as techniques for use in urban design.
5. The discovery of new forms and ideas for more satisfactory urban environments.
6. The education of the professional and lay public to the importance of these issues, and the re-orientation of the design training of future professionals.

Some of these objectives have been in measure achieved, others have not. The basic ideas with which the work began have been sharpened and developed in depth, and to some extent tested, particularly on the questions of continuity and clarity. What was a vague area of study has been partially structured, with some of its promising regions defined.

Some new and interesting information on the impact of the visual environment on the observer has been developed, but more needs to be done.

A number of new tools for the study of the cityscape have been produced, particularly in the areas of orientation, and of sequential perception.

On the other hand, the comparative analysis of visual form has been carried out only to a minor extent. New Design techniques, beyond the insights from the new ideas and new analytical methods, have been confined to a single optical device, whose utility is still uncertain.

Rather little work has been done directly on the question of new urban forms, except for one highway study now in preparation. However, a great deal of material, suggestions and criteria for designers has developed from the various studies.

Finally, the education of the lay public was early abandoned as a goal, due to limits on time and other resources. Materials from the project, however, have been used in a number of written and oral presentations to the profession, and the continuing studies are having a strong influence on the training of graduate city planners in the school.

Throughout this time there has been a gradual development of the basic ideas with which the work was begun, although the original statement of the concepts of coherence and the facilitation of growth still stands as the normative basis. Particular projects and studies have had varying fortunes, some being found to be dead ends, others reluctantly put aside for lack of time or other means, still others modified and carried through. In general, there has been a consistent shift in method

from projects requiring substantial staff assistance to those depending more on the personal effort of the principals, and also from projects primarily descriptive or survey in nature to those which emphasize normative criteria or more abstract analysis.

The first year was primarily a year of general speculation, and of the search for and testing of various possible avenues of study. In this explorative year, the two principals worked very closely together, while specific responsibilities were taken on in the later years.

Three approaches in particular were tried and soon abandoned: the collection of a general photographic library; the study of the painter's and the novelist's view of the city; and the analysis of spatial sequence. The reason for this abandonment are outlined in the progress report. The study of spatial sequences, however, had later consequences, which will be referred to below.

At the end of this first year, three major areas for research had been tested and judged worth major effort: a descriptive analysis of small urban areas; a study of orientation; and a consideration of the communication of meaning in the cityscape. These were discussed and outlined in the progress report.

The study of small areas was in part carried through, although the final goal of a coordinated description, on many levels, was not eventually achieved. A series of street interviews, taken on the spot to elicit responses to the visual scene, was carried out on Brattle Street, in Copley Square, and on Boylston Street. When analyzed, these produced

some original material on the visual elements that seize attention on the city street, how they are organized and how people feel about them. The results of this work will be published this spring in the magazine Landscape, in the article entitled "A Walk Around the Block."

In addition, the Copley Square area was thoroughly documented by photographs, which recorded sequences, spaces, floors, facades, activity, and cycles of season, light and weather. This material has proved quite useful as raw material for other studies in the project, such as those of sequence, or landmarks, or communication, and has also been used by others not connected with this particular research. With a specific objective in mind, this type of graphic description would be worth using again. It is more doubtful, however, if a general, non-directed, photographic exploration should be repeated. This collection of some 1,200 mounted photographs is now on file at the Institute. Work with motion pictures proved less successful. It was dropped as a technique which to bear fruit required more time, funds, and technical skill than this project could dispose of.

In general, the study of small urban areas showed both strength and weakness. The principal danger proved to be that of any broad descriptive attack: a large amount of material may be collected, only part of which is of use. If, on the other hand, the material is gathered and analyzed in order to test a theory, or to guide a future change, or to be related to an analysis of observer's impressions, then the results become meaningful.

In particular, this work showed its value when it was used for a study of the effect of visual sequence as one walks along (a study now being continued on his own by the original research assistant at the University of California, Berkeley, and which was also employed in the highway studies to be described below.) The Copley Square photos also showed their value as the background for the intensive analysis of a small urban area in which observer impressions and action are contrasted with the physical scene itself. This type of study, which is detailed in the article, "A Walk Around the Block," could very usefully be repeated in other locales.

One of the results of this work has been the revelation of a new field of study: the analysis (preferably by those trained in psychological techniques) of the sensuous impact of the city on the individual citizen, how what he sees and hears and feels influences both his actions and his inner state.

With the occasional guidance of professional psychologists, the project has made exploratory tests in several directions in this field. The "walk around the block," referred to above, is one of these. Another was an analysis of growing up in the city, which proved equally fascinating, and was published in "Some Childhoods Memories of the City," Lukashok and Lynch, Journal of the American Institute of Planners, Summer 1956. A test was also made of children's drawings of the cityscape, as described in the progress report. Some trials were made of asking people to describe and discuss at leisure a city scene which was before their eyes; and of

asking others to guess at and describe the probable occupants of various houses. Both of these seemed worthy of being pursued. Finally, the study of orientation also involved several techniques of field and office interview. Real gains appear possible, if a person well acquainted with current psychological techniques were to engage himself in this area.

The second major study outlined in the progress report, that on orientation, was carried through much as planned, and was applied to Boston, as well as to Jersey City, New Jersey, and Los Angeles, California. This study produced new material on the reaction of people to the large-scale city environment, developed a new concept for design at this scale, and created some new techniques for the analysis of city areas.

Since this work has already been reported on in preliminary form (see the mimeographed study, "The Image of the City," February 1958), and will be published in final form this summer as a monograph by the Technology Press, it seems unnecessary to describe it further here. It leads directly, however, into the question of the visual form of metropolitan areas, one of the more interesting of the issues stirred up by the project. If, as now seems possible, an area as large as a metropolis can in fact have an apparent visual form, then how can this form be manipulated and improved? What techniques can be invented to give it shape and continuity? This is a real issue, of present concern to practising planners.

The third major study originally planned was that on the communication of meaning by city landscape. This work, under Professor Kepes,

concerned itself with two levels: the direct communication of literal meaning by intentional signs and symbols and also the communication, by the total environment, of deeper ideas or emotions, such as those of cooperation or competition, aspiration or a sense of continuity in time. Work at the first level deals with the technical means for increasing the legibility and harmony of signs, as well as their general design potential as part of the visual scene. The second level considers the basic problems of the communication of meaning in a more philosophical and speculative way. Studies in these areas are forthcoming.

The original progress report, in its Appendix B, also mentioned two further areas which might be the subjects for research: a study of natural elements in the city, and another on the perceptual impact of circulation.

The first tentative proposal was, for lack of time, never carried out, although certain features of it still appear tempting, in particular the study of the use of water features in the city, and also the role of natural and artificial light. The second proposal, however, was attacked in a modified way in the final year and a half of the project.

This attack was via a study of the perceptual impact of the urban highway on the driver and his passenger, carried out only partly in the manner outlined in the earlier report. First, a number of speculative analyses were made of what were probably the significant elements in the experience of the highway while in motion. Second, a number of existing urban highways were studied, including Routes 2 and 1A in Boston, the approach to the City of Hartford, the East River Drive in New York City,

the New Jersey Turnpike, and the entrance into Philadelphia along the Schuylkill River. These roads were recorded in several ways: by motion picture and still photograph sequence; by the subjective impressions of the experimenters recorded as they drove; and by a series of rapid sketches done under pressure while moving through the landscape.

These materials have been correlated and analyzed to give a picture of the major perceptual elements and how they are organized, and to develop a technique for recording and evaluating these elements as they appear in any given road. This technique involves a series of sketches, photographs and motion pictures, as well as a new graphic notation. It will be further developed and applied in illustrative form to a particular highway, probably Boston's Route 1A. This will appear later this year, probably in the form of an article.

Since the objective of this work is to show the possibilities of the design of a road as a perceptual experience, an illustrative design is also being prepared, taking the proposed inner belt highway in Boston as its basic. Although such theoretical illustrative work is always liable to criticism for inadequacies in areas foreign to it (i.e., for carelessness in regard to cost implications or traffic flow) it is nevertheless an excellent way to illustrate the unsuspected visual possibilities of alignment, spatial sequence, lighting and detail. If this work proceeds as scheduled, this design will also be published in some form during the coming year.

In addition to these studies, substantial time has also been put into

developing and testing a device for allowing motion pictures to be taken while passing through a model, which pictures would give the illusion of being in scale with the model, both in terms of dimension and velocity. When and if this device is successfully developed, it could be of real help in the design of highways or of large-scale site developments.

At present the device is neither proven nor abandoned. Stubborn technical difficulties have been encountered, both of inadequate photographic exposure (which have now been met) and of smoothness of motion (which have not). The device, without the camera, has proved very useful in the individual study of site models, but its utility in highway design or on other extended sequences is still in doubt. Development will resume with the return of better natural light in the spring.

Beyond the immediate application to highway design, these studies have shown again the theoretical importance of the idea of visual sequence. Such sequences are the fundamental way in which a city environment is perceived, and are perhaps the principal means by which a metropolitan region might be unified.

Thus the original dabbling in spatial sequences, as well as the study of visual sequence in Copley Square (which in itself has stimulated further theoretical work in Berkeley), have come to bear again in the study of the highway. Professor Kepes is currently working on the basic concept of sequence, and undoubtedly this will be of central importance in any study of metropolitan form.

The method of the highway study could also with profit be extended to the analysis of other circulation systems; railroads, subways, bus lines, etc.

In conclusion, then, the project has developed some basic ideas in, and partially structured, a heretofore vague field. It has struck a number of dead ends, such as the photographic library idea, or the study of paintings or novels, as well as some seeming dead ends which have later proved of revived interest, such as the sequence study. It has completed a major study of orientation in the city, to be published in a forthcoming monograph. A complete photographic documentation of a city area has been accomplished, as well as a good deal of exploratory work on the reaction of the citizen to the city landscape. Parts of this latter work appear in one published and one forthcoming article. In addition, there are two studies currently in progress, both of which promise several publishable studies during the year: the first on the communication of meaning by the cityscape, and the second on the visual impact of the urban highway.

In the course of the work, several new areas of major importance have opened up: particularly the question of metropolitan form, the notion of visual sequence, and the study of the individual reaction to the visual city. All of these are worthy of significant continued effort.

In addition, there are a number of areas, left untouched or incomplete for lack of time, which appear attractive for study by this group or some other: especially the use of water and of light in the city; further

coordinated studies of small urban areas; the analysis of other circulation facilities such as subways; or further pursuit of the basic issues of meaning, stimulus or choice in the cityscape.

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