AN ENVIRONMENTAL IMPROVEMENT PROGRAM
FOR METROPOLITAN BOSTON

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Presented to the
METROPOLITAN AREA PLANNING COUNCIL
COMMONWEALTH OF MASSACHUSETTS

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1. INTRODUCTION

Charles Abrams has noted:

"The state of America's physical environment is a residuum --- of what is still left of nature's blessings, of what speculative profit has allowed to emerge and remain, and of what the elements have not yet taken away. America has seen its spurts of native architecture, its quests for the city beautiful, its art movements and its more recent landmark nostalgia. But the nobler inspirations never attained dominance in the American urban scene as they have in Europe's cities. . . . America's cities are a profusion of recencies --- of the speculative urge, of the procession of industrial superventions, of a subordination of natural beauty to utility and profit, and of assault by industry's most recent contribution, the automobile. *

This "residuum" is once again gnawing at our public conscience and a new "spurt" is underway, one which may well have higher chance for success since one of its key spokesmen is no less than the President of the United States. National policies are being debated and prepared, and local public leaders in urban areas, with understandable hesitancy over this strange new issue, are tentatively looking into it. Here in Boston, strong leadership in the central city's massive urban renewal program is providing a major impetus to improved urban design.

For Bostonians, this is not really new. The attractiveness of this city has long been of interest to residents and visitors alike, and the works of Bullfinch, Richardson and other noted Boston architects are still important and exciting parts of its environment. On a broader scale, the influence of Olmstead and Eliot and their work in creating the Metropolitan Parks District is one of the nation's outstanding early examples of city planning.

As Abrams suggests, however, this interest in the environment is sporadic. In spite of the Boston Redevelopment Authority's current beneficial impact on urban design, too much of the metropolitan area's past development has subordinated "natural beauty to utility and profit". The "speculative urge" in developing the area's suburbs is slowly eroding the traditional character and identity of earlier settlements. The "village green" is no longer a focus and the chrome-plated shopping center and the super highway is its replacement -- symbols of a new but substantially less human urbanism. As MAPC studies have already suggested, open space is being consumed indiscriminately. A blanket of new suburban box-like dormitories covers the landscape, creating new residential neighborhoods indistinguishable from one another and indistinguishable from the post-war spate of suburban development occurring in every other metropolitan area. Even much of the new apartment boom is taking on a standardized, "barracks-like" character.

The importance of the environment to the quality of life has been stated in many ways. It ranges from the psychological impact on the individual to influencing the ways in which people collectively live and work as a community. The dense, oppressive environment of the slum can stifle human aspirations, initiative and motivation. The richness, variety and diversity of urban centers can stimulate, challenge and provoke achievement. The metropolitan environment is a world that envelops the lives of its inhabitants, whose daily and weekly journeys range through large sections of its structure, whose activities are at once protected, guided and limited by its form and character.

This has not gone without recognition at a local scale. The efforts of Boston's renewal program, mentioned above; the growing activities of local conservation commissions; the tentative efforts at cluster zoning; local tree-planting programs; clean-up programs -- all are manifestations of a perceived need for environmental improvement. For each, the costs and benefits balance out to a net asset; even though precise values cannot be calculated in dollars-and-cents.

At the metropolitan scale, however, there is little equivalent concern. Yet, at this scale environmental form is perhaps most crucial. At this scale, organization and structure become of necessary concern; the contrasting grain of the many activity centers and points of interest become highlighted; vegetation, natural resources, topography, and climate stamp and mold the character of the metropolis. The extent to which man can manipulate, modify, create or alter these factors is the essence of metropolitan urban design. The pleasure derived from the Charles
River Basin would be of little value if people were unable to find it -- if it were in some sense hidden from view and off the beaten path (and indeed there are people in deprived neighborhoods who do not really consider it an asset precisely because they have never seen it). Storrow Drive and Memorial Drive, by virtue of their location and the traffic corridor they serve, assure that the basin is visible and accessible to a large number of people. By contrast, the Mystic River and the Neponset River are not valued to the same extent because they are less accessible and abutting land uses preclude their use and enjoyment.

The creation of the Metropolitan Area Planning Council provides the region with the first real opportunity to give close attention to the physical form of the environment at this scale. The efforts of individual cities and towns can be given richer, fuller meaning by a metropolitan focus which relates individual projects to the wider structure and form of the region. Concern for the environment at this scale can provide the means for imparting to the people of the region its topographical character, its order and organization, its diversity and uniqueness, and its identity and history. The quality of the environment and hence, the quality of life, in metropolitan Boston is firmly linked to the manner in which we use or misuse our land resources and how we adapt to our geographical setting. The revival of concern for highest quality urban design in the central core can and should be contagious for the rest of the region and the MAPC stands in a uniquely advantageous position to serve as a catalyst to such a process.
II. OBJECTIVES FOR METROPOLITAN DESIGN

As I pointed out at the Spring Conference, it is important to state our aims. Formulating aims or objectives is to satisfy a set of needs. These needs may be "felt" (i.e., evident to the whole community) or may simply be latent. They cut across the entire grain of urban life and include aspirations for economic security, social fulfillment and physical well-being. Community-wide economic and social objectives, as well as broad goals of accessibility and functional efficiency, serve as a background to the present discussion which is more concerned with the direct effects of the physical environment on the individual: effects which influence his health, safety and comfort, and his opportunities for choice, self-development and enjoyment. He should feel at home in the city; he should be able to perceive and structure it clearly; he should have a chance to develop, if he chooses, an awareness, understanding of, and involvement in its workings, meaning and form. Finally, he should be able to derive continuing stimulation from his contact with it, and feel a sense of continuing pride in being one of its citizens.

These general concerns lie at the base of the program described below. However, the particular list of objectives which I presented at the Spring Conference is well worth reviewing briefly since they provide much more explicit guidance in viewing programmatic requirements.

A. Hazard, Stress and Pollution Control

Optimal ranges of acceptable stress need to be established so that zones of excess noise, odor, pollution, smog and hazards can be identified as a first step toward eliminating serious problem areas.

B. Diversity and Identity

The identity of a place, street, or district depends on its use, visibility, symbolic significance and perceptual intensity. Survey techniques are proposed below which can approximately scale degrees of identity and diversity in the environment. With such techniques, it will be possible to record and evaluate qualities and contrasts in the metropolitan pattern; to focus on problem areas and unexploited assets; and to point the way for new development techniques to avoid overstandardization and preserve uniqueness and character.
C. Structure

For a sense of stability, for predictability, for efficient travel, for the opportunity to choose, even for a sense of social and political coherence, a well-structured environment is essential. A resident should be able to place the major communities in his metropolis in some framework, to find his way from one part to another without undue stress. Degrees of structuring can be analyzed and evaluated and residents' perceptions of structure may be gauged as a basis for exploring new techniques for better, more coherent patterning and designing of major structural elements.

D. Meaning

Structure and meaning are closely linked goals. A person's sense or recognition of structure depends strongly on the amount of information he possesses about the environment and what it means to him. Information perceived depends on the recognition of landmarks, destinations, the kind of area one is traveling through, and so on.

Information perception and, thus, meaning can be measured in a number of ways. To discern the match or mis-match between perceptual and functional pattern is not difficult. More serious is the question of what information should be conveyed. The exposure of major destinations, of important intersections, of local centers, or the continuous adaptation of visual form to functional processes would seem to have clear merit. The idea of city and country as an educative medium, has yet to be exploited. Industrial areas might consciously expose and display their processes; and specific areas of landscape and shorescape might be selected for public investigation.

E. Plasticity, Challenge, and Ambiguity

Another serious issue of urban life is its tendency toward abstraction, its retreat from nature, its lack of engagement with the physical world, the difficulty of escape. The rapid growth in outdoor recreation indicates a vigorous response to this problem, but the environment is becoming hardened and crystallized into a world of indestructible materials, pruned trees, preened lawns, and fenced-off facilities, making it virtually untouchable, unexplorable. Space for outdoor recre-
ation is under increasing pressure and the activities themselves are succumbing to mechanization and spectator-orientation. Rivers and shore lines are filling up with motor boats to the exclusion of most other forms of life.

The visual qualities of ambiguity and seclusion can be measured; but plasticity and challenge are more elusive. Plasticity relates to the variation in participation demanded; the ease with which a place can be manipulated, or the number of alternative uses it can be put to. Challenge is geared to the incentive, complexity and difficulty of a set task, graded to the ability of the user. Much is being learned about these factors in the field of education; for the environmental designer, this is an area most in need of imagination and investigation.

F. Adaptability

Suburbanization of population, industry, commerce, and other functions has affected Boston as much as other cities. It has been paralleled by serious stresses in the transportation system, diminished the amount of valuable open space, and changed the role of downtown and the gray areas. Much of this change was unprepared for. Since this process is likely to continue, allowance must be made for new likelihoods. Increased social mobility and migration, changed leisure patterns, technological innovation must be considered. Openings for new migration must be found, older neighborhoods require transformation, space must be reserved for recreation, rights of way, and new uses.

The quality of adaptability is the most difficult of all to assess. It depends on predictions of alternative futures for the metropolitan area and an estimate of the degree of change and the cost necessary to move from the present to the future state. Assessment is primarily an economic question, though psychological and social costs could be alleviated more easily in some forms than in others.

* * * * *
These objectives are limited in number, almost certainly incomplete, and their relationships to general needs have not yet been proven. They are probable objectives, still of a general nature, yet more precise than terms like beauty or amenity. They are sometimes both in internal and external conflict; indeed, no separate objective taken to its limit is desirable, and there is no method of weighting them except through interview or until support crystallizes around specific issues. But within each one measurements might be made. In other words, general agreement might be reached on the degree of diversity or coherence of any environment, whether or not all agree on the desired amount of each quality. This would be a long step toward more rational design.
III. STRATEGIC AREAS OF ACTION

Turning from the questions of objectives to the metropolitan form itself, we are confronted with a bewildering complexity of interrelationships. Total design of such a form is unthinkable and unnecessary. A metropolitan planning agency should identify strategic characteristics and problems on which to concentrate its influence and energy, areas where the return is high for relatively small input, and where effective public guidance and control is possible. These were spelled out in detail in the Spring Conference and are reviewed here briefly.

A. Circulation Network

The role of the circulation system as a structuring device and an information system, as a means for perceptual as well as actual accessibility, has frequently been emphasized. It can also be seen as a potential source of aesthetic pleasure. Sequential art forms like music, drama, and the cinema may eventually find their counterpart in the sequence of motion, space, landmark, and activity that mark our travel through the city. As more is learned about traveller's attention patterns, modes of representation and structuring, we will be able to predict and design more effectively in this area which is perhaps the most significant one for effective improvement of the metropolitan landscape.

B. Urban Open Space Texture

The shape of the metropolis catches the eye when we see a map or plan, but this can seldom be perceived or conceptualized from ground level. More important to the viewer is how it looks in terms of the size and density of its buildings and spaces, the presence of vegetation or topography, views, floor surface, microclimate, signs of activity or of automobiles and other qualities of the urban scene which vary in intensity throughout the metropolis. The relative and combined presence of different qualities gives any location its particular measurable character. Gradients and sharp contrasts in these qualities may make important changes and breaks in the pattern.

But the key issue lies in the contest between the urban texture and the open space pattern. Open space suffers from two drawbacks, a confusion of meaning and from being viewed as a negative rather than a positive concept. Its primary functions in the metropolitan region are fourfold. They lie in its visual contrast with the built-up city, a characteristic which frequently promotes ambiguity, seclusion, and privacy and which also serves as a structuring device by breaking the urban pattern; in its plastic role as an environment of indefinite purpose, ideal for active recreation, relaxation, adoption of new roles, or adventures of many kinds; as a natural heritage, to be conserved for historic, ecological and educational purposes; and a productive source of food, a minor function in this part of the country.

The MAPC is already well started toward a continuing concern for this strategic element in the environment with its current open space study program. In its preliminary report of December 1965, it gives explicit recognition of the functions listed above, and presents a variety of proposals and policies for a future open space system. As the report points out, more study is needed, and the crucial relationships which need to be explored in great depth are those between open space and the circulation system and the system of focal points or activity centers.

C. Focal Pattern

Within the urban texture, peaks, points and districts, of high use or character intensity emerge: the downtown area, civic centers, shopping centers, industrial districts, the harbor, the airport, institutions, historic districts, and cultural groupings. They frequently have symbolic importance, crystallizing the character of the surrounding area and giving the city its distinctive flavor.

Most of these points in the Boston Area are lacking in coherence, clarity, or visibility, and many are repetitious in nature. Many require reinforcement and occasionally transformation of character. Were they considered coherently and designated as "special districts", policies could be set for their development. Particular qualities of location and character could be seized upon, intensified, and elaborated. It may be the presence of a river as in Watertown Square, or of lakes and hills as in Brookline. Spatial definition, floor surface, sign styles, lighting, facade, skyline, external form or entrances can be considered thematic raw material. Regional and local shopping centers, the industrial district along Route 128 or that along the Mystic River, the harbor, the airport, Revere Beach, the Fenway, and other areas could receive coherent attention, for these centers belong to the metropolitan area as well as to the cities in which they happen to be located. They are used and seen by the largest numbers of people and deserve comparable consideration.
It is also essential that we be alert in recognizing the potentiality of new centers of growth in the peripheral suburbs, creating and amalgamating new uses and qualities unique in character. The specialization of suburban centers, and the rivalry between new and old patterns, has meant such a diffusion of uses, and therefore of attention, throughout the suburban areas that there are very few centers of sufficient size to act as perceptual anchors in the pattern of development. The assembly of uses and visual characteristics into more compact, complex and intensive centers could give the peripheral areas a structure they at present lack, thereby creating visual and social meeting points of a higher order than current commercial strip development. Combinations of recreation, entertainment, commercial and institutional functions may be experimented with, with higher-density residential clusters around such centers acting as social entrance points into the suburban structure for newcomers, such as younger and smaller families and different income groups. The location of major public facilities like the University of Massachusetts and other institutions for higher education or of cultural significance, will be critically important as will the siting of transportation interchanges, transit stations, and so on if sizable centers are to be created.
IV. PROGRAM

This program is organized with two particular goals in mind. One is based on the contention that the public at large should be active participants for much will depend on the individual actions of members of the community. The second is that the Council should seek to establish as rational and open an approach to environmental improvement as is possible to act effectively as advisor and coordinator to the many groups that are already involved in environmental development.

For these reasons the program devotes an extended initial period to the gathering of information both about the city and about people's attitudes towards the environment, in order to develop a clear set of criteria and objectives with which to carry out improvements. This information will be used to engage in a continuous dialogue with other agencies, the towns, and the public through an information center, which would keep the public up-to-date on the state of the environment.

Stage One: Exploration (3-6 months).

A. First Assessment of Problems and Assets.

A general reconnaissance of the major circulation system, the metropolitan foci, and the urban open-space system, making a record with movies, photos, aerial views, and drawings, with a view to evaluating the most serious problems of stress, clutter, identity, disruption, information loss, assets and potentials should be noted, and a few locations may be chosen to attack as sample case studies. The method of recording data should be organized as described in Appendix I and II and the schema for data assembly should be tested and evaluated.

B. Probing Interviews.

A small pilot interview (of some 50 - 100 people) to discover typical use and knowledge of the metropolitan area, awareness of environmental problems, disliked parts, needs, preferences, aspirations, and suggestions for improvements. (See Appendix III.)
C. Inventory of Environmental Information.

This inventory would be comprised of interviews with other relevant state agencies and local communities to assemble information on their environmental problems, plans, policies, and objectives (MDC, DPW, MBTA, BRA, local communities).

D. Criteria Development.

Detailed development from general objectives to specific criteria and standards to be used in evaluating environmental form (influenced by reconnaissance and interviews).

Stage Two: Evaluation and Simulation (9 months - 1 year).

A. Detailed Perceptual Analyses of circulation systems, focal structure, and open space texture; and evaluation by criteria refined in Stage One.

The analysis of the circulation system should set down the form of all major routes as seen both while travelling on the route and while stationary in near proximity to the route. These routes include all expressways, major arterial streets, transit lines and railroads. The two-way sequence of movement, space, view, activities, signs, lighting and other details would be recorded; areas of high and low visual quality, confusion, overload, bad views, mis-signing, etc.; system differentiation and construction evaluated.

The survey of major foci would include the major centers of activity in the metropolitan area, town centers, shopping centers, civic, cultural, and institutional centers, industrial complexes, and recreational foci. Their internal and external form, sky line, floor, wall, sign and lighting patterns; their approach, visibility, general intensity, coherence and relation to surroundings and to other centers.

The urban open space analysis would concern itself with the texture of space, view, surface, vegetation of the urbanized area, etc., especially of the open spaces, their general quality and intensity. The visual structure of the open space pattern, districts and communities, differentiation, connection and congruence with functional and social patterns. (see the Preliminary Open Space Report of the MAPC staff.)
By this time the general criteria should be defined more precisely. For instance, ranges of acceptable stress could be defined, degrees of desired diversity set, the minimum information to be disseminated on major activities established -- e.g., from an objective of general structuring, the criteria may now stipulate that all major recreation areas should be seen or signaled from the expressway system, or that each community should be distinct from its immediate neighbors.

B. Interviews

A large-scale random sample interview to find out most vivid, most significant, preferred, disliked, or confused places in the metropolitan area, and to discover how environmental problems vary by locality and class, selected groups by class, age, and ethnic group could be asked more detailed questions on extent, diversity, structuring, understanding, stress problems, etc.

C. Stimulation of the Metropolitan Area

As material on the environment is collected, a visual data bank should be set up (1) as a permanent information center for the Agency, (2) a laboratory for testing public reactions (through interviews and publications), and (3) as an educational center for the public at large. It should be such an effective monitor of the environment that new and proposed changes in the metropolitan area would be sensed immediately and their influence assessed. The level of simulation is going to depend on the budget available. Starting with more modest ideas, here is a set of possibilities.

Panoramic air photos of the area, press-button up-to-date movies of all major routes, photos of all sensitive views, skylines, centers, open spaces, rivers, shorelines, etc. would be, if possible, on permanent display. A changing schematic model of Boston viewed from the circulation system would be another powerful way of communicating what the perceptual problems of the metropolitan area really are. Permanent television cameras at key viewpoints could bring the immediacy of the metropolis into the display area. Any of these recording methods could serve as working design tools in the next stage.

D. Illustrated Report

An Illustrated Report would be an extremely important publicity tool.
for the agency at this point. It would suggest the major problems and potentials which the agency and the people of Boston were finding in the metropolitan area. This report should be prepared in close cooperation with other key agencies and the local towns, so that their involvement and support is gained before submitting it to the general public. In some cases the agencies and towns may be willing to participate directly in the surveys and preparation of the report. If this report were well done, the Agency should gain wide public respect and support, a receptive audience for its future proposals and policies.

E. Exploratory Plans, Policies, and Preliminary Projects

During this Stage a design group of MAPC could be developing its own internal alternative plans, policies, and programs for the environmental form of the metropolis. It may also select one or two current issues such as a highway or institutional location, on which it can make proposals as a case study in how to treat environmental problems.

Stage Three: Plans and Projects (1 year).

A. Schematic Plans and Policies

Alternative schematic plans and policies for the form of the circulation system, centers and communities, and open space system would be produced at this stage. They would be integrated with both functional plans made by the MAPC and other agencies, as well as any comprehensive plan made by the MAPC. The first plans could take environmental considerations as primary followed by adjustment, reconciliation, and integration, or they could be integrated from the beginning. The former would gain from a clearer link with the evaluation before adjustments blur the issues.

B. Special Projects.

1. Visual redesign of the existing circulation system in liaison with highway agencies as a first detailed design proposal, concentrating on the near-road environment, information coding, view guidance, path, interaction differentiation, etc.

2. Visual plan for open space, carried out in coordination with the open space program, concerned with the increase in choice of perceptual
qualities, in the open space textures, their accessibility from the circulation system, their use in structuring the urban pattern.

3. Development of design and policy recommendations for centers and communities. These may identify special areas or foci, for which specific design studies could be necessary. The MAPC might prepare a prototype visual plan for an important existing or new center, either in collaboration with a local community or through the new towns legislation, or, alternatively an outline visual plan for a whole community. It should be recognized in undertaking such projects that local communities and private development bodies have primary interest. Thus, the use of special projects should be only a part of a general effort to produce a prototype method of environmental analysis, design, policy and control for local use.

4. A fourth special project should relate to the most serious and urgent problems of environmental stress. The outlined program on solid waste disposal is one important instance of this concern. Air pollution is another. Acoustics, the microclimate, and traffic hazards might be other areas in which special studies will have to be made.

* * * * * *

These can be considered priority projects where the MAPC would likely have an immediate effect, as in the circulation system, or where the Agency has an on-going program, as in open-space, or where it would be fulfilling a form of technical assistance function for local communities and other important private groups as in centers and communities.

Other projects worth consideration at this time would be a plan for codifying and patterning the present chaos of signs in the urban area, a plan for planting throughout the metropolitan area, and another for organizing nighttime Boston with a coherent and imaginative lighting system. A special project might also concern itself with the design of the waterway system and the ocean shoreline. These and other projects could well be given as separate tasks to special consultants.

C. Policies

Parallel with schematic and detailed planning should be the task of
setting environmental policies. Standards of acceptable stress, environmental quality, control of visual intensity, view easements, diversification policies, sign programs, and so on would be developed as a guideline for the MAPC and other agencies. These might be selected with a view to testing and ultimate inclusion within legal documents such as zoning regulations, which at present consider the quality of the environment by implication rather than performance. This would be an important way for the influence of the MAPC to be felt throughout the metropolitan area.

Stage Four: Advice, Feedback, and Continuity.

A. The Agency by this stage would be well established in environmental affairs. This could be an appropriate time to form a Design Review Group similar in function to the BRA's design review activities, which could be run within the MAPC with an advisory committee from the design professions for referral on more critical issues. An important aspect of this would be the provision of design services to communities, (either free or at nominal cost), agencies and large developers in the more critical areas of the metropolis.

B. The maintenance of an up-to-date intelligence system will continue to be a major preoccupation of the Agency, so that it can be alerted to upcoming issues well in advance, transmit this information to other agencies, towns and the general public, and so maintain a monitoring system over metropolitan development.

C. The planning process from here on will be seen as a cyclical one, with the periodic reformulation of the major plans, probably every three or five years, a sequence of special projects and the production of annual reports.
V. STAFFING AND BUDGET

The organization of this program will depend on a highly skilled but small staff. An Urban Design Director is needed to guide the program. The other chief designers (three or four) will be in close liaison with other MAPC activities such as transportation, open space, housing, and so on. These men should be engaged from the beginning to direct the visual survey in Stage One. They will need adequate assistance throughout this period. The budget for this group could run at $90,000 a year for the first three years.

The interviews will have to be carried out by a competent social scientist with interviewers and tabulators. Depending on the size of the sample taken, the cost of these can range between $20,000 for a small interview of 200 persons to $50,000 for a 500-person interview. Given the size of the metropolitan area, however, the latter sample size is recommended.

The simulation room and the employment of a designer in charge of its creation could cost another $50,000, again depending on the degree of elaboration.
## BUDGET OUTLINE

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<td>Advisory Consultant</td>
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<td>4 Senior Urban Designers</td>
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<td>Interviews</td>
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<tr>
<td>Information Bank and Display</td>
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<td>Illustrated Report</td>
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<td><strong>TOTAL, First Three Years</strong></td>
<td><strong>$470,000</strong></td>
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(This does not include budgets for the solid waste disposal or open space programs.)
APPENDIX I

PERCEPTUAL ANALYSIS OF METROPOLITAN FORM

OUTLINE AND ARRAY OF
ILLUSTRATIVE VARIABLES FOR SURVEY AND ANALYSIS
(Construction of an Image Index)

<table>
<thead>
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<td>Surface = brightness</td>
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<td>Distance/Contrality</td>
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<td>Decision/Transition</td>
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- Intensity - Saliency - Perceptual Dominance
- Differentiation or Singularity - Exposure - Image
- Significance

User Intensity (direct and indirect)
Use singularity
Political and economic significance
Status

Recency
Publicity
Nomenclature
APPENDIX II

TECHNICAL NOTES ON PERCEPTUAL ANALYSIS

Criteria for measurement of environmental attributes:

1. Should be measureable according to clear-cut rules that can be agreed upon.
2. Variables should be independent of each other.
3. There should be a uniform framework for analysis in order to compare attributes for districts as well as places.

1. Perceptual Dominance vs. Objective Significance

"Perceptual dominance" measures information gathered from DIRECT EXPERIENCE, compared with "objective significance", which is information gained through direct use or indirect knowledge, mass media, etc., of its importance.

In "perceptual dominance" the perceived physical form is the primary component, although perceived activities (people gathering, working, etc.) are sometimes important identifying components. We are concerned with comparing what a person picks up from his travel through the city with that which is really there. This is the prime manipulatable tool which the designer has in his hand, the tool that the shopkeeper, commercial developer, and billboard agent have interest in.

"Objective significance relates principally to the activity that takes place in a place or district, though at times the physical form may be of special merit (historically or architecturally important)."
A. PERCEPTUAL DOMINANCE

Perceptual dominance depends on the saliency and the range of visibility or exposure. Saliency is primarily a quality of environmental fabric. Visibility relates more to the position of the observer. The first is primarily localized in quality, the second is a locational quality, the perceptual accessibility of a place.

(1) Saliency

Other words for saliency might be vividness or noticeability; it is essentially the quality of being able to catch the attention. The term is intended to describe a place as seen from the most usual viewpoint or from a series of viewpoints within the immediate vicinity. Saliency too is dependent on two qualities, one the intensity of stimulus, second the differentiation or singularity of the stimulus. Neither taken separately is an adequate measure of environmental identification. A striking chimney will be lost in a landscape of similar chimneys, a unique but minor landmark will be lost in a group of major landmarks.

Intensity

Intensity can be scaled on a regular and constant scale which may be calibrated to a particular city or to a group of cities. In this case it would be calibrated to the Boston Metropolitan Area. From experience in previous surveys the key attributes which seem to be important are: size, contour, shape, surface, motion, quality, signs. These are generalized and therefore suffer from difficulties of definition (more precise analysis of attributes was gained from direct questions). The following table suggests the definitions which have been helpful in previous efforts:

| SIZE: small to large, includes many different dimensions: bulk, height, verticality. It is therefore a mixed measurement. Particular problems occur with water towers, radio towers, etc. |
CONTOUR: The presence of a clear complete contour is one of the primary qualities which distinguish figure from sharpness of edge or blurring of contour.

SHAPE: has been measured on a simplicity/complexity range. Most buildings tend to be simple, which suggests that complexity might be an outstanding quality. However, beyond a certain point complexity serves to destroy identity. Simplicity may be perceived more quickly.

SURFACE: The brightness of the surface intensity of color or textures is less easy to measure for true base color of the city is already contrasted, light buildings or natural green and brown landscape. Intensity is measured as a departure from a plain white base, thus bright coloring or heavy texture, broken surfaces of various materials, grilles, glass, etc., are considered to contribute to intensity of surface quality.

MOTION: More than any other quality, motion draws the attention, through its potential interest or danger. The presence of people seen inside an establishment or closely associated with it, the clustering of people around bars, the lines outside a theatre, children playing in a school playground all direct attention to the activity and building connected with it. Cars as a sign of the presence of people perform the same function, even though they may be parked and motionless. Other kinds of movement -- smoke, water, flags, trees -- exert the some attracting qualities.

QUALITY: Quality here includes the use of expensive materials, of landscaping, of cleanliness. It clearly distinguishes different parts of the community though perhaps not at the scale of individual buildings. As a sign of social status, it may be more closely examined.

* D.E. Berlyne, "The Influence of Complexity and Novelty in Visual Figures on Orienting Responses ". 
SIGNS: Verbal signs are the primary means whereby a shopkeeper hopes to attract a customer's attention. Professional ethics do not allow doctors', lawyers' and architects' signs to exceed certain appropriate dimensions, but their aims are similar. Other signs relating to non-profit making activities are intended to be informative.

Differentiation or Singularity

The relative quality or uniqueness of a place are the essentials that make it outstanding. Singularity is, in fact, a measure of surprise or of new information given. This aspect of difference or novelty has frequently been pointed to as a magnet for attention (see Berlyne, Gibson). When the above qualities are seen relatively in surroundings different from the normal, their intensity may or may not contribute to their saliency.

There are several aspects of singularity that make measurement difficult. The direction from which a place is seen or compared will affect its relative saliency. From one direction, it may stand out, from another it may dissolve into the background. Thus, measurement simply tries to assess the aggregate view.

RELATIVE SIZE: Relative may be salient — sometimes if it is small within a group of large buildings like Boston's old State House, or large within a group of small buildings like the Custom House Tower; saliency occurs strongly due to overwhelming singularity. (These are, of course, extreme examples.)

ISOLATION (CONTOUR): The isolation from surroundings, skyline, a corner building, a tree in a large field, where the ground is continuously different from the figure.

SHAPE: The particularity of shape may again be more significant than its complexity or simplicity, the relative complexity, its peculiar outline, the presence of curves or diagonals in a predominantly rectilinear scene (Trinity Church in Copley Square).
SURFACE: Color differences from a normal white or neutral color will distinguish a place. The environment is highly variable so that what will stand out against a natural background will not be seen in an urban scene. Individual trees are highly noticeable in a plaza or market but not on a country road.

MOTION: Movement may distinguish a place if the general environment is quiet.

QUALITY: Since like qualities tend to group together, quality is only a differentiating feature at the boundaries between high and low income development, or where individual buildings are being improved, like the Government Center project. (One gets a vivid impression of quality as one travels from the Prudential Center to the older streets of Back Bay.)

SIGNS: Signs may be grouped so that one is scarcely distinguishable from another and so only those at the edge or in singular positions are distinguishable.

(2) Visibility/Exposure

has to be seen -- a locational measure, perceptual accessibility.

VIEWPOINT: number of people who pass along the routes around it, traffic flows of all vehicle types, pedestrians.

DISTANCE: Things seen near at hand are better remembered; there is little evidence that long views have the impact except for extremely dominant forms (i.e., the Prudential Building).
CENTRALITY: cone of vision limited, again those on axis seen best. Impinge themselves in the eye of driver and passenger -- less important for transit patrons.

DECISION-POINT: High attention points make things more likely to be seen. They also become reference points in verbal representation; there being a need to describe critical junctions and buildings as signs for an intersection.

TRANSITIONS: Should be part of form SINGULARITY (sequential singularity)

B. SIGNIFICANCE

1. personal significance -- frequent use -- in large sample, highly used places have higher probability of use.
2. general conversations, mass media, also highly used places.

USER INTENSITY (AND RANGE)

Employees, or clients; essentially the number of people in the region who need to find a place or district as occasioned by their use of it.

SYMBOLISM

Includes economic symbolism measured by investment cost; quality of materials; suggests presence of wealth or stability.

Social symbolism -- measured by number and type of users.

Historical symbolism -- many examples in Boston, measured by nature and character of prior events in association with the place.

Institutional symbolism -- e.g., church, university, jail.
SINGULARITY

Uniqueness to some extent is a measure of RANGE of use or users; much depends on categorization — i.e., schools not unique but high schools are, so must be finely categorized.

REGENCY

Recency is a measure of the effects of change complex. This may be difficult to measure at one point in time.
The importance of recency may be only evident to inhabitants of long standing unless many new events are occurring in continuous fashion.
This is closely related to historic symbolism.

NOMENCLATURE

SPECIFICITY — proper name, arbitrary names not so useful as locational or functional names. Locational and functional names, however, are often mixed.

SINGULARITY — naming confusions a problem: UV4, CVG offices, Bombas, Escuelas.
APPENDIX III

ILLUSTRATION OF TYPES OF INFORMATION SOUGHT FROM INTERVIEW QUESTIONNAIRES

1. Respondents would be typically asked to draw a map of the metropolitan area. Important to note would be the degree of difficulty each respondent experienced in carrying this out; the general order in which the elements were drawn (roads first or key places first); points of confusion; points of certainty; general skill with scale relationships and place relationships. Also important would be the sequence in which the respondent drew the map in terms of which things came to mind first, which things were most important, and which things were least important. The map should also be analyzed as much for what was left out as what was included.

2. Respondents would be asked to describe their key perceptions on a typical journey which they make every day -- such as the journey to work. How do they find their way; what landmarks are important; what signs, controls or directions are most vivid; their general impression of the various districts they pass through, etc.

3. Respondents might be asked to recall their impressions on their first trip on the Massachusetts Turnpike, or the Southeast Expressway. Similarly, they might be asked to recall their impressions of any recent trips to an unfamiliar part of the metropolitan area.

4. Respondents are typically asked what other cities have they lived in or are very familiar with and how those cities compare with Boston. What differences in character might be described, differences in landmarks, buildings, street systems, shopping areas, work areas, signs and symbols, etc.

5. Respondents are asked to provide directions as to how to get to different parts of the metropolitan area, especially those parts somewhat unfamiliar. Directions should include the forms of transportation which might be available if one did not have a car.

6. Respondent is asked his familiarity with place names, such as: South Boston, Wollaston, Newton Centre, Newton Corner, Orient Heights, Chestnut Hill, Savin Hill.
7. Respondent is asked about a variety of places in the metropolitan area as to whether he visits such places and why or why not; what impressions does he have; how would he describe each place.

8. Respondent, with respect to the various places involved above, is asked his opinions as to which of the places are most attractive, which least attractive and why. He is asked to give his opinion as to the most attractive thing about the metropolitan area and why.

9. Respondent is asked about those features of the metropolitan area that he dislikes and why; or those parts which to him are most unattractive or ugly.

10. Respondent is asked his impressions as to which way he thinks the metropolitan area and his community have been changing in the past few years, and does he like or dislike these changes.

11. Respondent is asked what sorts of changes he thinks will occur in the next few years. He is also asked what sorts of changes he would like to see made.

12. Respondent is asked how he usually obtains information about what events are happening in the metropolitan area.

13. Respondent is asked what sort of information would be most helpful to a person who has just moved into the metropolitan area: what would he need to know to find his way around, where would he be likely to get such information.

14. Respondent's knowledge of the different functional parts of the metropolitan area is queried: what are some of the principal activities in Cambridge, Waltham, Braintree, Downtown Boston, Peabody, etc. How did he learn of such activities.

15. Respondent is asked whether the activities in the Boston Metropolitan Area are different in any way from other cities; are there businesses or manufacturing activities here which are unique or which are especially appropriate to this metropolitan area.

16. Respondents are asked a series of detailed questions relating to their knowledge and use of a variety of different types of public facilities including those of a local scale (playgrounds, schools, libraries) and those of a regional scale (parks, beaches, cultural facilities). He is asked to provide directions to each and to give his impressions of each.
17. Certain generally known historic landmarks are suggested to the respondent (such as: Trinity Church, the Minuteman statue in Lexington, Bunker Hill monument, etc.). He is asked to describe how he would get to them and in a few words tell what they look like.

18. Respondents are finally asked a series of questions relating to general attitudes. How do they like living in the Boston Metropolitan Area? How do they like living in their city or town? Are there other communities in the area they would rather live in? Are there other metropolitan areas they would prefer to live in? Other sections of the country? This is followed by asking for the respondent’s notions of an ideal community.