SHORELINE APPEARANCE AND DESIGN: a collection of methods

by

Tridib Banerjee

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Foreword

Visual and aesthetic aspects of planning owe their origins to a rich heritage growing out of disciplines such as architecture, landscape architecture and urban design. The major contribution made by planning to this study is in the way in which we make collective decisions concerning the visual quality of an environnent. If we are to open up the decision making process to wide public participation, however, then we should also make it possible for all participants to acquire a basic level of skill in evaluating extant visual quality and in proposing changes in it.

The aesthetic quality of a setting is subjective matter, and any single interpretation is difficult to capture for portrayal to others. Moreover, the differences in values or aesthetics held by different groups are often unknown. In the absence of well-articulated positions, it is difficult to promote a useful policy discussion concerning the prospective appearance of an area.

Thus, in the past, we have generally ignored public discussions of appearance in favor of asking individual homeowners and developers to make their own contributions to the overall visual quality of an area. In the shoreline area, this laissez-faire attitude has produced a visual environment which, due to relatively varied and dense usage, has produced what may best be described as visual chaos.

In this publication, Professor Banerjee presents many of the techniques from the design professions for describing and evaluating the visual quality of the environment. His descriptions will be useful to interested citizens, to students of planning, and to professionals in other fields. Although his examples are drawn primarily from California, the techniques are obviously applicable to other coastal areas as well.

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The Marine Advisory Services component of USC's Sea Grant Programs is charged with responsibility for insuring that the results of Sea Grant sponsored research are made available to public as well as academic audiences. Thus, we are pleased to make this document, which integrates techniques and analysis from several fields in non-technical language, available to the public.

Professor Banerjee is an Associate Professor of Urban and Regional Planning at the University of Southern California. He has published several previous works on the problems of incorporating visual and aesthetic elements into the planning process.

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Contents

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Introduction

Shoreline appearance and design is now a matter of public policy. In California, for example, it has been an integral part of the statewide coastal planning process. Recently, state legislation has required all coastal communities and jurisdictions to prepare a Local Coastal Plan which will include, among other things, appearance and design policies.

How should public policy on coastal appearance and design be formulated? What concerns and issues must it include? How or where does one begin? What follows? Where does it end? These are some of the questions likely to be asked by the planner in responding to this official requirement.

Unfortunately, our experience in planning and designing local shoreline environments is still quite limited. Not much is available in the way of precedents. True, many communities have dealt with plans for a marina or a harbor, or even a waterfront development project. But these are mostly extended architectural or "urban design" projects. Neither in spirit nor in scope can they meet the requirements for a community-wide appearance and design policy, especially in an institutional context sympathetic to conservation objectives.

The objective of this publication is not necessarily to provide a definitive answer or a universal model for appearance and design planning, but rather to assemble those methods and approaches (many of which have been developed in the recent past and in the context of coastal planning) that appear to be applicable to the local design efforts. However, this publication is not a

"cookbook" or a handbook or a manual; it is not even a guide. It is simply a collection of materials with our interpretations and suggestions which we think will be of use to our professional colleagues as they confront the task of developing shoreline appearance and design policies at the local level.

We have made some assumptions about the critical steps necessary in developing appearance and design policies for the local shoreline environments. This is a general framework only, and need not be accepted as the prescription for the design process. Design, as we all know, does not involve linear thinking, and we do not imply any fixed sequence in the way these steps are presented.

We have assumed that planning for shoreline appearance and design must include, if not begin with, a sense of what exists in the strip of land and water identified as the coastal zone. This involves taking stock of the existing visual resources including those existing scenic qualities, areas, views, etc., which are worthy of preservation efforts, and the associated problems, potentials, and opportunities.

Once a design inventory is completed, some kind of organizing framework is necessary for what architects usually call "design concepts." This framework is necessary for cognitive economy, for guiding design thinking, and for the discipline required in managing limited time and resources.

We have also assumed that getting people involved is an important aspect of formulating any type of public policy. However, we suggest this not for political expediency, but simply in the belief that the quality of design can be improved through broad-based participation. Besides, what is public about public policies that are not developed publicly?

Finally, we will speak of actual design responses—not just specific or illustrative policies, but how they can be implemented. Clearly, we cannot dictate how specific policies will be implemented by individual communities, but we can suggest available methods of implementation that are universal in scope, and we will explore some of these possibilities in depth.

These four steps—taking stock, getting people involved, organizing concepts, and formulating and design responses—are the main thrusts of our subsequent chapters, which are presented in that order.[1]

Notes

1. Anticipating future changes, opportunities, and possibilities in the environment, as well as predicting the social and environmental consequences of specific policies is also part of the design process. While there are theories and methods of forecasting (de Jouvenel, 1967) related to other professional fields, they are less formalized and explicit in the case of environmental design; to the extent, however, that conjecture is implicit in the subjective and intuitive aspects of design, it will be included under the discussion on the development of design responses in Chapter 5.

2
Taking Stock: Public Transcripts

An intimate knowledge of the site is essential in any design process. It is possible to walk, measure, and record the entire site when it is small, but this is no easy task when dealing with situations in a large-scale environment such as the coastal zone of a city. In this, the designer's personal knowledge and experience of the environment may never be complete. There may always remain some *terrae incognitae* in the designer's personal view of the setting, even after detailed field reconnaissance. Thus, these gaps must be bridged by information available from various secondary sources, or what Kenneth Boulding (1956) calls "public transcripts"—maps, aerial photographs, reports, publications, etc. These secondary sources will supplement the designer's firsthand knowledge of the setting or any other primary data he may collect.

Typically, the various public transcripts are examined along with or before field reconnaissance. Such an examination is an indispensible part of the overall design process. Through these steps a designer hopes to learn about the place—its history, ecology, and social context. The designer hopes to discover what McHarg (1971) calls the "genius of the site"—the unique qualities and opportunities that a site has to offer. Important insights are often gained at this stage—insights that set the course of subsequent design thinking.

Maps and aerial photographs are the most common sources of secondary data. Reports, documents, photographs, etc., may also be available from various public agencies. Additionally, commercially published materials such as picture postcards, guide maps, history books, or photographic essays can also be important sources of information about the history or the community values of a place. The availability of such materials varies from community to community. For example, a number of excellent books of photographic essays

are now available on the communities of Venice and Santa Monica, in Southern California, but not all coastal communities are that fortunate. Occasionally, media reports—newspaper stories or television news reports—may be of particular relevance if one is willing to visit the newspaper morgue or television stations. The possibilities of these latter source materials, however, must depend on a particular case and situation, and cannot be generalized or recommended as a standard procedure for all.

Maps as "Public Transcripts"

Here we will concentrate on "public transcripts" that are readily available. The United States Geological Survey, for example, publishes a wide variety of general and specific purpose maps for all areas of the United States. Although many different map series and scales are available (Thompson, 1979), the maps most useful to planners at the local community level are the quadrangle topographic maps with scales of 1:24000 (1 in. = 2,000 ft.), also known as 7.5 minute maps.[1]

Figure 2.1 is an example of the USGS base map (sans color) used by the California Coastal Commission as a base map. (The coastal zone boundary is shown in heavy lines.) A map such as this is by far the most informative of all commonly available general-purpose maps. It contains a gamut of important information about the land form: topography (in 20-ft contours); such natural features as shifting sand or dunes, gravel beach, perennial or intermittent streams, water wells and springs, rapids, falls, lakes, washes, dry lake beds, etc.; different types of land cover and vegetation, such as swamps, submerged or wooded marsh, vineyards, mangroves, orchards, woods or brushwood, and scrub; various manmade alterations of the landscape such as cuts and fills, levees, tailings, mine dumps, land subject to controlled inundation, etc.; transportation networks of all kinds including roads and highways (only major arterials and highways are named), canals, railroads, tunnels, dams, locks, elevated aqueducts, etc.; public and semi-public buildings such as city halls, fire stations, post offices, schools and churches; large building forms of industrial or institutional structures; cemeteries, public and private parks, campsites, and recreation areas; corporate boundaries of cities and counties; patterns of urbanization (newer, sparsely developed areas are differentiated from the older contiguous and densely urbanized areas). Thus, while a USGS map is not a land-use map, it contains enough information to identify generalized use and development patterns. Even in the representation of offshore areas it contains many items of information applicable to local coastal planning. It shows not only such natural features as depth of water, small islands, rock or coral reefs, foreshore flats, bare or awash rock outcroppings, etc., but also such manmade features as breakwaters, intake towers, submarine pipelines, pilings or dolphins, and even exposed shipwrecks!

In addition to the USGS maps, the small-craft nautical charts (with scales from 1:10,000 to 1:80,000) published by the National Ocean Survey (NOS; formerly Coast and Geodetic Survey) contain information, albeit limited, that can be helpful for certain coastal planning purposes, especially those involving offshore development projects. In addition to showing bathymetric information (soundings in fathoms and feet), these maps show a great variety of information, such as tide and current data, marina and anchorage facilities, kelp beds, submerged power cables, sewage outfalls, and the like. They also include limited onshore features such as topography, street networks, and major structures (Figure 2.2).

Figure 2.1 USGS map showing coastal areas of Pacific Palisades and Malibu, California

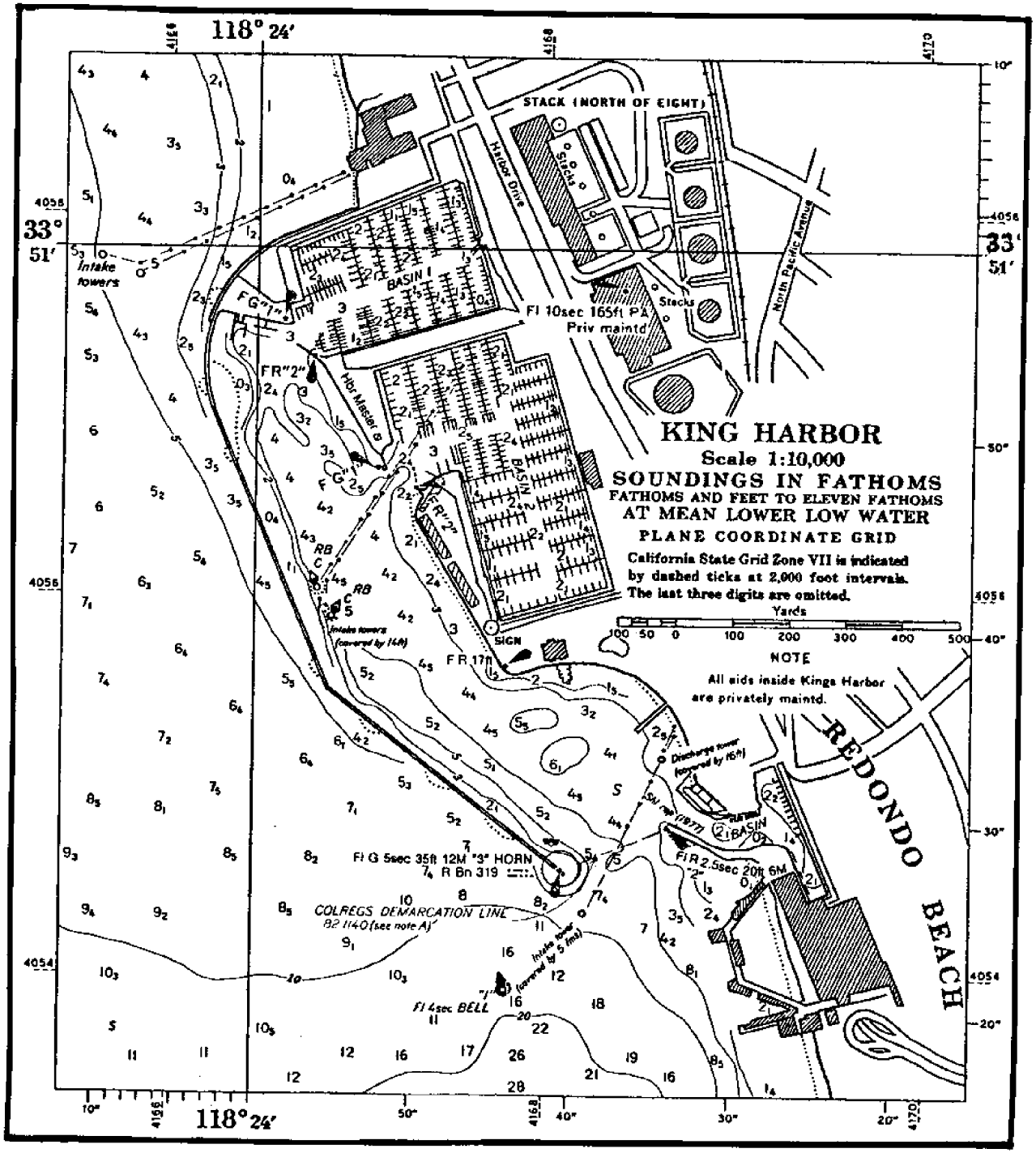
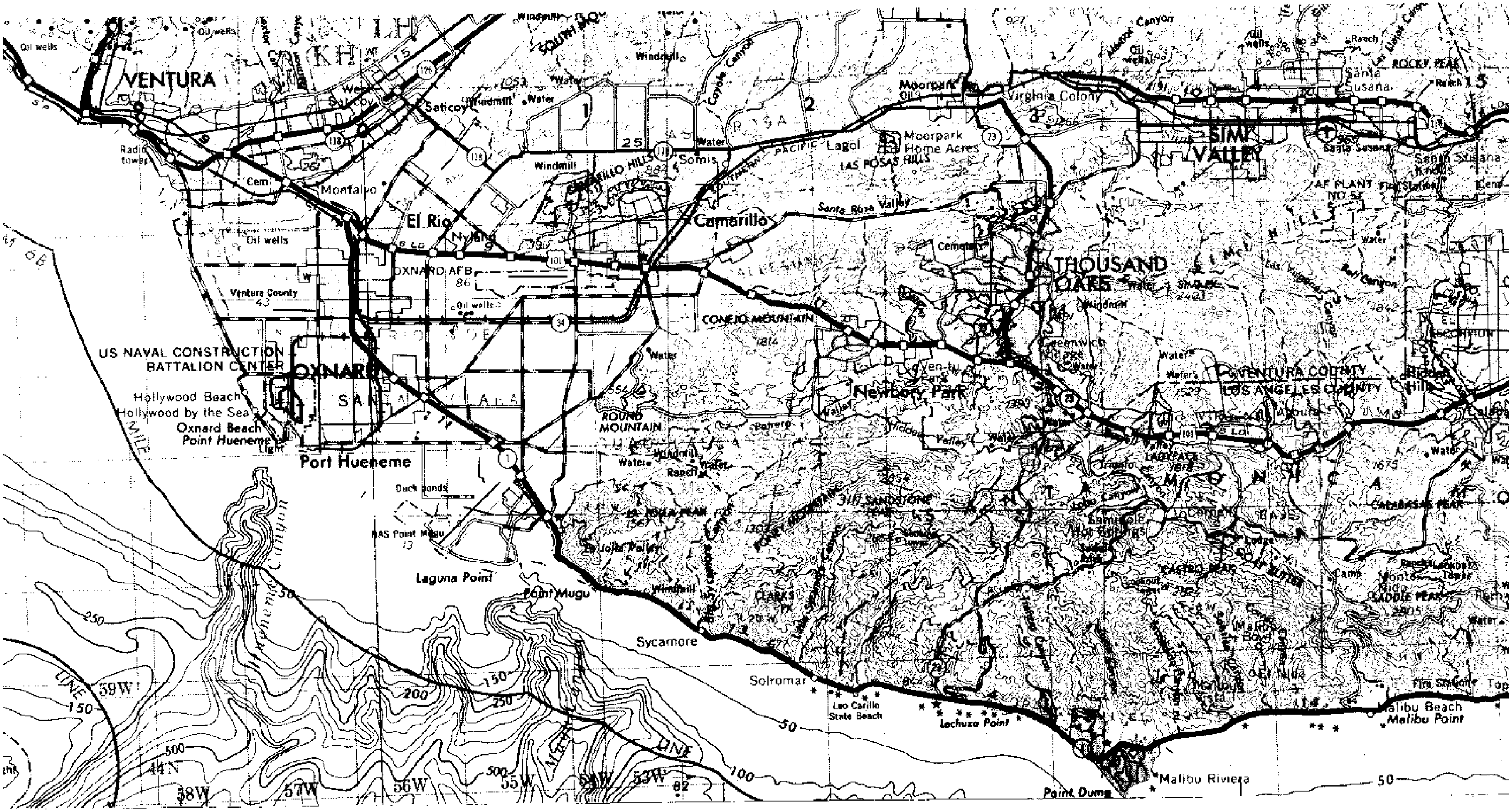


Figure 2.2 Nautical chart for small craft; King Harbor in California

Figure 2.3 A topographic/bathymetric map of the Santa Barbara Channel off the coast of southern California



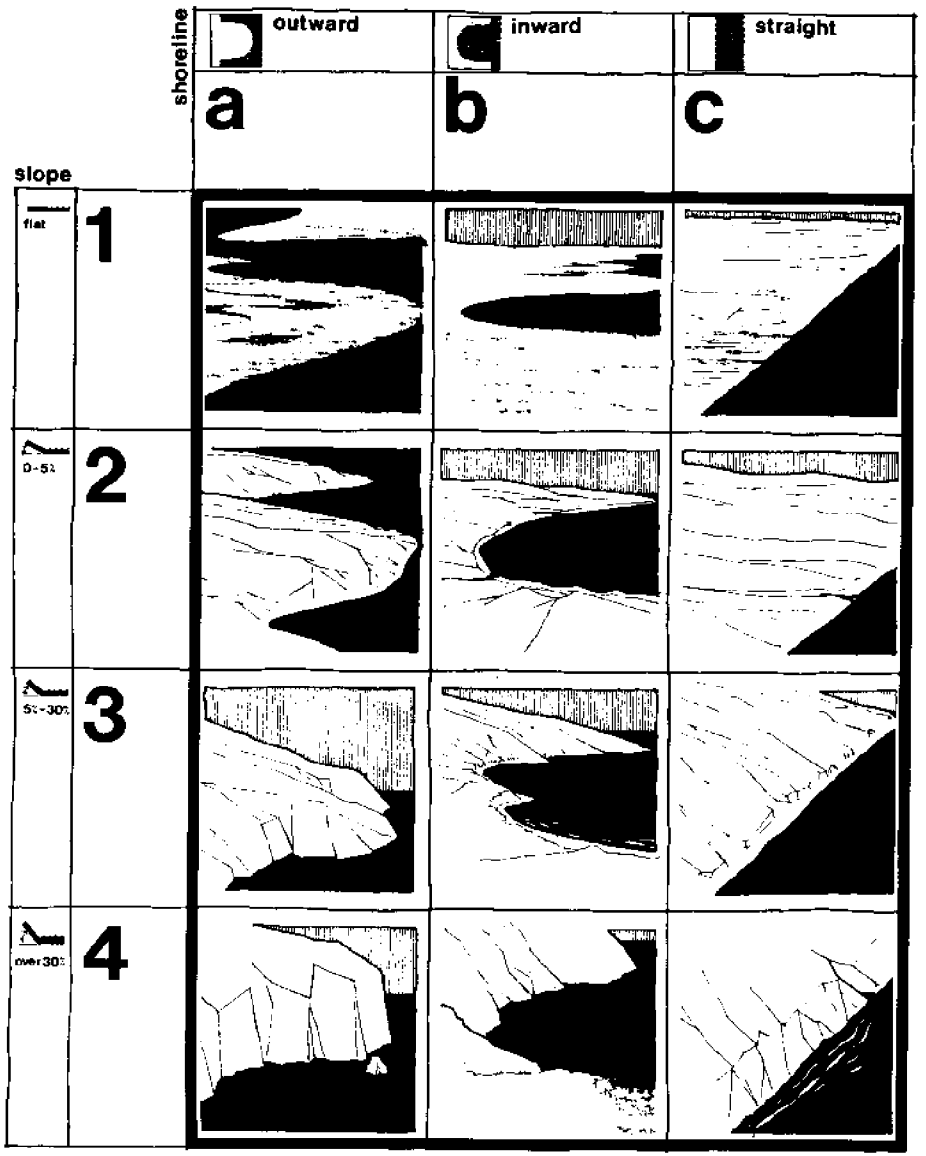


Figure 2.4 A typology of land:water relationship (Source: San Francisco Bay Conservation and Development Commission)

The task of preparing a set of maps covering the entire coastal zone of the United States has been jointly undertaken by the Geological Survey and the National Ocean Survey. Coastal maps showing significant areas of both land and water are called "topographic-bathymetric" maps, and have been prepared at the 1:250,000 and 1:100,000 scales (Thompson, 1979). However, it will be apparent from the scale of these maps that they are not particularly suited for planning shorelines of small coastal communities. On the other hand, these maps are extremely helpful in planning metropolitan or regional shorelines (Figure 2.3).

These maps can be used for the inventory and analysis of the following aspects of the coastal environment:

The natural setting: The designer can conceptualize the natural setting, abstract its key features and relationships, and understand its morphology from a USGS map. It is possible, for example, to establish some fundamental categories of land-water relationships based on slope and coastline configuration, as done in the San Francisco Bay plan (Figure 2.4), and differentiate the site accordingly. An examination of USGS maps can reveal the basic nature of the landscape—whether the site is characterized by coastal shelves, coastal bluffs, coastal terraces, or alluvial plains. Headlands, lagoons and estuaries, or arroyos and canyons can also be distinguished. Additionally, contour lines can point out the presence of typical topographical features such as valleys, ridges, mesas, depressions, flat grades, peaks, passes, escarpments, the brow of a hill, and the like (Lynch, 1972). It is further possible to identify drainage patterns, specific slope zones, areas in shade or exposed to sun, fog, or wind, areas with vegetation, etc. (Patri, et al., 1970).

The built form: A USGS map is particularly useful in documenting and abstracting the built form. Since it shows very clearly the hierarchy of movement systems, edges of urbanized areas, and bulk and extent of major public and private structures, as well as the grain of the development in the urban fringe, its role in the analysis of built form is obvious. It is possible to abstract major paths, landmarks, focal organizations, districts, prominent edges, difference in the grains of development, and other essentially two-dimensional aspects of built form.[2] Figure 2.5 shows an abstraction of the physical form of the shoreline of the south coast region (Los Angeles and Orange counties).

Views and visibilities: A major objective of the appearance and design policies in coastal planning is to preserve, protect, and enhance the scenic and visual resources of the coast. An important task for the designer is to identify the important views, viewpoints, vistas, and existing or potential visual access to the ocean. While some of these inventories can only be made in the field, much of the background work about what is visible from where can be done on the basis of the information about topography. An advantage of this type of "paper" analysis is that it supplements field work rather nicely. Since field work is often limited to areas that are public, existing views from private properties can only be extrapolated on paper. The USGS maps, augmented with recent aerial photographs, provide an adequate basis for not only such extrapolative or "visual" inventories, but for the prediction of future loss or availability of existing views as a result of proposed public or private actions. The analysis can be simple, and may involve only drawing vertical profiles of the site at desired intervals. Figure 2.6 and 2.7 show an example of how it is possible to determine which areas of the community of Hermosa Beach, California, have a view of the ocean and which areas are essentially in a "view shadow," i.e., without a view of the ocean.[3] These diagrams also show how it is possible to identify theoretically the concept of "viewshed" promoted by the California Coastal Plan.[4]

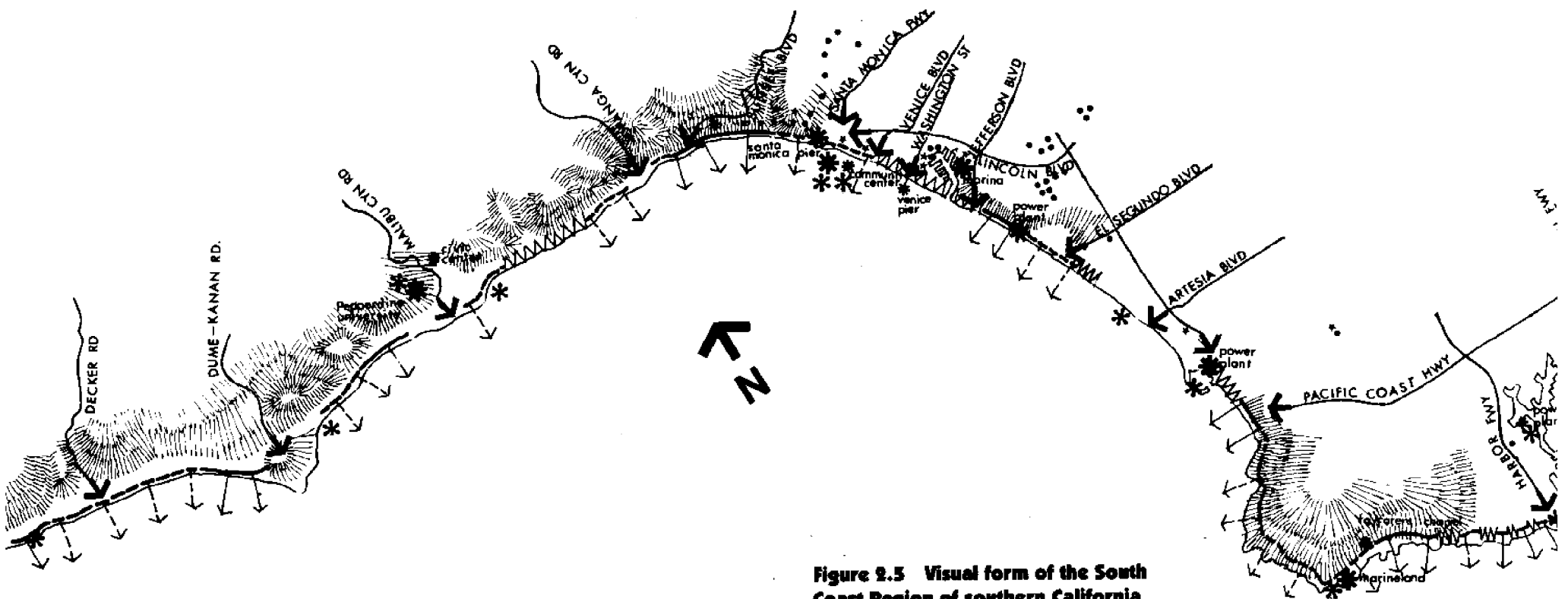


Figure 2.5 Visual form of the South Coast Region of southern California (Source: California Coastal Commission)

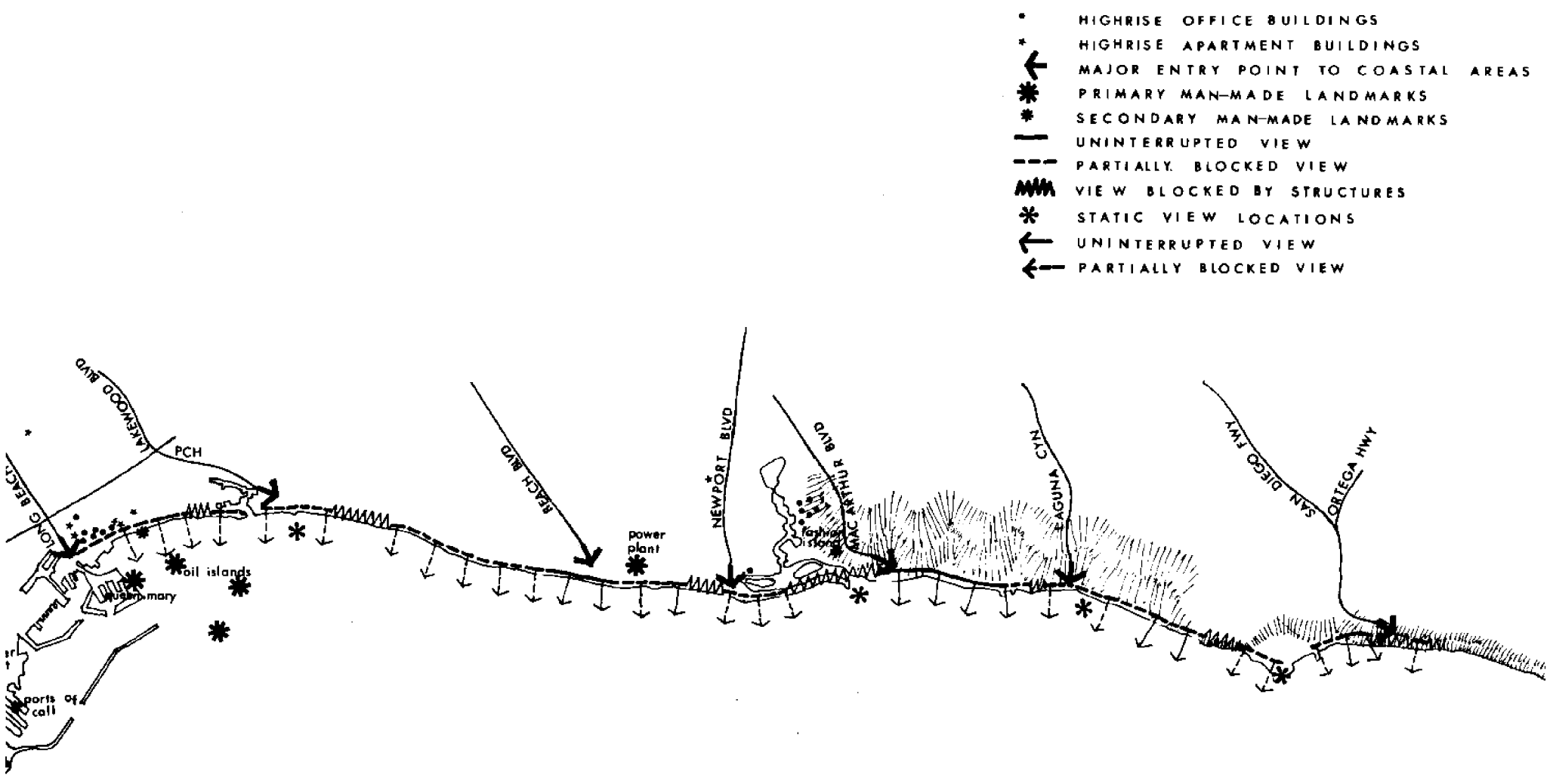

HIGHRISE OFFICE BUILDINGS
HIGHRISE APARTMENT BUILDINGS
MAJOR ENTRY POINT TO COASTAL AREAS
PRIMARY MAN-MADE LANDMARKS
SECONDARY MAN-MADE LANDMARKS
UNINTERRUPTED VIEW
PARTIALLY BLOCKED VIEW
VIEW BLOCKED BY STRUCTURES
STATIC VIEW LOCATIONS
UNINTERRUPTED VIEW
PARTIALLY BLOCKED VIEW
LONG BEACH
LAKEWOOD BLVD
PCH
BEACH BLVD
power plant
NEWPORT BLVD
ARTHUR BLVD
fashion island
CAN
LAGUNA
SAN DIEGO FWY
ORTEGA HWY
oil islands
Rush-mary
ports of call

Figure 2.6 A viewshed analysis from topographic profiles (Base map courtesy of Louis Weschler and Victor Regnier)

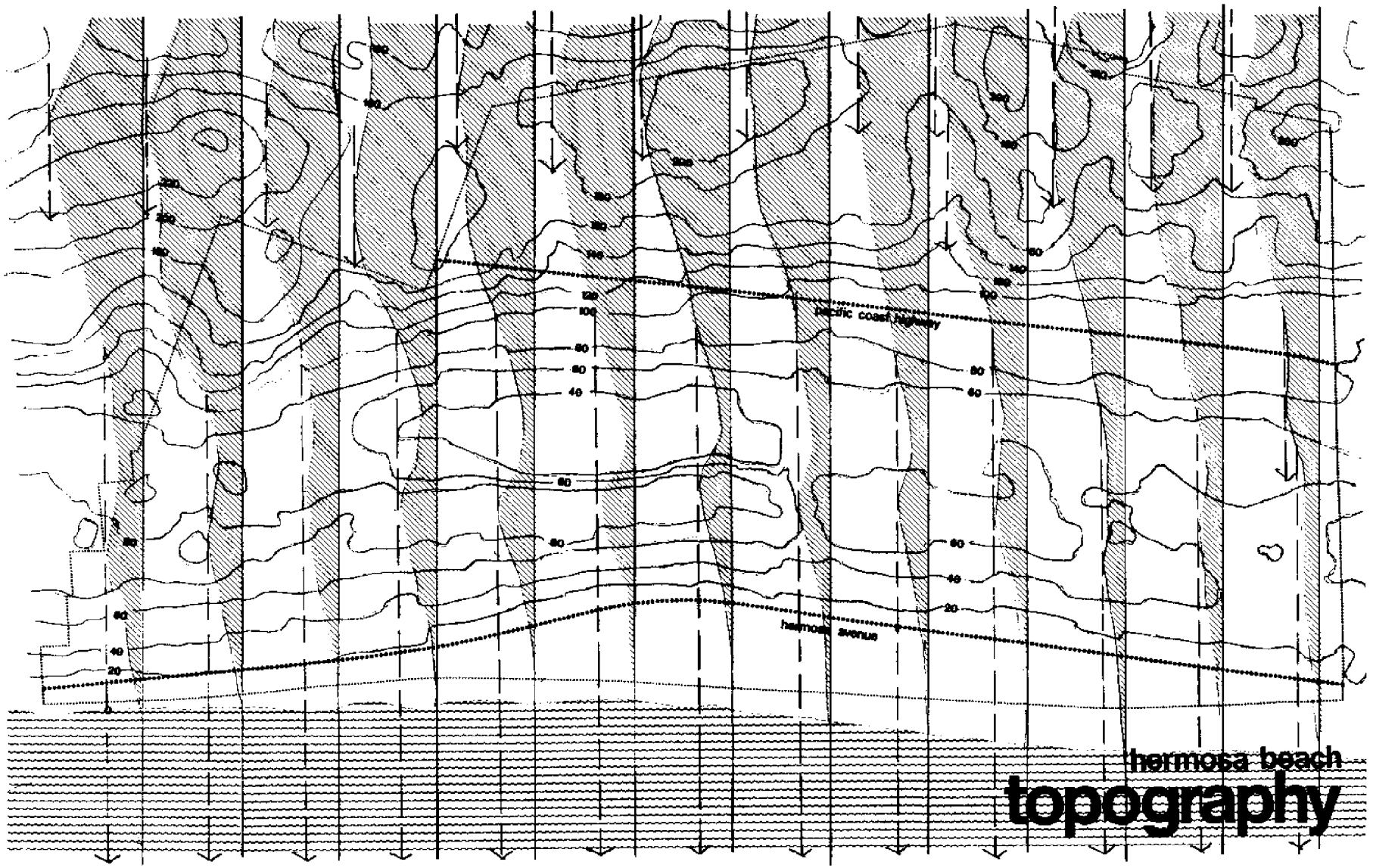
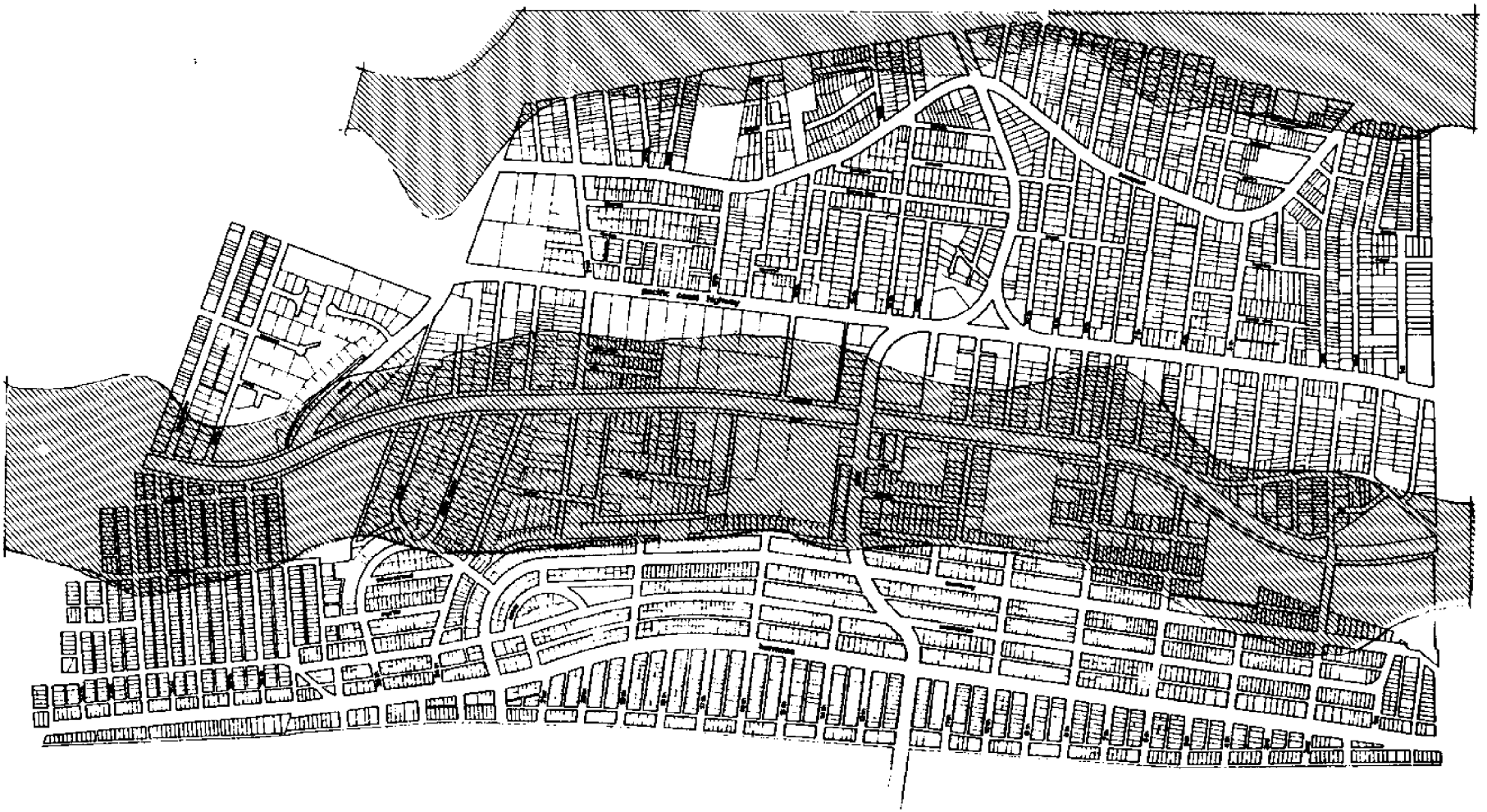
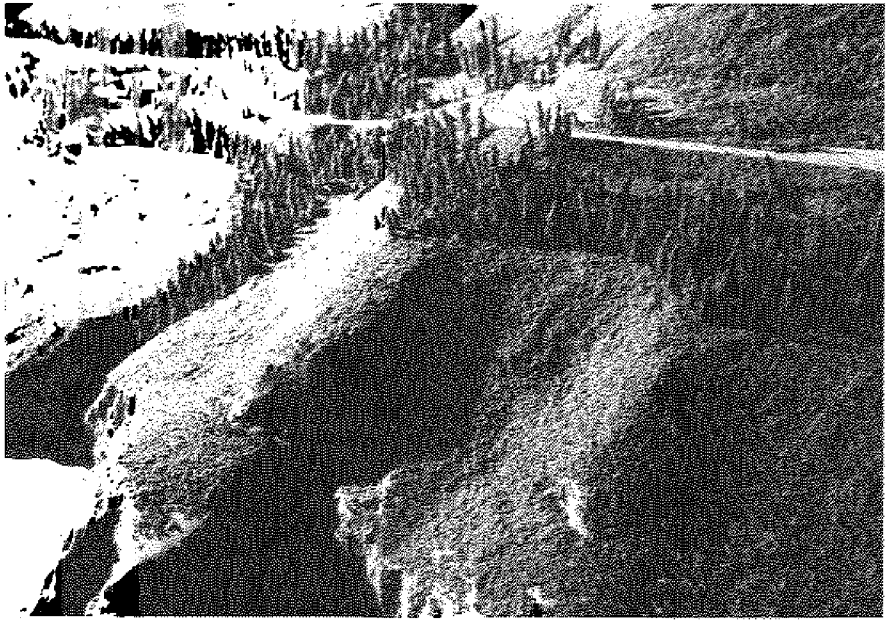
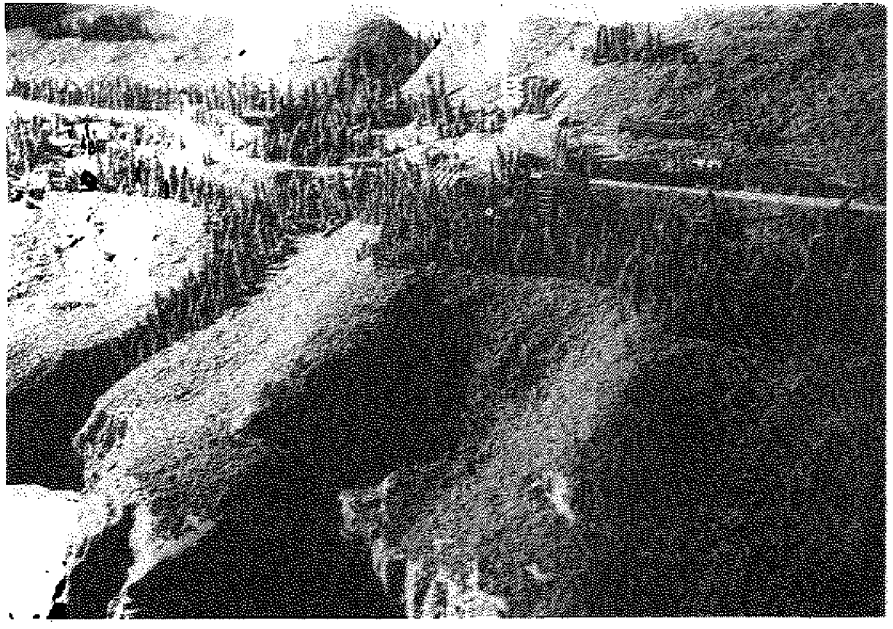


Figure 2.7 View shadows indicated by a map of Hermosa Beach, California. Shaded areas indicate areas with no view (Base map courtesy of Louis Weschler and Victor Regnier)







Figures 2.8 and 2.9 A site model constructed at the Environmental Simulation Laboratory, University of California, Berkeley, and the same site, model showing hypothetical development

The site model: Finally, the contour lines of USGS maps are invaluable in building scale models of the coastline. These study models can be particularly useful in areas with complex terrain and topographical changes, both for understanding the present site and for identifying relevant policies.

Figures 2.8 and 2.9 show site models built at the Environmental Simulation Laboratory of the University of California, Berkeley,[5] to assess the visual impacts of different developments on a particular California coastal setting.

Aerial Photographs

Although the USGS maps are based on aerial photographs, considerable information is lost in the cartographic conversion. In general, aerial photographs can provide an important supplement to most topographic or planimetric maps. Data related to coastal geomorphology or hydrology, or to coastal vegetation patterns can be interpreted and evaluated with varying degrees of accuracy from aerial photographs and other types of remote-sensing records.

Aerial photographs come in different forms depending on the recording medium (i.e., type of film) or the nature of the recording procedure (vertical, oblique, etc.) Details on aerial photography can be found in many technical books, including an excellent edition written for planners by Branch (1971).

Most recent aerial photographs can be purchased from local firms specializing in aerial photography. Figure 2.10 shows an aerial photograph prepared for the California Coastal Commission. The most common sources of inexpensive aerial photographs are orthophotoquad maps which are available from the U.S. Geological Survey. These orthophotoquads are published in a 7.5-minute 1:24,000-scale map series, identical to the typographic maps—made from quad-centered aerial photographs taken at 37,000 to 42,000 ft. altitudes and providing full coverage of the area included in a 7.5-minute map in a single exposure. Figure 2.11 shows a segment of a typical orthophotoquad map.

Figure 2.10 Aerial view of Hermosa Beach, California (Source: California Coastal Commission)

The aerial photographs, especially black and white panchromatic stereo pairs, can provide important supplements to planimetric or topographic maps (e.g., USGS maps) in interpreting both natural and built elements and features. While various techniques and principles have been developed to interpret aerial photos for site analysis purposes, the methods for interpreting urban aerial photos are still not fully developed. The following are some possibilities.

Natural landscape: In analyzing the natural landscape, aerial photographs can be used to inventory vegetation, soil types, change in use or ownership of land, drainage, erosion, flooding, effects of natural forces such as wind-blown patterns on sand dunes, exposure of slopes, etc. (Way, 1976). Stereo pair photographs have been used by the military to determine lines of sight from a given elevation and location, largely for the purpose of emplacement of guns. This knowledge can now be applied in determining location of future landmarks (Lynch, 1972).

Behavior trace: It is important for designers to know how a place is used by people. This is particularly necessary in the coastal setting which constantly attracts people for leisure and recreational opportunities. Aerial photographs—especially successive and sequential ones—can reveal traces of human occupancy of beaches, piers, and boardwalks; permanent or transient imprints of human uses of the coast, foot trails, tire tracks, or worn out vegetation. Edward Ruscha's (1967) famous photographs of Los Angeles parking lots are cases in point. It has been suggested that infrared aerial photographs can even reflect the level of maintenance and the landscaping in an area,[6] thereby suggesting a community attitude toward the place, or even more importantly, a process of change underway. Indeed, aerial photography can be a very effective "unobtrusive measure" (Webb et al., 1966) of human uses of the coastal space and landscape.

Built form: Aerial photographs can be used to inventory important aspects of built form. Designers often are interested in the height, bulk, type of structure, condition of repairs, etc., of buildings in an urban setting. Information of this nature is typically collected in the field—a tedious and time-consuming task. This task can almost be eliminated if a recent aerial photograph is available. For example, the heights of buildings can be accurately estimated from stereo pair photographs (Marsh, 1978). Rough heights of buildings (one-story, two-story, medium-rise, high-rise, etc.) can be obtained even from an ordinary aerial photo by noting differences in shadows cast on the ground. More accurate measures can be obtained if a building or other landmark of known height is identified and a "shadow scale" is constructed, using it as a benchmark.

Once height is estimated, measures of bulk are easy to obtain unless the building has a complicated configuration. The type of structure can also be deduced from the appearance of the roof, the height, and the bulk of a building. It is a well known fact that building assessors count the number of corners in a floor plan of a building as a rough indicator of the cost of construction. The more numerous the corners are, the more complicated the form is and, hence, the more expensive the building is. Such procedures can be used in assessing the quality of structures from an aerial photograph also.

It is more difficult to assess the condition of a structure, at least at a gross level. Under certain circumstances visible signs of disrepair of buildings and structures, and of lack of public and private spaces can suggest the general age and stage of deterioration of the buildings in a neighborhood. But assessments of this nature can only be subjective and judgmental and may be somewhat inaccurate.

On the other hand, aerial photographs are extremely useful in inventorying the extent, distribution or range of vegetation, various types of urban open spaces, or the site coverage of buildings. By overlaying a clear transparency that shows property or lot boundaries, it is possible to estimate the amount of built and unbuilt areas on a site. If the heights of the buildings are also known, it is then possible to estimate the *floor area ratios* by units of individual lots, street blocks, or some other larger aerial units.

Land use: It is not always easy to get an accurate inventory of land use from aerial photographs, especially in older urban areas where mixed land use, nonconforming uses, and zoning variances abound. But in recently developed urban areas, this is a relatively simple task. Knowledge of zoning ordinance (requirements of setbacks, off-street parking, etc.) plus various environmental clues (e.g., stereotypical building forms, landscaping, or locational characteristics with respect to the street network) can tell trained eyes how a particular parcel of land is used. Sometimes even finer categorization is possible. It is fairly easy to differentiate a single-family detached unit development from a planned unit development, apartment blocks from trailer parks, and so on. Once again, interpretations of this nature are useful primarily in developing generalized land use patterns for an area. They are not especially reliable for work which requires a high degree of accuracy.

Figure 2.11 A section of an orthophotoquad map for the city of Laguna Beach, California (Scale 1:24000)

Land-use and land-cover maps with 1:250,000 scale (to be replaced by a new 1:100,000 scale) base maps are available now for most of the coastal zone areas (with the exception of the Great Lakes coastal region) from the U.S. Geological Survey. These maps are derived from improved, remote-sensing technology such as Landsat images (Thompson, 1979), using a *land-use* and *land-cover* classification system consisting of nine broad categories and thirty-three detailed categories. Figure 2.12 shows a section of the USGS land-use and land-cover map for the Los Angeles area.

Other Miscellaneous Sources

Most cities, counties, regional agencies, state agencies, and special-purpose agencies prepare maps and documents that can serve as useful source material. Data related to traffic volume, utility alignments, and drainage and sewer layouts are available from most city engineering departments and are often plotted in maps. Zoning departments can furnish zoning maps that usually show lot boundaries. Land-use maps are, of course, available from the city planning departments. (See Figures 2.13 and 2.14.)

While some of these maps and sources can provide important information, it is wise to begin with commonly available USGS maps or aerial photographs and then search for additional sources, once specific needs for information have been identified.

Automobile association maps, the Thomas Brothers maps, and maps available from gasoline stations can also be useful, especially in preparing small-scale locational maps. Thomas Brothers map books are useful commercially produced sourcebooks of urban information. They show the accurate and current location of streets, identified by name, along with many other public and private institutions, shopping centers, parks, playgrounds, etc. They also identify original subdivisions by their tract names—an important historical reference system.

Previously, we have mentioned other sources such as photographic essays, history books, etc. Many communities have probably been the subject of one of these kinds of publications. Often, these books are self-aggrandizing and anecdotal, but they are useful nevertheless. Even such obscure sourcebooks as these can include useful facts and figures. They can also reveal many of the traditions, customs, and unique emotions that the residents may have about an area. More importantly, such sources might identify important physical landmarks imbued with local or regional sentiments and symbolism. In the exploratory stage of design, these anecdotes and local histories associated with different aspects of the coastal landscape, communities, people, and settlements can become important bases for evolving design concepts.

Picture postcards of coastal communities can be approached in the same spirit, since they are a common means for "packaging" and "exporting" images of a place. The subjects or themes portrayed usually have a popular appeal, or at least have some approval of the community. Picture postcards may reveal community values in the environment—objects, views, events, buildings, settings, landscapes, and even a particular time of day (i.e., dawn, dusk, night lights) or a particular season. By mapping what is seen in the postcards, it is possible to get a sense of the elements of the environment and the views and vistas that receive most common exposure and which presumably reflect a popular appeal.

Notes

1. The quadrangle maps are based on a system of subdivision suited to mapping areas at various scales. The largest quadrangle is bounded by degree lines of latitude and longitude, and the smaller ones by further subdividing it into 30′, 15′, and 7.5′ quadrangles. Thus, a 7.5-minute map refers to the quadrangle defined by a 7.5-minute interval of latitude and longitude.
2. *Paths*, "are the channels along which the observer customarily, occasionally, or potentially moves" (Lynch, 1960); thus, any established route of travel—canals, railroads, transit lines, walkways, etc.—can be construed as paths.

   Landmark is defined by Lynch (1960) as a "type of point-reference" which visually dominates the landscape or becomes significant because of its symbolic meaning or functional use.

   Focal organizations refer to the "spatial arrangement and interrelation of the key points in the total environments" (Lynch and Rodwin, 1958).

   Districts are defined by Lynch (1960) as "the medium-to-large sections of the city . . . which the observer mentally enters 'inside of,' and which are recognizable as having some common, identifying character."

   Edges are the "boundaries between two phases, linear breaks in continuity. . . . They are lateral references rather than coordinate axes" (Lynch, 1960). Thus, shores, railroad cuts, limited-access freeways, edges of development, walls, etc., typically qualify as edges.

   Grain refers to a quality of urban form which is based on "the typical local interrelations between similar or dissimilar elements." It is a quality that refers to the differentiability of the various elements of the form, degree of heterogeneity or homogeneity in the spatial arrangement of diverse elements, the degree to which the like elements are spatially contiguous or clustered and separated from the unlike elements, etc. (Lynch and Rodwin, 1958).
3. For an application of a similar method, see Wolfe and Shinn, 1969.
4. See Chapter 5 for a definition of "viewshed" and additional discussion on the "view shadow" concept.
5. Photographed at the Environmental Simulation Laboratory by permission of Prof. Donald Appleyard. This particular model was built for a study conducted by Prof. Joachim Wohlwill, Pennsylvania State University, 1977-78.
6. Well-kept and well-maintained lawns and gardens appear as solid patches of color, whereas unkempt, litter-strewn lawns and decaying vegetation appear as uneven and broken patches of color.

Figure 2.12 A land use and land cover map prepared by USGS from Landsat images, showing the Los Angeles, California, area

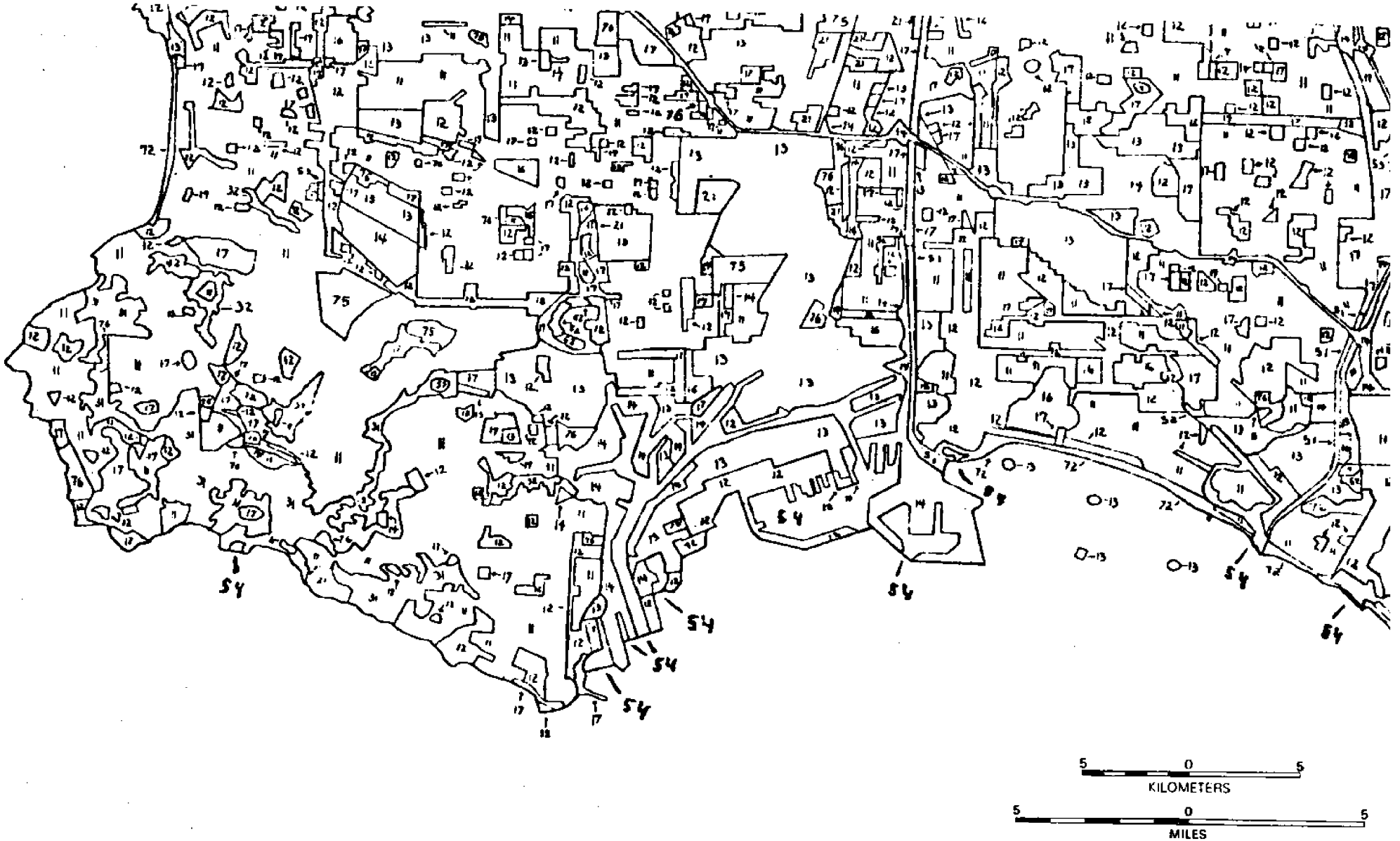


Figure 2.13 Spatial distribution of commercial activities in Hermosa Beach, California (Base map courtesy of Louis Weschler and Victor Regnier)

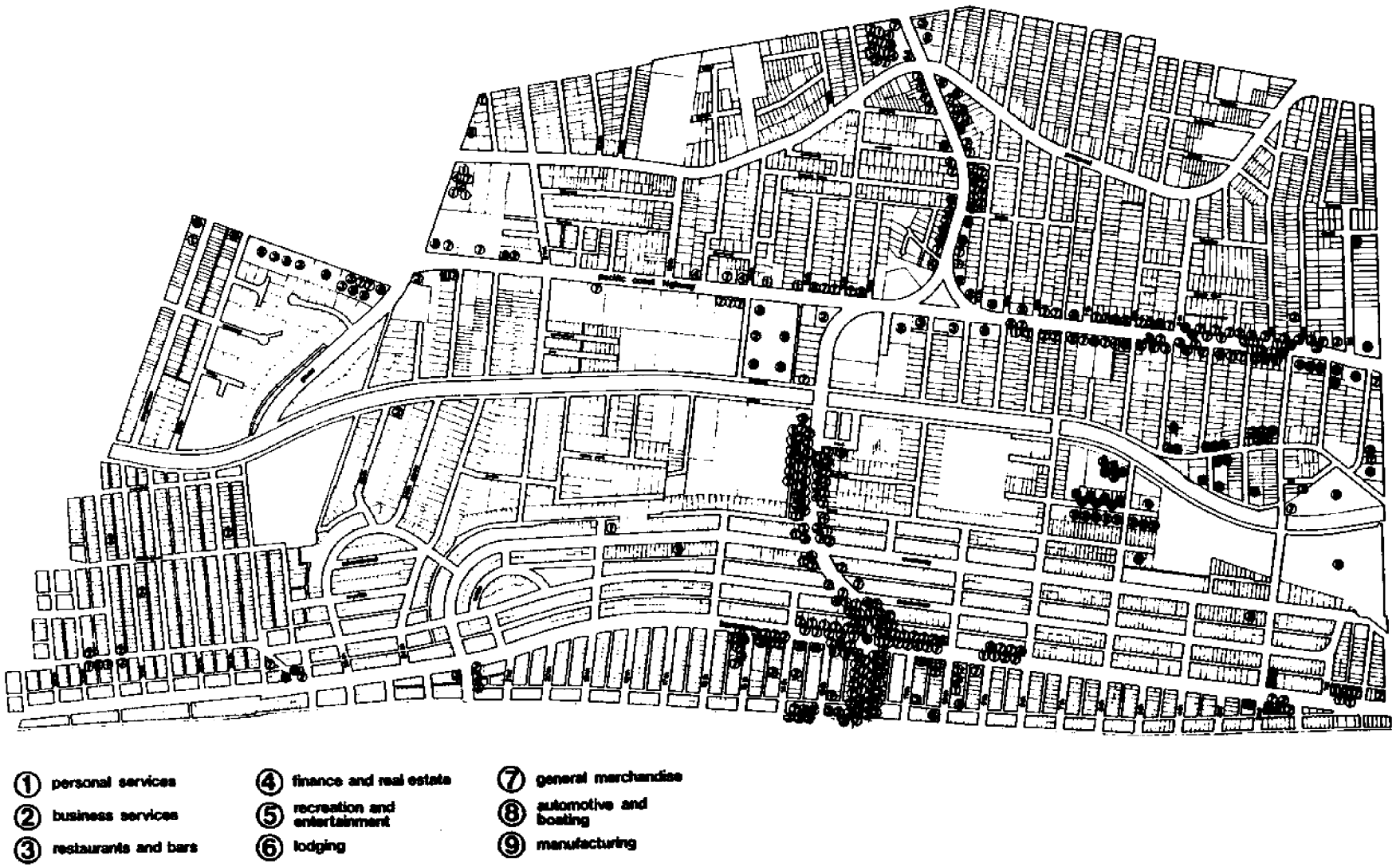
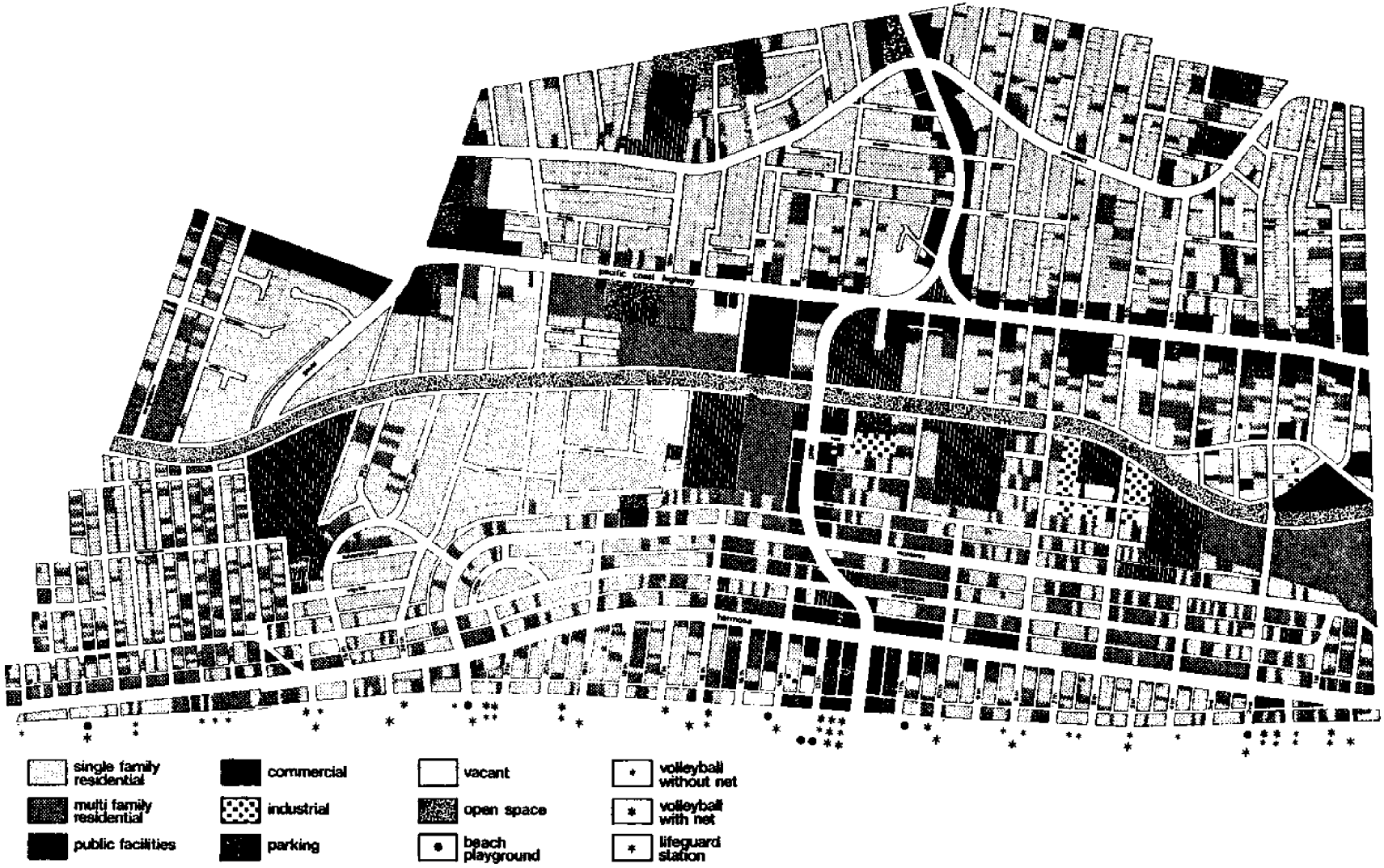


Figure 2.14 Uses of land in Hermosa Beach, California (Base map courtesy of Louis Weschler and Victor Regnier)



3
Taking Stock: Field Reconnaissance

No matter how complete a designer's stock of secondary sources of information is, personal reconnaissance of the setting is indispensible. The real-life environment is much more animated than any of the maps and aerial photographs can ever depict. The sights, sounds, smells, and textures are complex and rich, and are all part of the unique ambiance of a coastal setting. Somehow, the essence of this elusive atmosphere must be recognized and captured as an important resource. There is no way of doing it other than through field reconnaissance.

The task itself is difficult to prescribe, other than in very general terms. Photographs no doubt will help, and so will sketches and notes. It is possible that experiencing a seemingly all-too-familiar setting from different angles, at different times of the day, or on different days of the week will reveal new visions and meanings. Thus, looking at the coastline from a helicopter or sailboat or a ferry may reveal important perspectives and skylines which are normally not seen. In experiencing these coastal settings, empathic insights can be obtained by assuming the roles and perspectives of different coastal users, e.g., that of a fisherman in the early hours of dawn, or that of a surfer in the summer months, or that of a commuter driving home on a coastal highway at the end of a day.

In these open-ended field reconnaissance trips, the designer looks for many things. At an almost subconscious level, he is searching for some global concepts, some pervasive themes that will help him organize the information he collects and that will give justification to his recommendations and cement all the diverse issues and components of the design plan into a unified whole. There is no guarantee that the designer will successfully uncover such themes; and even if he does, pragmatic considerations may later override such a framework.

Most commonly, field reconnaissance will allow the designers to note many different aspects of the setting, thereby supplementing his secondary sources. For example, from the field analysis it will be possible to:

1. Identify additional elements of the physical setting that can help augment the form analysis done from a USGS map.
2. Differentiate the study area into smaller homogeneous areas based on age, building type, view or physical access, land use, social class, etc.
3. Identify important views, vistas, viewsheds, and view shadows.
4. Delineate functional or visual linkages and barriers between different parts of the districts, access routes, corridors, etc.
5. Record activity settings, activity circuits, duration of activities, pulse of activities, movements, and flows.
6. Identify areas with existing scenic qualities, future views, visually deteriorating or blighted areas, and existing and future scenic routes.
7. Record distribution of signs, lights, and billboards.
8. Generally identify various sensory qualities of the coastal zone.

Many other special types of inventorying can be included in this list, but the choice of what to record in field reconnaissance can only be made by the local designer, based on his or her perception of local needs and problems.

The importance of photographic documentation can never be overemphasized. But, when it comes to taking pictures, there is always a certain amount of confusion as to what to shoot, or how to maximize the photo coverage. In the absence of a clear guide, photos are often taken at random and later found to be repetitious, irrelevant, or useless. However, there are some known techniques of photographing a site, and the following is a review of these techniques with illustrations.

Journalistic Photography

This is the most open-ended, unstructured way of photographing a site. The designer may want to record a special view, a distinctive panorama, an example of a good design, or visual problems and potentials. The choice of the subject, the angle, and the lens are all based on the subjective judgment of the designers. These unplanned photographs may capture such things as human interest angles, special moods of the environment, or the ways in which people use or relate to the place and to each other in the context of a particular space. Pictures of this nature can be useful in illustrating a design objective, in suggesting certain design solutions, or for the general purpose of making the public and decision-makers aware of key issues. These can be important images and can have a powerful impact on the designer's own thinking about the future policies.

Panoramic Views

Panoramic photographs include scenes more expansive than our normal field of vision, and, hence, indirectly capture a temporal dimension. In design studies, panoramic photographs serve a number of purposes. Because a panoramic photograph simulates a temporal dimension, it offers a quality of experience that is absent in normal photographs. By covering a 360-degree view, such a photograph presents the visual environment in its totality, thereby allowing an examination of the relationship among all of the elements of the environment.

Panoramic photographs can be taken in many different ways. Extra-wide-angle lenses called "fish-eye" lenses are expensive but they are a possibility. These capture an expansive view in one frame, avoiding the edge-matching problems of a panorama assembled from multiple photographs; however, the resultant photo is distorted.

The best panoramic photographs can be obtained from multiple photographs with proper tools. Figure 3.1 shows a panorama of a site in Sea Ranch (Sonoma County, California) assembled from multiple photographs. In the studies of coastal setting, panoramic photographs are useful in identifying viewshed, existing scenic areas, and existing skyline, and in anticipating the visual effects of future buildings and construction.

Continuous "Scroll" Type Views

A variation of the panoramic view is the continuous "scroll" type view, also assembled from multiple photographs. This, too, has an implicit temporal dimension in the simulation of the space. This is a view that unfolds as an observer moves linearly through space. In a true panoramic view, the pictures are taken from one point by rotating the camera. But in the "scroll" type view, the camera is moved to a different location for every adjacent frame. (See Figure 3.2.)

This technique is particularly useful in documenting linear spaces, such as face block elevations or important streets or paths of movement. In coastal settings, photographs of this sort can document quite accurately the views that are available along streets running parallel to the coast, as well as the waterfront skyline.

Photo Atlases

Photo atlases are mosaics of photographs displayed on a base map divided into a grid of appropriate dimension. Each photograph mounted on a grid cell is a representative image of the corresponding area in that cell. It is possible to develop a series of photo atlases, each of which may represent a particular characteristic of the environment—e.g., a typical building form, typical users, typical activities, typical landscapes, etc. As part of his dissertation research, Carl Steinitz (1967) prepared a number of photo atlases for downtown Boston, each atlas capturing a specific component of the setting, such as built form, activities, signs, etc.

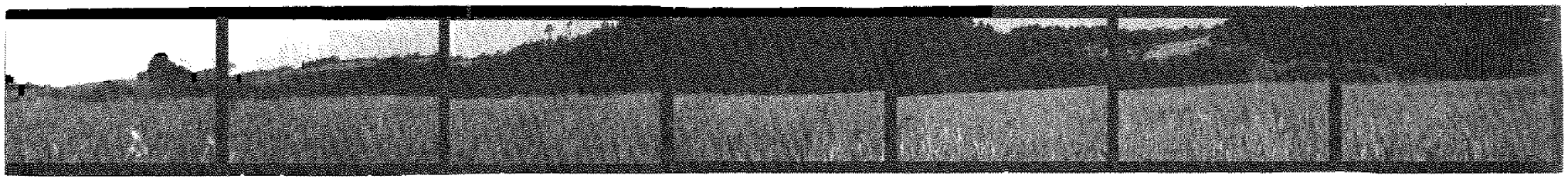


Figure 3.1 A panoramic view of a coastal setting at Sea Ranch, Sonoma County, California

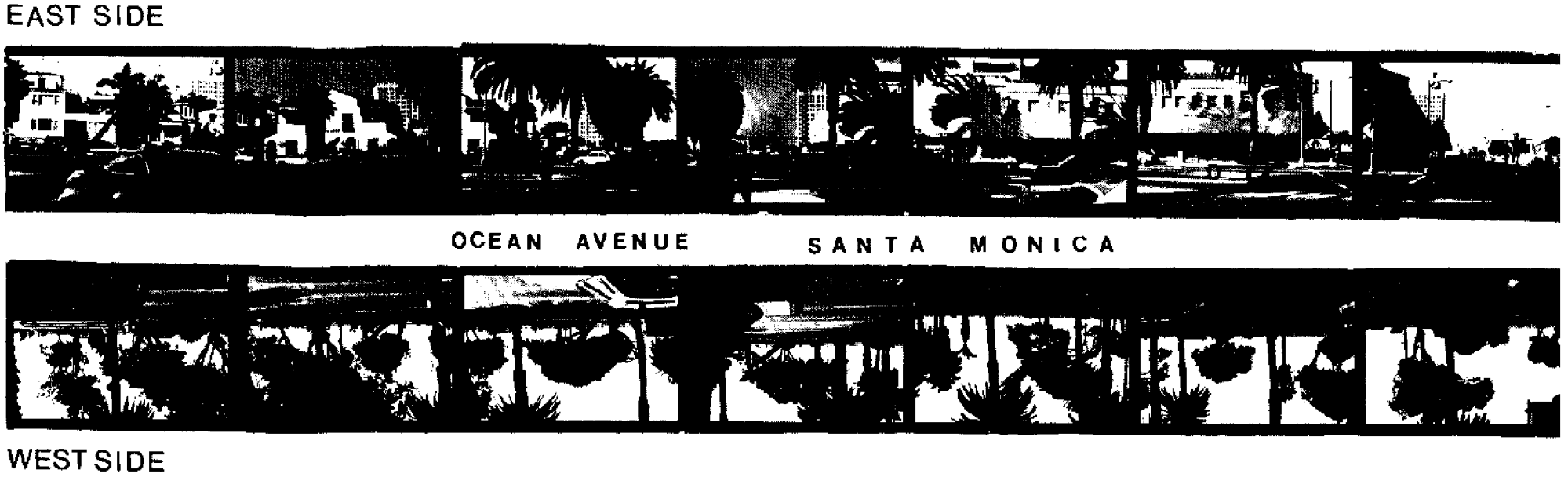


Figure 3.2 Street facade on Ocean Avenue, Santa Monica, California, using a continuous "scroll" type view

Systematic Area-Wide Photographs

Often it is necessary for designers to have a comprehensive inventory of photo images for the entire study area taken from sufficient number of points. In order to build such an inventory, it is advisable to develop some overall rules for taking photographs, both for meaningful images as well as for cataloging them in some systematic fashion. A common method is to establish a grid and take photographs of the four cardinal directions, or according to some other pre-established rule. (Lynch, et al., 1977, suggested a 100-meter grid for such purposes.) In most North American cities, the Jeffersonian grid pattern has already provided a framework.

Accordingly, photographs taken at each intersection looking into the intersecting streets are a possibility. However, this technique needs to be supplemented by additional photographs taken in the middle of long blocks or curvilinear streets. Where the street pattern does not follow a grid or includes idiosyncratic departures from the grid, modifications of the basic system will be necessary.

Cinematography

Movies are another possibility for recording the environment. With the addition of sound, movie films clearly provide a more complete simulation of an environmental setting. Movie films can be made either in a subjective or journalistic fashion, if the purpose is to stimulate and educate the public, or in a more systematic, mechanical fashion, especially when the purpose of the film is for objective simulation and scientific research. Such films can be made as one moves along a street, or from a fixed point by rotating the camera. The 360-degree panoramic views shown in Figures 18 through 21 represent four 16-mm color movie film segments made for the purposes of scientific research (Banerjee and Gollub, 1976; Banerjee, 1977). Finally, with the growth in video technology, video cameras can now be used to make such simulations.

Photo Sequences

Photo sequences are also useful in documenting linear spaces—especially major paths, access routes, approaches, view corridors—with a definite goal object or a view such as the ocean. These too imply a dimension of time, as the views presented would normally unfold as an observer makes the journey through the space. Figure 3.3 shows such a photo sequence along Ocean Park Avenue and Santa Monica Boulevard in Santa Monica, California, illustrating two very different approaches to the ocean.

These photo sequences can be further embellished by additional left and right lateral views at each point in the sequence, thus effectively reproducing the potential field of view of an observer. Time-lapse movies are also a useful device for temporally compressing a sequential experience.

Environmental Simulation

The designer may often have to supplement field reconnaissance with simulations of existing or future environments. Such simulations are necessary for public communication, citizen participation, and technical analysis of design options. Site models (as described in the previous chapter), perspective sketches, and computer-generated diagrams are all examples of environmental simulation, especially when future developments are involved. But these have limitations. Perspective sketches, while detailed, are static and do not convey the total experience of moving about in a space. Computer-generated sketches can be numerous and can be used in sequence to make cartoon-like animations of the space; but usually they lack the real-life details. In viewing site models, one gets an abnormal perspective and suffers from a "Gulliver" effect in relating to a seemingly "Lilliputian" environment.

Recently, sophisticated simulation facilities have become available to create closed-circuit television images, video-tape, or super-8 or 16mm colored movie films of traveling through a scale model, thus creating a total, life-like simulation of an existing or a proposed environment. The Environmental Simulation Laboratory of the University of California, Berkeley, provides such a simulation facility.

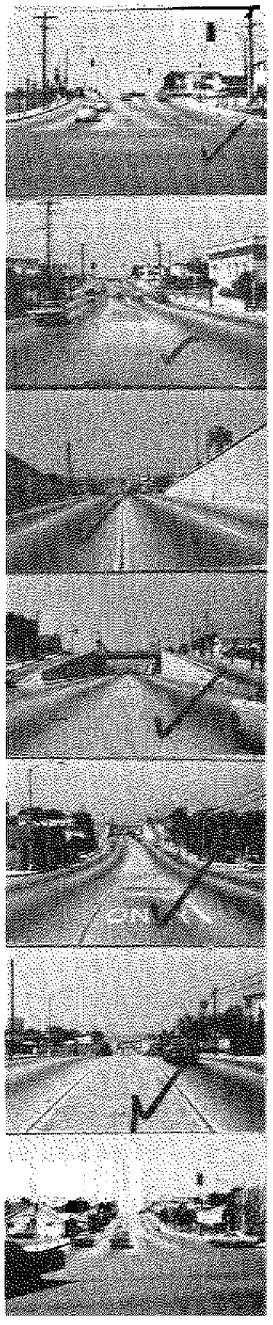


Figure 3.3 A photo sequence documenting Ocean Park Boulevard, in Santa Monica, California

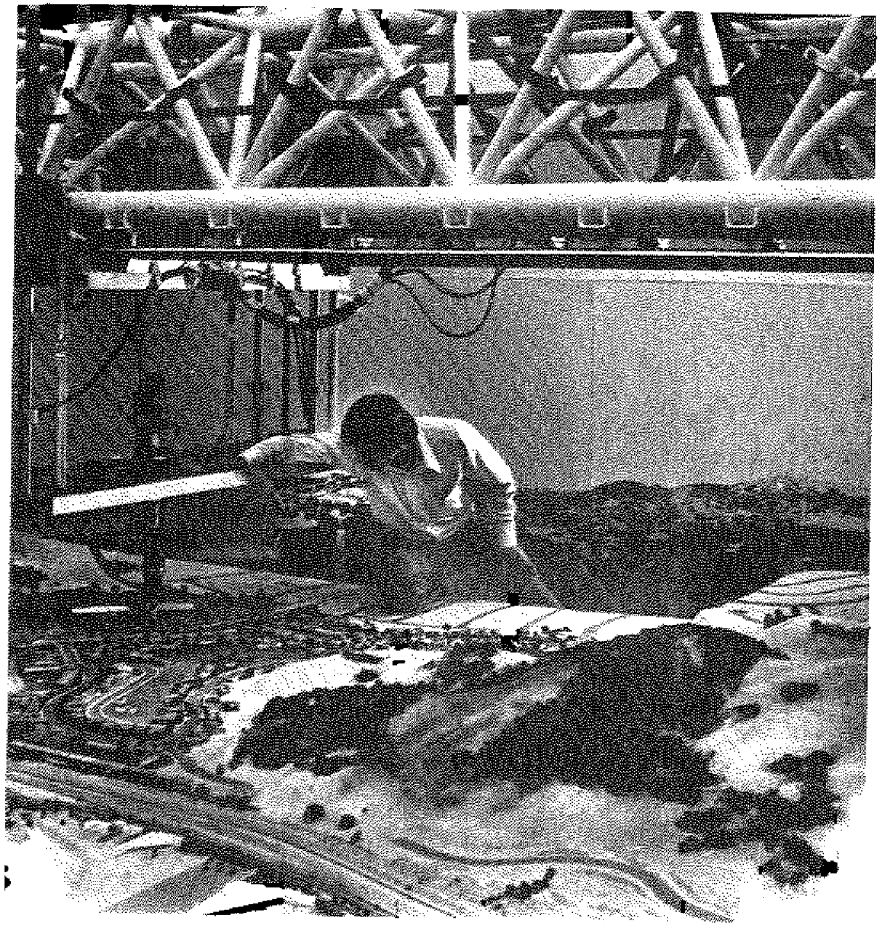


Figure 3.4 A gantry setup and periscope camera positioned over a site model (Environmental Simulation Laboratory, University of California, Berkeley)

> The laboratory possesses an environmental simulator which has as its centerpiece a remotely guided periscope with a tiny moveable lens (1/10-inch radius). Supported by a gantry and control system, the periscope can "fly," "walk," or "drive" through a physical model of buildings, and landscapes under either operator or computer control. . . . During these journeys, the periscope can look in any direction and can follow different routes at any desired speed. The laboratory has its own audio-visual, editing, projecting, and computer facilities. Animated films with moving vehicles, time-lapse movies, and photo-montage presentations are also made in the laboratory.*

The models usually must be of a fairly large scale, as Figure 3.4, showing the gantry setup and periscope camera over a model, suggests. Figure 3.5 shows the actual image captured by the periscope camera while "driving" along a highway in a model of a segment of Marin County.

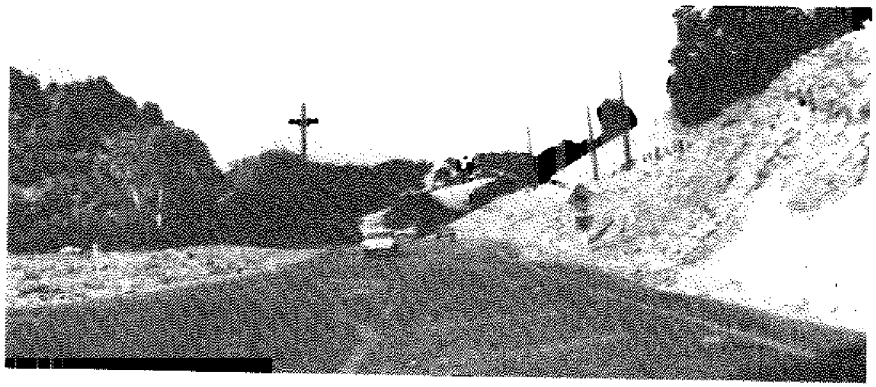


Figure 3.5 The actual image captured by the periscope camera while "driving" along a highway in a model of a segment of Marin County, California

*From a pamphlet describing the Environmental Simulation Laboratory, University of California, Berkeley.

Visual analysis and information display can be done effectively by means of maps and diagrams generated by computers.

Figures 3.6 through 3.10 are examples of computer-generated graphic analysis developed by Charles Steven Dwyer of the faculty of the School of Architecture at the University of Southern California, and his student, G. Michael Gehring. These diagrams were generated as part of a study of alternative development criteria for Santa Catalina island off the southern California mainland.[1]

Computer simulations of this nature can be particularly useful when the site being analyzed is physically remote, inaccessible, vast, or complex. Thus the tedious task of building a scale model of Santa Catalina island can be eliminated by using computer-generated diagrams showing perspectives of the island from different angles and directions (Figure 3.6 and 3.7). These perspective views can be further used to simulate the natural profile of the landform, the proposed skyline, or the appearance of the waterfront in general. From topographic information, the computer can predict areas which will have ocean views ("viewshed" and "view shadow" areas) as shown in Figure 3.8, views of sunrise and sunset (Figures 3.9 and 3.10) and such other information as morning light at the summer and winter solstice. These are only a few examples of the many different ways in which an imaginative designer can utilize a computer in understanding a site, its potentials, and its constraints.

[1]These diagrams were produced by means of a CALCOMP plotter based on programs developed by Dwyer.

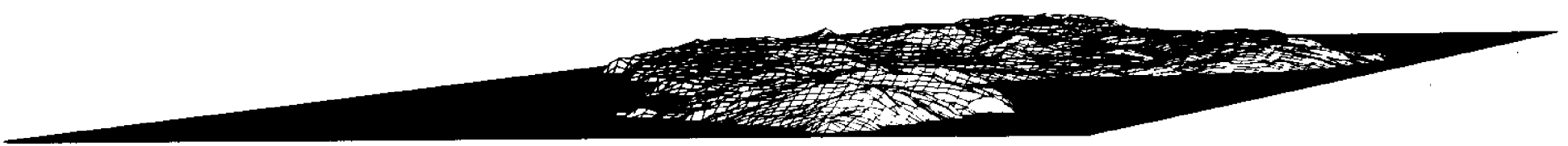


Figure 3.6 Computer simulation of Santa Catalina Island, California; view of the west end (Courtesy Charles Stephen Dwyer, University of Southern California School of Architecture)

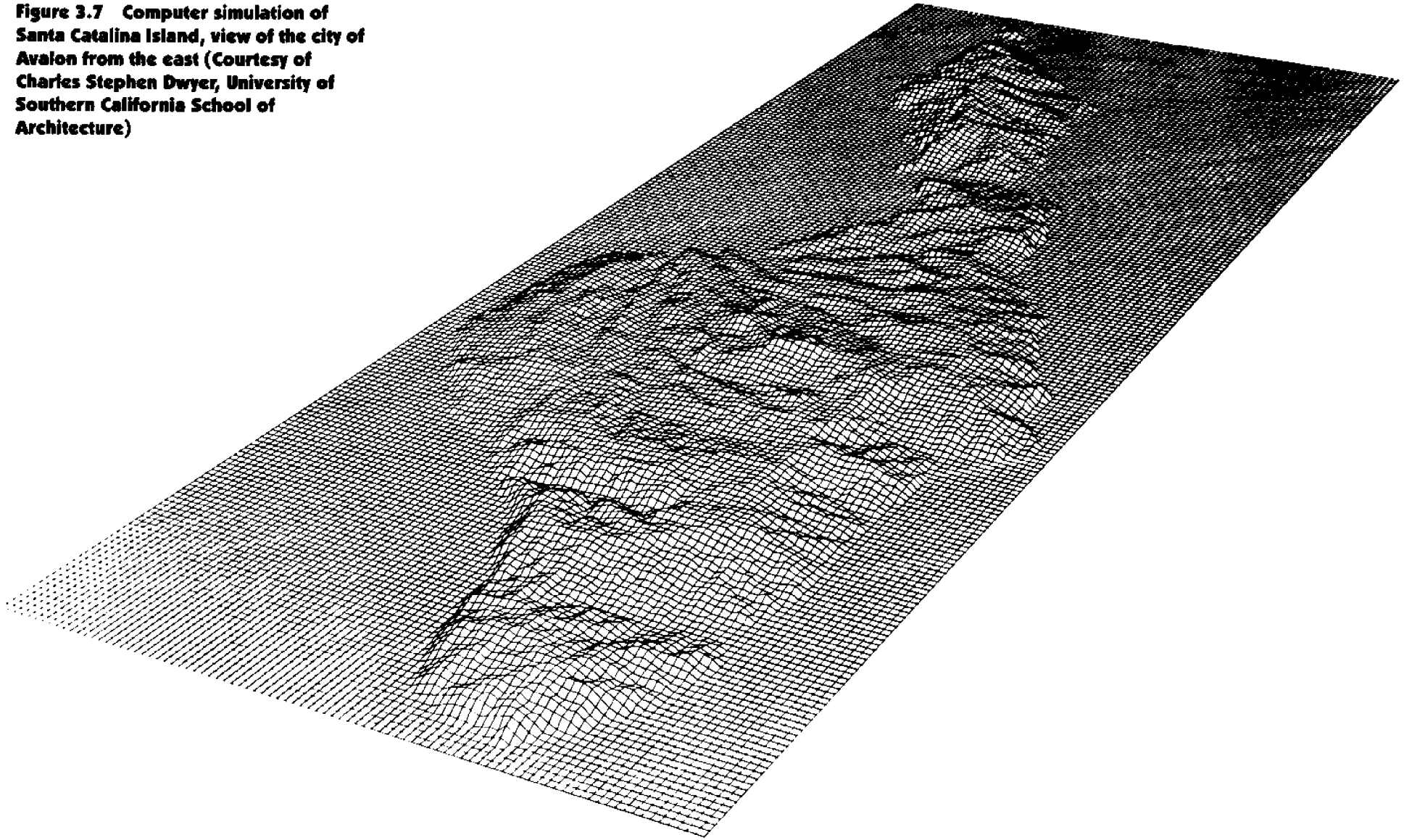


Figure 3.7 Computer simulation of Santa Catalina Island, view of the city of Avalon from the east (Courtesy of Charles Stephen Dwyer, University of Southern California School of Architecture)

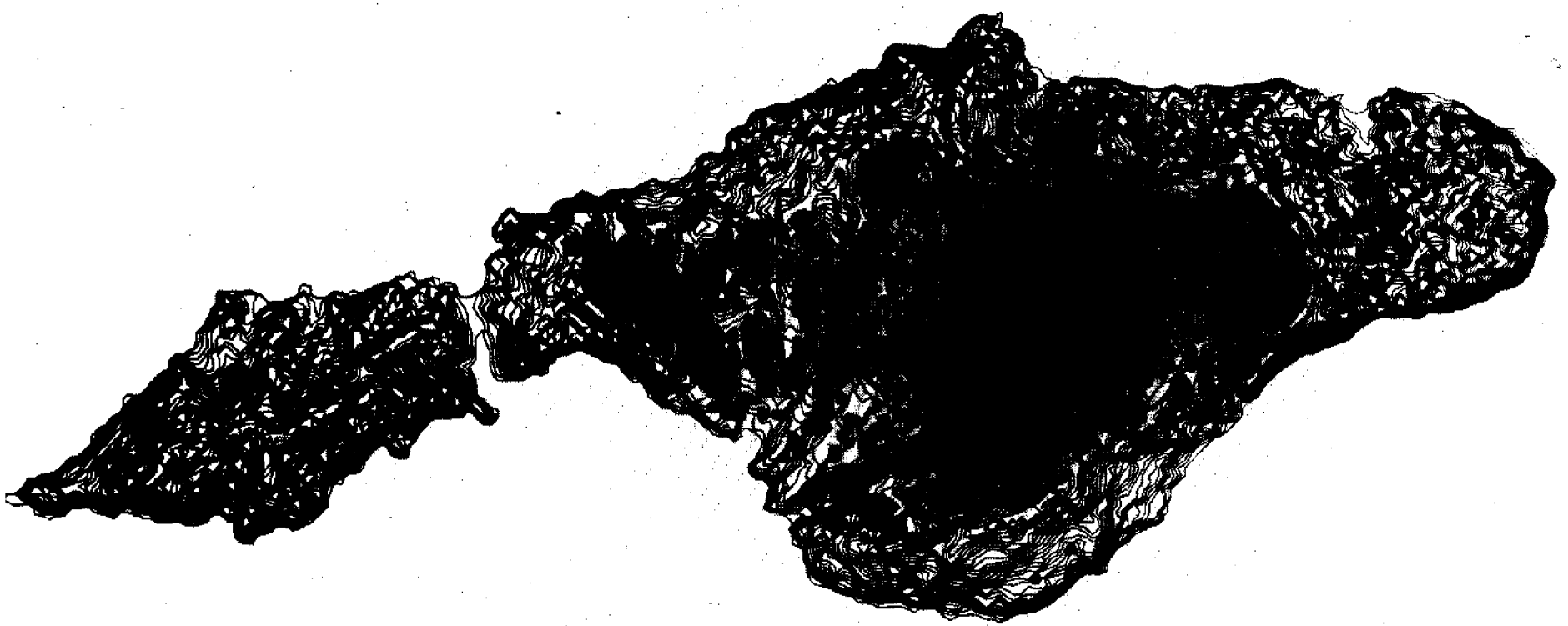


Figure 3.8 Santa Catalina Island; computerized analysis of areas with no ocean view within five miles of the coast (as indicated by dark areas) (Courtesy Charles Stephen Dwyer, University of Southern California School of Architecture)

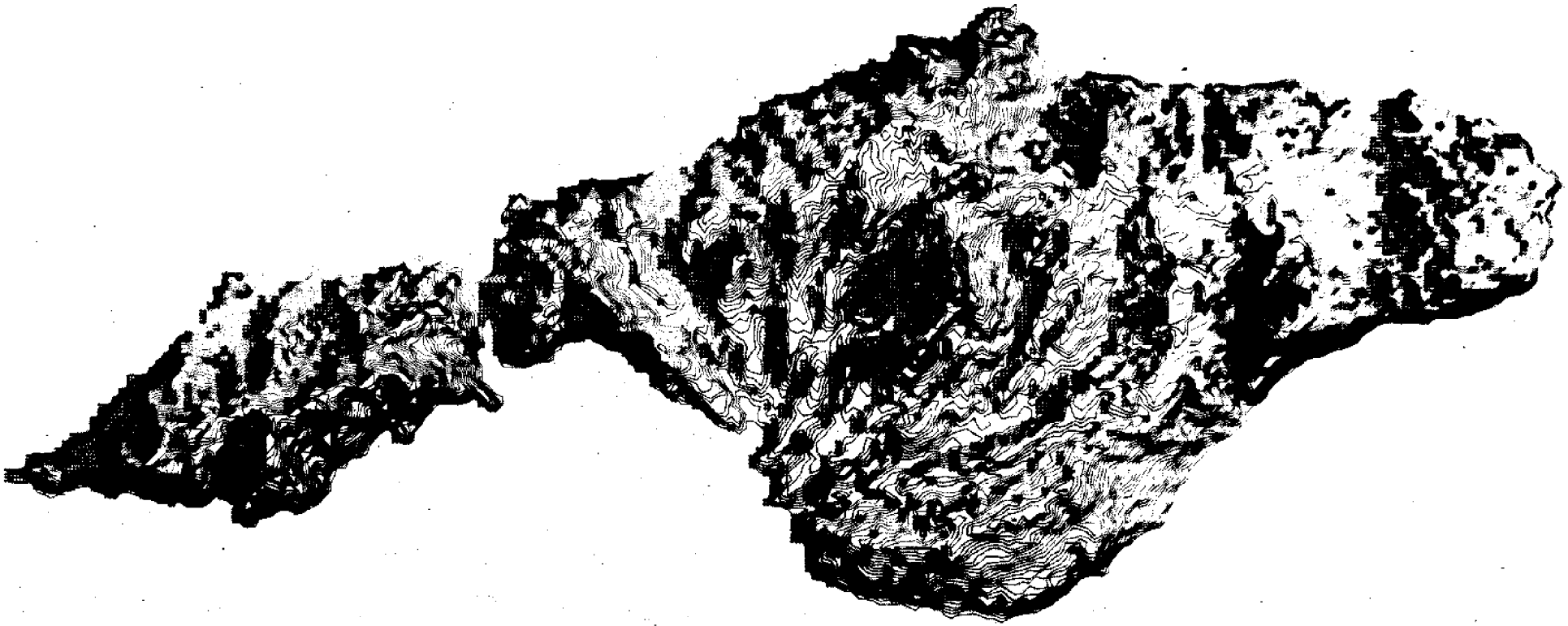


Figure 3.9 Santa Catalina Island; computerized analysis of areas of the island that receive varying degrees of morning sunlight at the winter solstice; white areas receive 3 or more hours; grid areas receive 1 to 2 hours; black areas receive no morning sunlight (Courtesy Charles Stephen Dwyer, University of Southern California School of Architecture)

4
Getting People Involved

We propose that getting people involved in the design process is an important aspect of large-scale design, since such design efforts largely involve public policies, interests, and environments. We will not repeat here the argument for citizen participation as commonly understood in the context of urban renewal or highway development. Nor, for that matter, will we necessarily prescribe a model of participatory design. Our purpose here is simply to present several ways in which the design team can interact with the public in a meaningful and productive manner, so that the designer's assumptions and recommendations can be grounded in community values and choices rather than in the designer's personal values and predilections.

Public Images

It is important for the designer or the design team to have a sense of how the coastal zone is perceived and imaged by the people. This is necessary not only to validate or supplement the designer's own impressions and perceptions of the coast, but also to obtain significant insights about the problems and potentials of the visual form of the coastal areas, definition of community boundaries, relevant user territories, etc. Various paper-and-pencil subject-response techniques are available to determine how people perceive and image the coast. Here we will focus on one technique that is most commonly used in studies of environmental images.

The task simply involves asking an individual to draw a map, from memory, of an assigned area in the coastal zone of a city. The respondent is encouraged to show as many details as possible and label his drawings. The respondent can be asked to include descriptions or lists of places meaningful or significant to him. These open-ended, freely drawn maps represent individual images of the area.

Individual maps can be examined for diversity of contents, styles, accuracy, and emphasis. In Figures 4.1 through 4. 7 we show several examples of personal "images" of the coastal setting represented by residents of different coastal neighborhoods.[1] It is interesting to note how the significance of the coast may vary from individual to individual. One Long Beach resident shows a strong linkage with the beach (Figure 4.1), while his neighbor's map omits any reference to the beach (Figure 4.2). Other interesting points can be noted in these maps. For example, coastline is the all-important reference line for a Palos Verdes resident (Figure 4.3). Similarly, the ocean is a significant focus in the residential area map of a Pacific Palisades resident (Figure 4.4).

These maps, when accompanied by short interviews, can be effective means for exploring both affective (e.g., areas, views that are liked or dislikes), and behavioral (e.g., type of behaviors which residents see as appropriate or inappropriate—"a good place to buy a lot," "a good place to swim") values which have implications for short-term use of the coast as well as for long-term modifications of the coastal landscape.

Composite maps based on these individual maps can be developed. Such collective maps can be prepared by tallying everything shown in all of the maps and preparing a composite that only includes those elements that are frequently mentioned. The purpose is to abstract the commonly shared or the consensus image of the area. Lynch (1960) has called composites of this sort "public images."

The "public image" of a coastal setting can further supplement a designer's own analysis of its physical form. It can reveal, for example, major paths, landmarks, districts, nodes, edges, and places commonly recognized and used by people. These will be important frames of reference when the designer suggests future policies for the area. Some of these elements, as the designer might discover, have powerful symbolic meanings, and, therefore, must be protected and maintained with care (Appleyard, 1979). Others may have to be reinforced and enhanced to bring out their latent possibilities. These collective mental maps may also reveal points of confusion and disorientation; physical barriers, major breaks in functional linkages, or the absence of physical definition or distinctiveness of a place, all of which will require policies suggesting physical improvements.

The composite images of residents from different neighborhoods, as shown in Figures 4.5 through 4.7, are particularly useful in understanding the ways in which different social groups are linked (or not linked) to the coastal environment. It is interesting to note in comparing these composite images that the ocean and the beach show up as a strong element for the Pacific Palisades residents (upper income white); but they are only weak elements in the composite images of the Venice residents (lower income whites). Why? Why is the place of the ocean and the beach so different in the cognitive maps of these two social groups, even though they are similarly located with respect to the coast? Is this because the ocean and the beach are psychologically further away for the Venice residents than they are for the Pacific Palisades residents? Is this a function of the way in which different groups experience the coast? Is this a function of limited mobility? Traffic? Congestion? Land use? Is this a reflection of a class difference in attitude toward the coast? These are important and interesting sociological and behavioral questions with many implications for policy, design, and planning. While we do not have a ready answer, we believe we succeed in showing how public images can be an important tool in exploring some of the fundamental questions of values, attitudes, equity, and opportunity.

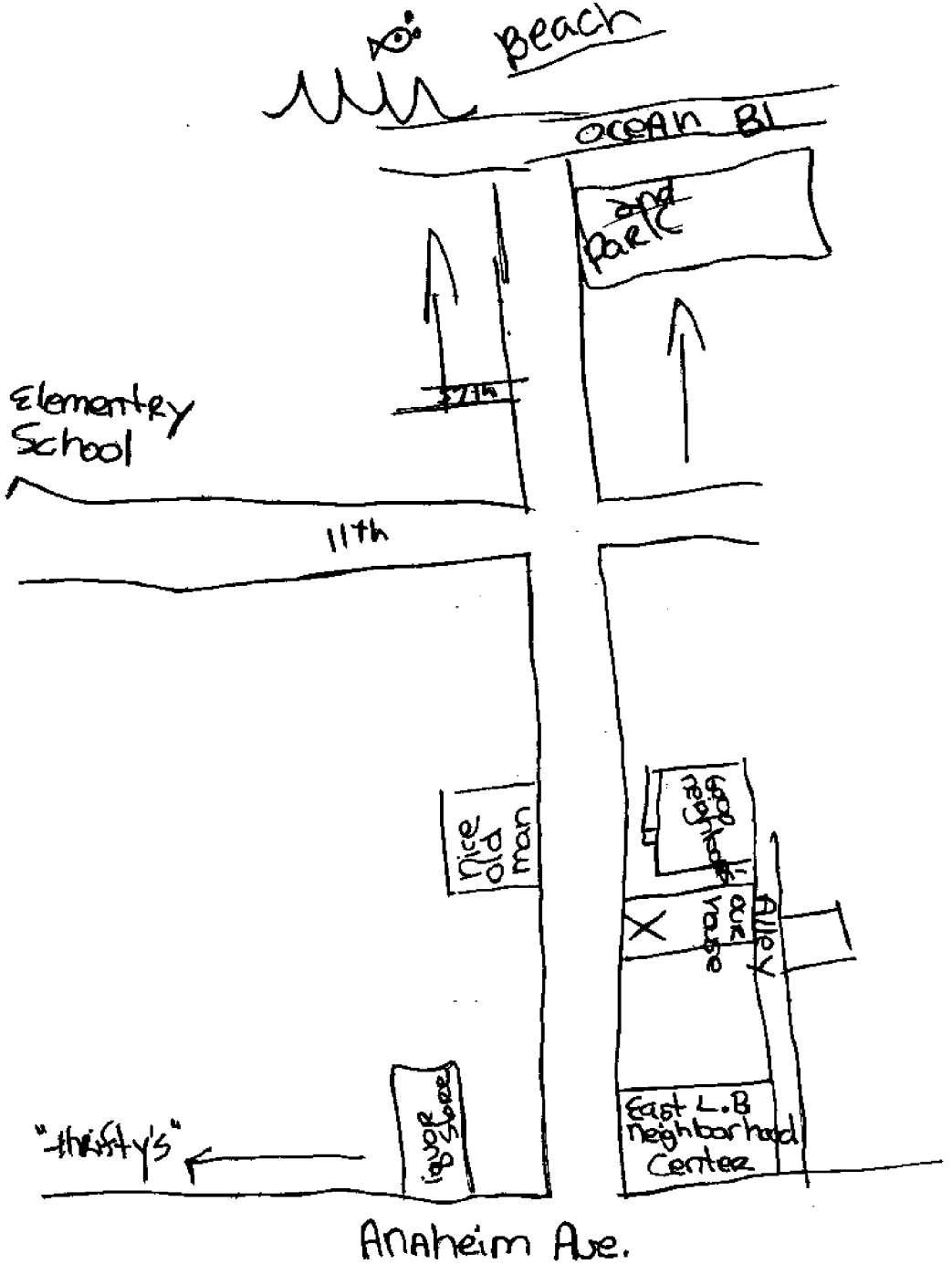


Figure 4.1 Cognitive map by resident of Long Beach, Ca. (lower income white)

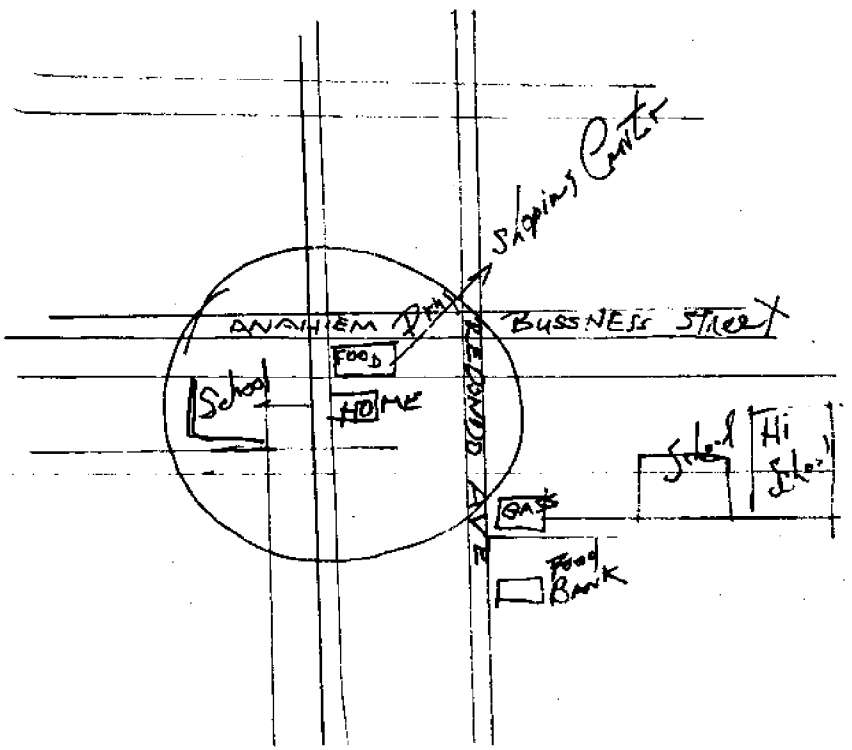


Figure 4.2 Cognitive map by resident of Long Beach, Ca. (lower income white)

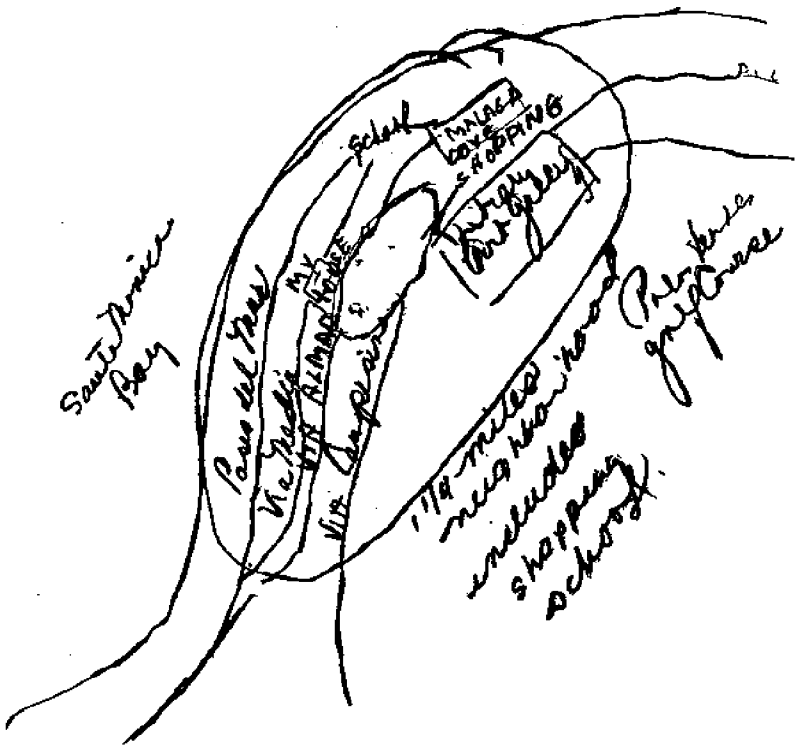
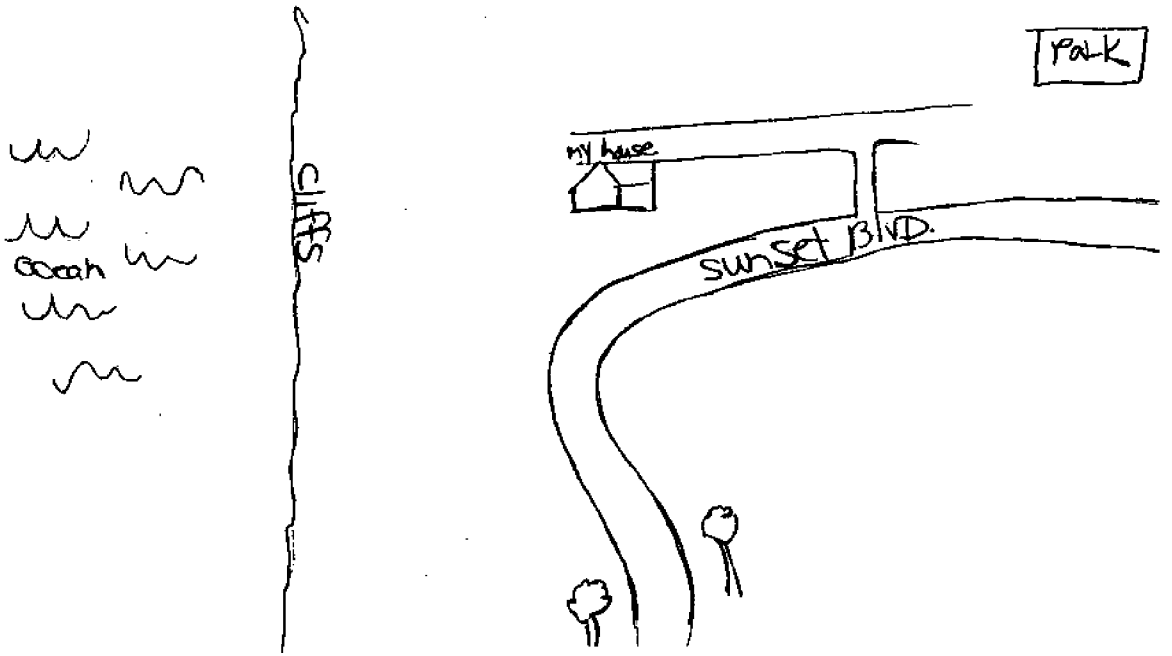


Figure 4.3 Cognitive map by resident of Palos Verdes Peninsula, Ca. (upper income white)

Figure 4.4 Cognitive map by resident of Pacific Palisades, Ca. (upper income white)



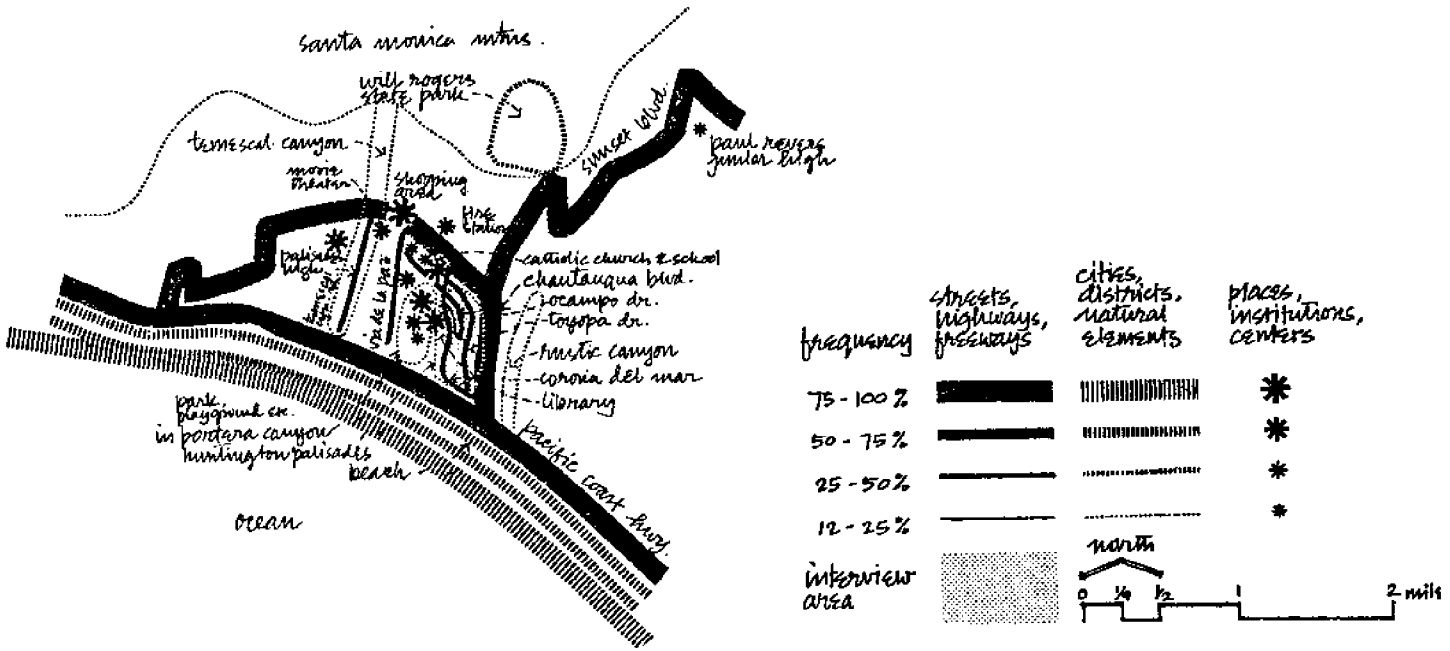
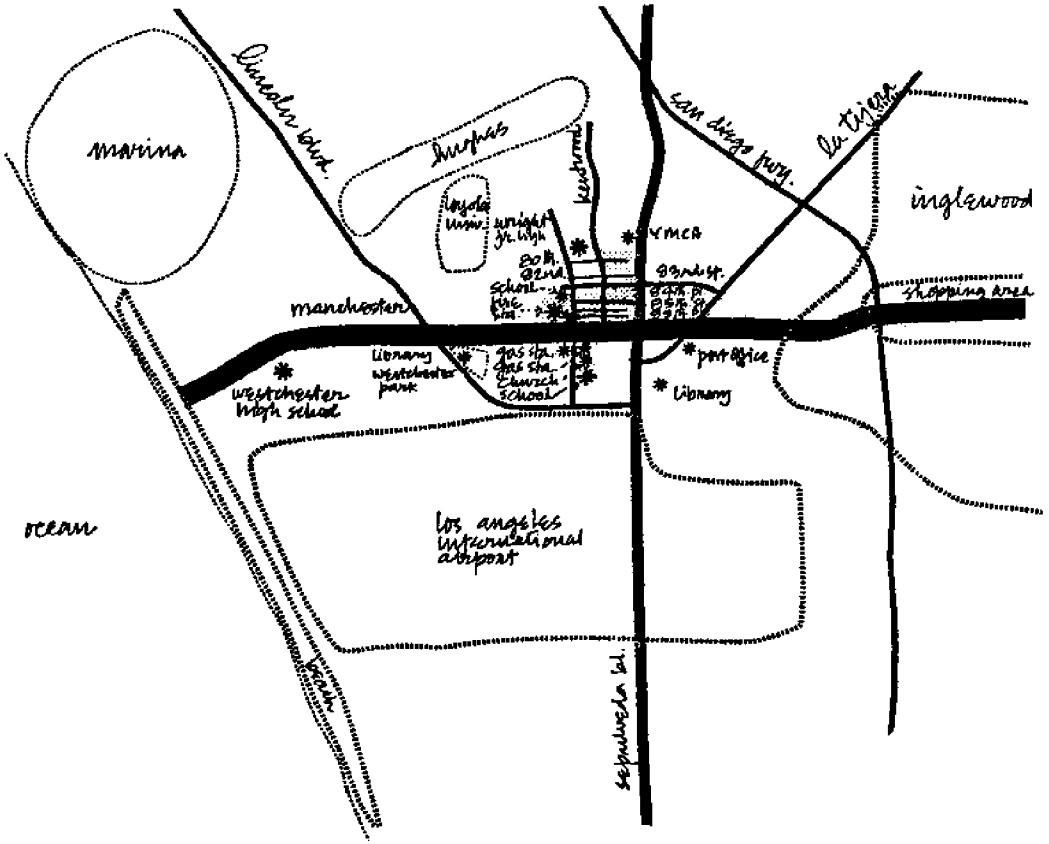


Figure 4.5 Composite image; Pacific Palisades (upper income white)

Figure 4.6 Composite image; Venice, Ca. (lower income white)



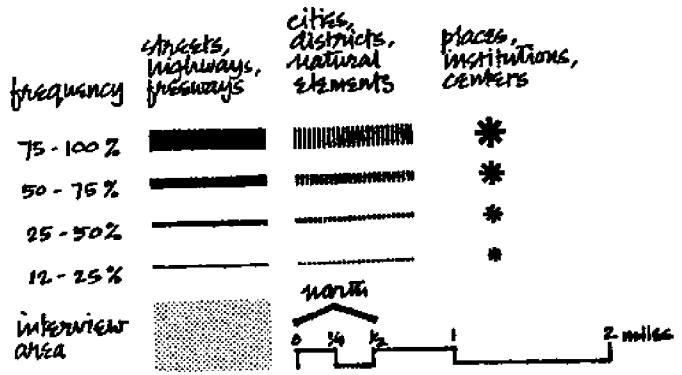
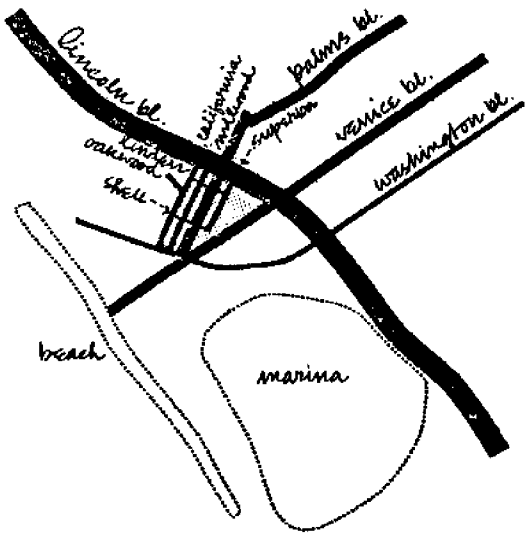


Figure 4.7 Composite image; Westchester (middle income white)



It is necessary for the designer to obtain a sense of the "value topography," i.e., distribution and intensity of community values over space involving elements of the physical form. Images and similar user responses are helpful, as Appleyard and Lynch (1976) found in the case of San Diego. Indirect sources can be consulted as well, as we have discussed previously; but there are also direct ways of tapping community values regarding coastal space and landscape.

As part of a Sea Grant related study,[2] 16mm films of four coastal settings were made and shown to an audience of 377, representing a cross-section of Los Angeles area residents in a special theater designed for audience response studies. A smaller subset of the audience (150) was asked to register their reactions to coastal scenes by turning dials attached to their armrests. In Figure 4.8, audience reaction profiles are shown, broken down by age, sex, and income.[3] Details of this study and the results have been published elsewhere (Banerjee and Gollub, 1976; Banerjee, 1977). Here, it is sufficient to point out the peaks and valleys in profile configurations corresponding to the man-made versus natural elements of the coast, and the difference in response among different age and income groups.

Studies of this nature can be done locally, involving local groups and utilizing local facilities and events, such as citizen group meetings in civic auditoriums, and even with more elementary techniques such as slide shows and questionnaires.

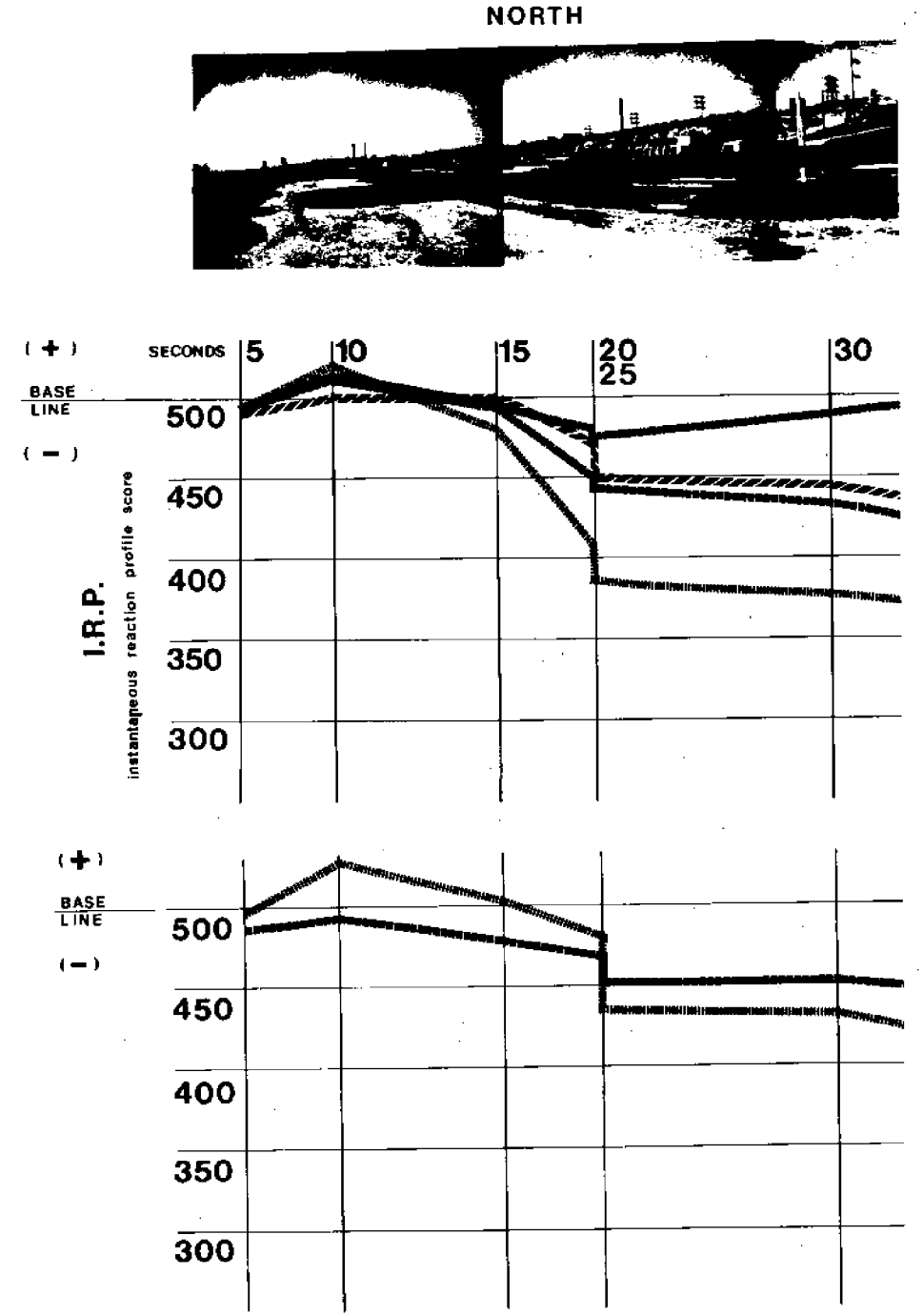
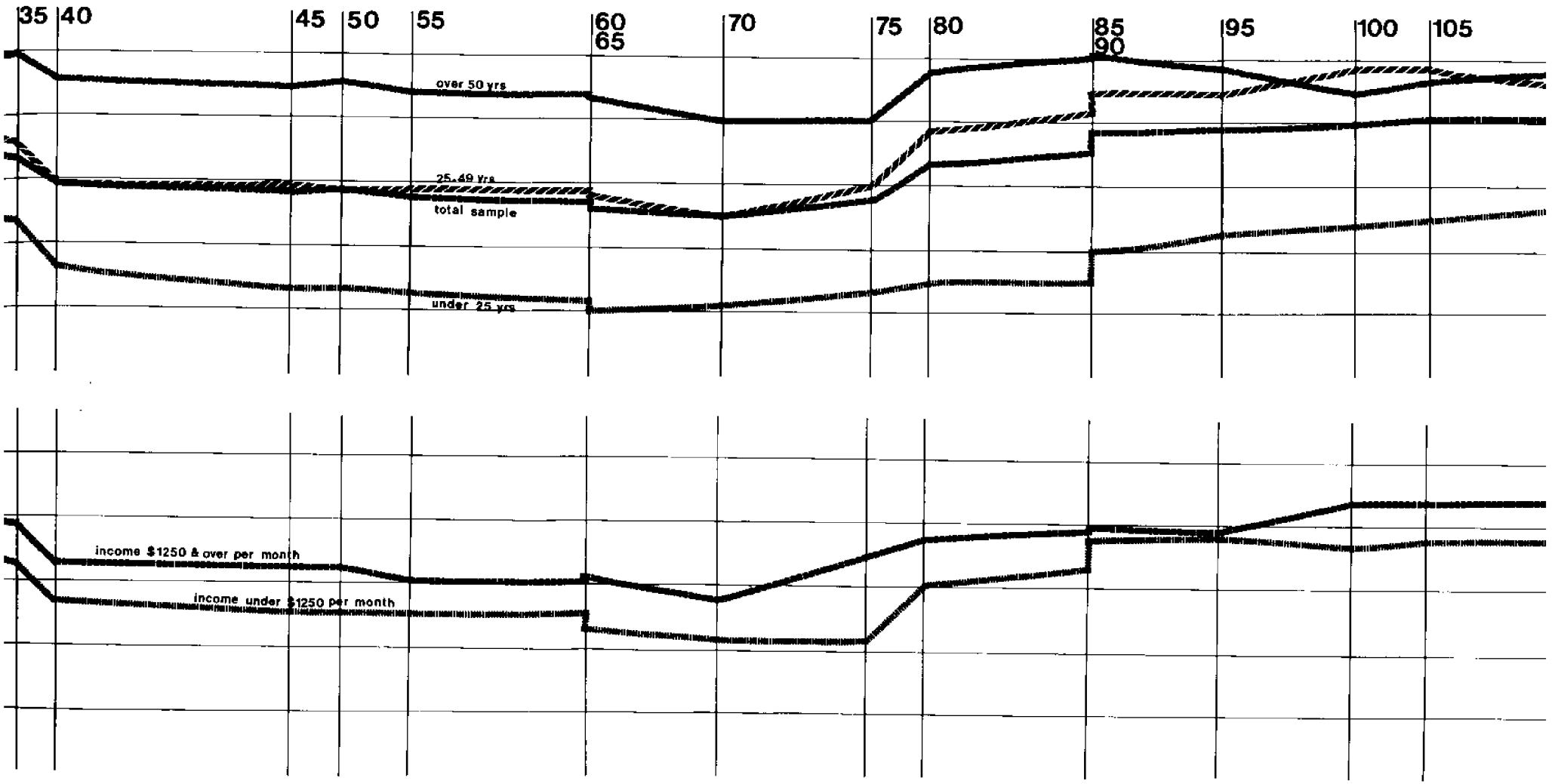


Figure 4.8 Public response to a coastal landscape in Playa del Rey, California

EAST SOUTH WEST



In the conventional concepts of "citizen participation," public input is sought somewhat "late in the game," after the technical staff has formulated the problem statement and presented their findings and recommendations. We propose that people can get involved in all stages of the design process, and from the very beginning. For example, we believe that community groups can play an extremely important role in taking inventory of coastal visual and scenic resources or in identifying environmental elements of significance. During the preparation of the *Appearance and Design* element of the South Coast Regional Plan of the California Coastal Plan, community groups throughout the South Coast region were invited to identify important scenic resources in their respective communities. The response was positive and probably unprecedented. Most of the citizen groups responded by sending detailed maps of their locality, pointing out important views, vistas, scenic drives, and so on. This then became the basis for detailed, region-wide inventory—a task that would never have been possible with the limited resources available to the regional coastal commission. Figures 4.9 and 4.10 show examples of such an information base generated by the community groups.

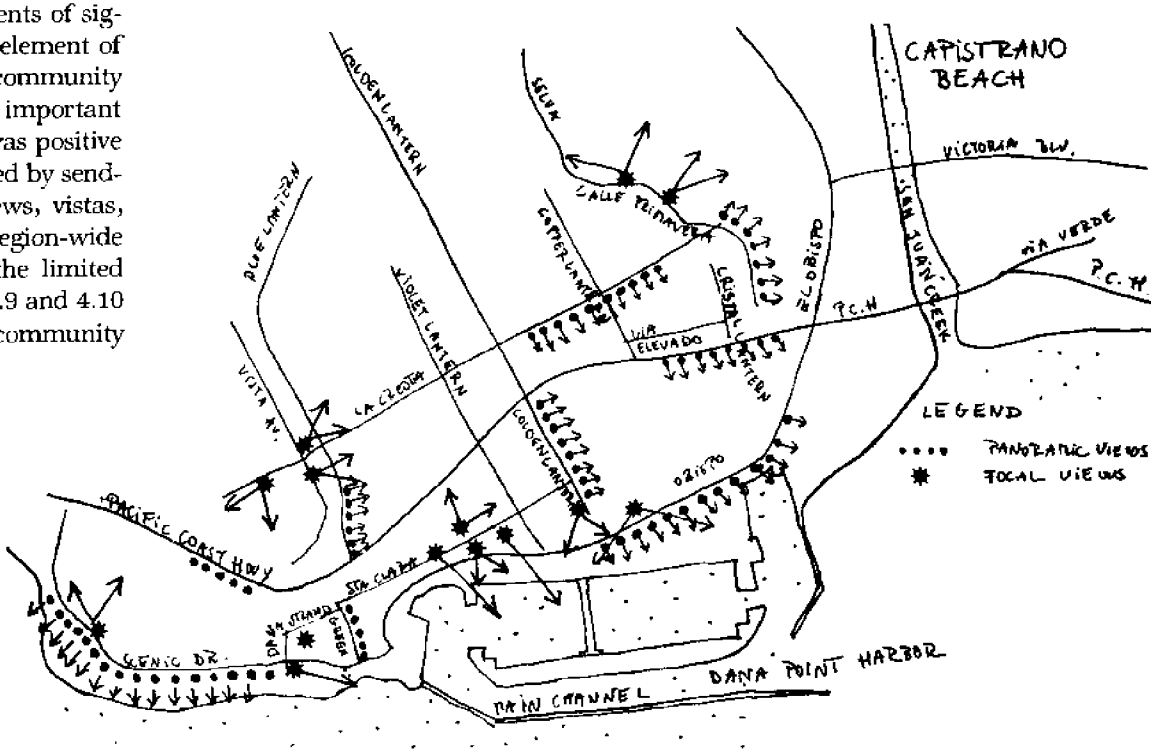
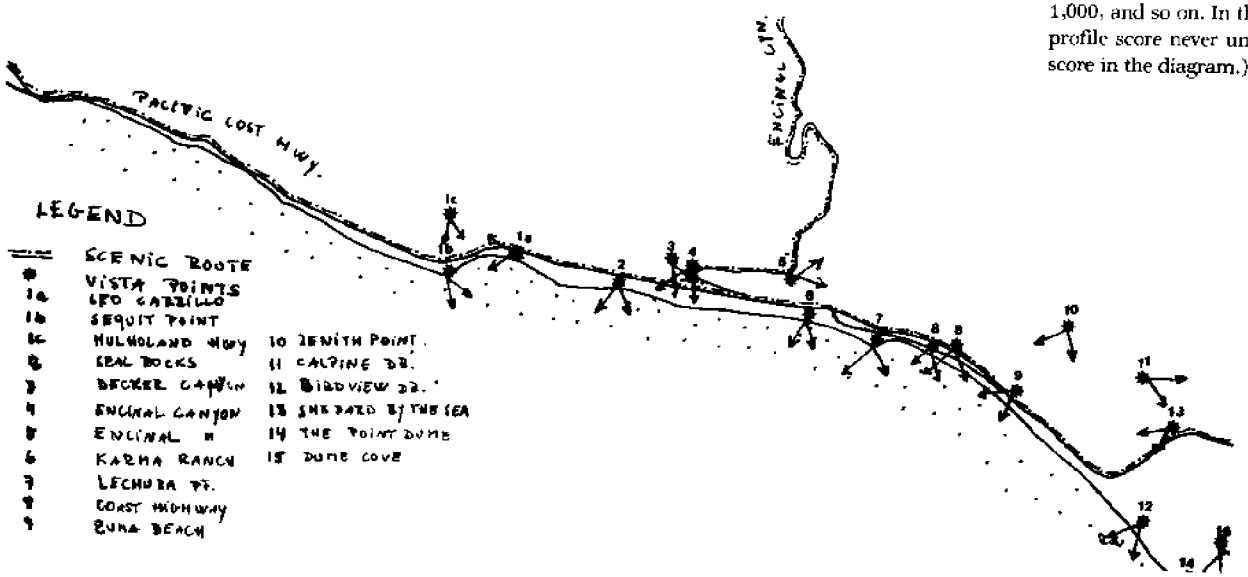


Figure 4.9 Examples of information generated by community groups in response to opinions on scenic resources; Dana Point, California

The Public as a Design Partner

It is well for the designer to consider the possibility that the public at large can be a design partner also. Community groups can be encouraged to propose recommendations or specific design ideas that can be incorporated in the overall policy scheme. For example, a proposal for a coastal scenic highway in the California south coast was largely based on recommendations made by a number of individual communities. It should be noted also that currently the city of Long Beach, California, has a unique citizen participation process where the representative community groups have aggressively taken over the planning and design process related to the coastal zone. The Long Beach local coastal plan element currently underway is largely based on the work of this citizen planning group.

Figure 4.10 Further examples of information gained by soliciting community response to opinions on scenic resources; Malibu, California



Notes

1. These maps were obtained from a study of residential satisfaction and preference in the Los Angeles area, conducted by Tridib Banerjee and William Baer during 1971-76. This study was supported by the Bureau of Community Environmental Management (U.S. Public Health Service Research Grant 1—RO1 EM 0049-02), and the Center for Studies of Metropolitan Problems, National Institute of Mental Health (U.S. Public Health Service Research Grant RO1 MH 24904-02).
2. "Aesthetic Indicators for Land Use Planning: Application to the Coastal Zone" funded by the National Oceanic and Atmospheric Administration, U.S. Department of Commerce, October 1974—September 1975.
3. From Banerjee and Gollub, 1976, pp. 119—120:

   . . . vertical lines represent intervals of 5 seconds; when two numbers appear on the same line, it means that the camera was held steady at that point for over 5 seconds. The fact that the vertical lines appear at uneven intervals merely reflects the fact that the camera movement was uneven, and that it was not always possible to strictly adhere to seven to eight seconds holding time, as planning originally. These variations are to be expected, since the camera movement was manually controlled.

   The horizontal lines represent only a segment of the entire scale of instantaneous profile scores (which range from 0 to 1000) within which the scores for this film segment were limited. These scores represent a normalized aggregate for the particular group of audience one is interested in. A score of 500 represents a neutral position, and always the time zero position, when all the dials are set at the middle location. If everyone in the audience turned their dial to the extreme left (negative reaction) the cumulative normalized score for the whole audience would be zero; if everyone in the audience turned the dial to the extreme right position (positive reaction) the cumulative normalized score for the whole audience would be 1000. Similarly, if every male member of the audience turned his dial to the extreme left position, the cumulative score for that population group would be 0, if all males turn their dial to the extreme right position, the cumulative score would be 1,000, and so on. In these graphs the high profile score never went over 510 and the low profile score never under 250. (Hence it was not necessary to show the entire range of score in the diagram.)

5
Development of Design Policies

Framework for Design Policies

As the designer continues his observation, inventory, and analysis, the need for a synthesizing framework becomes apparent. What will be the range and scope of design policies? Should the design policies have some internal hierarchy, order, scale, and priority? Should they be organized by arbitrarily chosen "subsystems" (e.g., land-use categories) of the environment, or differentiated by geographical entities? Should there be a way of separating those policies that have immediate applications from those that are essentially long-range in scope? These are questions that are likely to surface as the deadline for making formal recommendations approaches. An overall conceptual framework can help the designer organize his observations and recommendations. If a framework is adopted at the very beginning, it can also be useful in managing time and resources available for the design process. Additionally, a cohesive framework can minimize omissions, obvious overlaps, and conflicts in policy statements. Furthermore, for lay decision-makers and citizen groups, such a schema is an important tool for understanding the essence of the design team's findings and recommendations.

Subsequently, we will describe a number of examples of synthesizing frameworks used to organize the findings and recommendations of appearance and design studies. In each of these instances, a separate approach has been taken in conceptualizing the site and related appearance and design characteristics. These may not necessarily be applicable in the context of local communities because all of them were developed at a larger scale of application. But we review them in the hope that they can inspire the local designers to create their own policy framework suitable for their particular context.

The San Francisco Bay Policy Framework

The general development guide of the San Francisco Bay Plan is an excellent example of a policy framework that integrates the basic appearance and design objectives, site characteristics, and policy recommendations in a unified and consistent schema. The designers here come to the conclusion that their basic objective of increasing "opportunities for physical and visual contact with the Bay" would vary according to two essential site characteristics:

1. The shoreline configuration
2. The slope of the land along the shoreline

Figure 2.4 shows their abstraction of twelve basic shoreline-coast relationships. These twelve site characteristics then become the basis for the general development guide. Not only is this schema based on a sound rationale consistent with their design objective, it is also conceptually elegant and easy to follow. True, this framework is quite general and requires further embellishments in terms of design solutions (see Figure 5.1)[1], but it saves the lay audience from the frustrating experience of trying to wade through a confusing and seemingly vast morass of texts, flow diagrams, sketches, and maps that are typically included in professional reports.

The California Coastal Plan

In the beginning stages of coastal planning at the state and regional level, it was necessary to abstract the 1,000 miles of tremendously complex, rich, and variegated coastal landscapes into some basic categories. This led to the identification of twelve major landscape categories: beaches, sand dunes, coastal bluffs, headlands, estuaries, islands, upland terraces and plains, canyons and hillsides, rivers and estuaries, village waterfronts, suburban waterfronts, and urban waterfronts. While these landscape categories were not the sole basis for organizing appearance and design policies for the coastal plan, they constituted the most comprehensive system of constructs that can apply to diverse geographical settings. Once these categories were identified, generic problems and corresponding design guidelines unique to these landscapes were developed.

South Coast Appearance and Design

Even in the case of an essentially built-up shoreline such as the south coast region in California (Los Angeles and Orange Counties), the need for a conceptual schema was apparent from the beginning. The richness and diversity of land uses of the coastline was overwhelming from a design standpoint. Some form of abstraction was necessary both for processing the visual inventory and for designing a policy framework. This led to the development of framework based on two systems of categorization. The first one simply represented an urbanization scale of six categories ranging from very high intensity urban areas to almost undeveloped land. The second schema was an elaboration of a metaphor—"coastal mosaic"—used to describe the pattern of built-up environments (Figure 5.2). The coastal mosaic was seen to consist of larger homogeneous, "cells" embedded in a relatively smaller-grain and ubiquitous interstices of urban "matrix," thus being analogous to "tiles" and "mortar." This latter framework helped to organize both the visual inventory and the specific recommendations. The former schema helped to structure the region-wide policies cognizant of variable levels of urbanization. In combination, the policies were seen to respect the existing diversity and richness of one of the most urbanized coastlines.

Guidelines for Martha's Vineyard

The policy framework (Figure 5.3) developed for future development of Martha's Vineyard (Lynch, 1976) uses a combination of landscape categories and policy realms. It divides the island into eight landscape categories: the salt lands, the bluffs, the moors, the hilly thickets, the wooded moraine, the open plains, the flat thickets, and the wooded plains. In the context of each of these landscape types, six major policy realms were considered: development density and type of control, siting and form of buildings, road and path character, parking, clearing and planting materials and details, and activities. As in the case of the San Francisco Bay Plan, the policy framework for the Vineyard also has a simple elegance, consistency, and clarity necessary for public understanding and policy implementation.

GENERAL DEVELOPMENT GUIDE

shoreline

outward

a

LAND PROJECTING INTO THE BAY PROVIDES RADIAL WATER VIEWS, CUL-DE-SAC CIRCULATION, AND, IN STEEPER SLOPES, DEVELOPS OVERLOOKS AND THE SENSATION OF BEING THRUST INTO SPACE. DEVELOPMENT SHOULD PROTECT AND ENHANCE THESE QUALITIES.

slope

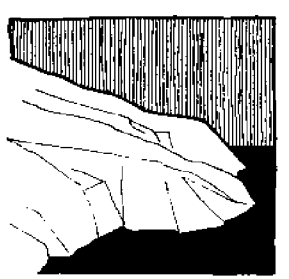
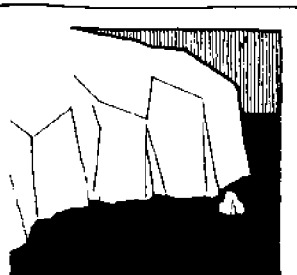
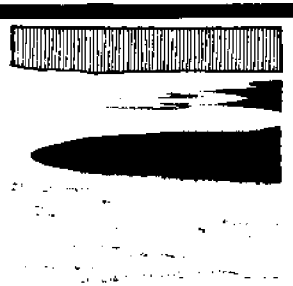
slope			
flat	**1**	PHYSICAL QUALITIES: THIS LAND USUALLY HAS RELATIVELY NON SUPPORTIVE SOILS, IS SUBJECT TO FLOODING, POOR DRAINAGE, AND OFFERS POOR ORIENTATION. IT HAS LOW ANGLE BAY VIEWS AND INLAND VIEWS ARE EASILY BLOCKED BY LOW CONSTRUCTION. EDGES ARE USUALLY WILD LIFE AREAS. POTENTIALS: THE EDGE IS EASY TO SHAPE, CANALS AND LAGOONS ARE POSSIBLE. TALL LANDMARK STRUCTURES AT THE EDGE WOULD LOCATE AND SYMBOLIZE THE BAY'S PRESENCE FROM INLAND VIEWING POINTS. SLOUGHS, STREAMS AND WATERSHEDS COULD BE DEVELOPED FOR RECREATION TO FURTHER EMPHASIZE THE WATER THEME, INCREASE LAND VALUES AND STRENGHTEN ORIENTATION. ECOLOGICALLY SENSITIVE RESTORATION IS POSSIBLE IN MARSHLAND.		PROJECTION INTO THE BAY HAS LESS SIGNIFICANCE HERE THAN IN STEEPER SLOPES, SINCE LOW VISUAL ANGLES FROM THE FLATLANDS RENDER ALL SHORELINES ALMOST ALIKE. PROTRUDING POSITION OFFERS WIDEST WATER VIEWS AND SHOULD BE DESIGNED FOR MAXIMUM ENJOYMENT. AN ELEVATED POSITION AT THE NEAR CENTER OF THIS LAND FORM ALLOWS A SENSE OF THE PENINSULA AS A UNIT AND, IF SMALL IN AREA, PROVIDES FOREGROUND CONTRAST TO THE BAY. CUL DE SAC CIRCULATION IS IMPLIED BY PENINSULA FORM AND IS MORE EASILY CONTROLLED.
0-5%	**2**	PHYSICAL QUALITIES: CHARACTERIZED BY GENTLE SLOPES, GOOD DRAINAGE, EASILY DEVELOPABLE. LOW BAY VIEW ANGLES EASILY BLOCKED BY BUILDINGS. WHERE DEVELOPED, HIGH DENSITIES ARE USUAL, PRODUCING LOSS OF BAY ORIENTATION, SENSE OF THE BAY AND VIEWS. POTENTIALS: LOW SITE DEVELOPMENT COSTS, EASY CIRCULATION; CLUSTER DEVELOPMENT WOULD PRESERVE VIEWS, MAINTAIN SENSE OF BAY AS OPEN SPACE. PUBLIC VISTA POINTS, AND RIGHT-OF-WAY ALIGNMENTS SHOULD BE POSITIONED TO RESTORE VISUAL ACCESS.		THE PROJECTING FORM INCREASES THE WATER EDGE AND BRINGS IT CLOSER TO DEVELOPMENT THAN OTHER PLAN TYPES. SAN FRANCISCO'S DOWNTOWN RADIAL VIEWS ARE EXEMPLARY ALTHOUGH PIERS BLOCK VIEWS ON LAND SLOPES 1 and 2. SWEEPING BAY VIEW POINTS ARE POSSIBLE FOR EXAMPLE ON THE NORTHERN WATERFRONT (FOOT OF FRANKLIN IN FORT MASON), IF PUBLIC ACCESS WERE ALLOWED BEYOND THE PIERS. THIS IS TRUE IN OTHER BAY COMMUNITIES BUILT ON LAND FORM "a".
5%-30%	**3**	PHYSICAL QUALITIES: SLOPES ARE LESS SUITABLE FOR INDUSTRIAL AND AGRICULTURAL USES UNLESS TERRACED AND INHIBIT WALKING AND BULK HAULING. WHERE DEVELOPED, STEPPED HOUSING AND UNIFORM BUILDING HEIGHTS HAVE RETAINED VIEWS. UPPER SLOPES PROVIDE GOOD COMPREHENSION OF BAY FORM AND VIEWS TO OPPOSITE SHORE. POTENTIALS: GOOD FOR RESIDENTIAL, LIGHT COMMERCIAL AND RECREATIONAL USES; HIGHER BUILDINGS ON HIGHER SLOPES INCREASE VIEWER POTENTIAL AND EMPHASIZE SLOPE; HIGH VISTA POINTS SHOULD BE PROVIDED PARTICULARLY ALONG ROADS PARALLEL TO THE CONTOURS. ROADS AT RIGHT ANGLES TO CONTOURS WOULD PROVIDE FRAMED VIEWS AS IN SAN FRANCISCO.		RESIDENTIAL COMMUNITIES, LIKE BRISBANE, BERKELEY, OR SAUSALITO, DEMONSTRATE THE CAPACITY OF THIS LAND TO STACK LOW DENSITY, RESIDENTIAL DEVELOPMENT, WHILE MAINTAINING VIEWS AND A STRONG SENSE OF THE BAY'S PRESENCE. URBAN DENSITIES SUCH AS TELEGRAPH OR POTRERO HILL ARE EQUALLY POSSIBLE, IF HEIGHTS ARE CONTROLLED, ALTHOUGH SPECIALIZED TRANSPORTATION IN THE STEEPER SLOPES IS NEEDED. ALBANY HILL AND THE COYOTE HILLS PRESENT SIMILAR OPPORTUNITIES, ALTHOUGH THEY MAY BE MORE IMPORTANT AS PUBLIC OPEN SPACE.
over 30%	**4**	PHYSICAL QUALITIES: VEHICULAR ACCESS DIFFICULT, DEVELOPMENT COSTS HIGH. MANY OF MOST DRAMATIC VIEWS ARE FROM THESE AREAS, ESPECIALLY WHERE ANGLE APPROACHES 90° (GOLDEN GATE, POINT RICHMOND, CARQUINEZ STRAITS). LARGE WATER AREAS ENCOMPASSED BY VIEW EMPHASIZE BAY FORM. POTENTIALS: PARTICULARLY SUITABLE FOR CONSERVATION AND PUBLIC VIEWING POINTS ESPECIALLY IN PLAN FORM "a". (SEE MAP "PLEASURE DRIVES AND REGIONAL OVERLOOKS WITH SIGNIFICANT BAY VIEWS") USE OF FUNICULARS, AERIAL TRAMWAYS, ETC., RESIDENTIAL ACTIVITY AND SELECTED COMMERICAL USES MAY BE POSSIBLE.		DRAMATIC RELATIONSHIPS WITH THE BAY AND DISTANT SHORE, AND SUBSTANTIALLY BROADER VIEWS THAN ANY OTHER LAND TYPE, TEND TO MAKE THIS TYPE OF SITUATION A PHYSICAL AND PSYCHOLOGICAL PART OF THE WHOLE REGION. VIEW PROMENTORIES SUCH AS WOLFBACK RIDGE, PORTIONS OF POINT RICHMOND, MTS. DIABLO AND TAMALPAIS ARE TYPICAL, AND SHOULD BE PERMANENTLY AVAILABLE TO THE PUBLIC. OFTEN WINDY AND EXPOSED WHERE DEVELOPMENT HAS OCCURED, IT MAY BE INCONSEQUENTIAL IN SCALE OR PRODUCE DISTURBING FORMS ON THE SKYLINE (RADAR DOMES ON GOLDEN GATE HEADLANDS, TRANSMISSION LINES ON SAN BRUNO MOUNTAIN).

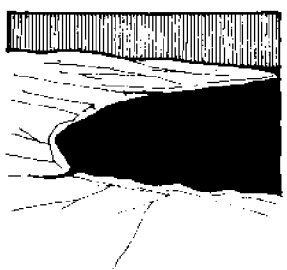
Figure 5.1 A framework for design policies (Source: San Francisco Bay Plan, San Francisco Bay Conservation and Development Commission)

b inward

INWARDLY FOCUSED, THIS PLAN FORM PROVIDES A SECONDARY OR TRANSITIONAL WATER BODY AS A FOREGROUND TO THE BAY. IT PROVIDES USEFUL WIND AND CURRENT PROTECTION IN CERTAIN LOCATIONS. RIDGE LINES OF THE ENCLOSING LAND OFTEN CREATE A BOWL, HENCE AN IDENTIFIABLE GEOGRAPHIC AND DESIGN ENTITY (MARTINEZ; MURRICANE GULCH, SAUSALITO; HOSPITAL COVE, ANGEL ISLAND; PEACOCK GAP, MARIN). AT A COMMUNITY SCALE, THE FORM SUGGESTS A FOCUS FOR COMMUNITY LIFE AT THE BAY'S EDGE WITH CIRCULATION, DEVELOPMENT AND SIGHT LINES DIRECTED TO THE VISUAL CENTER OF THE SPACE.



DUE TO PREVAILING WESTERLIES, THIS LAND FORM CAN OFFER NATURAL ANCHORAGE ON THE WEST AND NORTH SIDES OF THE BAY. HOWEVER, SHALLOW WATER USUALLY ADJACENT TO THIS LAND TYPE MAKES DREDGING NECESSARY BEFORE MOST BOATING IS POSSIBLE. THIS PRODUCES A SCARCITY OF BOAT HARBORS, ESPECIALLY IN THE SOUTH BAY WHERE POPULATION PRESSURE AND NEED FOR BOATING FACILITIES IS GREAT. WHERE CONSERVATION IS NOT OF PRIME IMPORTANCE, DEVELOPMENT OF THIS FORM TYPE, IN MARINE HOUSING AND RECREATION, OR EVEN IN CIVIC USES SHOULD BE STUDIED.



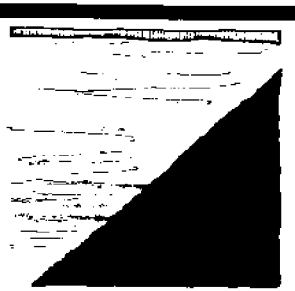
THIS IS PERHAPS THE IDEAL SLOPE AND LAND FORM TO PROVIDE A WATER FOCUS FOR DENSE URBAN COMMERCIAL DEVELOPMENT. IT NEEDS ADJOINING LAND AREA BEYOND THE BAY EDGE, AND SUFFICIENT DEPTH FOR SHIPPING. NO SINGLE LOCATION IN THE STUDY QUALIFIES AS AN EXAMPLE, ALTHOUGH PERHAPS MARTINEZ COMES CLOSEST. THERE ARE SMALLER SCALE EXAMPLES ON STEEPER LAND IN 2c BELOW.

EASY VISIBILITY OF RIDGE LINES AND WATER IN THIS SLOPE RANGE STRENGTHENS THE SENSE OF A COMMUNITY WHEN DEVELOPED. WATER ACTIVITY PROVIDES A SPECTACLE AS IN AN AMPHITHEATER. BAY EDGE FORM ENCLOSING THE FOREGROUND VIEW IS HIGHLY VISIBLE FROM MOST POSITIONS UNLESS LOCAL TOPOGRAPHY IS VERY IRREGULAR. DUE TO THE FOCUS ON THE COVE FORMED, CIRCULATION ALONG THE WATER'S EDGE MUST NOT BECOME A BARRIER BETWEEN LAND AND WATER. HIGH SPEED TRANSPORTATION SHOULD BE FROM ABOVE AND BEHIND TO PRESERVE SMALL SCALE EDGE RELATIONSHIPS.

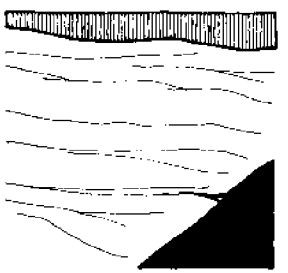
COVE FORM DEVELOPED IN THIS SLOPE CATEGORY IS LESS LIKELY TO PRODUCE BAY VIEW DEVELOPMENT DUE TO THE PRECIPITOUS SLOPE TO THE WATER AND EXPENSIVE SERVICE AND ACCESS PROBLEMS. CONTINUOUS URBAN DEVELOPMENT ALONG THE RIDGE CAN BLOCK ACCESS TO VIEWS FOR LAND BEHIND (AS IN FLATLAND TYPES) DEVELOPS WIND AND CURRENT PROTECTION (AS IN THE EAST SIDE OF PT. BONITA) AND IS USUALLY ACCOMPANIED BY DEEP WATER.

c straight

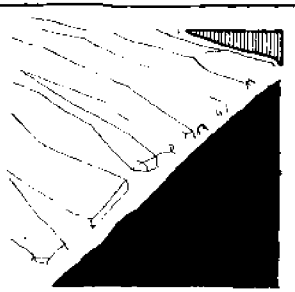
CLEAR, DIRECTIONAL RELATION TO THE BAY, ESPECIALLY WITH STEEP SLOPES, DIRECTS VIEWS PARALLEL WITH THE WATER'S EDGE. UNLIKE PLAN FORMS "a" AND "b", THE OVERALL EVENNESS OF THE WATER'S EDGE REQUIRES THE INTRODUCTION OF ADDITIONAL ELEMENTS TO ESTABLISH A SENSE OF PLACE, ORIENTATION AND VISUAL FOCUS. PIERS, A YACHT BASIN, A NEARBY ISLAND, ARE TYPICAL FOCUSING ELEMENTS OFFERING THIS SENSE OF POSITION ON THE OTHERWISE UNBROKEN COASTAL EDGE. CARE MUST BE TAKEN THAT DEVELOPMENT DOES NOT CREATE BREAKS AT VISUALLY DISTURBING POINTS, OR AT NEW POINTS COMPETITIVE WITH NATURAL BREAKS.



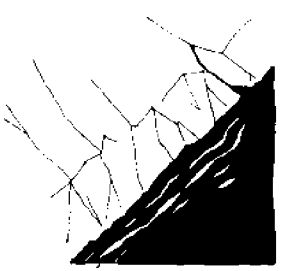
ONE OF THE LEAST PHYSICALLY INTERESTING SHORELINE CONDITIONS - DEVELOPMENT CAN PROVIDE FOCI AND VISUAL STIMULATION; ELEVATED VIEWING POSITIONS AND LANDMARKS COULD AID ORIENTATION. CLUSTER DEVELOPMENT WOULD RETAIN BAY VIEWS FROM INLAND AREAS AND MARSHLAND PRESERVATION WILL HELP MAINTAIN BIOLOGICAL BALANCE. WHEN DIKING IS REQUIRED PROVISION SHOULD BE MADE FOR PEDESTRIAN OVERLOOKS SO THAT THE BAY IS NOT HIDDEN BEHIND DIKES. IN NO OTHER LAND CONDITION ARE HIGH VOLTAGE DISTRIBUTION ROUTES MORE VISUALLY DISTURBING (WEST AND EAST SIDES OF THE SOUTH BAY) DUE TO THE ABSENCE OF OTHER CONSTRUCTION. ALTERNATE ROUTES FOR THESE LINES GROUPED WITH TRANSPORTATION EASEMENTS SHOULD BE CONSIDERED.



THIS LAND-WATER EDGE RELATIONSHIP IS CHARACTERISTIC OF MANY PORTIONS OF THE SOUTH BAY WHERE HEAVY URBANIZATION CONTINUES. BLOCKAGE OF UPHILL VIEWS BY SHORELINE DEVELOPMENT WILL REDUCE THE ABILITY OF THE BAY TO PROVIDE VISUAL EXTENSION OF SPACE. CLUSTER DEVELOPMENT COULD MAINTAIN THIS BAY FUNCTION.



COMMENTS IN 2c ABOVE APPLY IN THIS CATEGORY UP TO 10% SLOPES. SEE ALSO GENERAL NOTES IN "c" ABOVE.



THIS FORM OCCURS RARELY IN THE BAY REGION BUT, WHERE THE BAY PASSES THROUGH THE COASTAL RIDGE LINES (GOLDEN GATE AND CARQUINEZ STRAITS), PARALLEL CLIFFS ACCELERATE CURRENTS AND PRODUCE WIND AND WEATHER EXTREMES. THE STRONGLY-FORMED SPACE PROVIDES WALLS AGAINST WHICH THE APPARENT MOTION OF SHIPS IS HEIGHTENED. THIS LAND IS THEREFORE ASSOCIATED WITH THE MOST DRAMATIC AND DYNAMIC PORTIONS OF THE BAY REGION GEOGRAPHY, AND NEEDS PROTECTION BY WELL PLANNED CONSERVATION PROGRAMS.

Figure 5.2 A framework for analysis and policy utilizing a coastal mosaic

(Source: South Coast Regional Coastal Commission, California Coastal Commission)

Subregion No.: 1

From: Ventura County Line

To: Northerly Los Angeles City Limits

Included: Malibu

COASTAL MOSAIC

	"MATRIX" General Natural and Manmade Form Characteristics	"CELLS" Major Form Components
A. Components of Visual Quality  	Mountain range parallel to the coast; prominent canyons; chaparral and coastal sagebrush; prominent marine terraces and escarpment; sandy beaches; cliffs; rolling hills; mostly undeveloped land and sparsely developed land; intensity of commercial sign increases gradually moving east; utility poles and wires onmipresent; beach parking both on and off street. Magnificent panoramic views: Expansive, panoramic, dominated by sea and physiographic forms; temporal variations in scenery result from climatic, seasonal and daily cycles. Visible Human Activities: Surfing, boating, sunbathing, fishing, swimming, diving, etc.	Clusters of residential development tightly knit with distinct edge. Edge definition possible due to surrounding open space, vacant field, etc. Trailer Parks: High density, tightly knit, fine grain socially and physically homogeneous units. Strong territorial definition; usually with controlled entry points. Adapted Beaches: Typically with lifeguard posts, parking lots, concession stands, rest rooms, etc. Institutional: Pepperdine Campus; Hughes Laboratory.
B. Sources of Visual Conflicts and Major Issues  	1. Utility poles, wires, billboards, etc., often are in conflict with the view of the ocean. 2. Commercial "heraldries," although less intense than in major urbanized areas, are nevertheless equally competitive, here with the natural setting. 3. Potentially excellent views blocked by fences and structures. 4. Not adequate opportunities for stationery or low-velocity (pedestrians, bike riders) experience of the ocean. 5. Lack of instructions for travelers to determine best ways to enjoy the ocean. 6. On-street parking often acts as periodic visual barrier (in addition to creating traffic hazards).	1. Clusters of residential structures often act as solid physical, visual, and psychological barriers. 2. Adapted Beaches: Large parking lots and their design usually increase the visual and psychological distance to the ocean. 3. Intimidating "no trespassing" and similar signs appear arrogant and frustrates the scenic experiences—increases psychological distance to the sea. 4. The natural profile of hills and terraces are often distorted or spoiled by rows of trailer homes, buildings, or structures on the ridge line. 5. Usually unattractive rooftops are often seen from coastal roads at higher elevation. 6. The coastal context is often not reflected in the design of public structures and facilities.

Figure 5.3 A policy framework of Martha's Vineyard, Massachusetts (Source: Kevin Lynch, "Looking at the Vineyard," Vineyard Conservation Society, West Tisbury, Martha's Vineyard, Massachusetts)

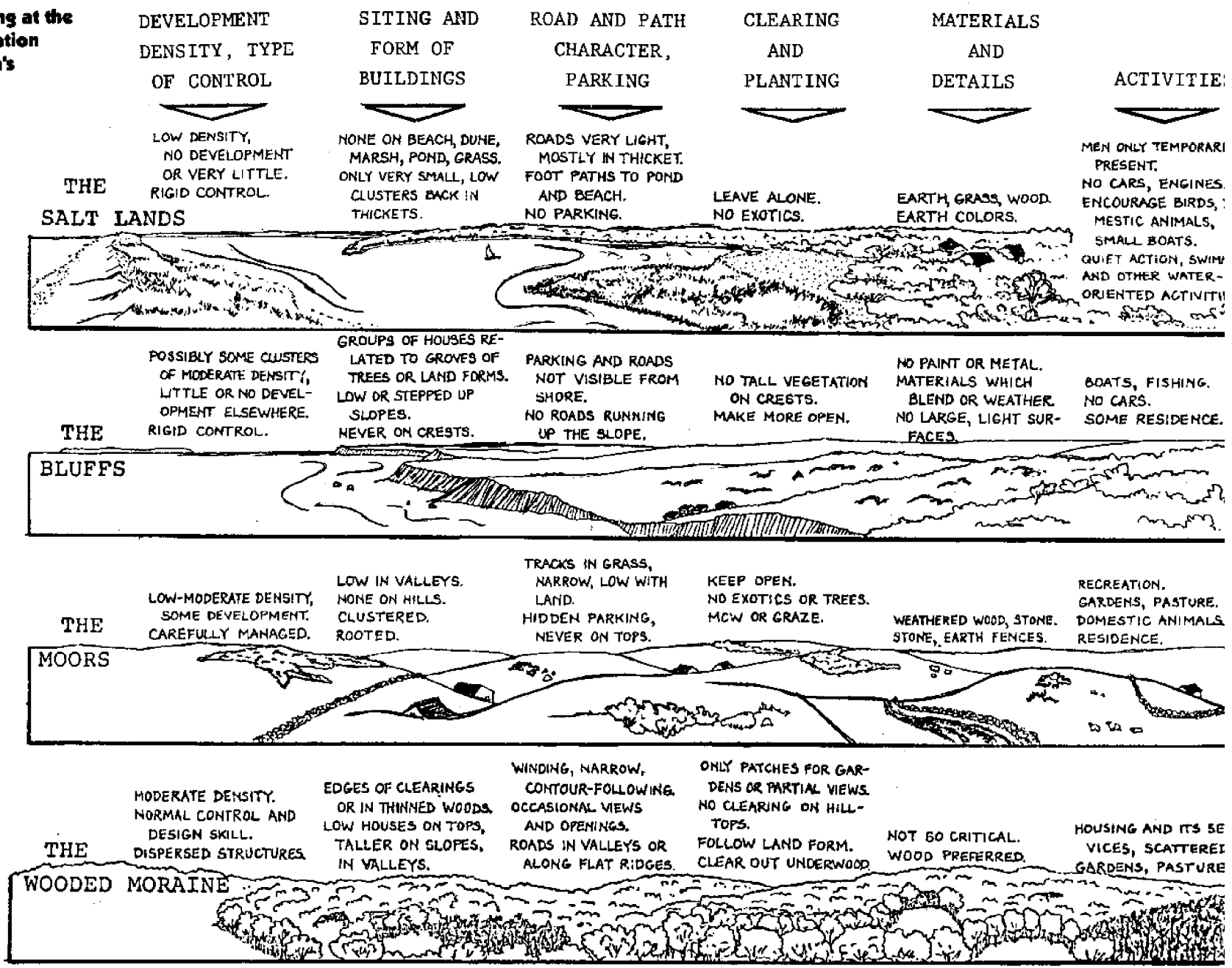


TABLE 5.1
Design Issues Identified by the Work Programs of Selected South Coast Communities

Issues	Communities Reporting
Protection and enhancement of visual access, view, and scenic areas	Marina del Rey, Malibu, Hermosa Beach, Newport Beach, Orange County, Manhattan Beach, Westchester, Venice, San Pedro, Long Beach
Protection of special neighborhoods and unique community characteristics	Venice, Santa Monica, Redondo Beach, Manhattan Beach
Standards for new development; visual compatibility of new development	Malibu, Huntington Beach, Newport Beach, Orange County, Santa Catalina Island, Redondo Beach
Adequacy of existing regulations	Huntington Beach, Redondo Beach, Orange County, Manhattan Beach, Los Angeles (citywide)
Scenic corridors, routes, vista points	Malibu, Santa Catalina Island, Huntington Beach, Newport Beach, Redondo Beach
Improving overall appearance including sign and billboard control, undergrounding utility lines	Hermosa Beach, Santa Monica, Redondo Beach, Orange County, Los Angeles (citywide)
Protection and preservation of natural form	Huntington Beach, Long Beach, Newport Beach, Santa Monica, Orange County
Rehabilitation, preservation, and redevelopment	Huntington Beach, Venice, Long Beach
Specific projects	Huntington Beach: bluff line park; Long Beach: shoreline projects; Hermosa Beach: railroad right of way, Pacific Coast Highway; Santa Catalina Island: historical and architectural resources; Orange County: tree preservation or replacement
Non-visual sensory qualities	Hermosa Beach: aural quality

Responding to Design Issues

In California, as a first step toward preparing a local coastal program, coastal communities are required to submit a work program outlining key issues, methods, resources, etc. As the work programs are being completed the key design issues are becoming apparent. Table 5.1 summarizes a comparative analysis of design issues identified by selected coastal municipalities and the two counties in the south coast region.

To a large extent, the issues have been determined by the sections 30251 and 30253 (5) of the California Coastal Act of 1976. For example, the Coastal Act emphasizes: (a) consideration and protection of scenic and visual quality of the coastal environments; (b) siting and design of new developments to protect views of ocean and scenic areas; (c) minimizing alteration of natural land forms; (d) visual compatibility of new developments with existing areas; (e) restoration of the appearance and design in visually degraded areas; and (f) protection of special neighborhoods and communities. Nevertheless, relevant sets of these concerns are different from community to community, depending upon history, geography, development or redevelopment potential, and, certainly, community values.

Some localities have gone a step further and have attempted to supplement these general themes with more specific and/or local concerns. A few communities have even added areas of concern not always included in the directives of the Coastal Act. For example, scenic routes, vista points, landmarks, and historically and architecturally significant structures are some specific items to be explored by a number of communities. Adequacy of existing regulations and standards is a major issue for some communities. Rehabilitation, neighborhood preservation, housing conservation and, more generally, redevelopment issues have been raised by several communities. Others have identified specific projects being considered, proposed, or underway as a means for focusing on design issues. One community has even referred to a nonvisual sensory (aural) quality of the environment.

Presumably, these issues identified as part of work programs are based on expert judgment and perceptions within the framework suggested by the Coastal Act. Detailed studies, as most work programs suggest, remain to be done. It is our belief that the methods outlined in the previous two chapters will be useful in carrying out these detailed studies and in developing policy choices for the communities. The following are some selected instances:

Protection and enhancement of views, visual access, and areas of scenic value: Figures 2.6 and 2.7 illustrated examples of analyzing existing and potential views and visual access to the ocean from topographic and other information available from a USGS map. Specific views or obstructions to specific views can be further illustrated by using one or more of the several photographic techniques outlined in Chapter 3. In developing policy choices for protecting and enhancing views and visual access, the concept of "view corridor" can be considered. View corridors in the coastal context can be defined as unobstructed linear spaces that secure the view of the ocean from a distance possible even beyond the immediate coastal zone. The "view corridors" identified by the New York urban design team for the lower Manhattan area are a case in point (Barnett, 1974).

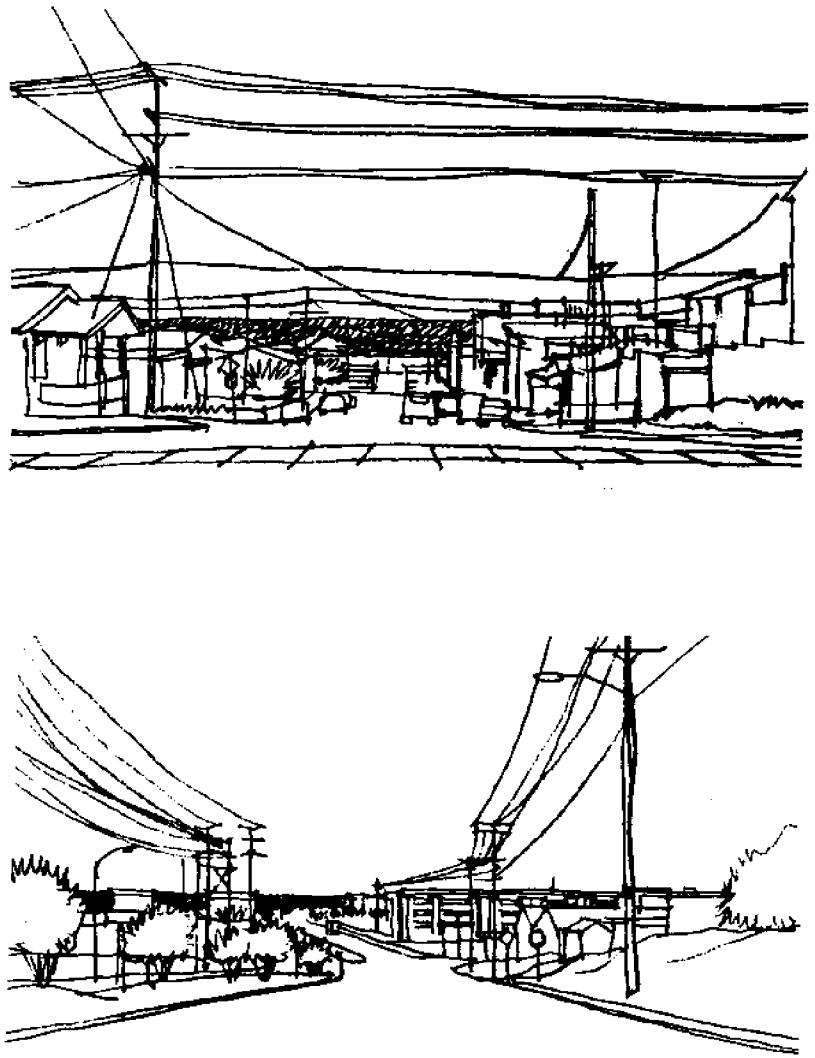
View corridors can consist of streets, public rights of way, open space, vacant lots, parking lots, and so forth. In areas of sloping terrain such as in the Ocean Park area of Santa Monica, most streets at right angles to the coastline act as or can potentially become view corridors (See Figures 5.4 and 5.5.) Once the view corridors are identified, special guidelines and controls can be established to protect existing views; where such corridors include privately owned lands, view easements can be sought through negotiations or incentives, or required outright by application of the principle of eminent domain. In effect, the visual corridors can be seen as visual easements to be kept open in future developments in the area—a concept analogous to the notion of Riparian rights.

The concept of viewshed is also relevant in developing policies for protecting areas of scenic value and exceptional views. The California Coastal Commission has actively promoted the concept of viewshed and used it as the main basis for identifying the territorial jurisdiction to which appearance and design policies can be applicable. In doing so, the California Coastal Plan has in effect, superseded the 1,000-yard limit of the coastal zone as defined by the 1972 California Coastal Initiative. This is based on the recognition that the visual "hinterland" of the coast can extend well beyond the immediate coastal strip of land as reflected in the definition of "viewshed" offered by the California Coastal Plan (1975):

> The Coastal Viewshed is the coastal lands and waters that can be seen from the major coastal access roads, trails, and railroads (those paralleling the coast and those leading to the coast from inland areas): from public vista points and recreational areas; and from the water's edge. (p. 69)

The accompanying sketches (Figures 5.6 through 5.9) illustrate the concept of viewshed both in general terms as well as in terms of specific meaning to such coastal communities as Santa Monica and Hermosa Beach.

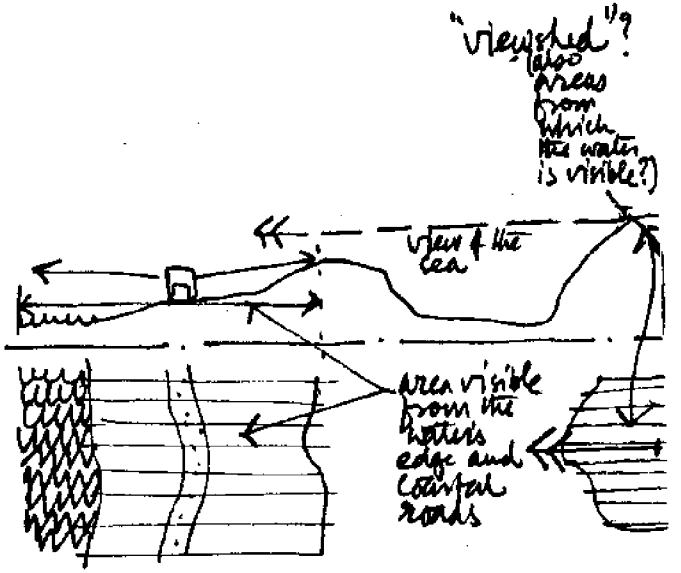
Figure 5.4 and 5.5 Illustrations of the concept of view corridors



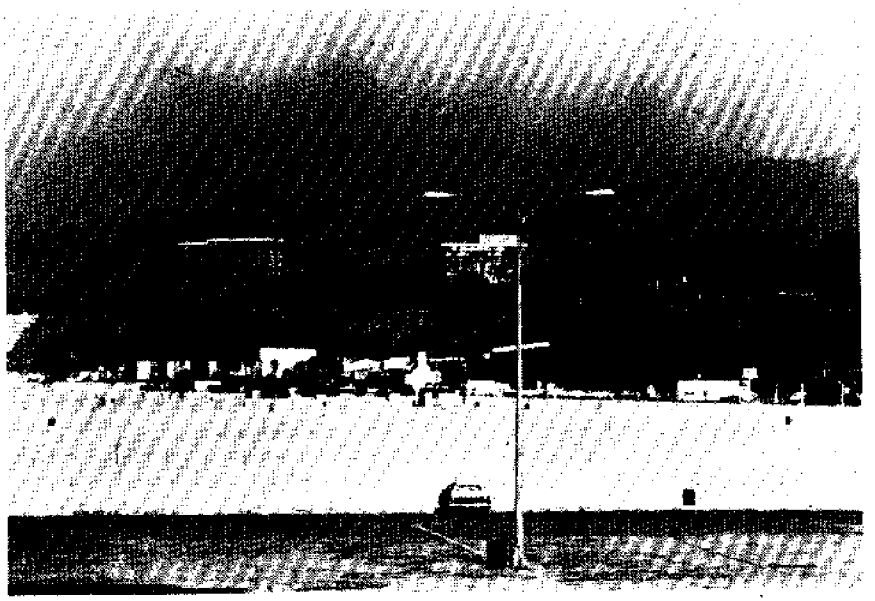
The concept of "viewshed" is a sound and logical basis for defining the territorial boundaries of the study area, and most local communities can adopt this premise. But local modifications may be necessary. What happens, for example, when the "view shadow" areas (where no view is available because of topography or existing structures) are in close proximity to the coast, as in the case of Hermosa Beach (Figure 2.7)? Should viewshed areas be contiguous and continuous, or can these areas be spatially separated? It may also be necessary to periodically redefine viewshed areas as changes and transformation take place in the urban fabric. For example, a new development or redevelopment may open up new views or views that were lost previously. Once the viewshed is identified, the future design and development in that area can be subject to specific guidelines (cf. California Coastal Plan, 1975, pp. 69, 75) and/or a mandatory design review process. The viewshed area can then be the target of visual restoration efforts such as amortization of billboards, off-premise signs and related structures, undergrounding of overhead utility lines, and special capital improvements programs, and the like.

Protection of special neighborhoods and unique community characteristics: This is not just an aesthetic issue; it is a social issue as well. The question of neighborhood protection is linked to such other planning issues as housing, access, etc. In older California communities like Venice, Ocean Park, Redondo Beach, or Manhattan Beach, this is a key issue. From a strictly visual standpoint, efforts must be made to first document the unique and special characteristics of these places. Source books of community history will be useful in building this documentation. Extensive photographic surveys to record the character of the streetscape, individual buildings, activities, and behavior settings will be necessary. The photo-atlas technique discussed previously is an excellent means for displaying these community resources. Aerial photographs, in addition, can be used to point out certain form qualities which contribute to the unique quality of an area, such as roof texture, vegetation, building forms, or site coverages.

Standards of new development: This is an issue that seems to concern those communities—Malibu, Huntington Beach, Newport Beach, and certain parts of Orange County—which still have room for new development. To a large extent, this issue is inseparable from questions of environmental sensitivity or carrying capacity of a particular locality. But there is a visual and appearance component to this issue, and designers must respond to it separately. Here, the critical challenge is to identify the policy choices for siting and design of new developments and their implications. This can be done by a sensitive analysis of the site forms and by illustrating site planning options via aerial photographs and panoramic views of key locations. The Sea Ranch site analysis done by Lawrence Halprin and Associates is an excellent example of such analysis (Halprin, 1969).



Figures 5.6 and 5.7 A coastal "viewshed" schematic; definition and example (Santa Monica, California)



Figures 5.8 and 5.9 Examples of coastal "viewshed" looking out and looking in

Standards for siting and design of new buildings are important in older communities facing redevelopment prospects. Here, analysis of visual impacts of existing redevelopment projects that are insensitive to these issues will be a good start. Figure 5.10, shows, for example, the high-rise development in the Ocean Park area of Santa Monica and its effect on existing visual corridors. Yet, a slight modification of the siting of the tower shown would have resulted in a completely different streetscape. Similarly, creative landscaping may "soften" the harsh and unsightly presence of a power plant such as the one in Redondo Beach (Figure 5.11). Analyses of this nature, illustrated by photographs and sketches, can be extremely helpful in developing future policies for new development.

Adequacy of existing regulation: As is apparent from Table 5.1, many communities are concerned about the adequacy of their existing regulations pertaining to height and bulk standards. Design studies of this nature must begin with the analysis of zoning maps and the three-dimensional envelope it permits. An overlay of the zoning map onto existing aerial photographs might be able to illustrate the inconsistencies, inadequacies, problems, and opportunities. In addition, "counter-factual" analysis (Baer and Fleming, 1976) can suggest how present regulations can be creatively modified to enhance the visual quality of an area. For example, Figure 5.12 shows the Ocean Park skyline for the same development with different height and bulk standards. Similar analysis can be done for different locations to show the visual destinies of a community under different assumptions of height and bulk standards (Figure 5.13).

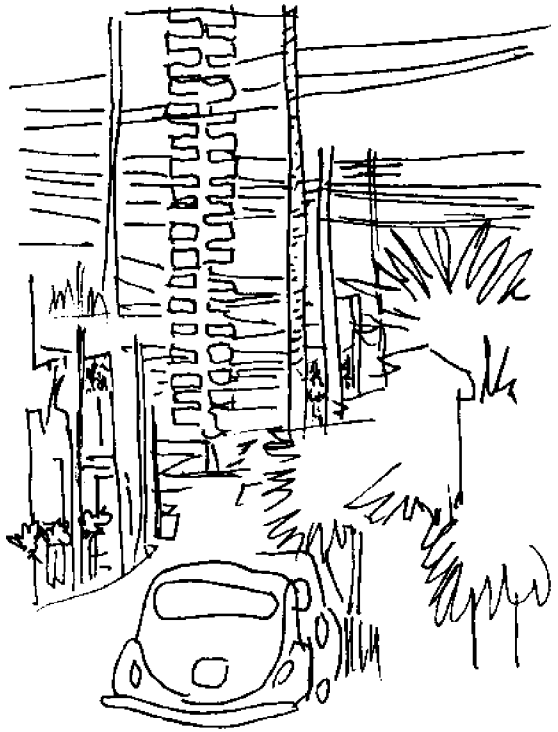


Figure 5.10 A lesson for the future: What is (above) and what was (below)

Scenic corridors, routes, walks, paths: The studies necessary to identify such routes have been discussed and illustrated previously. If view corridors are essentially components of protection-oriented policies, development of a system of scenic corridors can be seen as a policy aimed at *enhancement* of the enjoyment of the coastal scenic resources. The scenic corridors can include: routes (typically for the auto drivers); walks (unambiguously reserved for pedestrians only); and ways (for bikes, skateboards, roller skates). Scenic routes are quite common in many coastal communities. They are, in many ways, noncontroversial, and involve formally designating existing thoroughfares with view or scenic appeal as scenic ways. Public cost is minimal, since a few signs usually suffice. While it is an important symbolic act to recognize the authentic resources of a community, not much usually happens as a follow-through. A more vigorous policy would aggressively seek to create new access routes, open up new views and vistas, acquire special easements, direct capital improvements, and develop guidelines for any alterations, modifications, or constructions along the corridor.

Improving overall appearance, eliminating visual blight: This is a common concern and includes such specific objectives as controlling signs and billboards and putting utility lines underground. Undoubtedly these objects are common "villains," and in the past, community sentiment has been strong against signs, billboards, and utility lines. But even with such a receptive mood on the part of decision-makers, it is important for the designers to illustrate before-and-after effects of eliminating billboards or undergrounding utility lines, as shown in Figure 5.14, so that choices are clear.

Strategies for Implementation

While developing the framework for design policies, as well as specific policies, the designer must also think about available options for implementation. Design intentions are one thing; bringing them to fruition is a different matter. City design is a product of many actors, many decision-makers—involving both individual and collective actions, and private as well as public interests. Public policies must not only guide, direct, and even coerce certain actions, they must also incorporate some sense of timing in making all this happen. Unfortunately, unlike with a symphony orchestra there is no grand composition to follow in city design, for there are no master composers or conductors. Still, much can be achieved if proper coordination and timing can be maintained for different public and private actions that are scheduled to take place anyway.

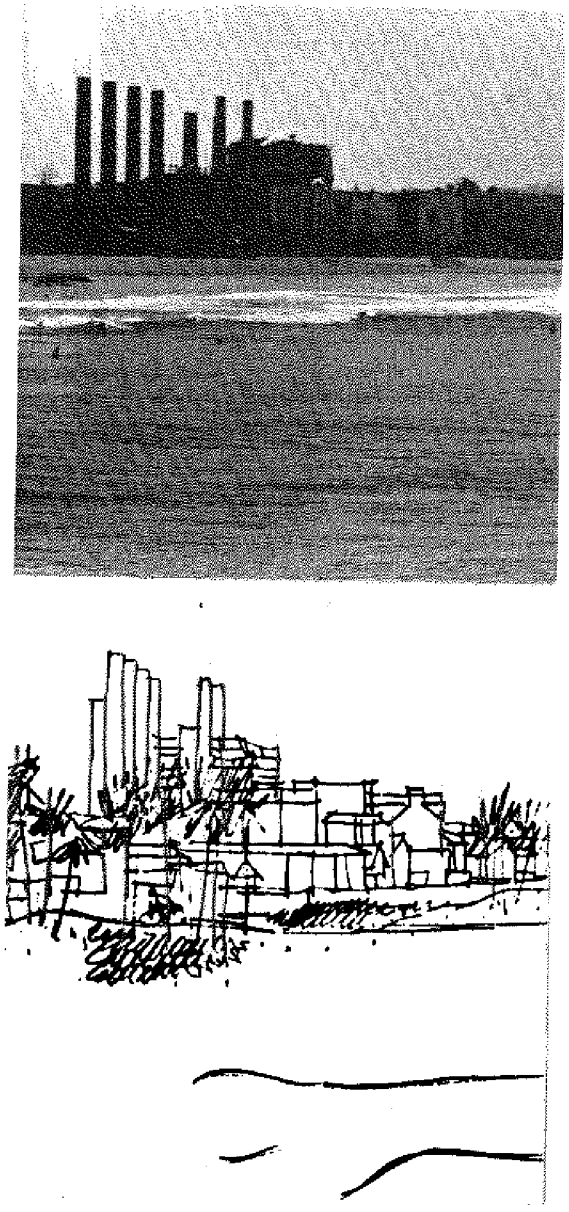


Figure 5.11 Illustration of the use of landscaping to soften the presence of a power plant (Redondo Beach, California)

While it may be futile for the designer to think about a finished product or even a well-synchronized process, it is important that the process get started. To start the process, the designers must index the policies with the appropriate courses of action. It is generally known that three major kinds of implementation measures are commonly available to public agencies: controls, incentives, and capital improvements.

Controls are more common and traditional ways of achieving land use goals, and can be used in connection with appearance and design objectives. Site coverage, setbacks, sign ordinances, height and bulk restrictions, and floor area ratios are some of the examples of traditional controls that involve police power (cf. San Francisco Urban Design Plan, 1971).

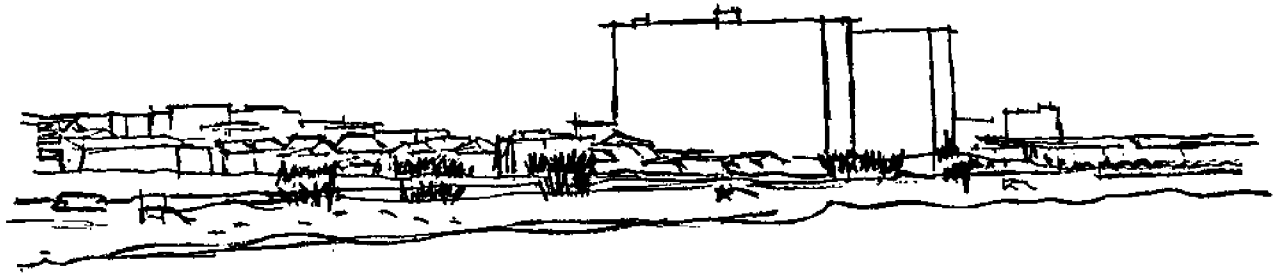
The use of incentives is less common in city planning tradition but is increasingly seen as having great potential. In New York City, incentive zoning has already been hailed as a tremendous success (Barnett, 1974). However, incentives do not operate in a vacuum. They go hand in hand with controls. Often, it involves a negotiated bargaining and works well in the context of large-scale redevelopments where the redevelopment authorities have a great deal of autonomy. Theoretical opportunities for use of incentives to produce public benefits in the coastal zone is almost unlimited. Visual easements, pedestrian access, public spaces, etc., can all be considered part of a long list of public benefits that could be obtained through incentives.

Finally, capital improvement programs are the most direct and effective way of achieving appearance and design goals. The public improvement programs serve many functions: they can serve as priming actions; they can demonstrate new opportunities and possibilities; and they can set the pace of design excellence.

Thus, the designer may have to consider a three-pronged strategy of implementation, in a formal sense. In addition, he must look for other ways of achieving some of these goals. It would be necessary for him to cultivate community support, seek the help of civic groups, chambers of commerce, local artists, architects, artisans, etc. This will require a continuing dialogue with the community—seeking opportunities, establishing priorities, resolving conflicts, and probing for consensus. The success of the community design process ultimately will depend on active participation, collaboration, and action of all segments of the community.

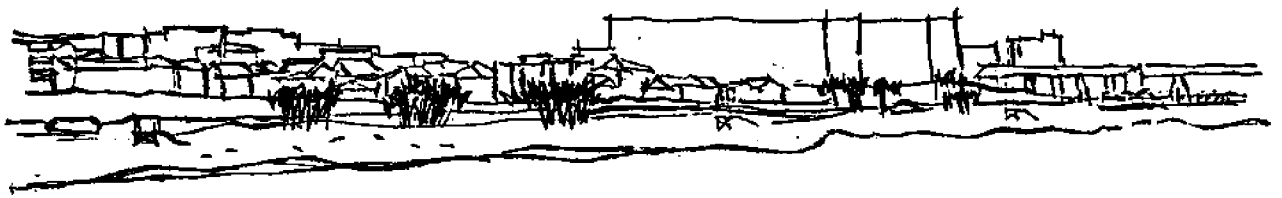
Notes

1. These policies have been subsequently revised as result of amendments to the San Francisco Bay Plan on April 5, 1979. The revised development guide is included as an appendix to the *Public Access Supplement to the Bay Plan*. Readers interested in substantive aspects of the development guide are advised to refer to this document.



Existing

Previous view

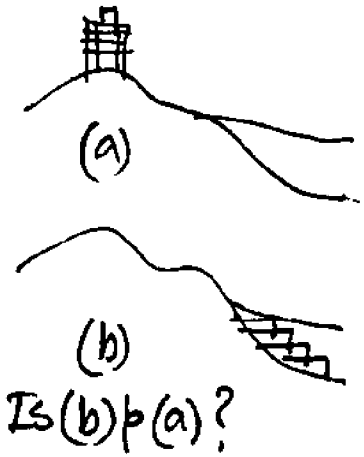


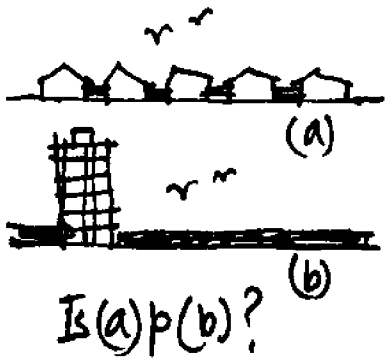
Modification of original

A sensitive design solution

Figure 5.12 A counterfactual analysis and lessons for future development of a skyline (Ocean Park, California)

Figure 5.13 Illustrating policy options





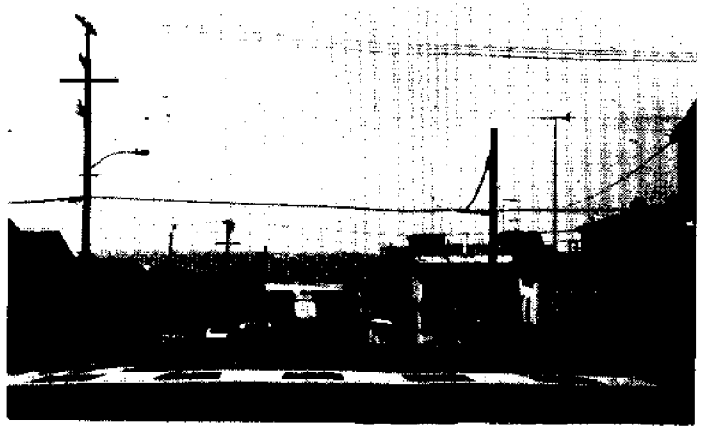
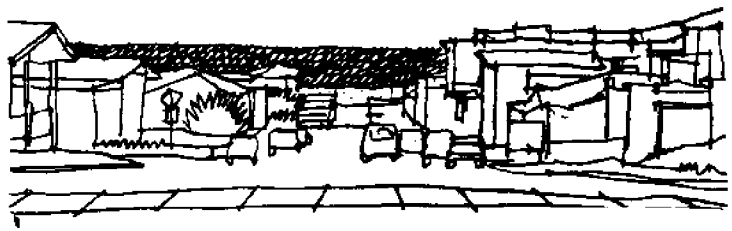


Figure 5.14 The possibilities for a view corridor in Hermosa Beach, California, if utility lines were removed



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