University of Wisconsin Milwaukee
UWM Digital Commons

Center for Architecture and Urban Planning Research Books

Architecture and Urban Planning (School of)

1982

Anatomy of a Competition: Urban Design for Milwaukee's Lakefront

Lawrence P. Witzling
University of Wisconsin - Milwaukee

W. Paul Farmer
University of Wisconsin - Milwaukee

Follow this and additional works at: https://dc.uwm.edu/caupr_mono

 Part of the Architecture Commons

Recommended Citation
Witzling, Lawrence P. and Farmer, W. Paul, "Anatomy of a Competition: Urban Design for Milwaukee's Lakefront" (1982). *Center for Architecture and Urban Planning Research Books*. 43.
https://dc.uwm.edu/caupr_mono/43

This Book is brought to you for free and open access by UWM Digital Commons. It has been accepted for inclusion in Center for Architecture and Urban Planning Research Books by an authorized administrator of UWM Digital Commons. For more information, please contact open-access@uwm.edu.

ANATOMY OF A COMPETITION

Urban Design for Milwaukee's Lakefront

Lawrence P. Witzling, Ph.D., W. Paul Farmer, A.I.C.P.

This study was funded with a fellowship from
The National Endowment for the Arts,
Design Arts Program Milwaukee, 1982

The School of Architecture & Urban Planning
The University of Wisconsin · Milwaukee

ANATOMY OF A COMPETITION

Copyright © Witzling and Farmer, 1982

PUBLICATIONS IN ARCHITECTURE AND URBAN PLANNING

Center for Architecture and Urban Planning Research
University of Wisconsin–Milwaukee
P.O. Box 413
Milwaukee, WI 53201

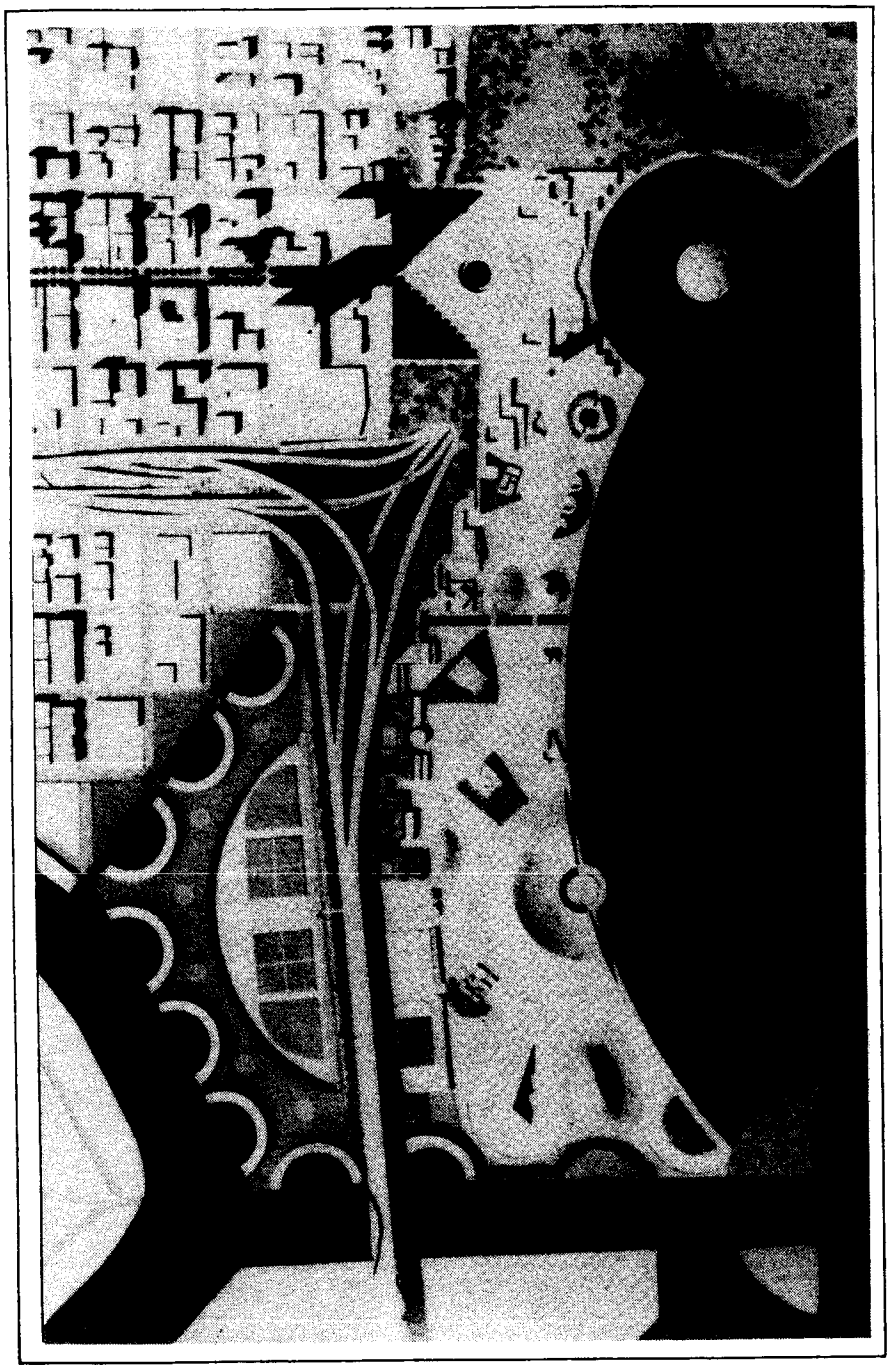
Report R82-5

Additional copies of this report are available at current prices
by writing the above address.

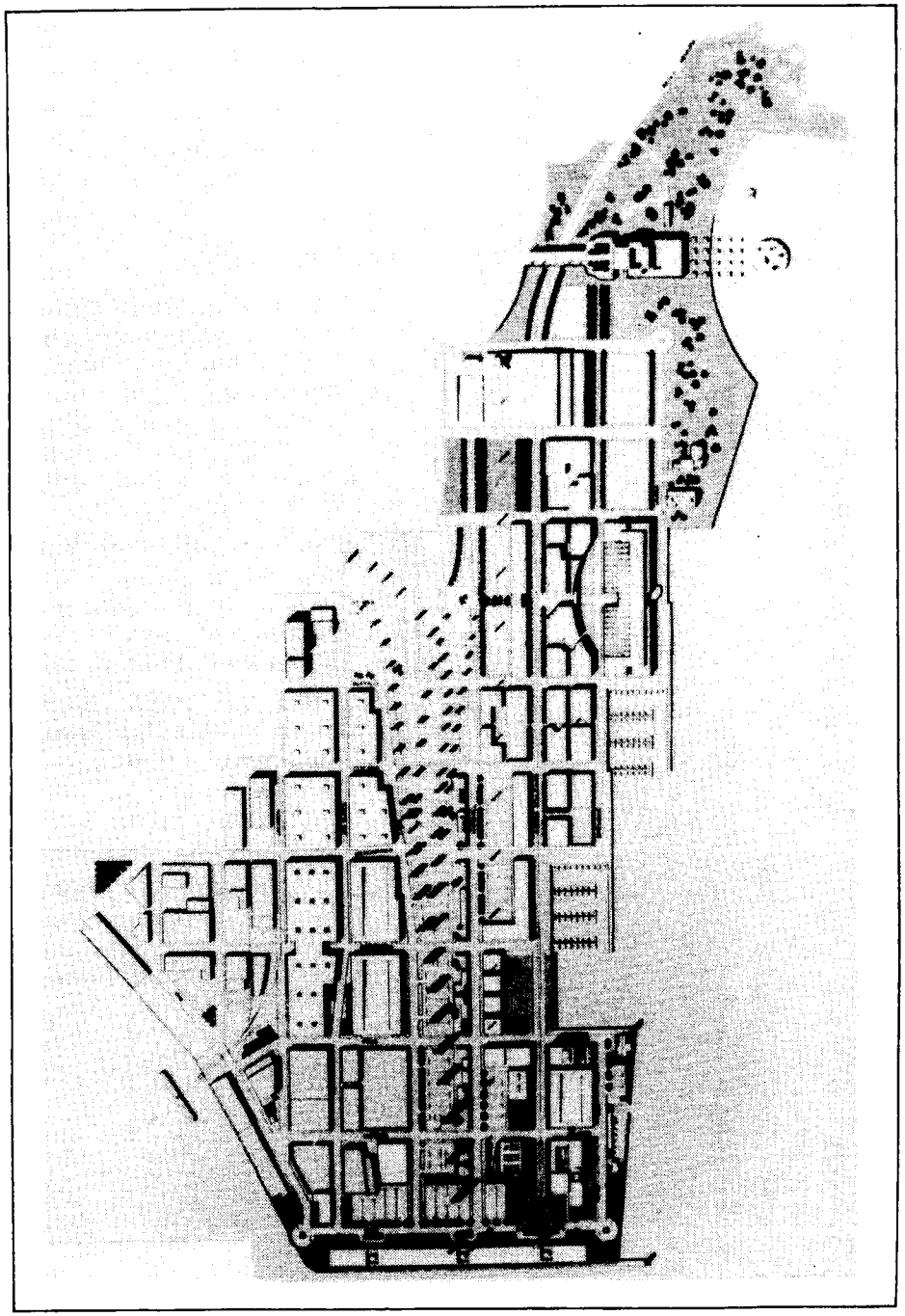
Lawrence P. Witzling, Ph.D., W. Paul Farmer, A.I.C.P.

TABLE OF CONTENTS

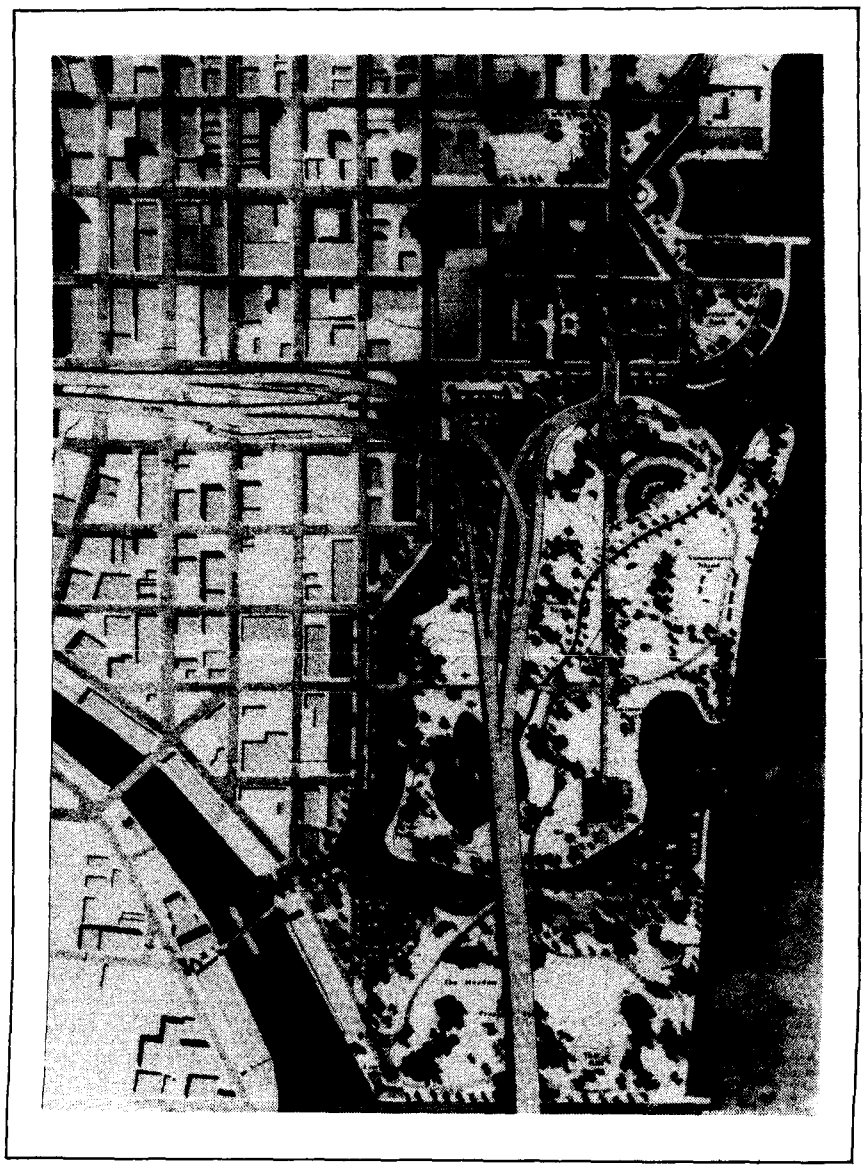
PLAN 1



PLAN 2



PLAN 3



Introduction

Milwaukee's lakefront is at a turning point. Future development can be orderly and productive or it can be chaotic and ineffective. Some cities have met this challenge successfully. Others have been impeded by government fragmentation, lack of public consensus and special interests working at cross purposes. A few cities, including Milwaukee, have sought direction through an innovative course of action — an urban planning and design competition.

The first goal of this study is to help other cities that are considering the use of an urban design competition. Part I addresses this issue. It discusses several critical aspects of competitions including the cost, program development, jury selection, prizes and media relations. Urban design competitions require careful preparation, management and evaluation. Competitions are only one part of a larger planning process — they do not guarantee success.

The second goal of this study may be even more important. It is to help cities like Milwaukee use the results of a design competition more effectively. Proper use of a competition requires a disciplined evaluation of all the solutions that are submitted. Parts II, III and IV address this issue. They are an example of what to do when a competition is over. They provide both an illustration for other cities, as well as a pragmatic tool for long-term planning in Milwaukee. For example, the analysis of Milwaukee's competition addresses questions such as:

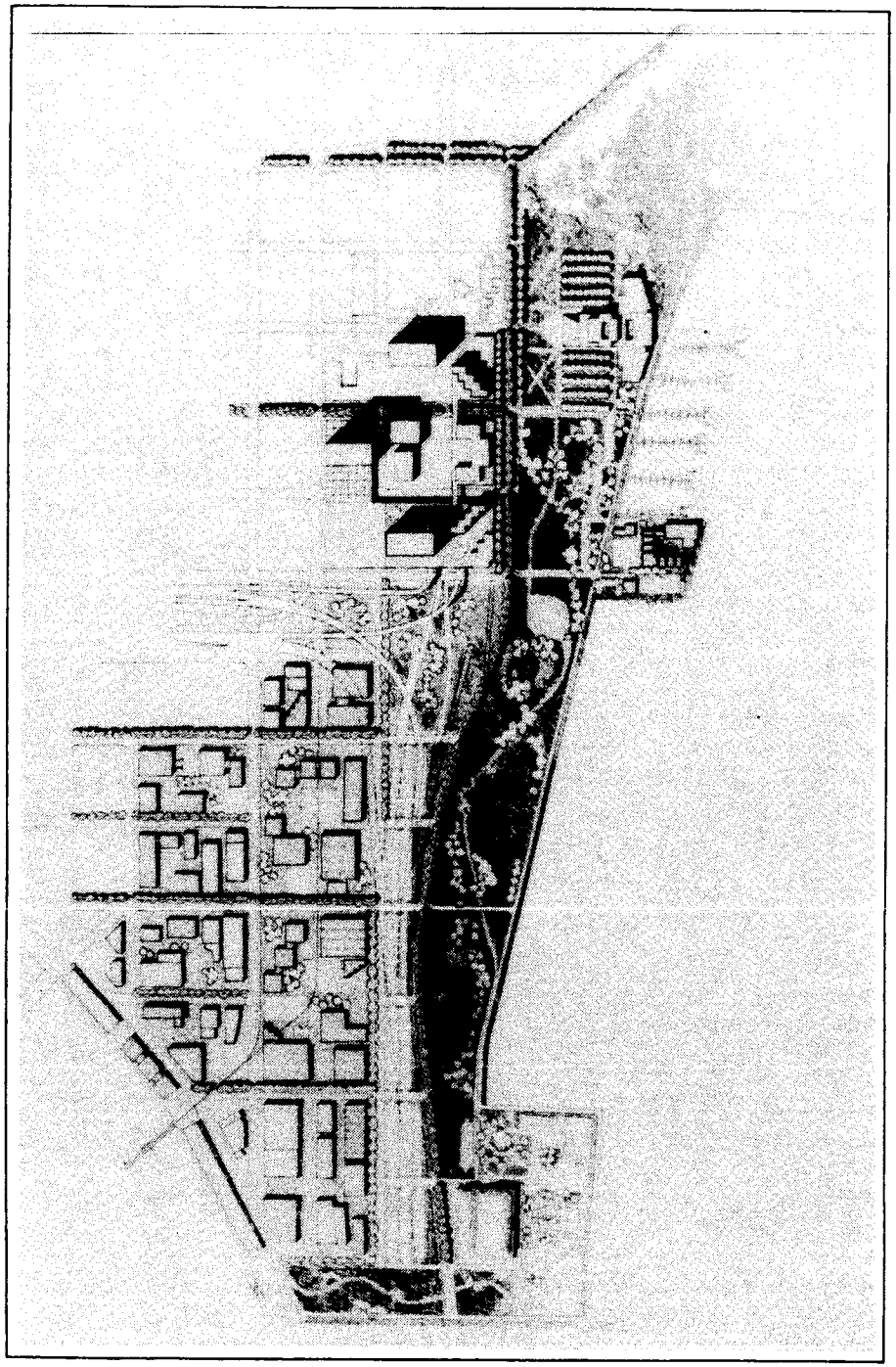
— How many entries suggested residential or commercial land uses and where were they located?
— To what degree were offshore islands and inland waterways a typical suggestion?
— What were the technical suggestions for improving the transportation system?
— Was there any consensus over styles, images, and design concepts?

The answers can be found by reviewing the statistics presented in this study. These statistics were developed by cataloguing approximately 130 items of information for each of 140 competition entries.

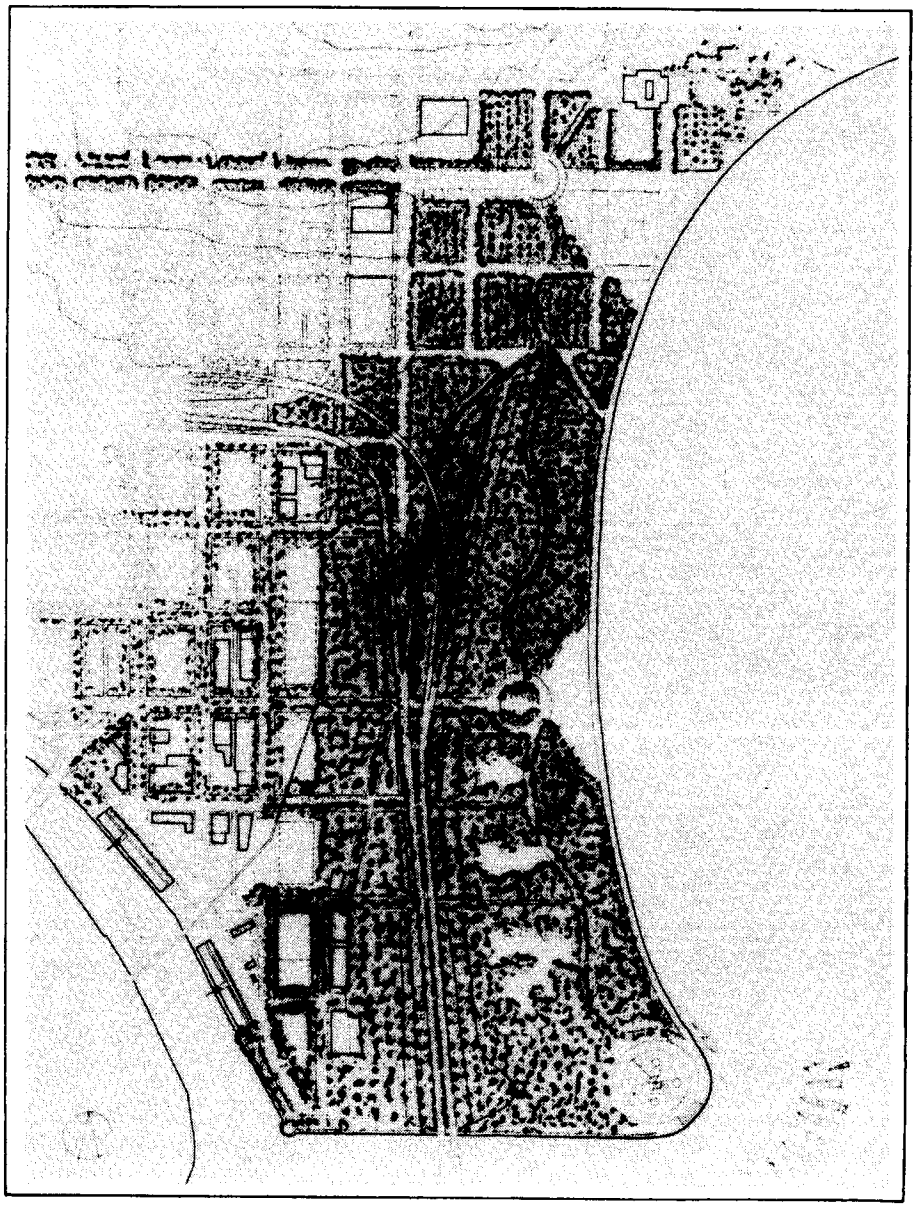
This study is a **reference catalogue** for waterfront design, planning, and development concepts. **More importantly, this study shows how information from a competition can be organized in a new and more productive manner.** For instance, if a developer proposes a new lakefront hotel in Milwaukee (or residential or commercial buildings) the data from this study can be used to identify similar solutions, some of which may be superior. Another example would be the use of the survey data to retrieve ideas for revitalizing Milwaukee's older industrial and warehouse district during the next decade.

A detailed evaluation of the entries in a design competition is not, however, the end of a planning process. To the contrary, an analysis of competition results — like the one presented below — is a tool to be used in a long-range, comprehensive planning process.

PLAN 4



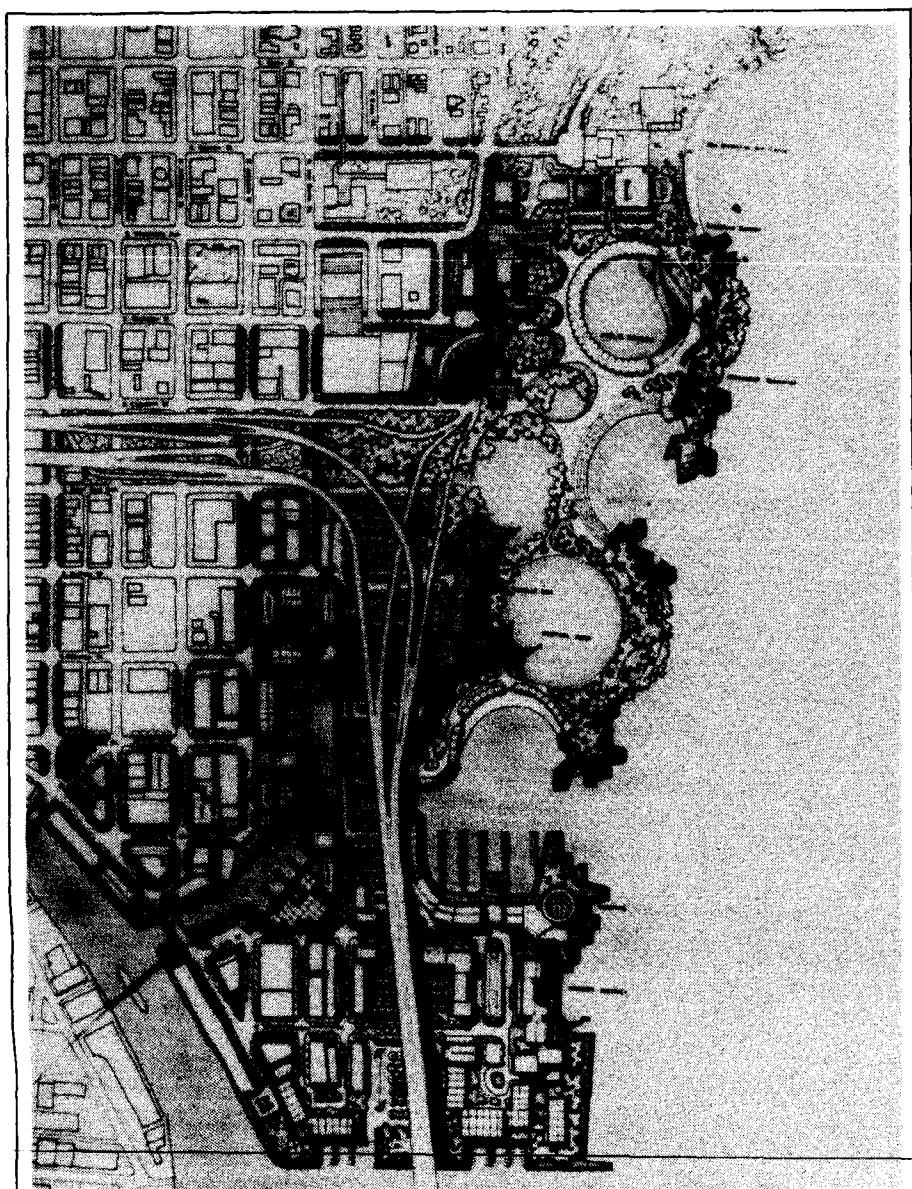
PLAN 5



PART I

Why Have An Urban Design Competition?

PLAN 6



Competitions bring forth a wide range of solutions. New talent and ideas are revealed. There is an open community dialogue over the issues. Competitions cost the sponsor time and money, but on the whole they are a genuine bargain. The expense of running a competition is far outweighed by the amount of professional expertise that is leveraged.

Competitions stimulate new thinking within the professional community. Different approaches can be tested and compared. Professional designers are free to innovate and solve problems from different, less constrained perspectives. At times, competitions have changed the mainstream of professional thinking.

The quantity, quality and usefulness of new ideas depends on several factors. For example, the prestige of the competition and the size of the monetary award affect the number of entrants. The capacity of local decision-makers to prepare for and evaluate the results also influences the usefulness of a competition.

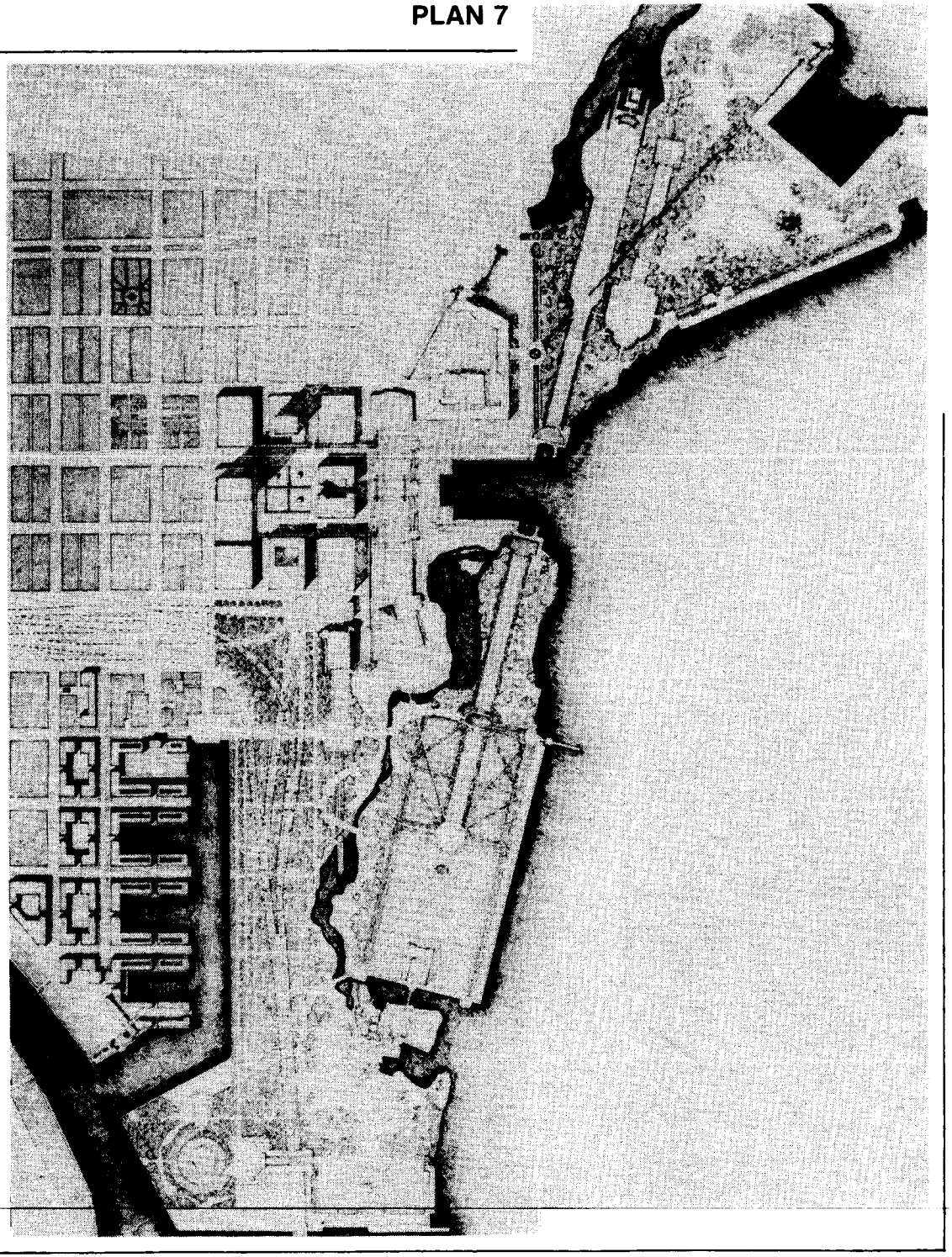
Urban design competitions are only a part of a planning process. They are not a substitute for planning. This planning process includes the definition of goals prior to the competition, the generation and selection of alternative solutions by the entrants, and subsequent evaluation and action. Community leaders and the general public must be involved in each step in the process to ensure their interest in the outcome. Competitions do not resolve policy disputes, but they can raise the quality of public debate and focus attention on key issues.

Design competitions can, of course, be disadvantageous. They may raise expectations too high. Solutions may not be feasible or they may solve the wrong problem. Competitions can delay more traditional design and development processes. But these problems only reaffirm the necessity for careful planning and management of a design competition.

WHY ARE URBAN DESIGN COMPETITIONS SPECIAL?

Competitions for the resolution of urban planning and design problems are different than traditional competitions for individual buildings. The resolution of an urban design problem requires different skills, knowledge, disciplines, and theoretical perspectives than does the resolution of a building design problem. In the Milwaukee Lakefront Competition, for example, entrants included not only registered architects but also landscape architects and planners. The list of rel-

PLAN 7



evant professional disciplines could be extended further depending on the problems to be addressed.

Urban design competitions focus on a special type of problem. In a building competition, the product is usually a single structure or a complex of buildings serving a singular purpose. Often, the specification of different spaces, their relative size, and their intended function is predetermined and comparatively detailed. In an urban design competition, spatial requirements are usually more general and encompass a wider range of functions and purposes.

Building competitions typically emphasize a greater level of architectural detail while urban design competitions emphasize the relationships among architectural and non-architectural components. A building design competition might address the design of a museum, while an urban design competition might determine the location and external character of a museum as only one component of a larger land use problem. Urban design competitions may focus more on landscaping details, land use patterns and transportation systems. Moreover, urban design competitions may require submission of non-architectural products like proposed zoning or development regulations.

Urban design competitions are often envisioned on a grand scale. Presumably they encompass larger geographic areas. But this is not necessarily universal. One could imagine an urban design competition for a small one-block street mall versus a building competition for a large rural office complex. **The critical difference is not size but content. Urban design competitions focus on relationships among diverse architectural and non-architectural elements. Building competitions focus more on single purpose architectural products.**

Urban design competitions may also dif-

fer from building competitions in the way they are initiated and sponsored. The former are often undertaken by a coalition of organizations. In Milwaukee, for example, both the City and County governments as well as other public and private organizations sponsored the competition. Conversely, in a typical building competition one public or private organization such as a government agency or a major corporation, is the chief sponsor and beneficiary of a competition.

Finally, there are differences in the use of the results of urban design and building competitions. In a building competition the feasibility of implementing a winning solution may be easy to determine. In urban design competitions, the use of the winning solutions — in fact, the use of any solution — is more ambiguous. Part of one solution may be feasible for one part of the problem, while another solution may contain elements which are superior in other areas.

Obviously winning solutions are selected, in part, because of the artistry with which all the individual elements have been juxtaposed. Nevertheless, **when competitions, like Milwaukee's, cover large areas with diverse land uses, there is a real option of joining elements of one solution with those of another.** The mixture of different designs is more problematic in building competitions. Building designs, unlike urban plans, usually contain more tightly connected and fitted pieces which are harder to treat as independent choices.

THE COST OF A COMPETITION

While there are costs to entrants in a competition, there are also costs to staging a competition. The size of the cash awards and the size of the jury influence cost. Other cost factors include salaries and overhead for the professional advisor and staff, advertising, announcements and any final competition report. Yet the cost of a competition is not necessarily higher than that of conventional contracts for professional services.

Income can be derived not only from public sector operating budgets, but also from private sector gifts, foundation grants and competition registration fees. The latter can be set high enough to discourage frivolous entries but should not be relied upon to generate substantial income.

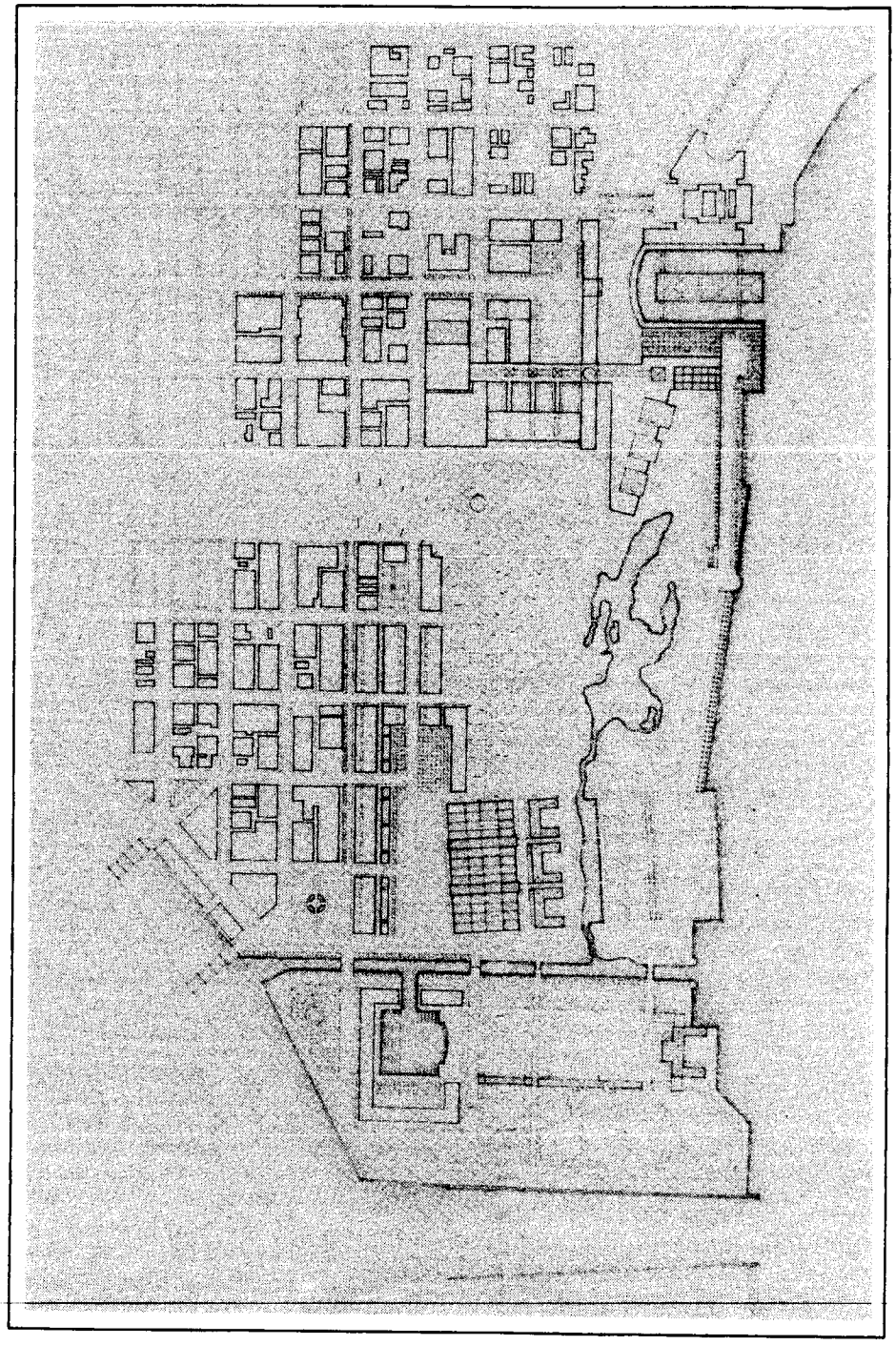
THE PROGRAM

At the beginning of an urban design competition there must be a well-defined program. The program should state the intent of the competition, its rules and regulations as well as background information. It should state the policies and ideas to be embodied in the solutions. The program must be a carefully drafted, professional document which is reviewed by the organization running the competition. At the time of judging no solution should be ruled out if it fits the program parameters. Neither should a solution be selected as a winner if it violates the program. The program should be written to narrow policy options but not to predetermine the outcome of the competition.

An important program issue is the cost or economic feasibility of a solution. Building competitions sometimes require cost estimates or have cost limitations. It is possible to do this in an urban design competition only when the program is quite specific and quantities, such as square feet of new construction, are known.

It is usually not feasible to require a complete cost analysis as part of an entrant's submission. A requirement that cost estimates be included in the competition submissions also places an added burden

PLAN 8



on the administration of the competition. Such cost estimates must be checked by an independent professional so that entries which are over budget or which are unrealistically low are eliminated prior to judging. Costs must also be compared to social and economic benefits. Moreover, requiring cost estimates implies a higher level of expertise and more work on the part of the entrants.

On the other hand, absence of financial data or cost constraints may encourage competition results which are widely divergent. Ultimately the degree to which cost constraints and estimates are required in the submission depends on the objectives of the competition.

THE JURY

Selection of the jury is another critical part of the competition process. The nature of the urban design problem should determine the composition of the jury. Jurors might be chosen from several disciplines and professions, such as planning, architecture, fine arts, landscape architecture, social sciences, finance, engineering and real estate development.

The extent of the jurors' fame or notoriety must also be addressed. "Big names" generate interest in a competition and bestow a certain degree of legitimacy. They can also scare away some potential entrants or encourage the competitors to slant their submissions toward the known likes and dislikes of the jurors. The jury should be kept to a workable number, probably three to seven, for a traditional deliberative jury. A typical jury comprised of outside experts may or may not have local participation.

Traditionally, the jury has the opportunity to review and discuss the submissions in order to reach a consensus on the winners. The degree to which the outside jurors are briefed, in addition to the material contained in the program, depends on the complexity of the problem and the cost of running a competition. Typically a briefing consists of meetings with local decision-makers, the professional advisor, and the committee sponsoring the competition. After the judging the jury should prepare a written report in order to share their insights with the community and make suggestions based on their expertise. The jury should also meet with the local press.

The issue of a public or open jury versus a closed jury must also be addressed. For some public competitions "sunshine" laws are applicable. Open juries may also be useful in stimulating local community interest. Prior to their selection, jurors should be told whether an open jury is being considered, so that they understand the scope and nature of their involvement.

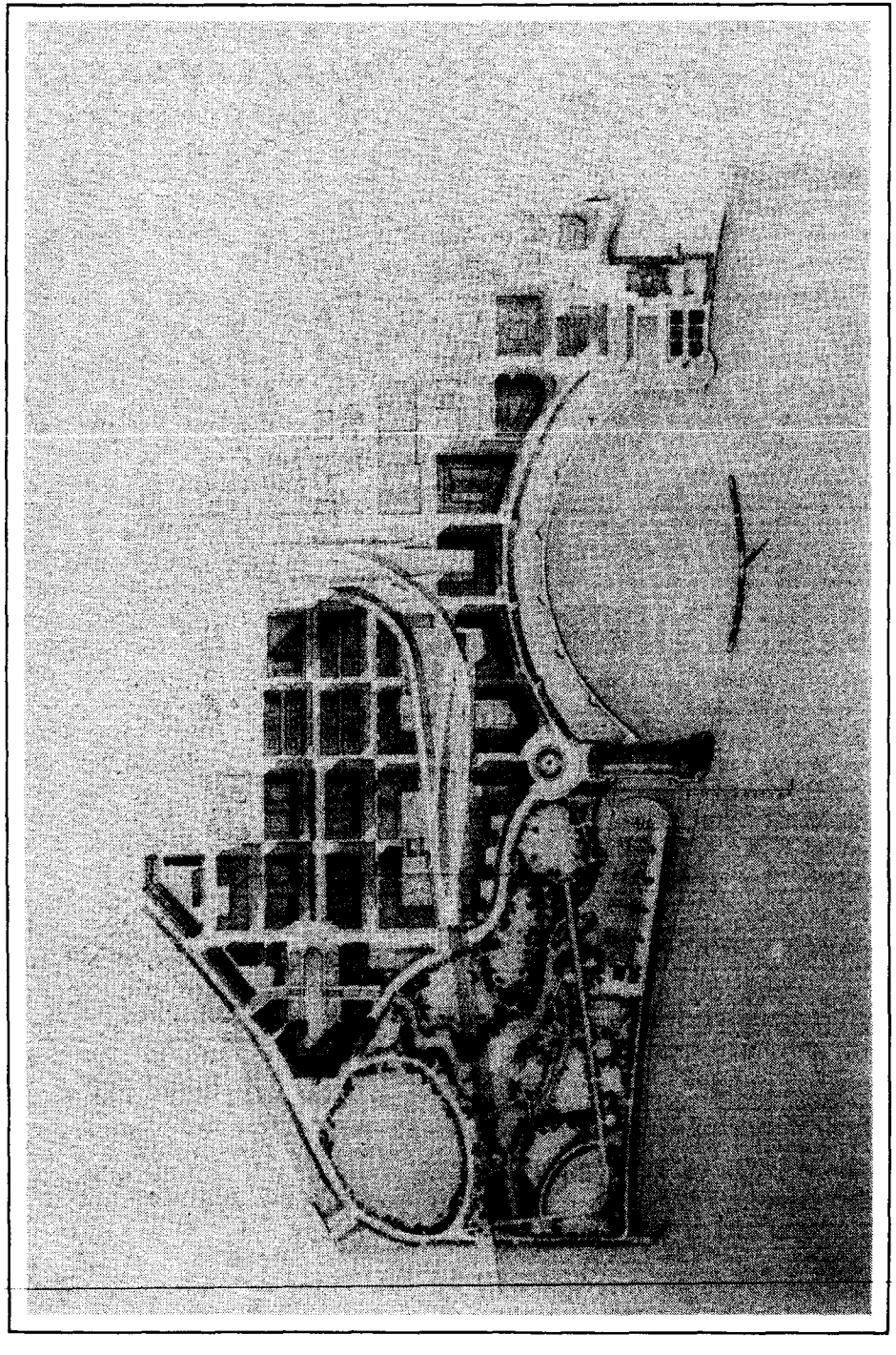
THE MEDIA

Public relations and press relations are also important throughout the competition process. A competition must be publicized so that interest is created among possible entrants and the public. When a competition is first announced a press kit might be prepared showing how other competitions have worked. When the competition winners are announced another press kit should describe the winning entries, relevant insights from the jury, information on costs and benefits, and suggestions for the next steps in the planning process. Also when winning entries are announced they can be displayed in public buildings, office lobbies, indoor malls and other locations.

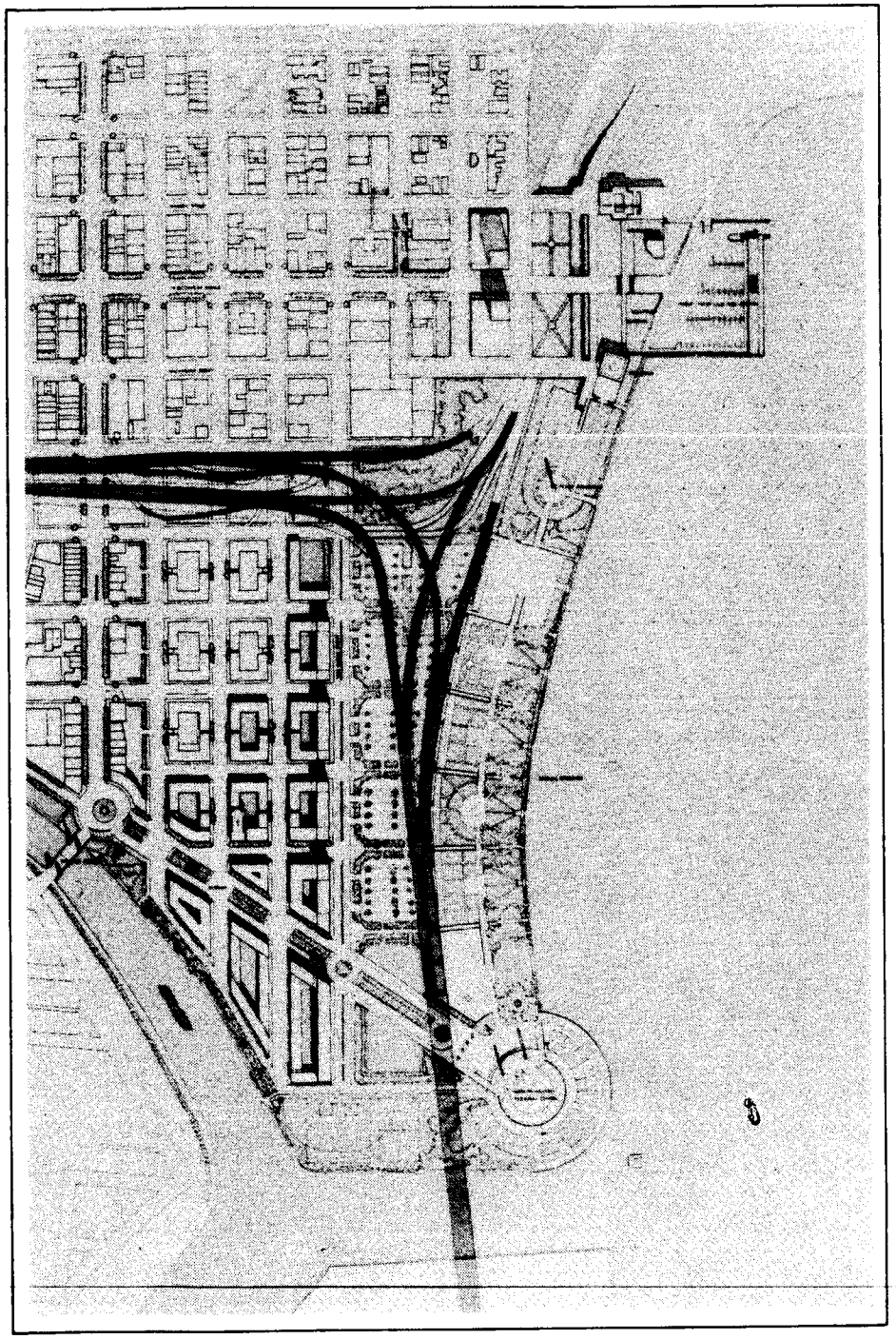
THE PRIZES

Competitions often have first, second and third place prizes, as well as honorable mentions. This type of award system may be appropriate for a building

PLAN 9



PLAN 10



competition, but it may be misleading in an urban design problem. For example, in the Milwaukee Lakefront Competition no single entry presented the best solution for all of the different geographic areas and all aspects of the problem. Yet public attention focussed primarily on the first place winner. Perhaps a more useful debate would have focussed on the commonalities and differences among the six winning entries, or on the way portions of several solutions could be recombined into one economically and politically acceptable solution.

The public's attention can be focussed on several solutions, rather than one, by giving several prizes of equal value rather than designating one winner. Another approach might be to single out components of the problem for special awards (although problem components should not necessarily be singled out in advance).

Two-stage competitions provide another option. In a two-stage competition, there are minimal submission requirements for stage one. This reduces the cost of entering the competition. The jury then selects a small number of first stage entrants as competitors in the second stage. All of the entrants in the second stage are now guaranteed a cash award since they won the first stage. These entrants can then invest more time in the second and final stage which often has still another prize or reward.

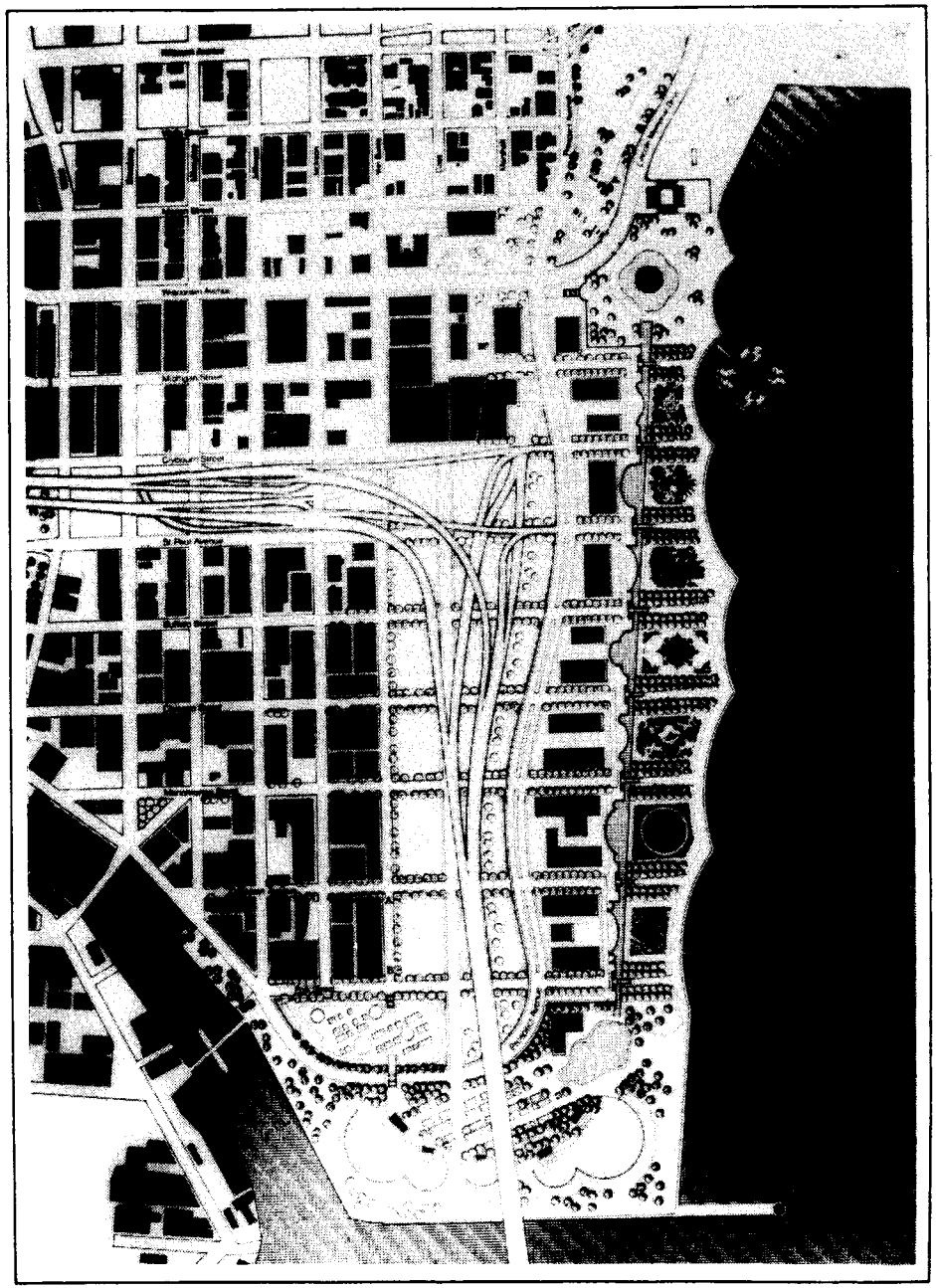
Regardless of the awards, the jury comments and any contracts for the winners, the competition sponsor still should undertake a complete evaluation of all the entries. Providing such an evaluation is a primary purpose of this study. This type of evaluation should be funded as part of the competition's administrative expenses and should begin as soon as the entries are submitted. Evaluation of alternatives should be part of any planning process, and detailed evaluation of competition submissions is complementary to the jury process. They are not substitutes for each other.

THE NEXT STEP

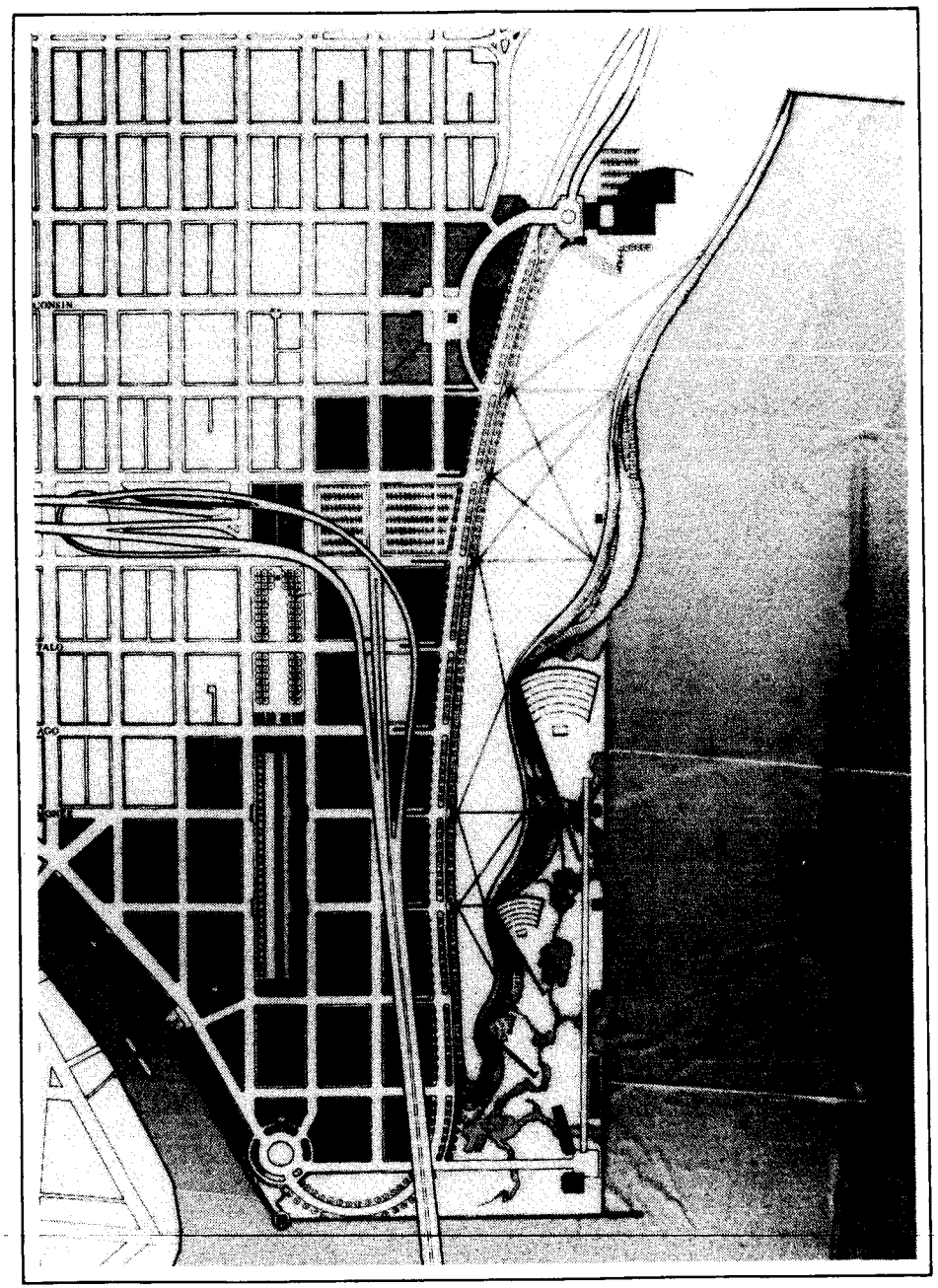
The awarding of prizes should not be the end of a competition. There is still the issue of implementation or at least the first steps towards implementation. Privately sponsored competitions often end with a contract for design services. However, public bodies are usually prohibited from awarding contracts in this manner. The competition program should clearly state any possibilities for subsequent service contracts. In a publicly sponsored competition a contract could, for example, be guaranteed by the private sector, through a chamber of commerce or a foundation. This would give winning entrants greater remuneration and would provide the critical assurance that further work would occur on the project.

When there are no contracts for further work, the competition sponsors have responsibilities regarding the authorship of ideas. That is, both the public as well as the design and planning professions have an obligation to see that the work of one individual or firm is not unfairly used by others. Although this is important, it is difficult to assign sole proprietorship to design ideas contributed by the entrants.

PLAN 11



PLAN 12



PART II

What Design Problems Were Addressed?

When an urban design competition begins there is an official program document which states key community problems and goals. However, when the competition is over, the designers who entered the competition have usually discovered new aspects of the problem and new goals to be achieved. That is, **it is only at the end of the design process, when the solutions are presented, that the full complexity of the design tasks can be appreciated**.

Milwaukee's competition was no exception — after an initial survey of the results, it seemed relatively self-evident that there were four major types of problems and associated goals addressed by the competition entrants. These problems and goals are described below.

NEW IMAGES

The paramount problem addressed by the entrants in the Milwaukee Lakefront Competition is that of image — creating images, relating them to each other, and using them to induce satisfactory human behaviors, attitudes and experiences. This is always a problem in the design of an urban environment.

Images can make urban development a success or lead it to failure. For example, if new recreational facilities are remembered by people as "difficult to get to" or "unsafe" or "not for them" — regardless of whether these perceptions are true — such facilities probably will be unsuccessful. Similarly, if a developer thinks that buyers will perceive a new residential area as unattractive, then the developer's investment is unlikely — regardless of whether the buyers' perceptions are legitimate. **Images of Milwaukee's lakefront will influence how a wide variety of residents and visitors perceive the lakefront, the central business district and the entire city, how they use these areas, and whether or not they value them highly.**

The images created by entrants in Milwaukee's Lakefront Competition include, for example, large scale megastructures, suburban condominium villages, major waterfront promenades and carnival midways. The images used by the entrants can also be described in more abstract, architectonic terms such as radial or concentric patterns, grids, curvilinear and natural forms, axes and symmetries, contrasts and harmonies, rhythms and textures.

Images can be separated and combined in various ways. The point here, is that strong, coherent images are fundamental to the vitality and longevity of urban areas. If Milwaukee's lakefront had a

clear, meaningful image there probably would have been no need for a competition.

VISUAL LINKAGES: UNITING THE CITY AND THE WATER

A critical attribute of any new urban image is how it links together different aspects of urban life. Does it tie places together or create psychological barriers? **Milwaukee's Lakefront contains a critical meeting point — the intersection of Wisconsin's most urban, intense central business district with its largest natural feature — Lake Michigan and its shoreline.** This type of design problem is not unique to Milwaukee. Most major cities have grown around waterfront areas.

Traditional models for relating patterns of urban development to natural water systems are evident in the competition results. For example, many solutions created a place of arrival at the shoreline with a single grand plaza and a landmark, which in turn was connected to a major street or boulevard. Other solutions connected the urban pattern to the waterfront with a linear seam of plazas and buildings along the shoreline. One side of the seam is related to the water, the other side is related to the city.

Stylistically, some solutions adapted concepts from baroque and renaissance planning while others used more recent styles. The detailed analysis in Part III shows how similar design concepts were elaborated in different ways. Combinations of approaches were also evident. The point, again, is that the visual tie between the city and the entire waterfront is a critical design problem.

SOCIAL BENEFITS: PLURALISM AND PUBLIC ACCESS

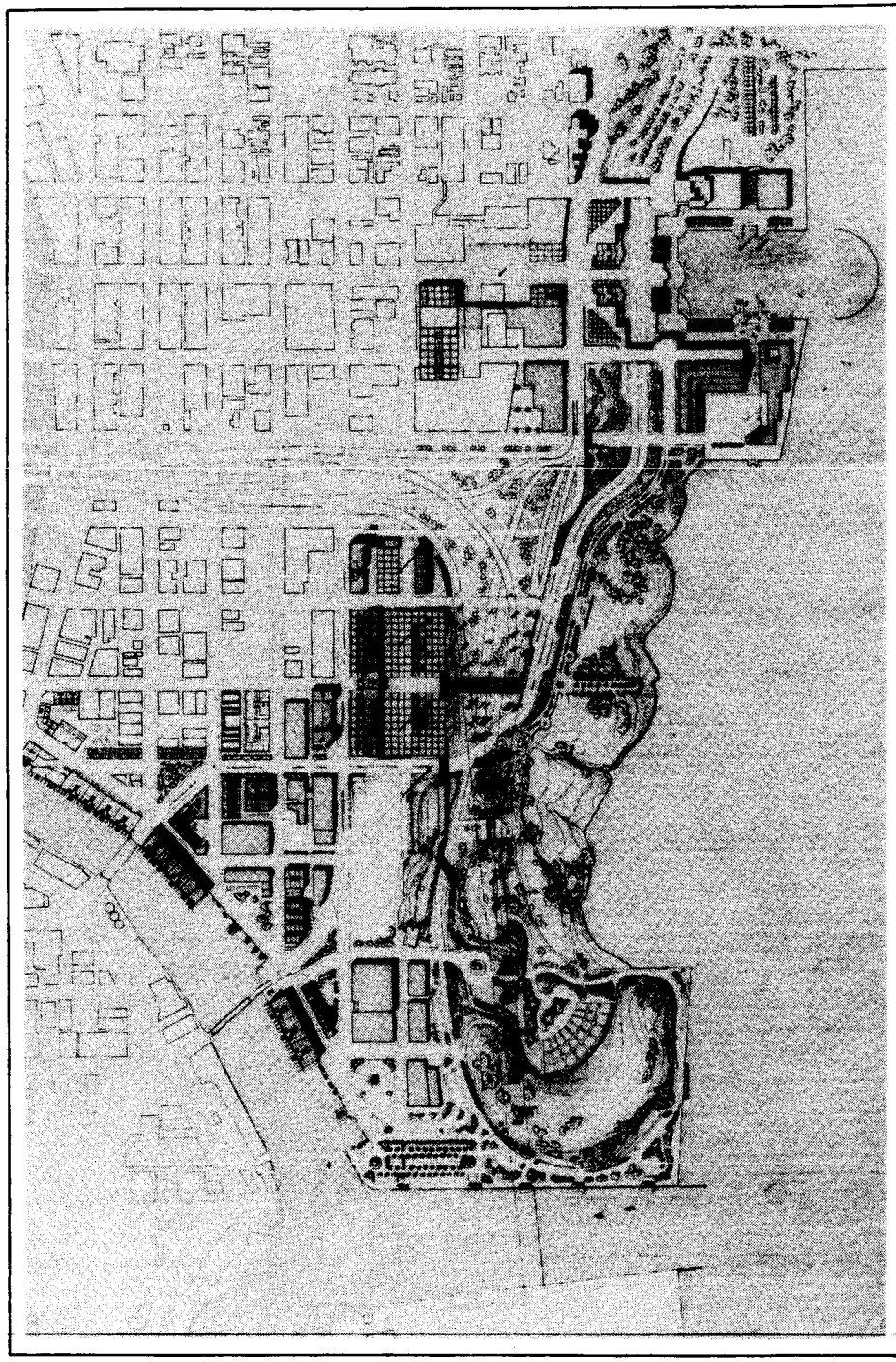
Historically, urban waterfronts have satisfied a wide range of public benefits. However, public needs are complex, conflicting, and not always self-evident. The needs of today may not match those of subsequent generations. A design which emphasizes social benefits for one group at the expense of another is often impolitic and probably ineffective. Designs must agressively encourage use of the lakefront by a variety of population groups for a variety of purposes.

Pluralistic use of the waterfront requires convenient physical access. But roads, parking lots, walkways and bus routes are not enough — they must be properly designed. In fact, if these elements are improperly designed they can obscure or discourage appreciation of the lakefront. **It is the quality, not just the technicality of access which is critical. The physical activity of going to a waterfront should be pleasant, enjoyable and even fun.**

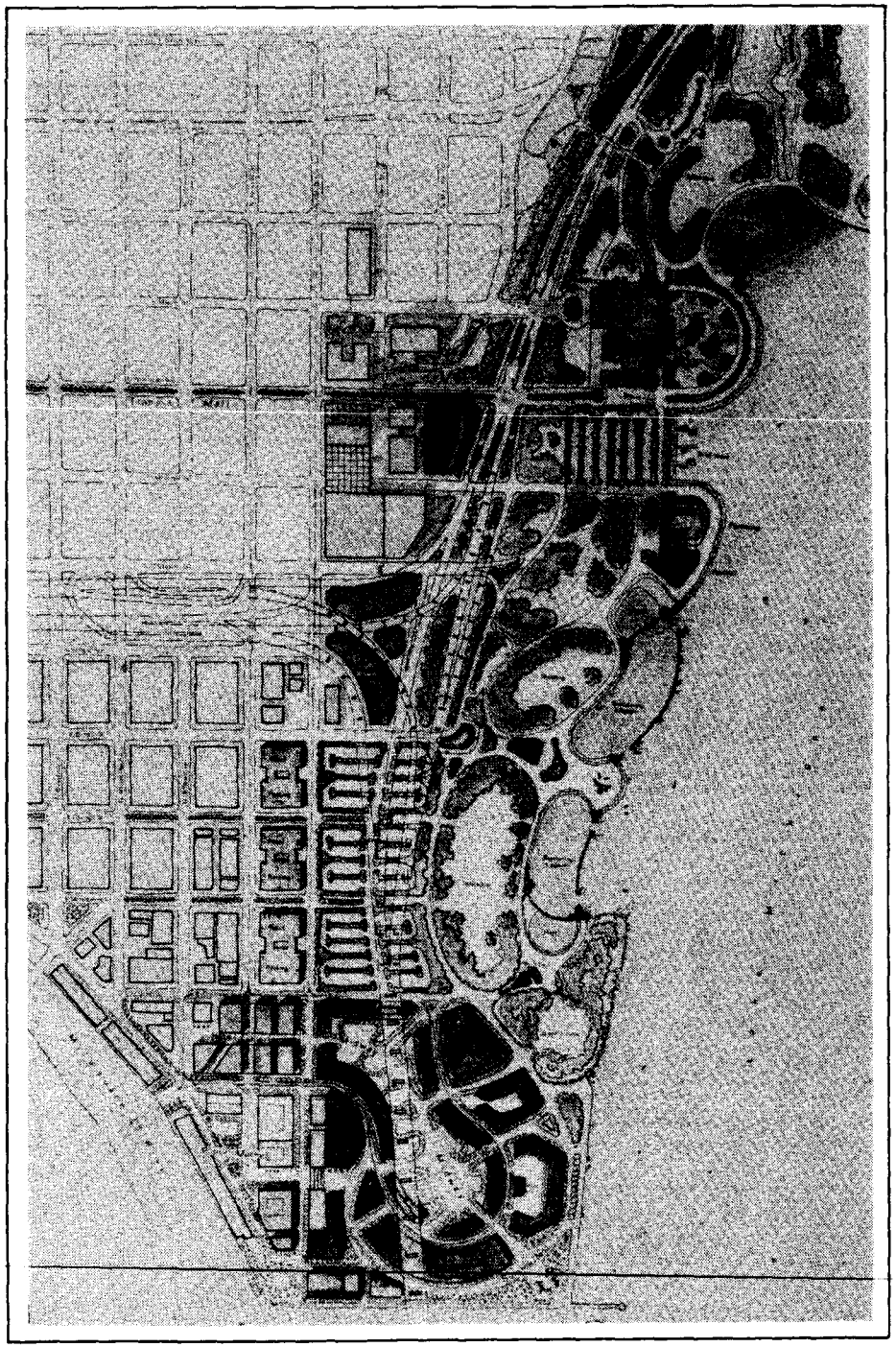
Effective public access presumes that people have a reason to go the waterfront — that they will attach a net positive value to using new lakefront development. In North America the most active and accessible urban waterfronts have been those which carefully interweave private land development with well protected public spaces along the shoreline. Experiencing such waterfronts is not perceived as an independent activity requiring special effort. The waterfront becomes an integral part of day-to-day activities like shopping, commuting, dining, entertainment and regular business transactions. At the same time, the public spaces — the promenades, plazas, and parks — become special places beyond the ordinary routine of urban living.

The problems of land use and public access are mutually dependent. A waterfront plan with a few segmented and unrelated land uses will attract fewer types of people than one with a broad, integrated variety of uses.

PLAN 13



PLAN 14



Many competition entries mixed land uses and activities throughout the site. Even solutions which emphasized recreational land uses contained formal gardens, open fields, playgrounds, boating, skiing, restaurants, bandshells, swimming pools, theaters, museums, arenas, schools, tourist centers, campgrounds and a variety of civic buildings. Clearly, the large majority of competition entrants sought to increase public access to the waterfront for a broad, diverse set of social uses.

ECONOMICS: INVESTMENTS, COSTS, REVENUES

In Milwaukee, as in other cities, waterfront development requires public expenditures for construction and maintenance of roads, recreation facilities, landscaping, institutions, mass transit and parking facilities. At the same time substantial private investment is needed for new residential, commercial and industrial structures. **At issue is whether design proposals have both public and private investment opportunities that will be financially feasible and yield satisfactory outcomes.**

The potential for private development and the cost of public improvements are interdependent. For example, construction of a public parking facility is often used by cities to facilitate private commercial development. Legislative devices such as revenue bonds and the creation of tax incremental financing districts are also used by cities, including Milwaukee, to improve the feasibility of private development. But it may be difficult to attract private investments before public improvements are committed. Conversely, it is often unwise to commit public funds without prior assurances of private investment. For some cities this dilemma is insurmountable. For most cities it leads to protracted and complicated public and private negotiations.

There are two basic strategies for linking private and public investments — both are apparent in the competition results. In the **first strategy,** new private developments are placed along the lakefront, immediately adjacent to the central business district which already contains new and desireable real estate. Presumably there is a stronger existing market in this location which makes new commercial activities more feasible. These new commercial uses can generate tax revenues as well as attract more people to the area. The tax revenues can be used to build plazas and parks that draw even more people and make public places vital and exciting. Thus, existing opportunities for private development are used to leverage public revenues and social benefits.

The **second economic strategy** is to create entirely new options for development rather than build upon existing opportunities. This strategy often implies initially higher public and private investments. But it also implies greater long-term tax revenues. For example, many competition entries located major private and public investments near the lake or river, but away from the central business district. These new residential and commercial developments were often intermingled with public improvements like marinas and parks. Presumably the public improvements would make the area more appealing to consumers and thereby increase the market for new development. Again, the interrelationships among public costs, private development, and ultimate social benefits were a major problem that is evident in almost all the competition entries.

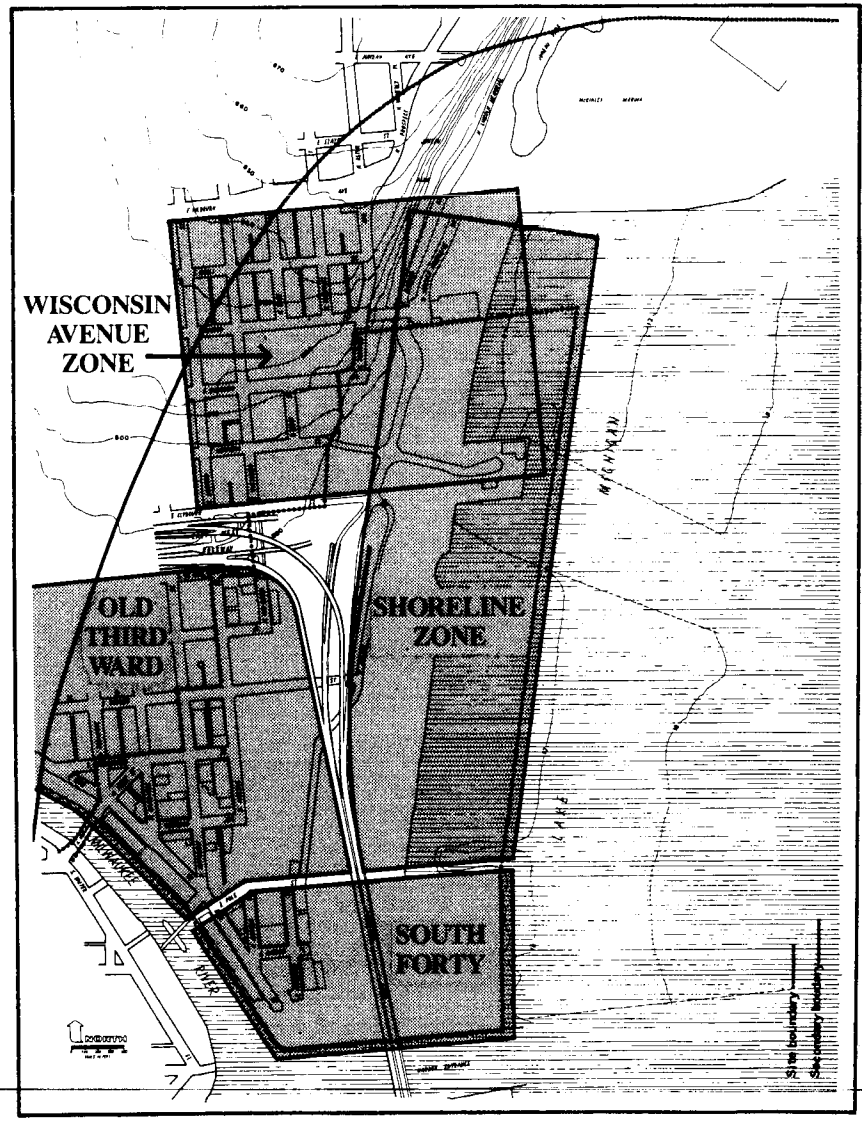
FIGURE 1

FRAMEWORK FOR ANALYSIS

SPATIAL ZONES	URBAN DESIGN PROBLEMS: NEW IMAGES	VISUAL LINKAGES	SOCIAL BENEFITS	ECONOMICS
WISCONSIN AVENUE ZONE	Page: -18-	-18-	-19-	-20-
SHORELINE ZONE	-21-	-21-	-21-	-22-
OLD THIRD WARD	-23-	-26-	-27-	-27-
SOUTH FORTY	-30-	-30-	-31-	-31-

FIGURE 2

THE FOUR SPATIAL ZONES



PART III

Analyzing The Solutions

The method of analysis used in this study is significantly more time consuming than the traditional jury's review of competition results. In Milwaukee, for example, the formal jury evaluation lasted only three days. **Although it is lengthier, the type of analysis demonstrated below allows the competition sponsor to use the results more productively as the process of urban development unfolds.**

In Milwaukee — as in other cities sponsoring design competitions — new or modified design proposals inevitably arise after competition winners are announced. Such new proposals can be high quality, feasible alternatives. Yet it is virtually impossible to reconvene the competition jury to review every new suggestion. If, however, there is a detailed evaluation of competition results, then new proposals can be compared to the original competition entries. This study is a detailed demonstration of how such a **post-competition evaluation** can be conducted.

Since this study was conceived and funded after Milwaukee's competition had begun, the analysis had to be based on the authors' rather than the jurors' opinions. Obviously, other cities considering design competitions can expand the jury's function to include, from the start, a detailed evaluation of the entries. The added benefit of a detailed evaluation should outweigh any additional staff expenses or fees.

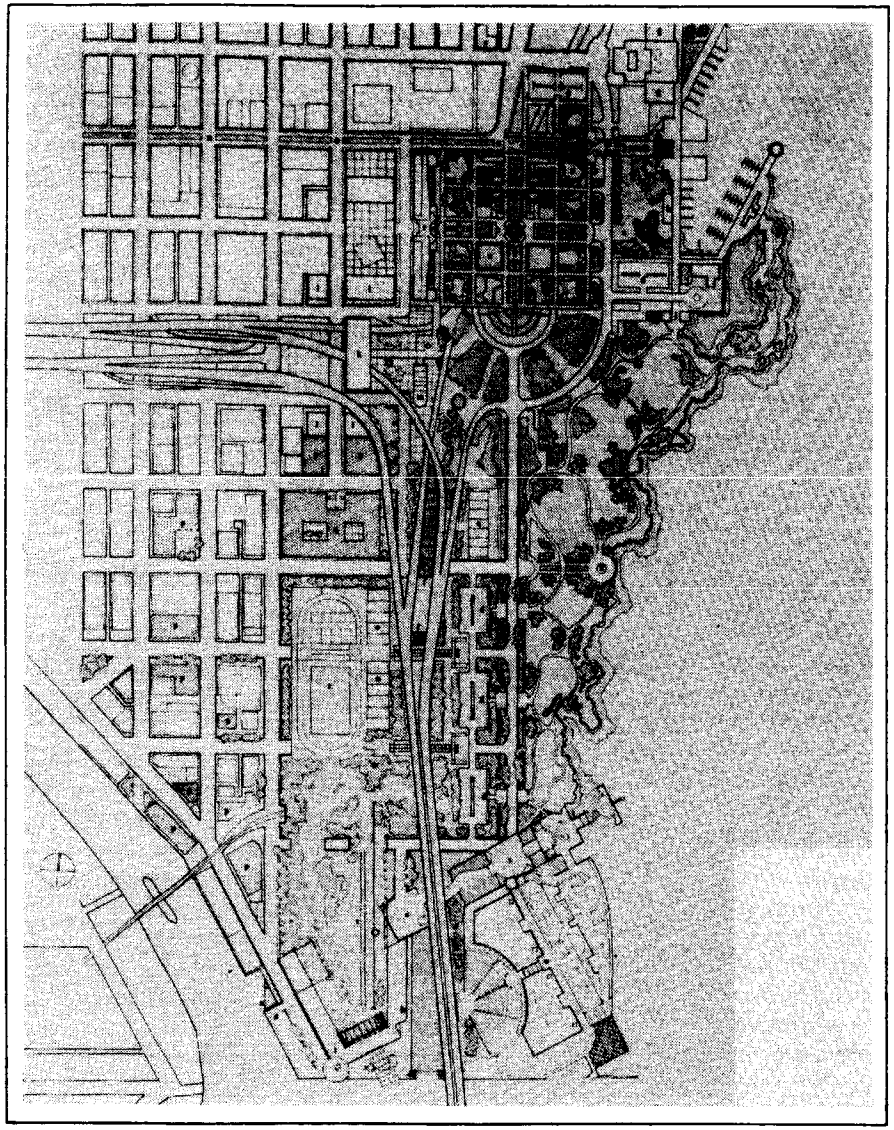
RESEARCH METHODS AND TECHNIQUES

The authors' analysis of the solutions began with a three-day survey of 140 entries. After this initial look at the designs, a conceptual framework for a more detailed analysis was developed. This conceptual framework is represented by the matrix in FIGURE 1.

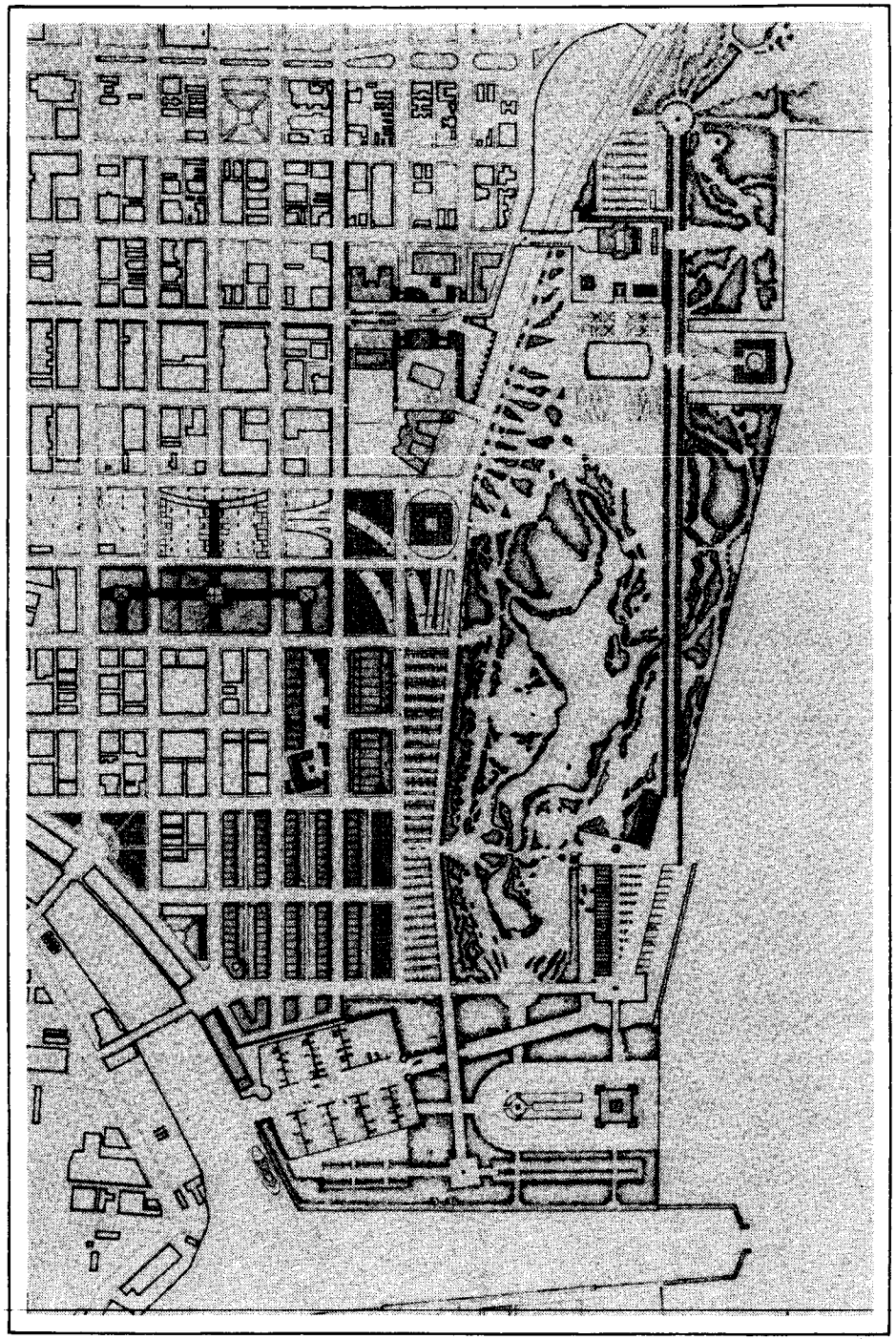
One dimension of this matrix reflects the four key problems discussed above — new images, visual linkages, social benefits, and economics. The other dimension of this matrix is the geographic or spatial separation of the site into four distinct areas, labelled the Wisconsin Avenue Zone, the Shoreline Zone, the Old Third Ward, and the South Forty (FIGURE 2). Although the site is complex, several boundaries, like the shoreline, the bridge and the freeway system create these distinct spatial areas. The isolation of and sparse activity in the southern portion of the site also make it a distinct area. It should be noted that these geographic boundaries are evident in most of the solutions.

Each of the four key problems, in each of the four geographic zones leads to different questions and issues. The authors developed a list of approximately 130 such questions or variables. Over a three week period each solution was assessed relative to each question. The results were aggregated using a computer.

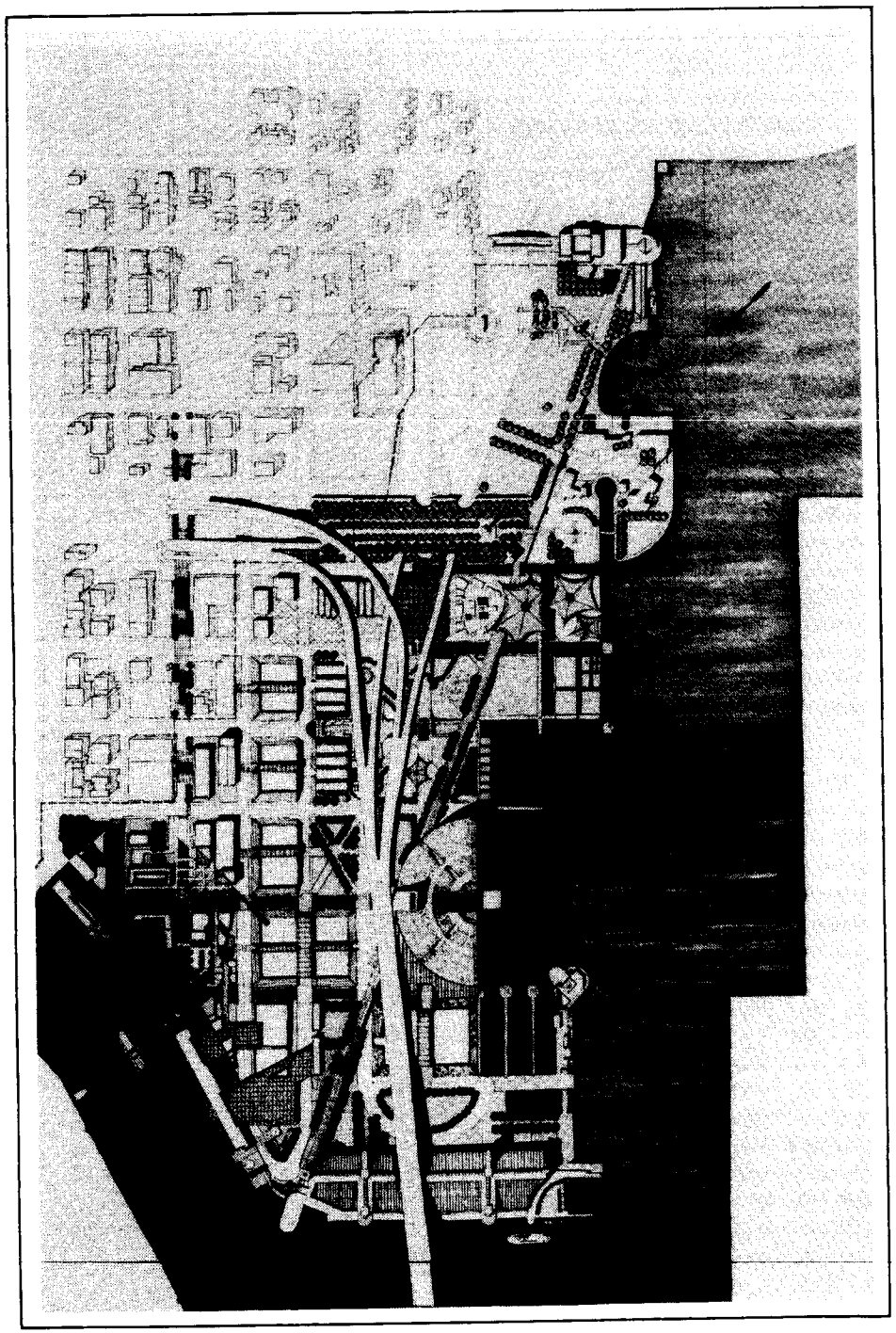
PLAN 15



PLAN 16



PLAN 17



PLAN 18

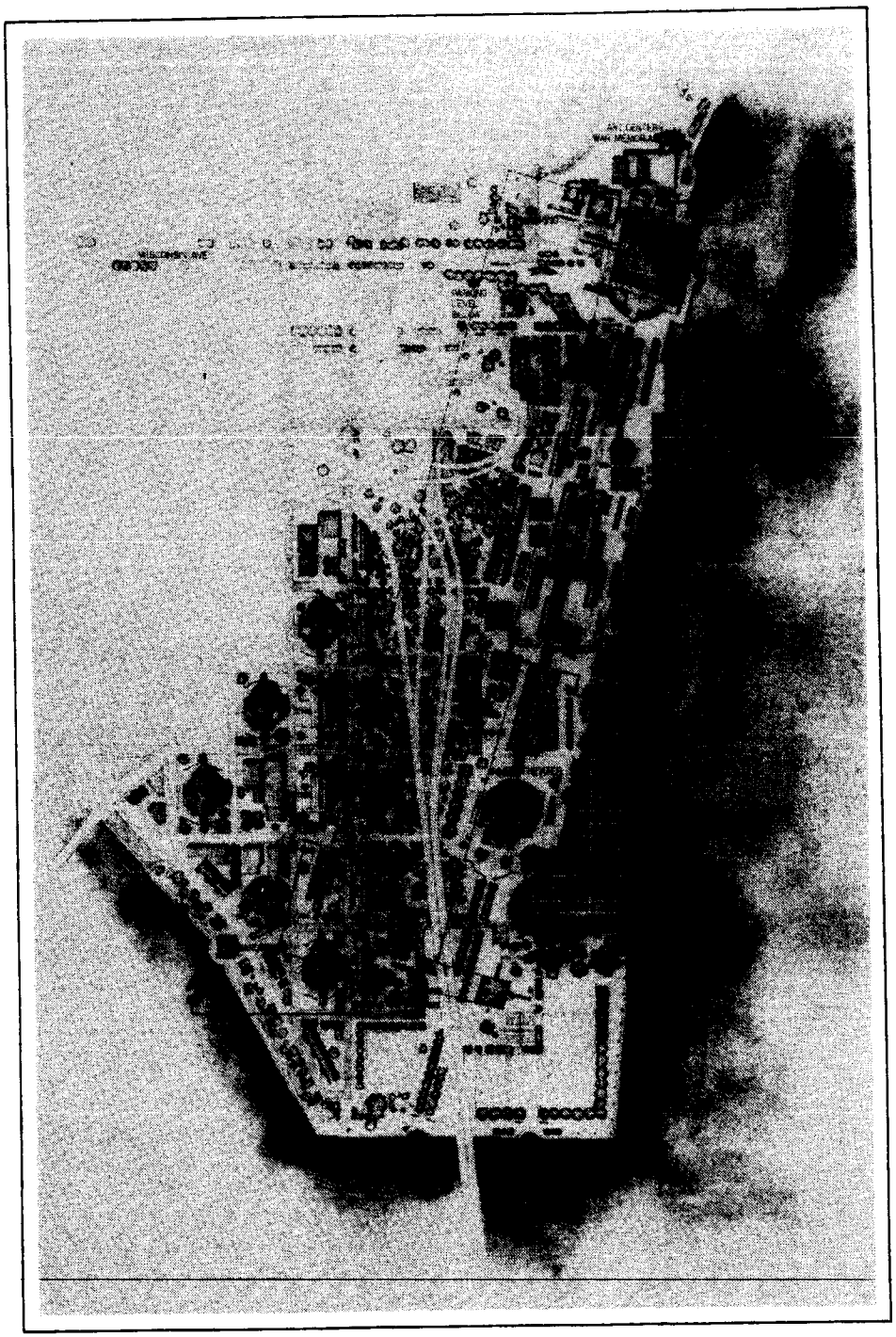


TABLE 1
NEW IMAGES IN THE WISCONSIN AVENUE ZONE

DESIGN PROBLEMS AND STRATEGIES	NUMBER AND PERCENT OF SOLUTIONS		AUTHORS' OPINION OF QUALITY
A. ENDING WISCONSIN AVENUE			
a) CREATE A MAJOR LANDMARK	39	28%	**HIGH**
b) BUILD A NORTH/SOUTH EDGE OR SEAM	31	22%	NEUTRAL
c) REDIRECT THE WISCONSIN AVENUE AXIS TO THE NORTH OR SOUTH	17	12%	NEUTRAL
d) DE-EMPHASIZE WISCONSIN AVENUE AND CREATE A NEW EAST/WEST AXIS	17	12%	NEUTRAL
e) NOT AN IMPORTANT PROBLEM (IGNORE THE ISSUE)	36	26%	LOW
	140	100%	
B. NUMBER OF DESIGN STRATEGIES USED TO END WISCONSIN AVENUE			
a) NONE	36	26%	LOW
b) ONE	64	46%	NEUTRAL
c) TWO	40	29%	**HIGH**
	140	100%	
C. RELATIONSHIP TO THE AREA NORTH OF THE ART CENTER			
a) CHANGING DESIGN STRATEGIES NORTH VERSUS SOUTH OF THE ART CENTER	69	49%	LOW
b) CONTINUING ONE DESIGN STRATEGY NORTH AND SOUTH OF THE ART CENTER	67	48%	**HIGH**
c) DOING BOTH (a) AND (b) — CHANGING SOME STRATEGIES AND CONTINUING OTHERS	4	3%	NEUTRAL
	140	100%	
D. SYMMETRICAL INLET AT THE END OF WISCONSIN AVENUE, SOUTH OF THE ART CENTER			
a) YES	37	26%	**HIGH**
b) NO	103	84%	LOW
	140	100%	

The tables presented herein contain only some of the information gathered. The first column of numbers in each table includes simple statistical frequencies and percentages. As is typical with such data, there are always solutions for which information is unknown or inapplicable. ~~Thus, in these tables the total~~ number of solutions is usually one or two fewer than the maximum possible total of 140 solutions. Also, the associated percentages do not always add up to 100% due to rounding.

The second, rightmost column in each table contains the authors' opinion of the quality or effectiveness of the specific ~~design~~ strategy in ~~question. Clearly,~~ **these opinions are subjective. The important point is that they are a valid demonstration of how the results of an urban design competition can be judged in a detailed analytic manner.** These judgments were made by recording the authors' opinion of the quality of a solution in each spatial zone and for the entire site as a whole. Each time the quality of a solution was rated as satisfactory or unsatisfactory. These ratings were crosstabulated against each design strategy or tactic. The percentage of satisfactory solutions using each design strategy was calculated. If the percentage was significantly higher than what could be expected from a random distribution, then the quality of the strategy was labelled "high". Likewise, significantly lower percentages were labelled "low" and the rest "neutral". In statistical language, all the tests for "high" or "low" quality were "one tailed" at the .10 level of significance or better. Each test was based on a binomial distribution, in which the proportion of satisfactory solutions was compared to the proportion of unsatisfactory solutions.

Plans one through thirty-four, which are used to illustrate this analysis are photoreductions of the site plans submitted by the competition entrants. Aside from winning entries, solutions were included in the publication because they represent diverse ideas. However, citing all of the plans which illustrate each issue or strategy was too cumbersome. Consequently, those plans are cited which provide the clearest illustrations for a general audience. Also, wherever possible, the plans cited represent, in the authors' opinion, higher quality examples of the particular design approach being illustrated — even when the authors had a low general opinion of the overall set of solutions using that same approach.

THE WISCONSIN AVENUE ZONE

The first spatial zone lies directly east of Wisconsin Avenue, the major urban axis of the city. On the west side of this zone are major commercial office structures, one of which is a clear landmark on the downtown skyline. To the northwest is an older residential area with mid-rise residential structures and some newer high-rise apartment buildings. To the north is Milwaukee's War Memorial and Art Center. Further expansion of the Art Center was a required part of the competition. To the north of this building is a continuing series of lakefront parks. The southwestern edge of this zone is blocked by an elevated freeway and the "stub ends" of incomplete entrance/exit ramps. The eastern edge of this zone is Lake Michigan and directly south is a continuation of the competition site.

New Images and Visual Linkages

This zone has the most intense human activity. It is a recognized focus of downtown redevelopment. **Nevertheless, the primary architectural space — the Wisconsin Avenue spine — does not connect to the lakefront in a clear, understandable manner.** Changes in topography, undeveloped sites, roadways and parking lots obscure the connection of this end of the central business district to the water. This is a problem of imagery which, in this zone, is congruent with the second problem noted above — the visual linkage of an urban pattern to a waterfront.

A variety of strategies were used by competitors to resolve the design dilemma of ending the Wisconsin Avenue spine (TABLE 1-A). These strategies included: creating a **major landmark** ~~or architectural~~ element at the end of Wisconsin Avenue (PLANS 1, 3, 22); creating a

spatial edge or **seam** that binds together the urban and natural environments (PLANS 25, 28); **redirecting** the east/west axis of Wisconsin Avenue to the north (where it converges on the Art Center) or to the south where it can end in some new architectural feature (PLANS 33, 34); or **deemphasizing** Wisconsin Avenue and strengthening some other east/west street as a major axis (PLANS 16, 24). Some solutions combined these approaches (TABLE 1-B). Other competitors, however, ignored the problem of linking an east/west spine to Lake Michigan, presumably to accomplish other objectives.

The visual link of the Wisconsin Avenue Zone to parklands north of the Art Center was also at issue (TABLE 1-C). The two primary design strategies were either to create a sense of **continuity** (PLANS 7, 20) or to create a clear **split** (PLANS 22, 23) between the areas north and south of the Art Center. A few solutions however, created images of both continuity and separation by using two or more overlapping spatial organizations.

There is one particularly interesting pattern to the images proposed for this spatial zone. That is, a significant number of solutions all chose one identical urban design tactic. They created a clearly defined, usually symmetrical body of water, often elliptical, like a ceremonial pool or **symbolic harbor, directly south of the Art Center and in line with the major axis of Wisconsin Avenue** (TABLE 1-D, PLANS 3, 13). Presumably this design idea was used often because it is an established, successful way to create a powerful, understandable image which would unite the business district, the waterfront and the Art Center. It brings the waters of Lake Michigan closer to more active parts of the downtown and the day-to-day experience of the population. It symbolizes the extension of the city into the water by using simple, dramatic forms.

TABLE 2
PUBLIC ACCESS IN THE WISCONSIN AVENUE ZONE

DESIGN PROBLEMS AND STRATEGIES	NUMBER AND PERCENT OF SOLUTIONS		AUTHORS' OPINION OF QUALITY
A. TERRACE OR DECK AT THE END OF *WISCONSIN AVENUE*			
a) FOR PEDESTRIAN ACCESS ONLY	11	8%	NEUTRAL
b) TO COVER VEHICLES AND ROADS BUT NOT FOR PEDESTRIAN ACCESS	26	19%	LOW
c) FOR PEDESTRIAN ACCESS AS WELL AS COVERING VEHICLES AND ROADS	48	34%	**HIGH**
d) NO TERRACE OR DECK	55	39%	LOW
	140	100%	
B. CREATION OF NEW PARKING STRUCTURES			
a) YES	125	90%	**HIGH**
b) NO	14	10%	LOW
	139	100%	
C. VEHICULAR ACCESS TO ART CENTER PARKING			
a) FROM MASON OR WISCONSIN AVENUES	18	13%	LOW
b) FROM ROADS ALONG THE SHORELINE	78	57%	LOW
c) BOTH (a) AND (b)	31	22%	**HIGH**
d) NO APPARENT PARKING ACCESS	11	8%	NEUTRAL
	138	100%	
D. CONNECTING THE FREEWAY "STUB ENDS" *TO THE DOWNTOWN STREET SYSTEM*			
a) YES	86	61%	NEUTRAL
b) NO	54	39%	NEUTRAL
	140	100%	
E. CONNECTING THE HARBOR BRIDGE TO LINCOLN MEMORIAL DRIVE			
a) YES	107	76%	LOW
b) NO	33	24%	**HIGH**
	140	100%	
F. CONNECTING LINCOLN MEMORIAL BRIDGE TO LINCOLN MEMORIAL DRIVE			
a) YES	51	36%	**HIGH**
b) NO	89	64%	LOW
	140	100%	
G. PEDESTRIAN ACCESS TO WATER'S EDGE			
a) YES	138	99%	NEUTRAL
b) NO	1	1%	NEUTRAL
	139	100%	
H. VIEW OF WATER FROM ROADWAYS			
a) YES	43	31%	**HIGH**
b) NO	96	69%	LOW
	139	100%	

Social Benefits

Problems of imagery and visual linkages parallel the social problems of public access and use of the waterfront. Proximity to the central business district is a major advantage in the Wisconsin Avenue Zone relative to the other zones. The water's edge is in walking distance for many people. Mass transit lines are convenient. However, there is a significant topographic barrier — a drop in land elevation between the commercial structures that mark the current visual end of Wisconsin Avenue and the shoreline. There are also physical and psychological barriers to pedestrian movement created by wide existing streets, parking lots and a vacant freeway corridor.

Among the competition entries, one of the more direct solutions to these access problems was the creation of a **terrace** or deck extending eastward at the current level of Wisconsin Avenue, passing over a new road system and then descending to the lakefront (TABLE 2-A, PLANS 6, 10, 30). Convenient access also implies the provision of sufficient parking (TABLE 2-B). Solutions which created a deck or terrace often placed parking beneath it. Other solutions placed parking structures to the southwest of the site, under or adjacent to existing freeway ramps. The competition problem also required vehicular access to, and parking for, the Art Center. Here too, a variety of approaches were used (TABLE 2-C). Other problems of public access addressed in the competition entries include: street and road connections (TABLES 2-D, 2-E and 2-F), pedestrian

TABLE 3
ACTIVITIES AND LAND USES IN THE WISCONSIN AVENUE ZONE

DESIGN PROBLEMS AND STRATEGIES	NUMBER AND PERCENT OF SOLUTIONS		AUTHORS' OPINION OF QUALITY
A. DIRECTION OF ART CENTER EXPANSION			
a) ONLY TO THE SOUTH	35	25%	NEUTRAL
b) BOTH NORTH AND SOUTH	26	19%	**HIGH**
c) ONLY TO THE EAST	12	9%	NEUTRAL
d) BOTH SOUTH AND EAST	12	9%	**HIGH**
e) ONLY TO THE NORTH	9	6%	LOW
f) OTHER (INCLUDING COMBINATIONS)	27	19%	NEUTRAL
g) NO APPARENT EXPANSION	18	13%	LOW
	139	100%	
B. NEW CULTURAL OR PUBLIC INSTITUTIONS			
a) YES	40	29%	NEUTRAL
b) NO	99	71%	NEUTRAL
	139	100%	
C. PARKS AND PLAYFIELDS			
a) PARKS	128	92%	**HIGH**
b) PLAYFIELDS	1	1%	NEUTRAL
c) BOTH	9	6%	LOW
d) NEITHER	1	1%	NEUTRAL
	139	100%	
D. MARINAS OR BOAT SLIPS			
a) YES	27	19%	**HIGH**
b) NO	112	81%	LOW
	139	100%	

DESIGN PROBLEMS AND STRATEGIES	NUMBER AND PERCENT OF SOLUTIONS		AUTHORS' OPINION OF QUALITY
E. COMMERCIAL USES			
a) MAJOR	38	27%	**HIGH**
b) MINOR	43	31%	NEUTRAL
c) NONE	58	42%	LOW
	139	100%	
F. RESIDENTIAL USES			
a) MAJOR	6	4%	NEUTRAL
b) MINOR	22	16%	NEUTRAL
c) NONE	111	80%	LOW
	139	100%	
G. HOTELS			
a) YES	31	22%	**HIGH**
b) NO	108	78%	LOW
	139	100%	
H. AMOUNT OF SUMMERFEST IN THE WISCONSIN AVENUE ZONE			
a) OVER 75%	3	2%	NEUTRAL
b) 25% to 75%	5	4%	NEUTRAL
c) LESS THAN 25%	10	7%	LOW
d) NONE	121	87%	**HIGH**
	139	100%	
I. MIXED VERSUS SINGLE LAND USES			
a) MIXED LAND USE PATTERNS	83	60%	NEUTRAL
b) SINGLE LAND USES ONLY	55	40%	NEUTRAL
	138	100%	

access (TABLE 2-G), and visual access from roadways (TABLE 2-H).

The problem of creating good lakefront access is interdependent with the problem of creating lakefront activities which attract a variety of social groups. The only specific use required in this zone by the competition program was an expansion of the Art Center (TABLE 3-A). Some expanded to the north (PLAN 12), others to the south (PLANS 14, 22) or the east (PLAN 13). Still others expanded in two directions, such as north and south (PLANS 8, 15), or south and east (PLANS 1, 9).

Many solutions also created additional public and cultural facilities such as visitor centers, theaters and harbor related exhibits (TABLE 3-B). Recreational uses, especially parks or plazas, were frequent (TABLE 3-C). Some solutions included marinas or boat slips (TABLE 3-D, PLANS 15,26). Very few solutions placed Summerfest activities in this area (TABLE 3-H).

It should be emphasized that in most cities comparable to Milwaukee, **the activities which draw people to urban waterfronts include private as well as public developments**. For example, large volumes of commercial activity attract people. Thus, many competitors placed commercial activities including stores, retail services and office space along the lakefront (TABLE 3-E, PLANS 8, 28). Some solutions included hotels (TABLE 3-G, PLANS 16, 18). Such commercial activities enlarge the number of population groups who will be motivated to use and appreciate the waterfront.

Finally, a few solutions located residential uses in this zone (TABLE 3-F), both major developments (PLANS 3, 11) and minor ones (PLAN 15). **Residential development can increase lakefront use if it creates a vital urban neighborhood which is both appealing to visitors and supportive of daytime and nighttime activity.** For example, high-rise or mid-rise apartment buildings, combined with commercial space and parks might be a dynamic, effective combination of land uses. On the other hand, a single low-rise residential development without any other uses may create too exclusive an image for the area.

Economics

The fourth key issue in the Wisconsin Avenue zone is the potential for private investment and the restraint of public costs. Land values in this zone are probably higher than other parts of the competition site. The proximity to the new commercial structures and other developments to the northwest indicate a better opportunity for private investment.

As noted, many designs proposed new commercial and residential developments. Such land uses create additional desires for public parking and outdoor amenities. Public expenditures might be used in this case to leverage private investment. Many of the solutions suggested this investment formula with their mixed uses (TABLE 3-I). Also, for example, some solutions which extended decks eastward from the end of Wisconsin Avenue placed new private development on the surface with public parking underneath. This is a relatively straightforward approach.

Other solutions used public parks and

amenities in this zone presumably to increase the market for private investment to the south in the Shoreline Zone. Many solutions tied the existing freeway ramps directly to the downtown streets — a transportation link which increases the vehicular accessibility of the area and thereby increases its potential land value (TABLE 2-D).

THE SHORELINE ZONE

The second spatial area to be analyzed is the Shoreline Zone. It extends from the Art Center to the southern tip of the competition site. The eastern boundary is Lake Michigan. The western boundary is split: to the north, the western boundary is the central business district and residential development; to the south, the western boundary is the freeway and harbor bridge.

New Images

The primary issue is, again, the creation of a coherent, dynamic image. A review of the competition solutions implies that creating an image in the Shoreline Zone requires several critical design decisions. For example, **the shape of the shoreline** created by most competitors fell into one of three categories (TABLE 4-A) — simple, dominant edges (PLANS 1, 9); complex and intricate edges (PLANS 15, 33); and leaving the shoreline as it is (PLANS 4, 27).

A second, critical decision was choosing a strategy for organizing the space between the water's edge and the Harbor Bridge (TABLE 4-B), including: a single geometric system such as a grid (PLANS 2, 26); a combination of geometric systems such as diagonals and cross-axes (PLANS 17, 23); or a series of irregular, sometimes picturesque, forms and spaces (PLANS 14, 31). Some solutions combined these strategies (PLANS 8, 16).

The shoreline image also depends on a third choice — the use of **inland waterways** (TABLE 4-C, PLANS 3, 6) and islands (TABLE 4-D, PLANS 19, 21, 23). Inland water can symbolize the extension of the lake into the city just as islands demonstrate the extension of the city to the lake. Lastly, the continuity or separation between the Shoreline Zone and the area north of the Art Center is an important component of the shoreline's image — this is the same design decision as noted for the Wisconsin Avenue Zone (TABLE 1-C).

Visual Linkages

Questions of image and spatial organization are interdependent with the second key problem — linking Milwaukee's urban pattern to its waterfront. Half of this problem is linking the waterfront to the central business district, described in the discussion of the Wisconsin Avenue Zone. The other half of this problem is **linking the Shoreline Zone to the area west of the Harbor Bridge** (TABLE 4-E). Some solutions implied that no strong link was needed and simply created an edge to the Shoreline Zone at the bridge (PLANS 14, 27). Other solutions created an east/west cross-axis — a strong spatial or architectural feature which continues under the bridge and freeway linking together the two sides (PLANS 17, 22). Still other solutions attempted to transcend the bridge and freeway barrier by creating forms and spaces which emphasized new patterns that visually contradict or "deny" the bridge and freeway (PLANS 13, 19). Again, some solutions combined strategies (PLANS 7, 10).

Social Benefits

The third major problem concerns public access to the Shoreline Zone and the plurality of activities located in the area. Virtually all solutions provided direct pedestrian access to the water (TABLE 5-A). Some also provided visual access to the water from vehicular roads (TABLE 5-B, PLANS 11, 16). Solutions also varied according to whether they provided direct vehicular connections between downtown streets and the Shoreline Zone (TABLE 5-C). Many solutions provided surface parking or parking structures, and some also contained mass transit routes to the area (TABLES 5-D and 5-E).

These patterns of public access led to a variety of land uses and activities. By far, the most critical activity is **Summerfest** — Milwaukee's festival grounds for seasonal entertainment and recreation. Many solutions located a portion of Summerfest in the Shoreline Zone (TABLE 6-A). Summerfest is an appropriate land use because it serves a diverse population. However, it is not a year-round festival and the grounds frequently are inaccessible. Efforts are being made to use the grounds at other times but it is still far from a year-round activity center. Some solutions chose to solve this problem by locating Summerfest as far south as possible in the Shoreline Zone, leaving considerable land to the north for year-round public activities. Other solutions designed festival grounds that were open to the public for the entire year but, at the time of Summerfest, could be managed as a controlled access facility.

Summerfest was far from the only activity located in the Shoreline Zone. Solutions also included a rich variety of public parks and playfields (TABLE 6-B, PLANS 7, 11, 30), and marinas (TABLE 6-C PLANS 2, 32). A few solutions also

TABLE 4
NEW IMAGES IN THE SHORELINE ZONE

DESIGN PROBLEMS AND STRATEGIES	NUMBER	PERCENT OF SOLUTIONS	AUTHORS' OPINION OF QUALITY
A. SHAPE OF THE SHORELINE EDGE			
a) LITTLE OR NO CHANGE (STATUS QUO)	35	25%	LOW
b) CREATING A SIMPLE, DOMINANT EDGE	37	26%	**HIGH**
c) CREATING A COMPLEX, INTRICATE EDGE	62	44%	NEUTRAL
d) CREATING BOTH SIMPLE AND COMPLEX EDGES	6	4%	**HIGH**
	140	100%	
B. DESIGNING THE AREA BETWEEN THE SHORELINE AND THE HARBOR BRIDGE			
a) USING A SINGLE GEOMETRIC SYSTEM	38	27%	NEUTRAL
b) TWO OR MORE GEOMETRIC SYSTEMS	24	17%	**HIGH**
c) USE OF PICTURESQUE AND IRREGULAR SHAPES	46	33%	LOW
d) COMBINING THESE APPROACHES	32	23%	**HIGH**
	140	100%	
C. INLAND WATERWAYS			
a) YES	53	38%	NEUTRAL
b) NO	86	62%	NEUTRAL
	139	100%	
D. CREATION OF ISLANDS			
a) OFFSHORE	26	19%	**HIGH**
b) INLAND	33	24%	NEUTRAL
c) BOTH	4	3%	LOW
d) NEITHER	77	55%	NEUTRAL
	140	100%	
E. LINKING THE SHORELINE ZONE TO AREAS WEST OF THE HARBOR BRIDGE			
a) CREATING AN EDGE PARALLEL TO THE HARBOR BRIDGE	56	40%	LOW
b) USING AN EAST/WEST CROSS-AXIS	12	9%	**HIGH**
c) CREATING A VISUAL CONTRADICTION TO THE BRIDGE	51	36%	NEUTRAL
d) COMBINATIONS OF ABOVE STRATEGIES	20	14%	**HIGH**
e) NONE OF THE ABOVE STRATEGIES	1	1%	NEUTRAL
	140	100%	

TABLE 5
PUBLIC ACCESS IN THE SHORELINE ZONE

DESIGN PROBLEMS AND STRATEGIES	NUMBER	PERCENT OF SOLUTIONS	AUTHORS' OPINION OF QUALITY
A. PEDESTRIAN ACCESS TO WATER'S EDGE			
a) YES	138	99%	NEUTRAL
b) NO	1	2%	NEUTRAL
	139	100%	
B. VIEW OF WATER FROM ROADWAYS			
a) YES	54	39%	**HIGH**
b) NO	85	61%	LOW
	139	100%	
C. VEHICULAR CONNECTIONS FROM DOWNTOWN STREETS TO THE SHORELINE ZONE			
a) YES	74	53%	NEUTRAL
b) NO	66	47%	NEUTRAL
	140	100%	
D. LARGER, NEW PARKING AREAS OR RAMPS			
a) YES	87	63%	NEUTRAL
b) NO	52	37%	NEUTRAL
	139	100%	
E. NEW OR EXPANDED MASS TRANSIT			
a) YES	58	42%	NEUTRAL
b) NO	81	58%	NEUTRAL
	139	100%	

showed boat launch locations and inland waterways for recreation. The entries included new commercial developments (PLANS 1, 2, 11, 20), residential structures (PLANS 9, 11, 12, 20), hotels and a variety of cultural institutions (TABLES 6-D through 6-H). Some new structures were extensions of patterns that began in the Wisconsin Avenue Zone while others were divorced from the downtown area.

Planning such a variety of land uses is not, however, sufficient to insure meaningful public use. Different land uses and activities have to be part of an understandable, useable and pleasing environment. Less effective solutions, for example, located housing next to parks but did so in a manner that discouraged or prevented nonresidents from using the parks. Other, more effective solutions, placed housing next to parks in a manner that enhanced the use and appreciation of both.

Economics

The appropriate synthesis of land uses in the Shoreline Zone leads to the last problem — creating new opportunities for private investment while restraining public costs. The Shoreline Zone does not contain large existing private devel-

TABLE 6
ACTIVITIES AND LAND USES IN THE SHORELINE ZONE

DESIGN PROBLEMS AND STRATEGIES	NUMBER AND PERCENT OF SOLUTIONS		AUTHORS' OPINION OF QUALITY
A. AMOUNT OF SUMMERFEST IN THE SHORELINE ZONE (EXCLUDING PARKING)			
a) OVER 75%	51	37%	**HIGH**
b) 25% to 75%	40	29%	NEUTRAL
c) LESS THAN 25%	15	11%	NEUTRAL
d) NONE	33	24%	NEUTRAL
	139	100%	
B. PARKS AND PLAYFIELDS			
a) PARKS	113	81%	NEUTRAL
b) PLAYFIELDS	1	1%	NEUTRAL
c) BOTH	24	17%	NEUTRAL
d) NEITHER	1	1%	NEUTRAL
	139	100%	
C. MARINAS OR BOAT SLIPS			
a) YES	63	45%	LOW
b) NO	76	55%	**HIGH**
	139	100%	
D. NEW CULTURAL OR PUBLIC INSTITUTIONS			
a) YES	18	13%	NEUTRAL
b) NO	121	87%	NEUTRAL
	139	100%	

DESIGN PROBLEMS AND STRATEGIES	NUMBER AND PERCENT OF SOLUTIONS		AUTHORS' OPINION OF QUALITY
E. COMMERCIAL USES			
a) MAJOR	7	5%	**HIGH**
b) MINOR	23	17%	NEUTRAL
c) NONE	109	78%	LOW
	139	100%	
F. RESIDENTIAL USES			
a) MAJOR	7	5%	**HIGH**
b) MINOR	11	8%	NEUTRAL
c) NONE	121	87%	LOW
	139	100%	
G. HOTELS			
a) YES	4	3%	**HIGH**
b) NO	135	97%	LOW
	139	100%	
H. MIXED VERSUS SINGLE LAND USES			
a) MIXED LAND USES	38	28%	**HIGH**
b) SINGLE LAND USES ONLY	100	71%	LOW
	138	100%	

opments. Nevertheless, proximity to the central business district and the amenities of the lakefront suggest a good potential for investment.

Large scale private investment is not only compatible with public use, but it may be prerequisite to making public uses well recognized, highly frequented and pleasurable year-round amenities. Several solutions did, in fact, effectively fit private developments with public amenities. Some solutions created patterns of new private investment that were dramatic extensions of the current downtown area, thereby taking advantage of the existing potential for development. Other solutions created entirely new residential and commercial structures at the southern end of the Shoreline Zone, divorced from the central business district.

Most solutions, however, did not locate any major private development in the Shoreline Zone. Many frequently devoted the entire area to public parks, playfields and festival use. This approach implies clear, but relatively limited economic and social benefits. It can be justified only by assuming that major private investment never will be feasible or that it will evoke images that are culturally unacceptable.

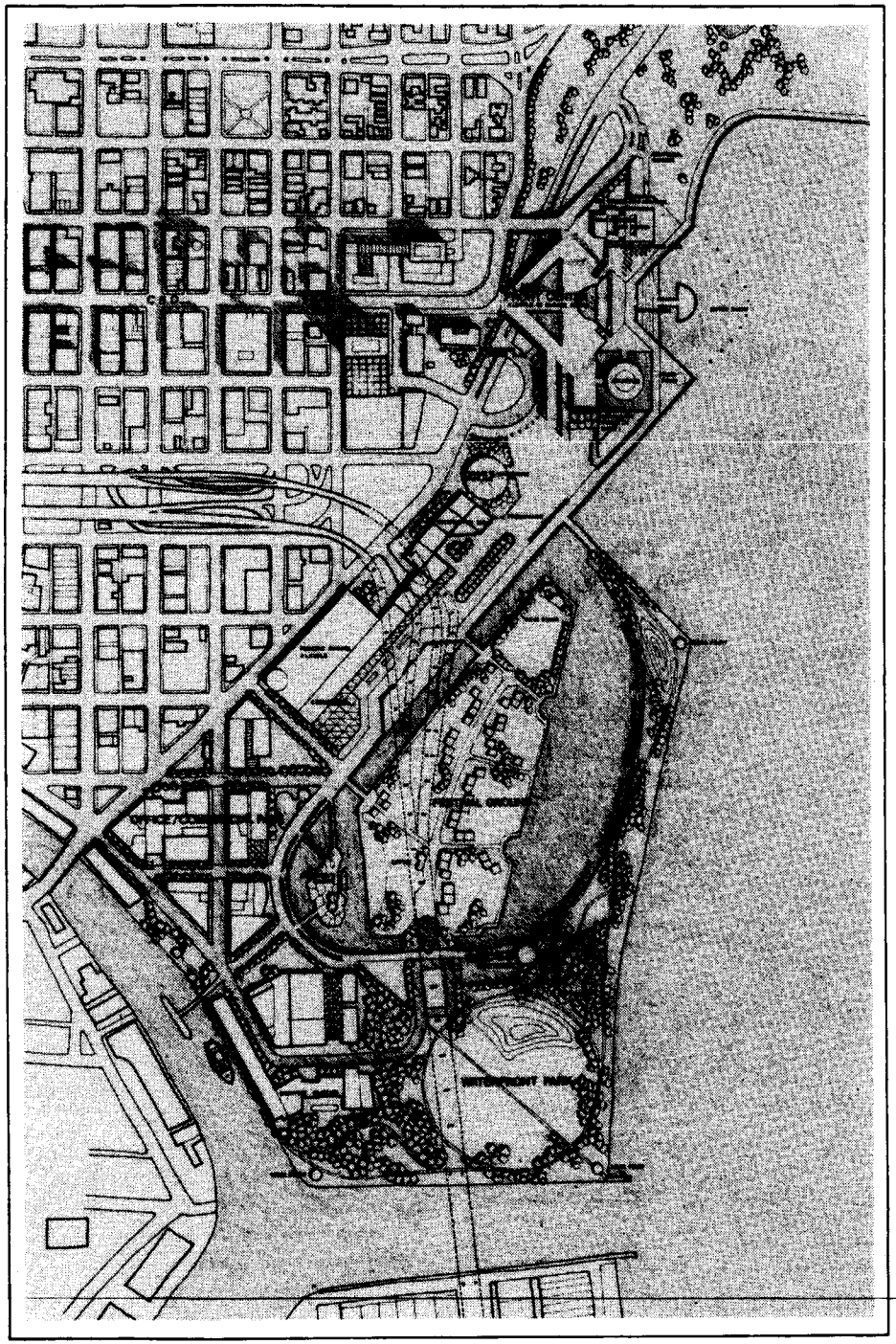
THE OLD THIRD WARD

The name of the next spatial zone — the Old Third Ward — is a holdover from Milwaukee's political past. The area is located just south of the downtown district, in the western part of the competition site. This zone is separated from the downtown by an elevated freeway, Interstate 794. The northern part of the Old Third Ward contains many older industrial buildings of a distinguished historic character. Some have been converted to office uses. There are a few taverns and restaurants. The eastern boundary of this zone is the Harbor Bridge and its exit/entrance ramps which preclude good visual access to the Lake. The western and southern boundary, however, is the Milwaukee River which provides a distinctly different type of urban waterfront edge. The southern part of the Old Third Ward contains newer structures for light industry, manufacturing and warehousing as well as some vacant parcels and surface parking lots. Thus, the Old Third Ward has some undeveloped land, a unique riverfront edge, some structures that could be demolished and others that could be revitalized and newly appreciated.

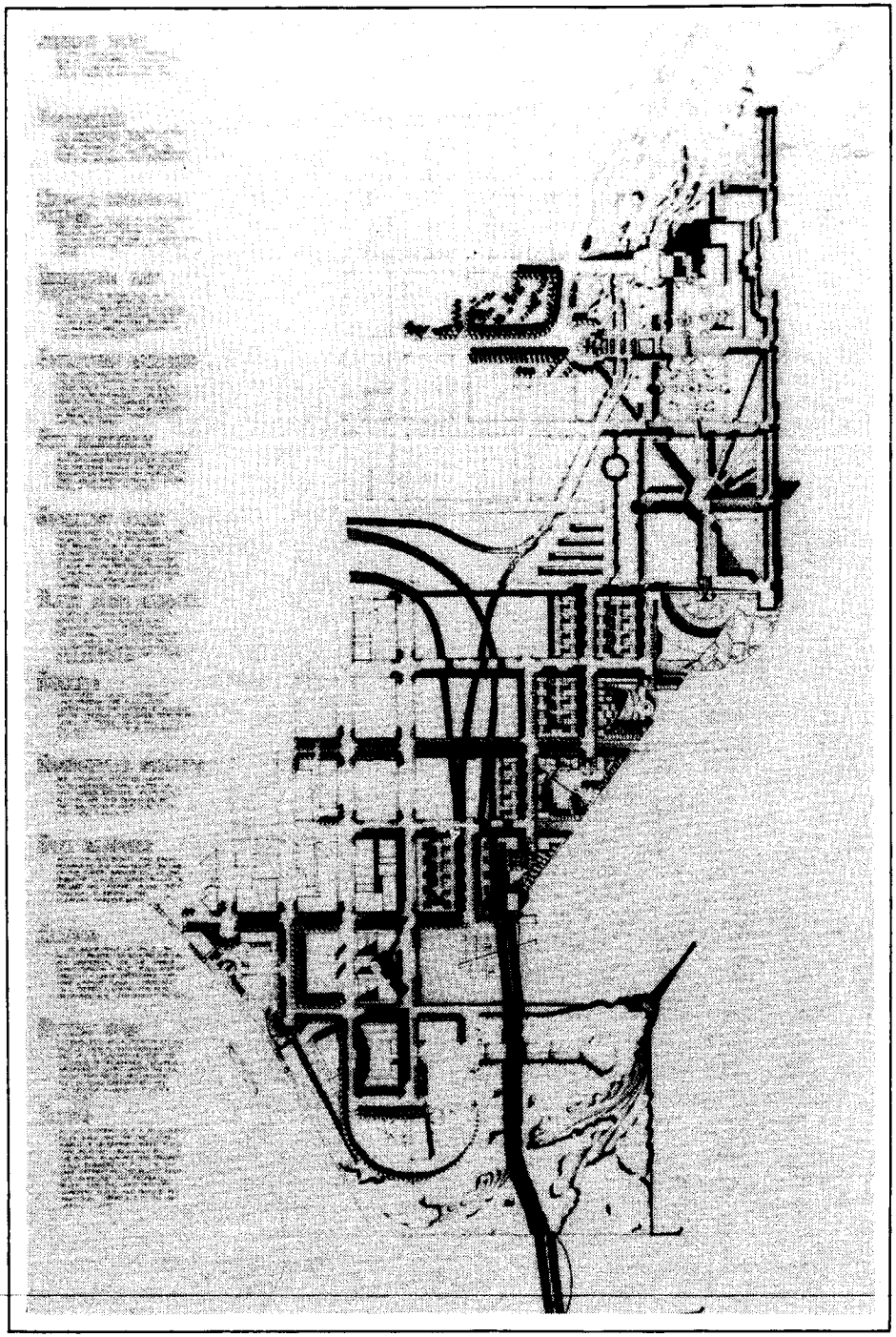
New Images

Creating new images is at least as complex a problem in the Old Third Ward as it is in other parts of the lakefront competition site. For example, some entrants chose to develop images which continue the Old Third Ward directly eastward, under the Harbor Bridge, toward the lakefront (TABLE 7-A, PLANS 12, 21). Other solutions adopted the opposite approach, creating an edge to the Old Third Ward at the Harbor Bridge (PLANS 4, 27) or slightly west of the bridge along one of the existing streets (PLANS 18, 25). **Many solutions created minor east-west linear spaces that passed under the Harbor Bridge to the lakefront** (TABLE 7-B, PLANS 13, 21). Some of these linear spaces or axes were composed of streets and open areas that created a clear, functional link to the lake. Apparently other axes were not intended to be functional, but rather serve as symbolic or visual connections to the lakefront. A few entries contained a major **diagonal axis,** usually a tree-lined boulevard edged with new parks and buildings, that passed through the Old Third Ward from the northwest to the southeast and the lakefront (TABLE 7-C, PLANS 10, 27). Another significant design idea was the creation of formal **public plazas**

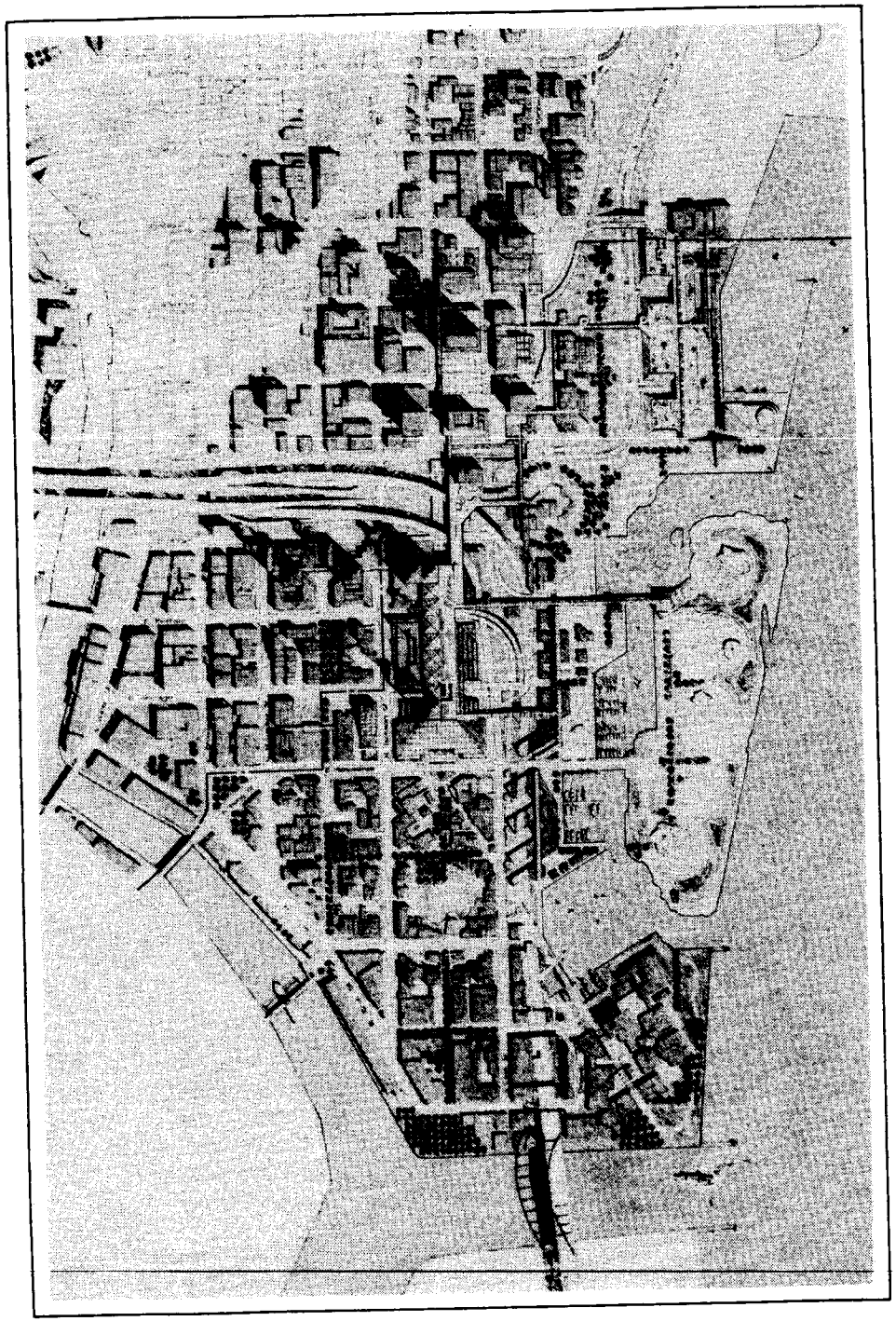
PLAN 19



PLAN 20



PLAN 21



PLAN 22

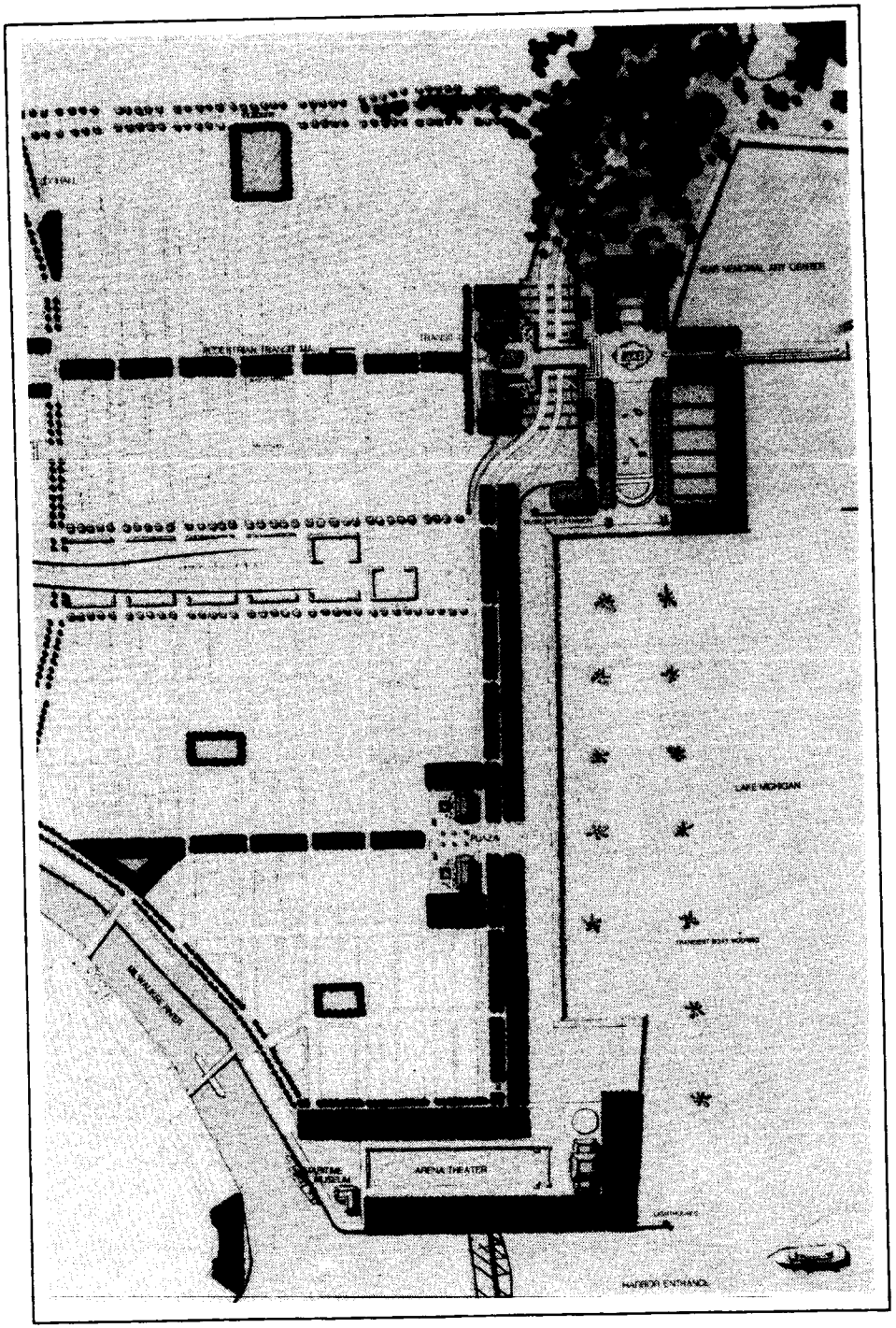


TABLE 7
NEW IMAGES IN THE OLD THIRD WARD

DESIGN PROBLEMS AND STRATEGIES	NUMBER AND PERCENT OF SOLUTIONS		AUTHORS' OPINION OF QUALITY
A. DEFINING THE EASTERN EDGE OF THE OLD THIRD WARD			
a) CONTINUING UNDER THE HARBOR BRIDGE	24	17%	**HIGH**
b) STOPPING AT, OR UNDER THE BRIDGE	28	20%	NEUTRAL
c) STOPPING WEST OF THE BRIDGE AT JACKSON OR VAN BUREN STREETS	86	62%	NEUTRAL
	138	100%	
B. EAST/WEST AXIS LINKING THE OLD THIRD WARD TO THE SHORELINE ZONE			
a) YES	56	40%	**HIGH**
b) NO	84	60%	LOW
	140	100%	
C. DIAGONAL AXIS OR BOULEVARD LINKING THE OLD THIRD WARD TO THE SOUTH FORTY			
a) YES	14	10%	**HIGH**
b) NO	126	90%	LOW
	140	100%	
D. FORMAL PUBLIC SQUARE AS A NUCLEUS FOR THE OLD THIRD WARD			
a) YES	37	26%	**HIGH**
b) NO	103	74%	LOW
	140	100%	
E. INLAND WATERWAYS			
a) YES	35	25%	**HIGH**
b) NO	105	75%	LOW
	140	100%	

TABLE 8
PUBLIC ACCESS IN THE OLD THIRD WARD

DESIGN PROBLEMS AND STRATEGIES	NUMBER AND PERCENT OF SOLUTIONS		AUTHORS' OPINION OF QUALITY
A. PEDESTRIAN ACCESS TO WATER'S EDGE			
a) YES	98	71%	**HIGH**
b) NO	41	29%	LOW
	139	100%	
B. VIEW OF WATER FROM ROADWAYS			
a) YES	60	43%	**HIGH**
b) NO	79	57%	LOW
	139	100%	
C. LARGER, NEW PARKING AREAS OR RAMPS			
a) YES	117	84%	LOW
b) NO	22	16%	**HIGH**
	139	100%	
D. NEW OR EXPANDED MASS TRANSIT			
a) YES	70	50%	NEUTRAL
b) NO	69	50%	NEUTRAL
	139	100%	

or squares; that is, public open spaces that have rectangular symmetries, with clearly defined edges usually composed of buildings, and which provide a visual and social nucleus for the area (TABLE 7-D, PLANS 8, 12).

Visual Linkages

Strategies for creating new images relate directly to the second major problem — linking the urban pattern of the Old Third Ward to the natural features of the river and the lakefront. As noted, many designers created east-west linkages that crossed the Old Third Ward, passed beneath the bridge, to arrive in the Shoreline Zone. Another common response was the creation of stronger visual access to the river for both pedestrian and vehicular traffic (TABLES 8-A and 8-B). **Some proposals transformed the river's edge into a landscaped walkway bordered by shops and restaurants.** Other solutions brought the river and harbor into the site with new channels, inlets, lagoons and canals — some waterways are navigable apparently by small boats while others seem intended only as visual amenities (TABLE 7-E, PLANS 1, 9).

Again, linking an urban area to a waterfront requires images that establish coherent relationships between the two types of experiences. In the case of the Wisconsin Avenue Zone, an image was needed to tie a dense business district to the natural grandeur of Lake Michigan. In the case of the Old Third Ward it is a problem of joining an older industrial district to a narrow river with piers, docks, and built-up edges.

Social Benefits

The third problem to be resolved in the Old Third Ward is providing public access to the waterfront as well as activities to make such access meaningful. Almost all solutions provided access to the river's edge (TABLES 8-A and 8-B). Many proposals also emphasized mass transit lines, new parking facilities and maintenance of existing streets (TABLES 8-C and 8-D).

The Old Third Ward has been readily accessible for many years. Yet it is not considered by most Milwaukeeans as a district with major amenities nor an area with a strong waterfront image. At issue is whether this trend can and should be reversed. Most solutions reduced, or left untouched, the industrial character of the area (TABLE 9-A). **Some solutions created mixed-use districts which typically contained shops, hotels, restaurants, warehouses converted to offices, or loft residences and artists studios** (TABLES 9-B, 9-J, PLANS 13, 21). These activities would certainly attract people to an urban riverfront as shown by other cities which have revitalized similarly old and underutilized industrial areas. TABLES 9-C through 9-H indicate a variety of suggested activities which would attract people such as parks (PLANS 23, 24), playfields (PLANS 15, 32), marinas (PLANS 6, 24), hotels (PLANS 29, 32), cultural institutions and a wide range of residential developments (PLANS 16, 21, 27, 30) and commercial structures (PLANS 14, 16, 17, 20). Clearly, mixed land-uses are the dominant planning strategy for the Old Third Ward (TABLE 9-J).

Economics

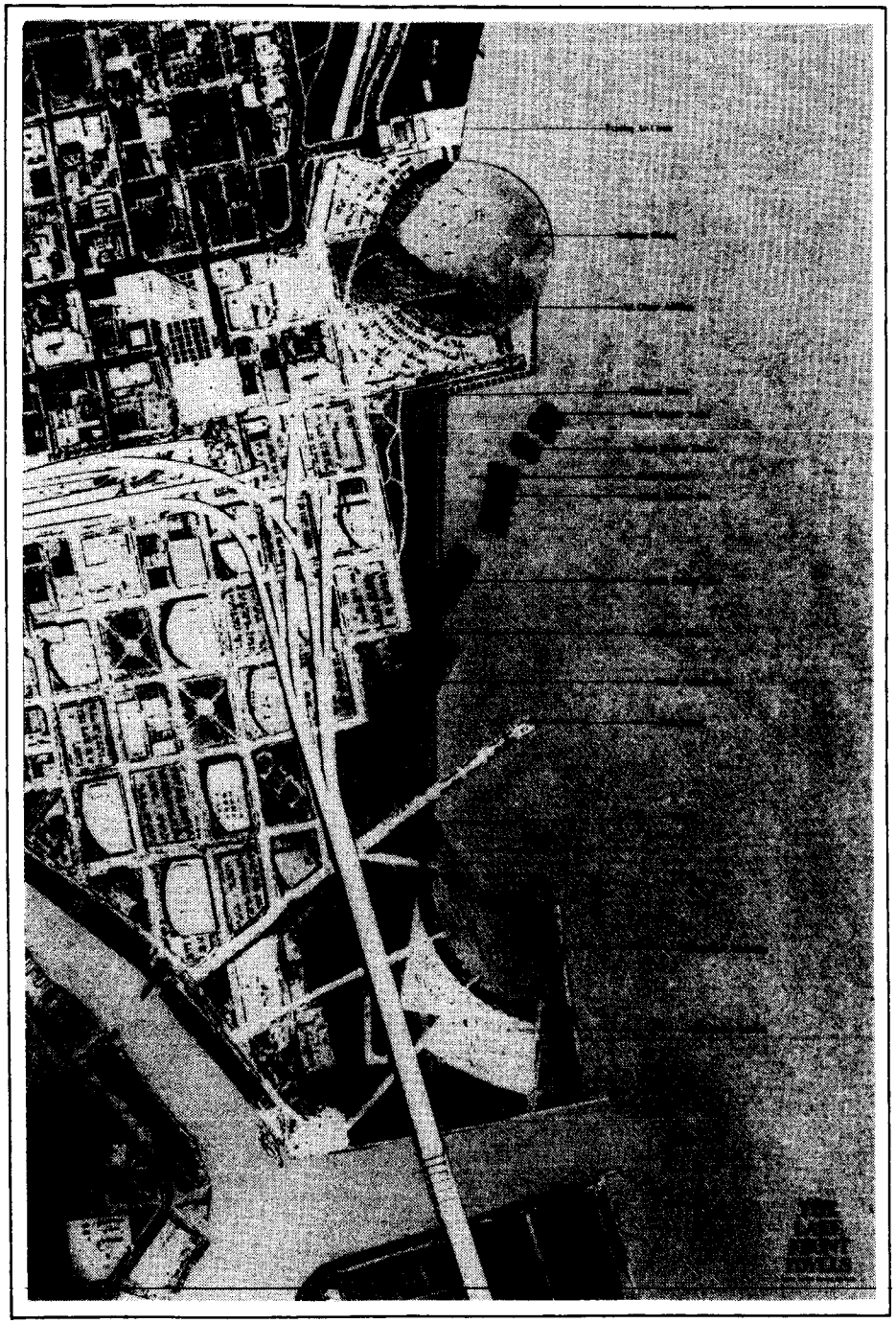
Revitalization and redevelopment of the Old Third Ward also depend on the po-

TABLE 9
ACTIVITIES AND LAND USES IN THE OLD THIRD WARD

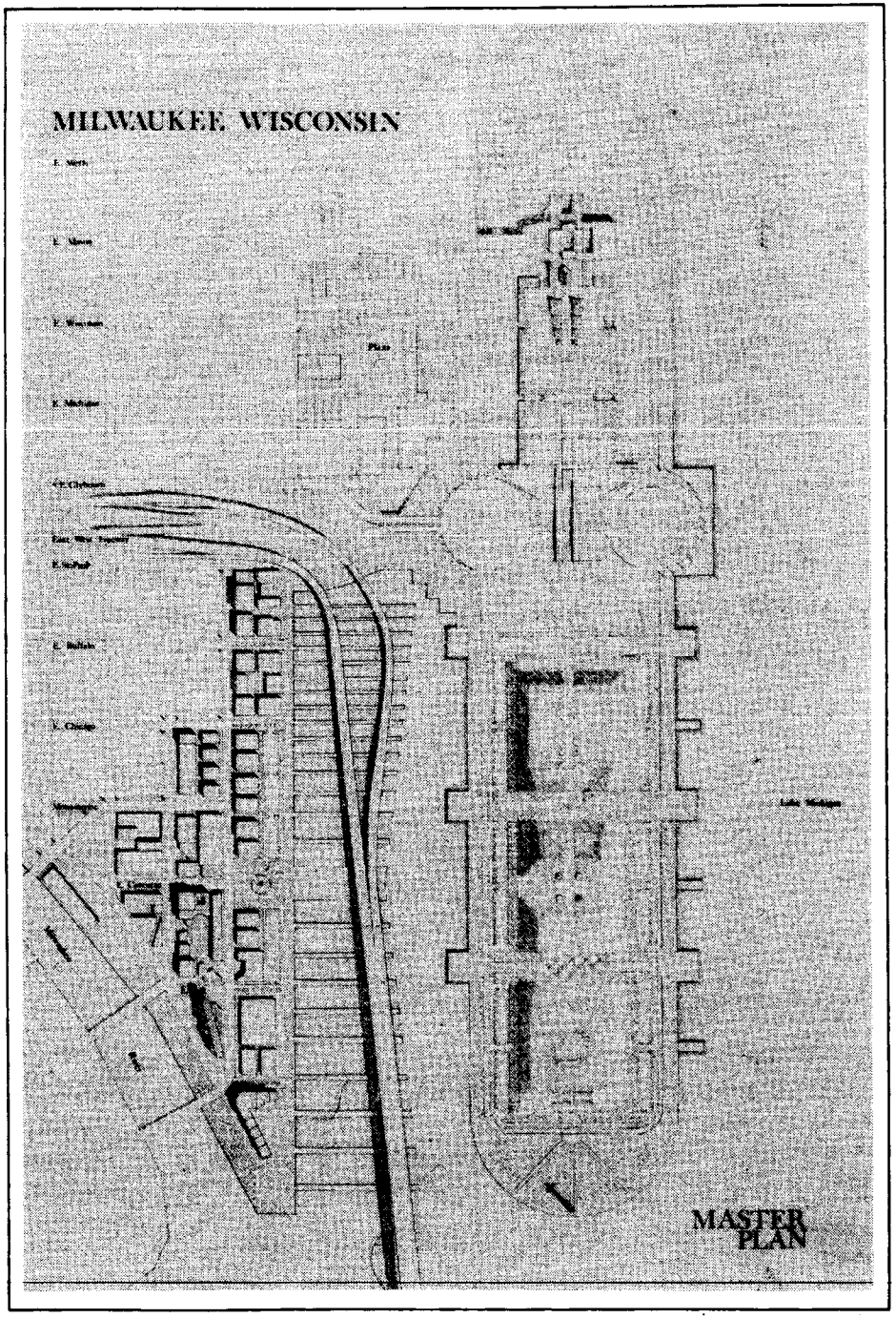
DESIGN PROBLEMS AND STRATEGIES	NUMBER AND PERCENT OF SOLUTIONS		AUTHORS' OPINION OF QUALITY
A. INDUSTRIAL DEVELOPMENT IN THE OLD THIRD WARD			
a) MINIMAL OR NO CHANGE	21	15%	LOW
b) REMOVAL OF EXISTNG INDUSTRIAL BUILDINGS	91	66%	**HIGH**
c) CONSTRUCTION OF NEW, LIGHT INDUSTRIAL BUILDINGS	6	4%	NEUTRAL
d) BOTH REMOVAL OF EXISTING INDUSTRY AND CONSTRUCTION OF NEW ONES	20	14%	LOW
	138	100%	
B. REVITALIZED, MIXED USE DISTRICT, WITH REHABILITATION OF BUILDINGS			
a) YES	34	24%	NEUTRAL
b) NO	106	76%	NEUTRAL
	140	100%	
C. NEW CULTURAL OR PUBLIC INSTITUTIONS			
a) YES	13	9%	**HIGH**
b) NO	126	91%	LOW
	139	100%	
D. PARKS AND PLAYFIELDS			
a) PARKS	99	71%	NEUTRAL
b) PLAYFIELDS	2	1%	NEUTRAL
c) BOTH	25	18%	NEUTRAL
d) NEITHER	13	9%	LOW
	139	100%	
E. MARINAS OR BOAT SLIPS			
a) YES	25	18%	NEUTRAL
b) NO	115	82%	NEUTRAL
	140	100%	

DESIGN PROBLEMS AND STRATEGIES	NUMBER AND PERCENT OF SOLUTIONS		AUTHORS' OPINION OF QUALITY
F. COMMERCIAL USES			
a) MAJOR	38	28%	NEUTRAL
b) MINOR	60	43%	NEUTRAL
c) NONE	40	29%	NEUTRAL
	138	100%	
G. RESIDENTIAL USES			
a) MAJOR	41	29%	**HIGH**
b) MINOR	38	27%	NEUTRAL
c) NONE	60	43%	LOW
	139	100%	
H. HOTELS			
a) YES	20	14%	LOW
b) NO	119	86%	**HIGH**
	139	100%	
I. AMOUNT OF SUMMERFEST IN THE OLD THIRD WARD (EXCLUDING PARKING)			
a) OVER 75%	3	2%	NEUTRAL
b) 25% TO 75%	6	4%	NEUTRAL
c) LESS THAN 25%	16	12%	LOW
d) NONE	114	82%	NEUTRAL
	139	100%	
J. MIXED VERSUS SINGLE LAND USES			
a) MIXED LAND USES	104	78%	**HIGH**
b) SINGLE LAND USES ONLY	30	22%	LOW
	134	100%	

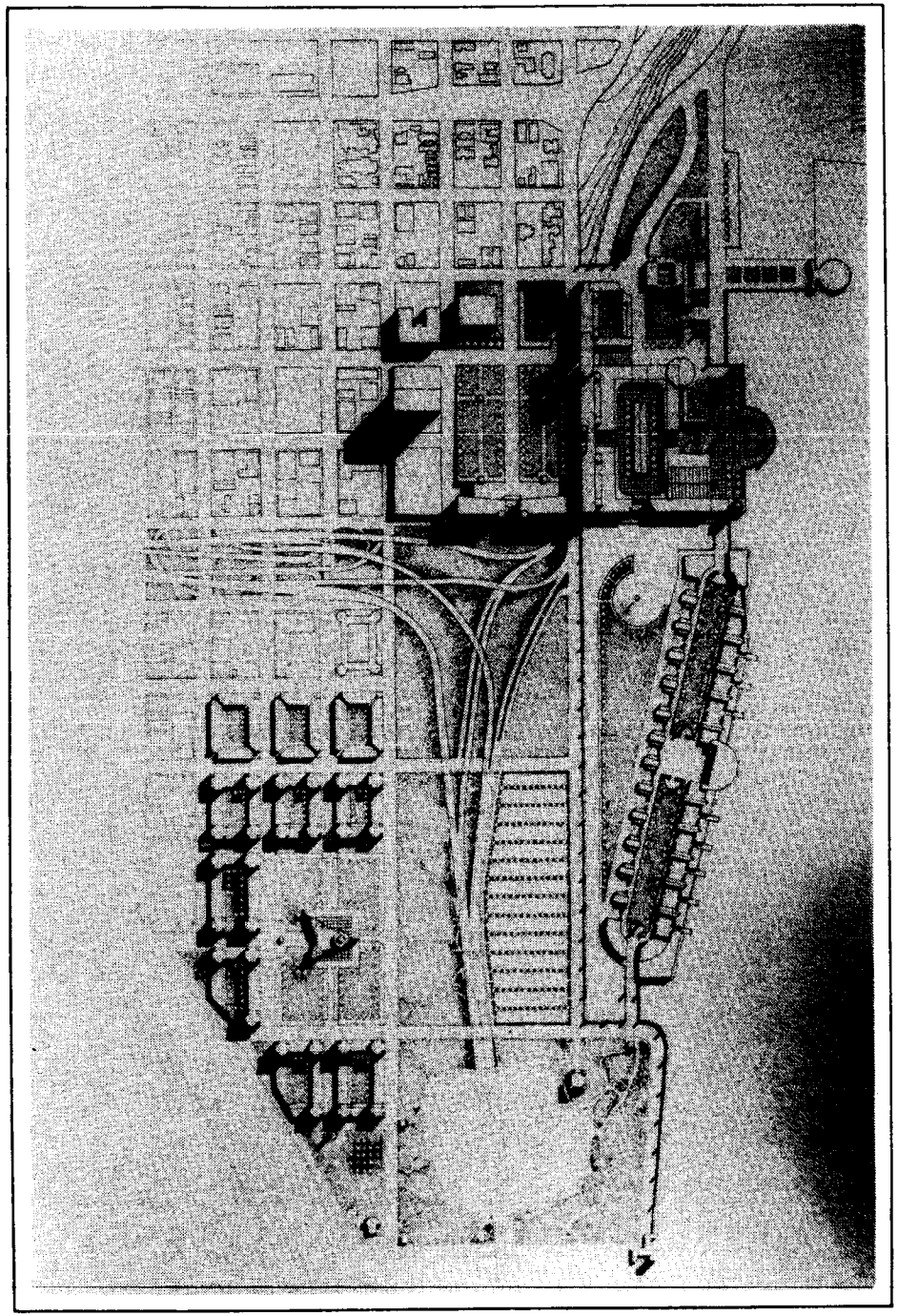
PLAN 23



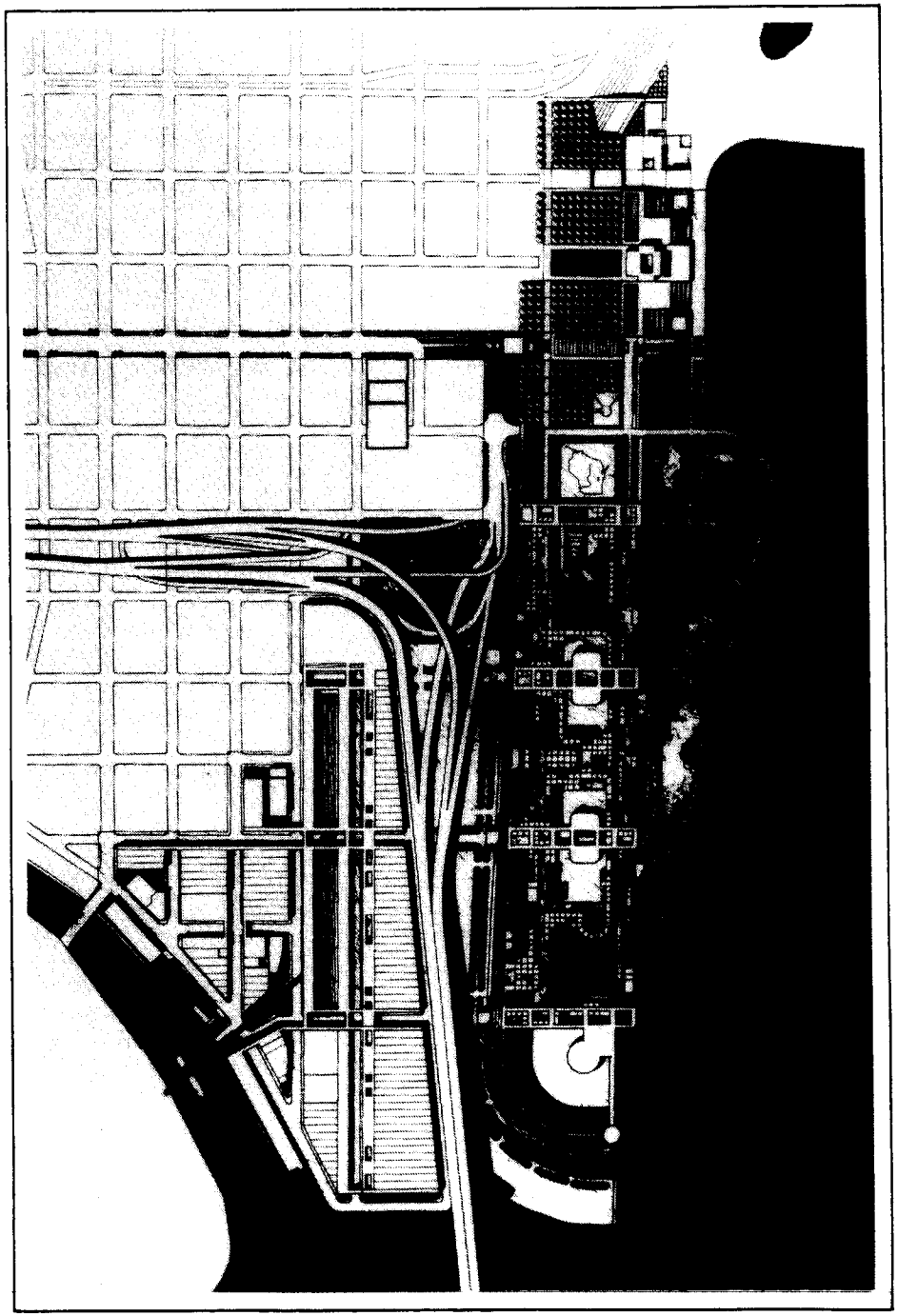
PLAN 24



PLAN 25



PLAN 26



tential for private development and the associated public costs. Proximity to the lakefront and the business district are stronger investment incentives in the Wisconsin Avenue and Shoreline Zones relative to the Old Third Ward. There are, however, some features of the Old Third Ward which can encourage the long-term development of a new neighborhood — or at least a higher level of public and private investment than currently exists. For example, many costly infrastructure improvements, such as streets and sewers, are already built. The area is quite close to the business district in terms of actual travel time — both for pedestrians as well as cars and buses. Most important, the character of the historic buildings, the river's edge, and the flexibility with which parks, marinas, and waterfront features can be created provide a rich foundation on which to build.

As noted, many designs proposed the adaptive reuse of existing buildings with a mixture of residential, commercial, and recreational facilities (TABLE 9-B). Such proposals imply a relatively modest level of new public improvements. On the other hand some proposals suggested major private development. This might involve more elaborate public improvements such as larger parks, playfields and parking structures. Two other development patterns which were suggested, albeit infrequently, were the expansion of new industry and the inclusion of a portion of the Summerfest grounds in the Old Third Ward (TABLES 9-A and 9-I).

Finally, some designers simply did not create any new development, public or private, in the Old Third Ward. Presumably they considered it an inappropriate or irrelevant component of the lakefront problem. This was not necessarily an illogical response. For example, some solutions created such a strong split or edge paralleling the Harbor Bridge that the development of the Old Third Ward was unrelated to the use and appreciation of the lakefront. In general, however, the development of the Old Third Ward appeared to be interdependent with the design, development and imagery of other spatial zones.

TABLE 10
NEW IMAGES IN THE SOUTH FORTY

DESIGN PROBLEMS AND STRATEGIES	NUMBER AND PERCENT OF SOLUTIONS		AUTHORS' OPINION OF QUALITY
A. DESIGN APPROACH TO THE SOUTH FORTY			
a) DESIGNING IT WITH ONE, DISTINCT PATTERN (ITS OWN IDENTITY)	55	39%	**HIGH**
b) SPLITTING IT INTO TWO DISTINCT PATTERNS, EAST AND WEST OF THE BRIDGE	5	4%	NEUTRAL
c) EXTENDING THE PATTERN OF THE SHORELINE ZONE SOUTHWEST, UNDER THE BRIDGE	60	43%	LOW
d) EXTENDING THE PATTERN OF THE OLD THIRD WARD SOUTHEAST, UNDER THE BRIDGE	20	14%	NEUTRAL
	140	100%	
B. INLAND WATERWAYS			
a) YES	35	25%	**HIGH**
b) NO	105	75%	LOW
	140	100%	

TABLE 11
PUBLIC ACCESS IN THE SOUTH FORTY

DESIGN PROBLEMS AND STRATEGIES	NUMBER AND PERCENT OF SOLUTIONS		AUTHORS' OPINION OF QUALITY
A. PEDESTRIAN ACCESS TO WATER'S EDGE			
a) YES	138	99%	NEUTRAL
b) NO	1	1%	NEUTRAL
	139	100%	
B. VIEW OF WATER FROM ROADWAYS			
a) YES	89	64%	**HIGH**
b) NO	50	36%	LOW
	139	100%	
C. LARGER, NEW PARKING AREAS OR RAMPS			
a) YES	99	71%	NEUTRAL
b) NO	40	29%	NEUTRAL
	139	100%	
D. NEW OR EXPANDED MASS TRANSIT			
a) YES	56	40%	NEUTRAL
b) NO	83	60%	NEUTRAL
	139	100%	

THE SOUTH FORTY

The last district to be analysed is the South Forty so named because it contains the southernmost forty acres of the competition site. The South Forty is bounded on the east by the lakefront and on the west by the Milwaukee river. To the north this zone borders the Old Third Ward and the Shoreline Zone. To the south is the Milwaukee Harbor entrance. The South Forty site is bisected by the Harbor Bridge.

New Images

The entries used two types of strategies to create appropriate images (TABLE 10-A) — designing the South Forty with one relatively **distinct**, cohesive character (PLANS 8, 29) or treating it is an **extension** of the other districts. This latter type of strategy had several variations. Some entrants treated the South Forty as an extension of the Old Third Ward, some considered it an extension of the Shoreline Zone (PLANS 14, 21), and some tried to do both by using the Harbor Bridge to split the image of the South Forty down the middle (PLANS 1, 26). In some cases, inland waterways were used to create new images for the South Forty (TABLE 10-B, PLANS 3, 16).

Visual Linkages

Choosing an image for this zone is directly related to the problem of linking urban development to the waterfront.

TABLE 12
ACTIVITIES AND LAND USES IN THE SOUTH FORTY

DESIGN PROBLEMS AND STRATEGIES	NUMBER AND PERCENT OF SOLUTIONS		AUTHORS' OPINION OF QUALITY
A. PARKS AND PLAYFIELDS			
a) PARKS	100	73%	NEUTRAL
b) PLAYFIELDS	0	0%	NEUTRAL
c) BOTH	36	26%	NEUTRAL
d) NEITHER	3	2%	LOW
	139	100%	
B. AMOUNT OF SUMMERFEST IN THE SOUTH FORTY (EXCLUDING PARKING)			
a) OVER 75%	35	25%	NEUTRAL
b) 25% to 75%	24	17%	NEUTRAL
c) LESS THAN 75%	25	18%	NEUTRAL
d) NONE	55	40%	NEUTRAL
	139	100%	
C. NEW CULTURAL OR PUBLIC INSTITUTIONS			
a) YES	42	30%	**HIGH**
b) NO	97	70%	LOW
	139	100%	
D. MARINAS			
a) YES	42	30%	NEUTRAL
b) NO	98	70%	NEUTRAL
	140	100%	
E. COMMERCIAL USES			
a) MAJOR	8	6%	NEUTRAL
b) MINOR	40	29%	**HIGH**
c) NONE	91	65%	LOW
	139	100%	
F. RESIDENTIAL USES			
a) MAJOR	18	13%	NEUTRAL
b) MINOR	32	23%	**HIGH**
c) NONE	89	64%	LOW
	139	100%	
G. HOTELS			
a) YES	18	13%	**HIGH**
b) NO	121	87%	LOW
	139	100%	
H. MIXED VERSUS SINGLE LAND USES			
a) MIXED LAND USES	74	54%	NEUTRAL
b) SINGLE LAND USES ONLY	63	46%	NEUTRAL
	137	100%	

The South Forty is the zone furthest removed from the central business district, but it is also surrounded by water on three sides. In the other three zones the difficulty is bringing the waterfront into the urban area, while in the South Forty the situation is almost reversed — there are many ways to interpret and expose the lengthy waterfront, but there are few options for extending existing urban patterns. Perhaps this is why many solutions extended southward into the Old Third Ward whatever urban imagery they created to the north in the Shoreline Zone. The only other basic approach was to give the South Forty a new visual character and link this new identity to the waterfront. In this way the South Forty becomes a unique meeting ground linking the city, lake, harbor and river.

Social Benefits

The greater distance between the South Forty and the central business district makes problems of public access and land use even more critical. Most solutions provided public pedestrian access to the water as well as visual access from roadways (TABLES 11-A and 11-B). Many solutions clearly noted new or expanded mass transit routes and parking areas (TABLES 11-C and 11-D). Once again, the simple provision of physical access to the water is not sufficient. There must be attractive, highly desireable activities that will bring people to the waterfront. Parks (PLANS 9, 13), playfields (PLANS 15, 32) and recreational facilities were, by far, the land uses most frequently selected for this purpose (TABLE 12-A). Many solutions indicated that Summerfest should be at least a partial recreational and entertainment use for this area (TABLE 12-B, PLANS 13, 14, 30). Presumably, the size and shape of the South Forty is suited for festival use. Along similar lines, many solutions placed marinas (PLANS 6, 31) and cultural institutions (PLANS 22, 32) in this area (TABLES 12-C and 12-D).

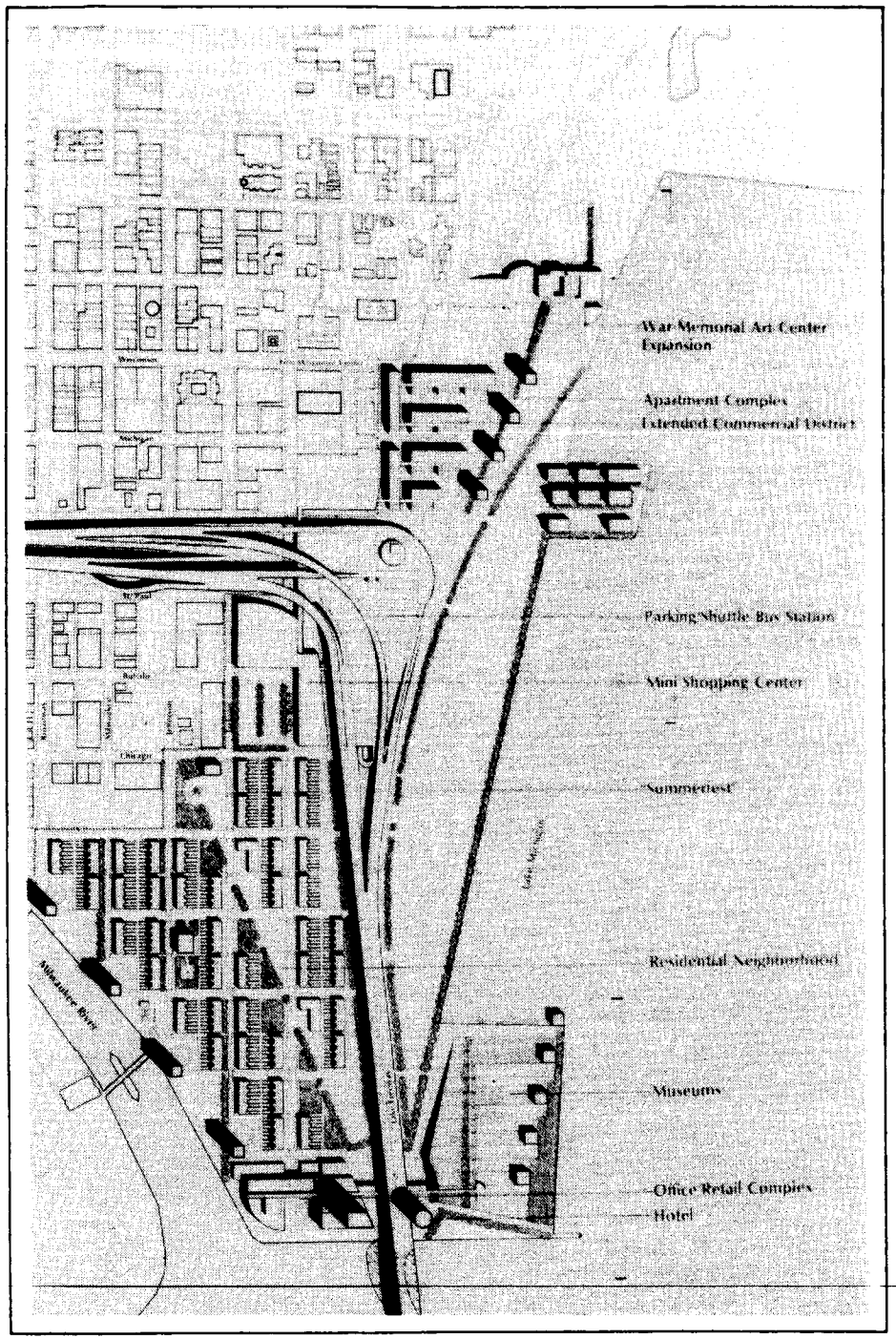
Some solutions, however, located hotels, new residential developments (PLANS 6, 21, 25, 30) and commercial structures (PLANS 14, 17, 21, 27) in the South Forty (TABLES 12-E, 12-F, and 12-G). Often, these uses were extensions of developments in the Old Third Ward or Shoreline Zone. However, a few solutions designed completely distinct residential and commercial neighborhoods. Also there was a significant number of mixed land use patterns (TABLE 12-H).

Economics

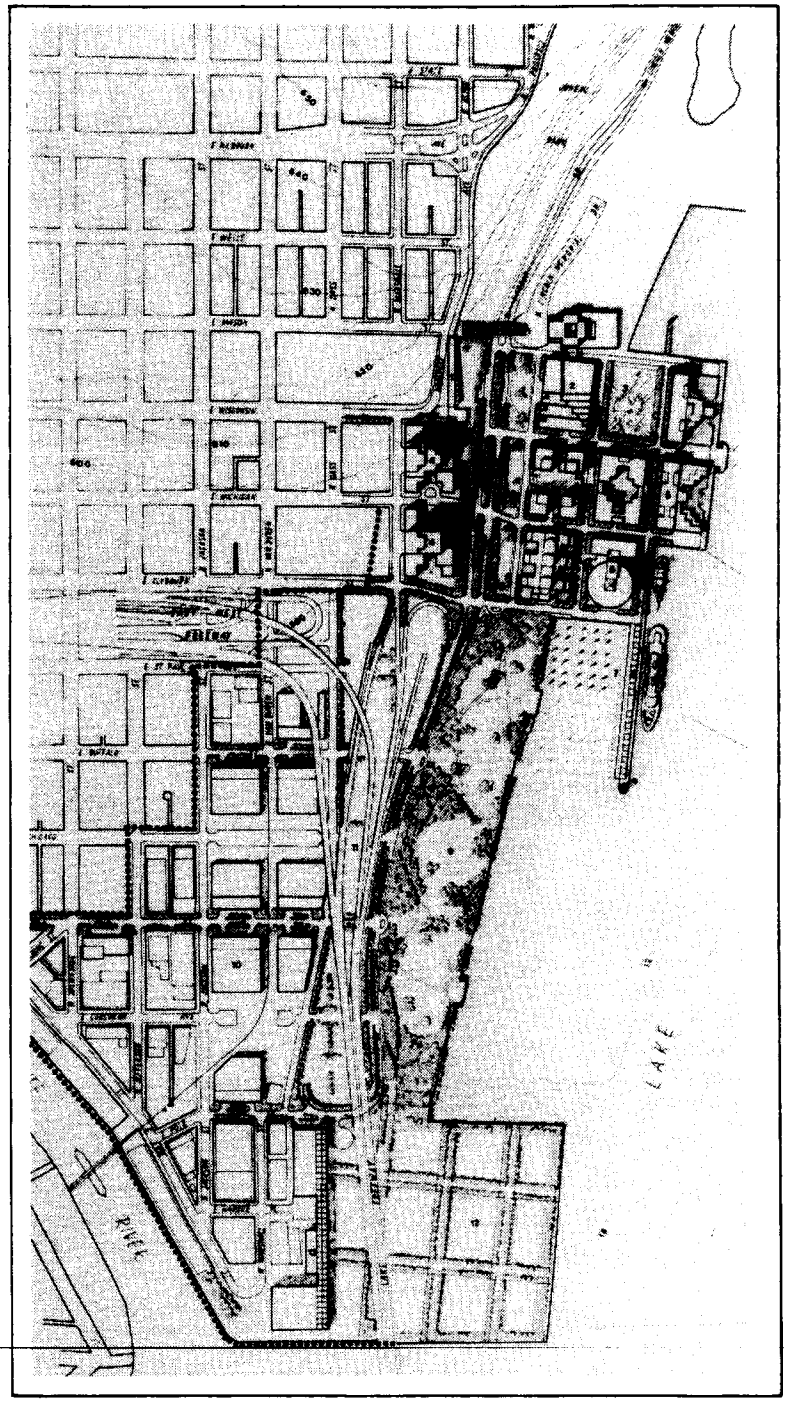
Obviously, major commercial and residential uses will draw people to the area. The more fundamental question, however, is whether such uses are economically viable. Creating a market for new development is more difficult in the South Forty than in other zones. The market is probably strongest in the Wisconsin Avenue Zone with some spillover to the Shoreline Zone and perhaps the Old Third Ward.

In the South Forty, however, extensive market growth might take one or two decades. This is not an especially long period for conventional long-range planning, but it does entail greater uncertainties. It also requires significant public commitment and investment to create the amenities and infrastructure improvements that will make private development financially feasible. While the risk for public and private investments should not be underestimated, neither should the potential long-term benefits. This is especially true in relation to the current underutilization of the area with its minimal tax revenues.

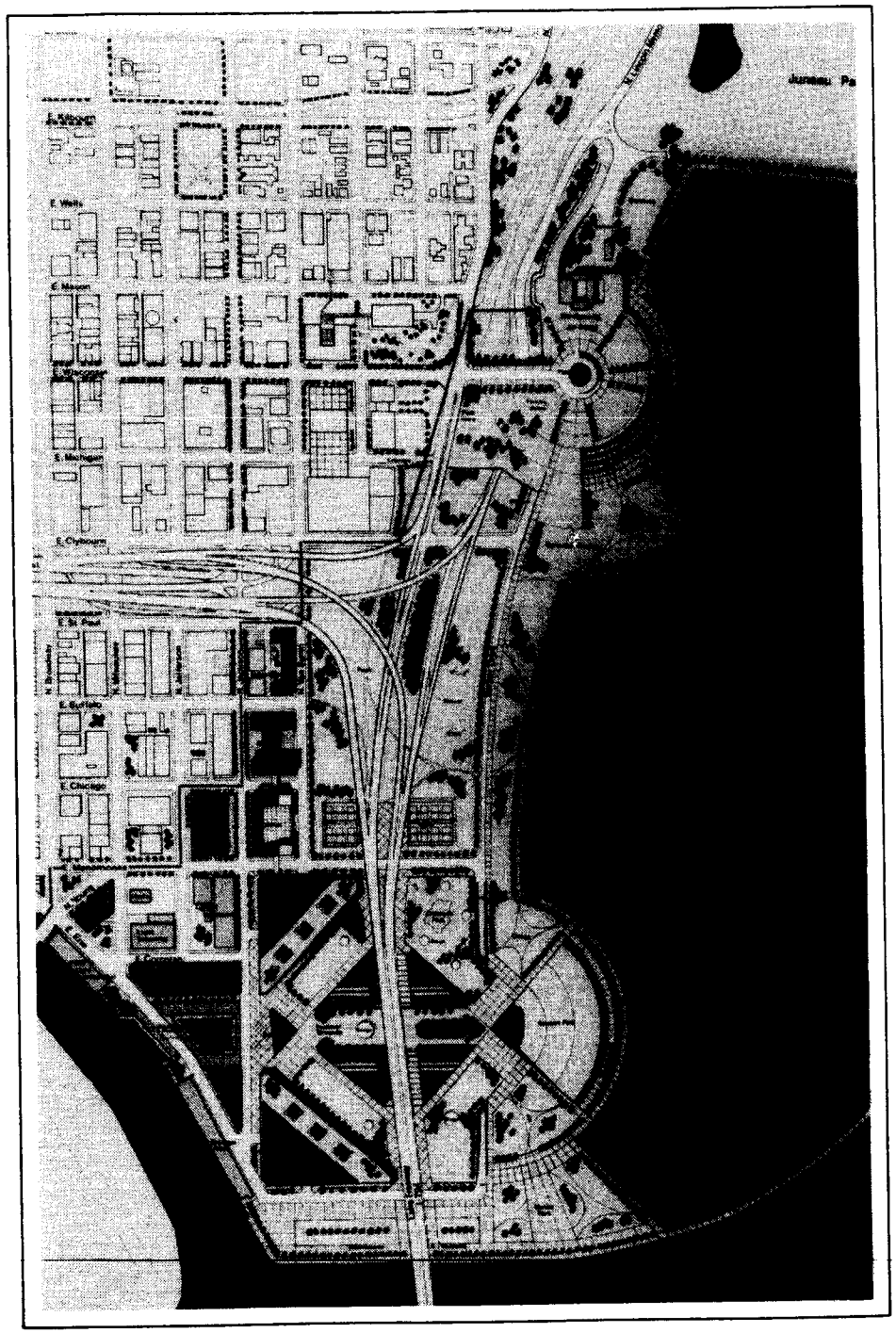
PLAN 27



PLAN 28



PLAN 29



PLAN 30

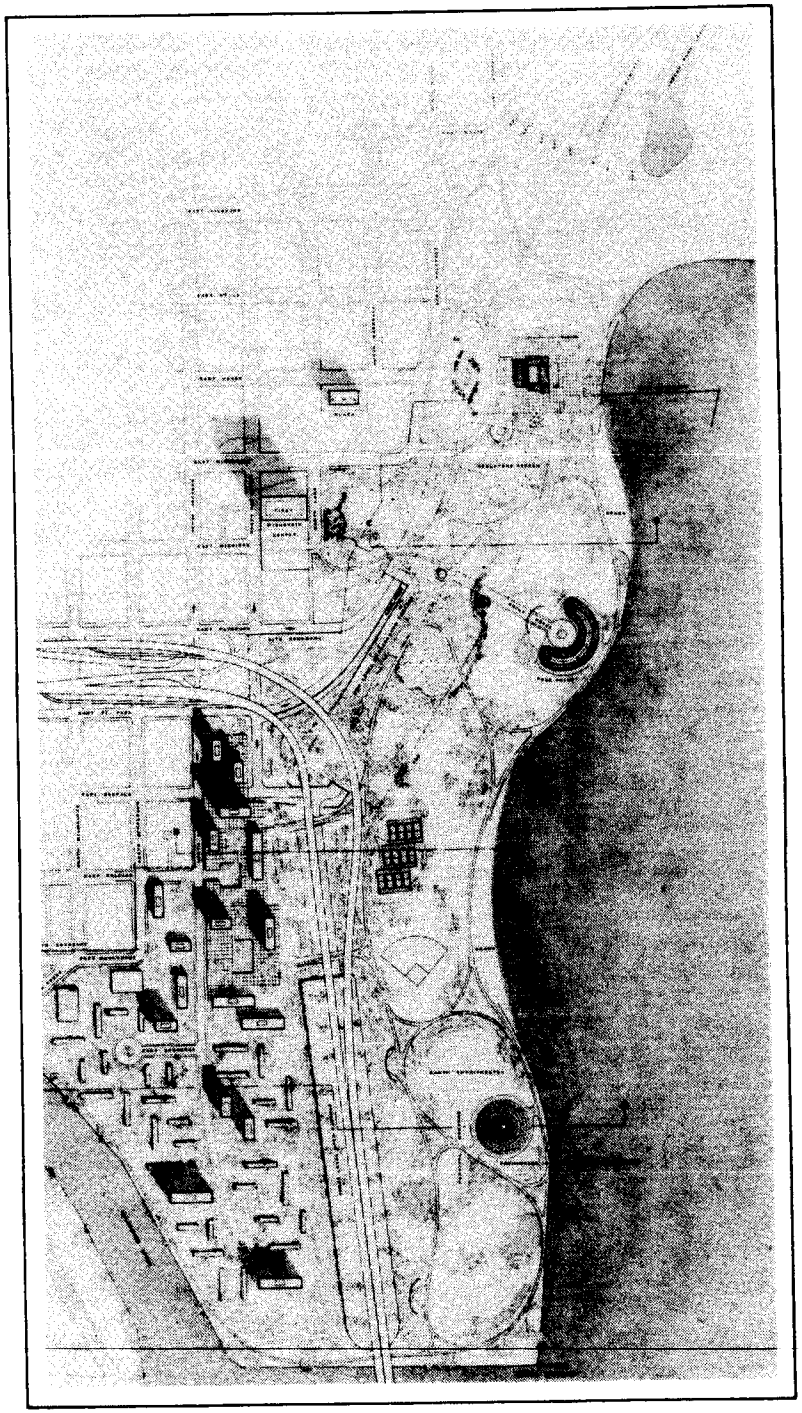


TABLE 13
PATTERNS OF RESIDENTIAL LAND USES

DESIGN PROBLEMS AND STRATEGIES	NUMBER AND PERCENT OF SOLUTIONS		AUTHORS' OPINION OF QUALITY
A. ZONES WITH RESIDENTIAL USES			
a) NOT IN ANY ZONE	39	28%	LOW
b) ONLY IN ONE ZONE	41	29%	NEUTRAL
c) IN TWO ZONES	44	32%	**HIGH**
d) IN THREE ZONES	14	10%	**HIGH**
e) IN ALL FOUR ZONES	1	1%	NEUTRAL
	139	100%	
B. PATTERNS OF RESIDENTIAL USE			
a) IN THE OLD THIRD WARD AND THE SOUTH FORTY	33	33%	NEUTRAL
b) ONLY IN THE OLD THIRD WARD	25	25%	NEUTRAL
c) ONLY IN THE WISCONSIN AVENUE ZONE	10	10%	NEUTRAL
d) OTHER PATTERNS (EACH LESS THAN 5% OF THE TOTAL)	32	32%	NEUTRAL
	100	100%	

TABLE 14
PATTERNS OF COMMERCIAL LAND USES

DESIGN PROBLEMS AND STRATEGIES	NUMBER AND PERCENT OF SOLUTIONS		AUTHORS' OPINION OF QUALITY
A. ZONES WITH COMMERCIAL USES			
a) NOT IN ANY ZONE	8	6%	NEUTRAL
b) ONLY IN ONE ZONE	37	27%	LOW
c) IN TWO ZONES	62	45%	NEUTRAL
d) IN THREE ZONES	28	20%	**HIGH**
e) IN ALL FOUR ZONES	3	2%	NEUTRAL
	138	100%	
B. PATTERNS OF COMMERCIAL USES			
a) IN THE OLD THIRD WARD AND THE WISCONSIN AVENUE ZONE	33	25%	NEUTRAL
b) ONLY IN THE OLD THIRD WARD	20	15%	LOW
c) IN THE OLD THIRD WARD AND THE SOUTH FORTY	14	11%	NEUTRAL
d) IN THE OLD THIRD WARD, WISCONSIN AVENUE ZONE, AND THE SOUTH FORTY	13	10%	**HIGH**
e) ONLY IN THE WISCONSIN AVENUE ZONE	13	10%	NEUTRAL
f) OTHER PATTERNS (EACH LESS THAN 8% OF THE TOTAL)	37	28%	NEUTRAL
	130	100%	

TABLE 16
PATTERNS OF PARKS AND LANDSCAPED AREAS

DESIGN PROBLEMS AND STRATEGIES	NUMBER AND PERCENT OF SOLUTIONS		AUTHORS' OPINION OF QUALITY
A. ZONES WITH PARKS AND LANDSCAPED AREAS			
a) NOT IN ANY ZONE	1	1%	NEUTRAL
b) ONLY IN ONE ZONE	0	0%	NEUTRAL
c) IN TWO ZONES	1	1%	NEUTRAL
d) IN THREE ZONES	16	12%	LOW
e) IN ALL FOUR ZONES	121	87%	**HIGH**
	139	100%	
B. PATTERNS OF PARKS AND LANDSCAPED AREAS			
a) THROUGHOUT ALL FOUR ZONES	121	88%	**HIGH**
b) IN THE WISCONSIN AVENUE ZONE,THE SHORELINE ZONE, AND THE SOUTH FORTY	13	9%	LOW
c) OTHER PATTERNS (EACH LESS THAN 2% OF THE TOTAL)	4	3%	NEUTRAL
	138	100%	

TABLE 17
PATTERNS OF MARINA LOCATIONS

DESIGN PROBLEMS AND STRATEGIES	NUMBER AND PERCENT OF SOLUTIONS		AUTHORS' OPINION OF QUALITY
A. ZONES CONTAINING MARINAS			
a) NOT IN ANY ZONE	34	24%	NEUTRAL
b) ONLY IN ONE ZONE	64	46%	NEUTRAL
c) IN TWO ZONES	31	22%	NEUTRAL
d) IN THREE ZONES	9	6%	LOW
e) IN ALL FOUR ZONES	1	1%	NEUTRAL
	139	100%	
B. PATTERNS OF MARINA LOCATIONS			
a) ONLY IN THE SHORELINE ZONE	38	36%	NEUTRAL
b) ONLY IN THE SOUTH FORTY	12	11%	NEUTRAL
c) IN THE OLD THIRD WARD AND THE SOUTH FORTY	10	10%	NEUTRAL
d) ONLY IN THE WISCONSIN AVENUE ZONE	9	9%	NEUTRAL
e) OTHER PATTERNS (EACH LESS THAN 4% OF THE TOTAL)	36	34%	NEUTRAL
	105	100%	

TABLE 15
PATTERNS OF PLAYFIELD LOCATIONS

DESIGN PROBLEMS AND STRATEGIES	NUMBER AND PERCENT OF SOLUTIONS		AUTHORS' OPINION OF QUALITY
A. ZONES WITH PLAYFIELDS			
a) NOT IN ANY ZONE	75	54%	NEUTRAL
b) ONLY IN ONE ZONE	37	27%	NEUTRAL
c) IN TWO ZONES	22	16%	NEUTRAL
d) IN THREE ZONES	3	2%	NEUTRAL
e) IN ALL FOUR ZONES	2	1%	NEUTRAL
	139	100%	
B. PATTERNS OF PLAYFIELD LOCATIONS			
a) ONLY IN THE SOUTH FORTY	20	31%	NEUTRAL
b) ONLY IN THE SHORELINE ZONE	8	13%	NEUTRAL
c) IN THE OLD THIRD WARD AND THE SOUTH FORTY	8	13%	NEUTRAL
d) ONLY IN THE OLD THIRD WARD	7	11%	NEUTRAL
e) IN THE OLD THIRD WARD AND THE SHORELINE ZONE	7	11%	NEUTRAL
f) OTHER PATTERNS (EACH LESS THAN 5% OF THE TOTAL)	14	22%	NEUTRAL
	64	100%	

PART IV

Overall Patterns, Styles And Types

Analyzing the results of the competition as they are manifest in four spatial zones provides a useful but disaggregated view. For example, there are some land use patterns which can only be seen by viewing the entire site as one entity. There are also overall styles and design concepts which emerge as a result of the designers' general feelings, principles, and unique expertise.

ACTIVITY AND LAND USE PATTERNS

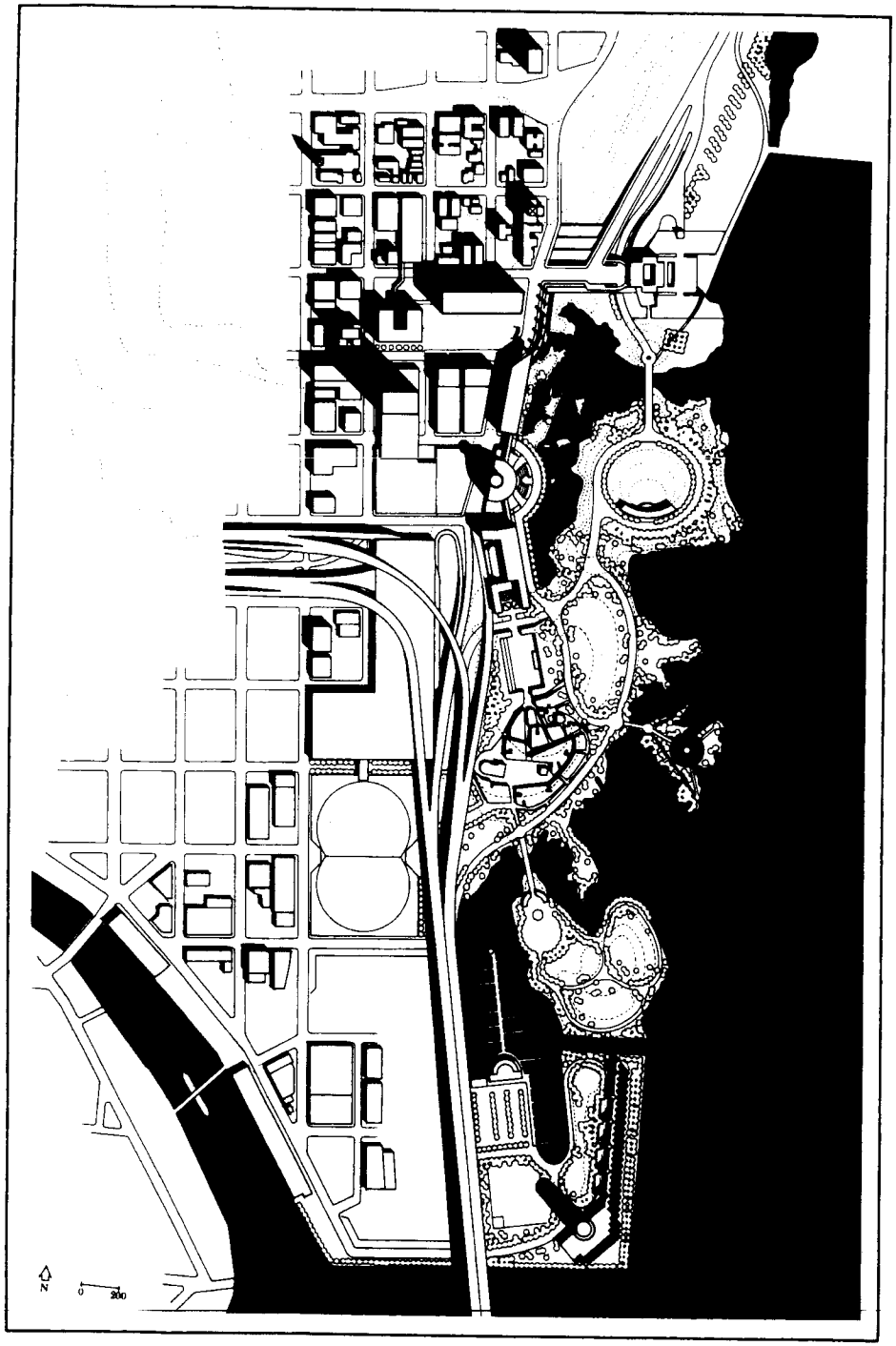
The varieties of residential, commercial and recreational land uses can be aggregated into broader, more inclusive geographic categories (TABLES 13 through 17). Overall patterns of land use for the entire competition site become clearer. There is a general tendency to locate residential or commercial investment near the Old Third Ward or the Wisconsin Avenue Zone. Similarly, there is a slight tendency to locate more recreational uses or marinas in the Shoreline Zone and South Forty. An analysis of land use patterns also indicates a strong tendency toward mixed uses in the Wisconsin Avenue Zone and Old Third Ward versus the Shoreline Zone and South Forty (TABLES 3-I, 6-H, 9-J, and 12-H).

STYLE AND ARCHITECTURAL ORGANIZATION

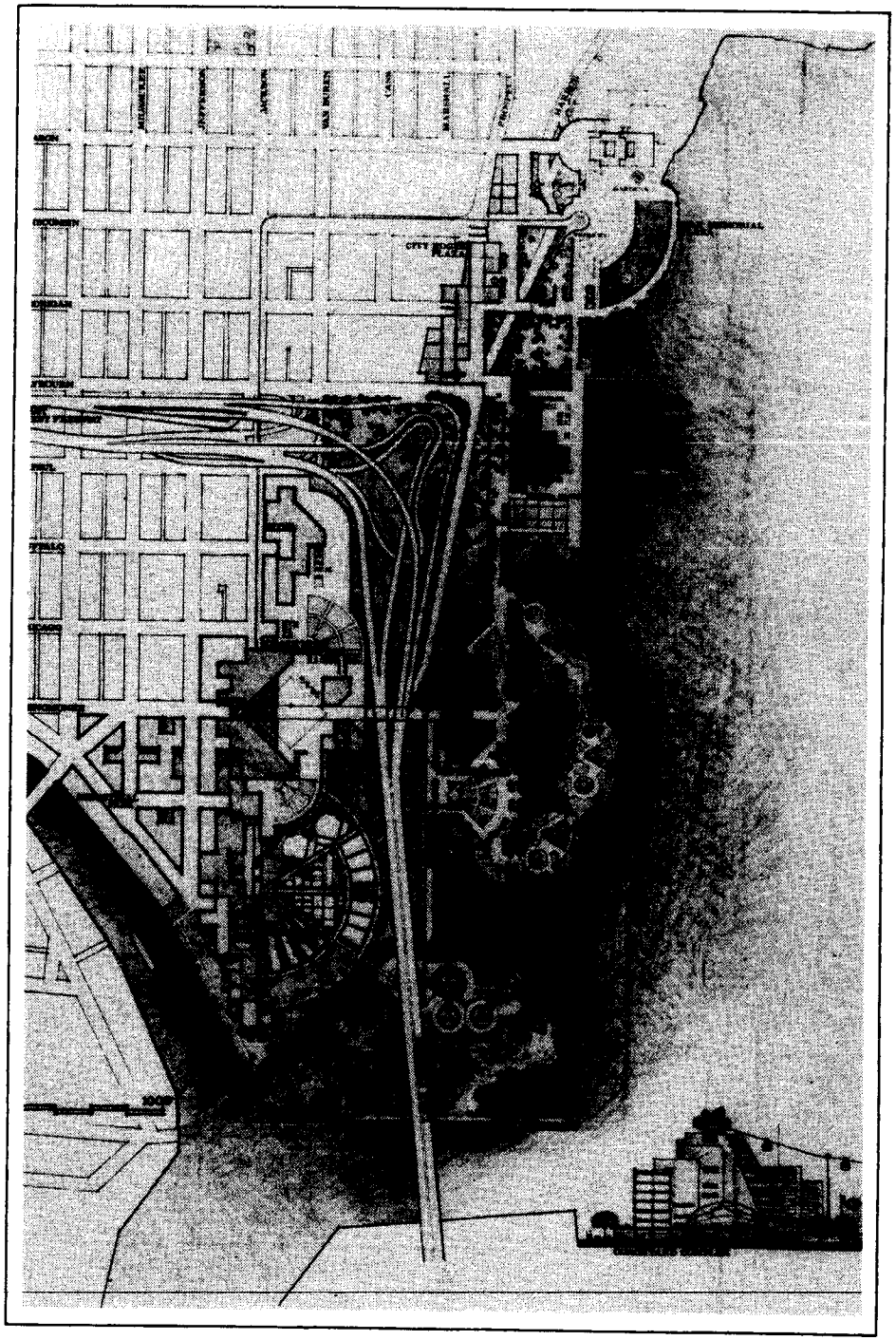
Still another way to generalize the solutions is to examine **overall design styles and strategies of architectural organization** (TABLE 18). For example, some solutions created geometric networks of streets and buildings, frequently a rectangular grid, that covered most of the site (PLANS 2, 10, 26). This pattern is not necessarily evident when examining designs within each of the four zones but it becomes evident when examining the overall site. Other modes of overall architectural organization evident in many solutions are the use of axial forms (PLANS 7, 25), linear organizations (PLANS 11, 12, 18), radial and concentric patterns (PLANS 1, 29), picturesuqe patterns of landscaping (PLANS 9, 14, 16), textural changes between areas (PLANS 7, 11, 23), and non-formal or irregular clusters of buildings (PLANS 25, 27, 32).

Each of these modes of architectural organization can, by itself, be the sole strategy for the organization of the site or it can be used in combination with the other strategies (TABLE 18-A). Moreover, these architectural strategies can be applied in a relatively dominant, stronger fashion or a subordinate, weaker fa-

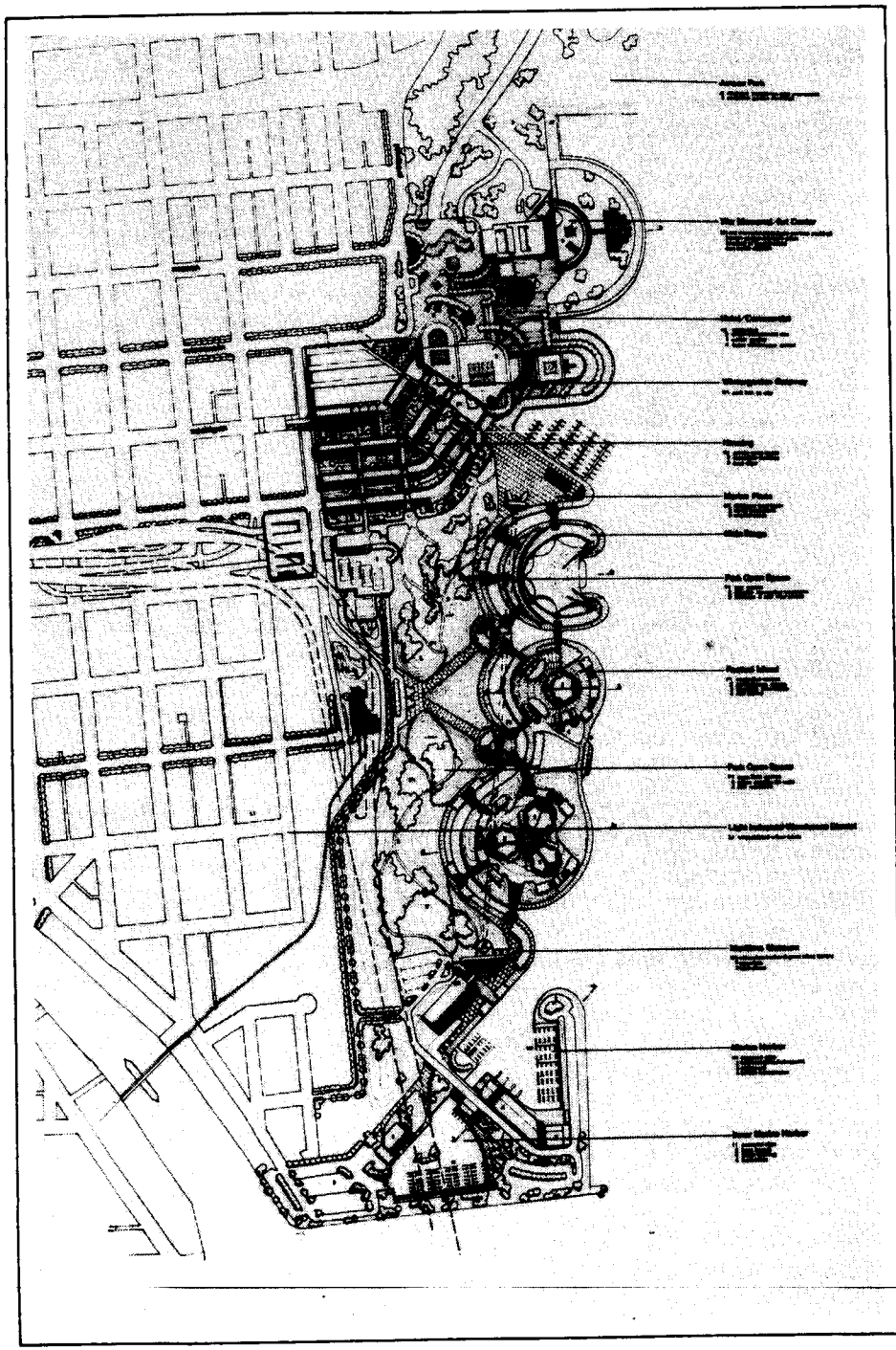
PLAN 31



PLAN 32



PLAN 33



PLAN 34

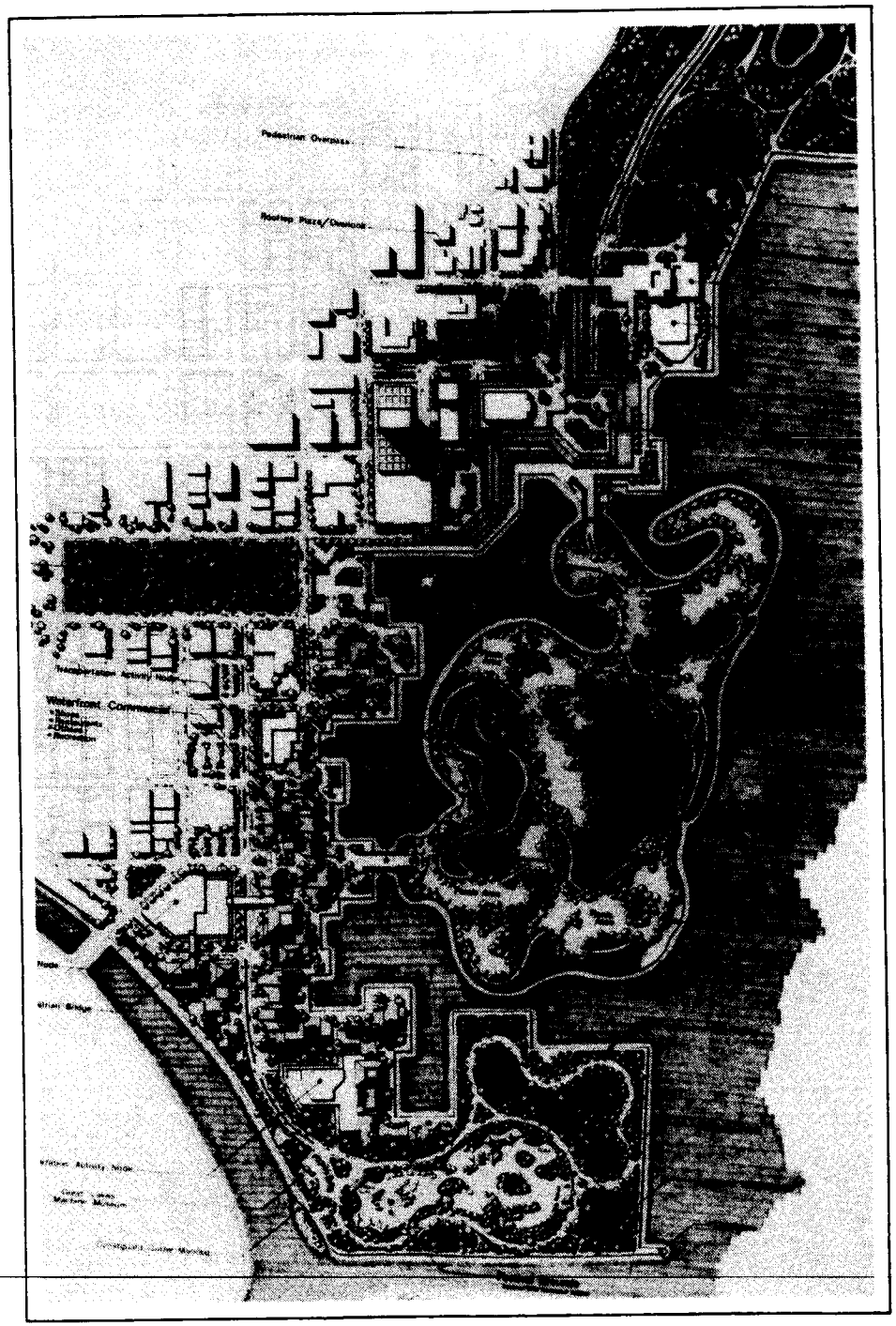


TABLE 18

DESIGN STYLES AND STRATEGIES OF ARCHITECTURAL ORGANIZATION

DESIGN PROBLEMS AND STRATEGIES	NUMBER AND PERCENT OF SOLUTIONS		AUTHORS' OPINION OF QUALITY
A. NUMBER OF STYLES OR ORGANIZATIONAL STRATEGIES			
a) 2 or 3 DOMINANT STRATEGIES, WITH 2 or 3 SUBORDINATE STRATEGIES	20	14%	**HIGH**
b) 2 or 3 DOMINANT STRATEGIES, WITH 0 or I SUBORDINATE STRATEGY	34	24%	**HIGH**
c) 0 or 1 DOMINANT STRATEGY, WITH 2 or 3 SUBORDINATE STRATEGIES	44	31%	LOW
d) 0 or 1 DOMINANT STRATEGY, WITH 0 or 1 SUBORDINATE STRATEGY	42	30%	LOW
	140	100%	
B. DEGREE OF ARCHITECTURAL ORGANIZATION			
a) DOMINANT DESIGN STYLE OR ARCHITECTURAL ORGANIZATION	98	70%	**HIGH**
b) ONLY SUBORDINATE DESIGN STYLE OR ARCHITECTURAL ORGANIZATION	40	29%	LOW
c) NO APPARENT DESIGN STYLE OR ARCHITECTURAL ORGANIZATION	2	1%	LOW
	140	100%	
C. PICTURESQUE PATTERNS			
a) DOMINANT USE	32	23%	**HIGH**
b) SUBORDINATE USE	54	39%	NEUTRAL
c) NOT USED	54	39%	NEUTRAL
	140	100%	
D. SIMPLE LINEAR ORGANIZATIONS			
a) DOMINANT USE	52	37%	**HIGH**
b) SUBORDINATE USE	30	21%	LOW
c) NOT USED	58	41%	LOW
	140	100%	
E. AXIAL ORGANIZATIONS			
a) DOMINANT USE	26	19%	**HIGH**
b) SUBORDINATE USE	33	24%	**HIGH**
c) NOT USED	81	58%	LOW
	140	100%	
F. GEOMETRIC NETWORKS			
a) DOMINANT USE	25	18%	**HIGH**
b) SUBORDINATE USE	34	24%	NEUTRAL
c) NOT USED	81	58%	LOW
	140	100%	
G. CLUSTERING PATTERNS			
a) DOMINANT USE	14	10%	NEUTRAL
b) SUBORDINATE USE	34	23%	NEUTRAL
c) NOT USED	92	66%	NEUTRAL
	140	100%	
H. TEXTURAL CHANGES BETWEEN AREAS			
a) DOMINANT USE	9	6%	**HIGH**
b) SUBORDINATE USE	13	9%	NEUTRAL
c) NOT USED	118	84%	LOW
	140	100%	
I. RADIAL OR CONCENTRIC PATTERNS			
a) DOMINANT USE	6	4%	**HIGH**
b) SUBORDINATE USE	9	6%	NEUTRAL
c) NOT USED	125	89%	LOW
	140	100%	

TABLE 19
TYPOLOGY OF BASIC DESIGN CONCEPTS

DESIGN PROBLEMS AND STRATEGIES	NUMBER AND PERCENT OF SOLUTIONS		AUTHORS' OPINION OF QUALITY
a) PROMENADES	15	11%	**HIGH**
b) MEGASTRUCTURES	13	9%	LOW
c) COLLAGES OF TRADITIONAL CONCEPTS	13	9%	**HIGH**
d) ONTARIO PLACE ANALOGUES	9	6%	NEUTRAL
e) 1950'S URBAN RENEWAL PROJECTS	9	6%	LOW
f) GRIDIRONS	8	6%	**HIGH**
g) MIDWAYS	8	6%	NEUTRAL
h) CONDOMINIUM VILLAGES	5	4%	LOW
i) CONSERVATIVE/MINIMALIST	6	4%	LOW
j) OTHER	54	39%	LOW
	140	100%	

shion (TABLE 18-B). **In the authors' opinion the higher quality solutions were those which had two or more strong architectural strategies — either with subordinate strategies (PLANS 7, 8, 9) or without such subordinate strageties (PLANS 3, 10, 13).**

Such subjective judgments reveal an important issue. The quality of the solutions depends on both the specific architectural strategies which are chosen as well as the ordered combination and hierarchy of such strategies. Solutions which used coherently, ordered sets of strategies or styles imply coherently, ordered images laden with more meanings and interpretations for the public.

DESIGN CONCEPTS AND TYPES

Another, still more general way to classify solutions is to look for a conventional professional or popular image that is evoked and which appears to have been the designers' major guiding concept (TABLE 19). For example, some of the solutions appear to be based on concepts of urban design strongly reminiscent of large scale **1950's Urban Renewal** projects (PLAN 30) — a simple street system within which most existing structures are demolished and new rectangular block buildings are constructed in almost unrelated geometries. Other solutions conjure images of **Condominium Villages** (PLAN 34) — suburban townhouses and shops found often in warm weather climates, with minor amounts of community facilities, organized around parking clusters and smaller open spaces in an intendedly picturesque manner. Other strategies reflect a concern for creating formal **Collages** (PLANS 7, 8) — integrations and juxtapositions of traditional urban design ideas, especially with regard to the aesthetics of urban form and space. Still other strategies appear to be based on large building systems often referred to as **Megastructures** (PLAN 26), lakefront islands and developments conceptually analogous to Toronto's **Ontario Place** (PLAN 33), long boardwalks or **Promenades** (PLANS 10, 11, 22), carnival **Midways** (PLAN 17,18), **Gridiron** street systems (PLAN 2), and lastly, a **Conservative/Minimalist** approach (PLAN 4) which embodies very little or no change in the current lakefront character.

This categorization is again subjective. Other observers will disagree with the opinions of the authors. But this does not change the important point — **the use of solution types by the entrants was a major conceptual force in the design process and provides one way of classifying holistic approaches to the problem.** As with the overall patterns of architectural organization, there is significant variation in the quality of designs based on different conceptual types. Such judgments are debatable. But in a design competition such judgments are possible and probably necessary — in fact, they are the rationale for using a jury of experts.

The types of solutions which appeared to the authors as most effective are those labelled as **Collages, Promenades** and **Gridirons**. Those labelled **Condominium Villages, 1950's Urban Renewal, Conservative/Minimalist,** and **Megastructures** seemed least effective.

About one-third of the solutions could not be classified by the authors. These unclassified concepts seemed, on the whole, less effective. However, it must be emphasized that all categories or types of solutions contained designs of high and low quality — the authors' judgments are based on sets of solutions and not on individual entries.

CONCLUSION

Conceptually there is an infinite number of solutions. Yet with only 140 examples of professional decision making, clear patterns have emerged. This does not mean that the most frequent solutions are necessarily the best — in fact, one rationale for staging a competition is to encourage innovative solutions as opposed to the conventional. Nevertheless, the constraints and context of the design problem will always push solutions in a general direction.

Urban design competitions do not lead to a single obvious answer, but they can reduce the number of design options to a manageable level — a universe of alternatives that is small enough to receive detailed public scrutiny and broad enough to provide a rational basis for higher quality long-term planning.

LIST OF PLANS AND NAMES OF ENTRANTS

PLAN 1. Brown, Daltas, and Associates, Inc. (first prize)
PLAN 2. Thompson C. Nelson, Kirk A. Gastinger, Stephen A. McDowell(second prize)
PLAN 3. Harry Van Oudenallen, Jim Sulivan, Cy Fishburn, Rick Blommer (third prize)
PLAN 4. Daniel Hilmer and Gerald Gast (honorable mention)
PLAN 5. A. Mark Battaglia, Daniel R. Jones, Daniel B. Burke, James R. De Tuerk (honorable mention)
PLAN 6. Thomas Aidala, Barbara Maloney, Cynthia Ripley, G. James Scoggin, Sheila Brady (honorable mention)
PLAN 7. Lee F. Hodgden, Colin Rowe, Douglas Fredericks, Derek Tynan
PLAN 8. John Miller, Kenneth Drucker, George How, Stephen Moser
PLAN 9. Tony Atkin, Stephen Bonitatibus, Eugene Lefevre, Stanly F. Taraila
PLAN 10. Peter D. Eisenman
PLAN 11. Frederick A. Jules, Vincent James, William Williams, Rebecca Willians
PLAN 12. Orr/Taylor and Accociates
PLAN 13. Robert M. Beckley, Sherill Myers, Stanley C. Cairns, Stephen McNeil, Robert Storm
PLAN 14. Charles R. Torrence, David W. Walsh
PLAN 15. S. Fiske Crowell, Jr., Gary Paul, Adam Gross, Janet Stegman
PLAN 16. Graham L. Gillespie, Gene Lee, Robert J. Vorbach, Hugh J. Connolly
PLAN 17. David Mogavero, Joe Monteadora, Dia Sullivan, J. Ronald Unruth
PLAN 18. David Tritt
PLAN 19. C. S. Chou, Y. L. Tsai, C. T. Wu and Associates
PLAN 20. John Michael Osteen
PLAN 21. Christopher Eseman, Marguerite Heard, Stephen Matthias, Doug McCallum
PLAN 22. Boris Dramov, Bonnie Fisher, Bill Smith, Brigitte Smith, Norman Kondy, Bill Hurrell, Allen Gatzke
PLAN 23. Joseph Valerio, Kent Hubbell, James Shields
PLAN 24. David Harlan, Renny Logal, Joel Newman, Burn Sears, D. L. Collins
PLAN 25. Wojciech G. Lesnikowski, Ula Lesnikowska, Jeffrey Ollswang, Ann Hill
PLAN 26. Timothy R. McCoy
PLAN 27. Richard R. Bosch, Barry Berg, Robert Fizek, Francis McGuire
PLAN 28. Stephen H. Katz, Paul Buckhurst, Laurie Olin, Robert Hanna
PLAN 29. James A. Johnston, Gloria R. Oskvarek, Enrique J. Unanue
PLAN 30. H. P. Davis Rockwell, Jay R. Carow, George E. Danforth, Mark P. Sexton, Robert A. Jones
PLAN 31. James L. Piwoni, John T. Schroeder, Michael J. Quinn
PLAN 32. Jack I. Joseph, Louis Wasserman
PLAN 33. Steven Strom, Hanque Macari, David Vala, Jim Skeira, Craig Van Valin
PLAN 34. Bill Oliphant and Associates, Inc.

*The names of the designers are taken from a list prepared by the Milwaukee Lakefront Competition Committee.