

RESIDUAL USE PLANNING
FOR WORLD'S FAIR SITES

by

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B.S. in Agriculture
South Dakota State University, 1977

A MASTER'S THESIS

submitted in partial fulfillment of the
requirements for the degree

MASTER OF LANDSCAPE ARCHITECTURE

KANSAS STATE UNIVERSITY
Manhattan, Kansas

1984

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This research is dedicated to Dr. Paul Collins, who nurtured in me a love for learning, and to Dr. Paul Nordstrom, who provided me with the knowledge that there is no such thing as a free lunch.

Acknowledgements

I would like to thank the many individuals who contributed their time and talents to assist this research effort. I wish first to thank my committee members, Professors Robert L. Page, Dennis J. Day, and Alton A. Barnes, Jr., who provided invaluable assistance during the entire research process and challenged my assumptions, research methods and findings, to improve the quality and validity of the research. I would also like to thank the following persons who allowed me to interview them concerning the Knoxville International Energy Exposition: Susan F. Adams, Metropolitan Planning Commission; Wayne Blasuis, Metropolitan Planning Commission; E.B. Copeland, E.B. Copeland Company; David Forkner, McCarty, Bollock, Holsaple Architects; Hank Garant, Department of Community and Economic Development; A.J. "Flash" Gray, Private Consultant; Greg Kern, Knoxville Community Development Corporation; H. Don Mauldin, Barge, Waggoner, Sumner and Cannon Engineers; and Bruce McCarty, Bollock, Holsaple Architects. Finally, I would like to thank my wife, Katie Blesener, for her uncounted hours of discussing my research, assisting in editing the manuscript and providing a number of technical skills that helped to pull the final document together.

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Chapter One

Introduction

World's Fairs are monumental events. The fairs require major pre-fair planning efforts, involve massive public and private expenditures, and have the potential to create lasting physical benefits or liabilities for the host city and its international image. The myriad of problems, questions and uncertainties involved in hosting a fair is recognized in the preface of Paris 1900, a book chronicling the French world's fairs of the nineteenth century. "Any world's fair is complex, certainly so complex, as to be unknowable as a whole... They can succeed or fail, live indelibly in the minds of the participants (or in history) or be immediately forgotten" (Mandell, 1967: xii). Since nearly the beginning of world's fairs in 1851, critics have predicted their demise, reasoning that the fairs were outdated notions in a modern world. Even the most recent fair in Knoxville in 1982 was predicted to be little more than a minor regional event (Harrigan, 1980: 7). This prediction, like those for earlier fairs, was unfounded, and future world's fairs continue to be planned by host cities, who often compete vigorously to receive international recognition for the privilege. (For examples see: Mahoney, 1969: 1, and Kidder, 1982: 5). World's fairs continue to occur because host cities, and the groups that compose them, continue to recognize the benefits of international recognition and improved city status, the economic surge that occurs prior to and during the fair, and

the opportunity to achieve major community physical development objectives in a compressed time frame. Only host cities willing to accept the challenge of attempting to control and direct the frenzy of prefair development, and later manage the post-fair adjustments, will successfully host a fair that benefits the city's image, economic health, and physical development.

World's fairs require large amounts of public and private funds to plan, construct and operate a fair. Knoxville's 1982 International Energy Exposition involved expenditures of \$100 million while the earlier, and larger, Montreal Expo '67 generated expenses of nearly three-quarters of a billion (1967) dollars. (Curtis, 1982: 44&46; Strong, 1967: 30). In addition to risking these large fiscal amounts, the status of host cities can be affected by hosting a fair. World and national opinion of the host city is influenced by the fair's success or failure, as well as by how well the fair is managed and planned. World's fair planning involves more than simply planning and designing an area to serve as a site for a six-month event because of the number of potentially permanent site improvements that must be made prior to having a fair. While many of these site changes can be constructed as temporary improvements, the materials involved and the costs of construction may not differ significantly from similar, permanent improvements.

The idea of fully depreciating the cost of the site improvements on a world's fair site over a six-month period severely affects the financial feasibility of a fair. Alternately, depreciating only a portion of these improvements

against the fair with the remainder charged off to a long term post-fair or residual site use, greatly improves the financial feasibility of a fair and increases the potential benefits accrued to the host city. A residual use can provide the host city with a long term, beneficial physical development that carries a portion of the site improvement costs, spurs additional development in the adjoining area, and provides a larger return on investment through increased taxes for the host city. A successful residual use will occur only if the necessary planning is completed and ready for implementation upon the fair's closing. Residual use planning is therefore a necessity and is impacted by how the site is developed for the fair. To ensure the greatest benefits from the money invested in the fair and the residual use development, the planning, design, and development of both must be coordinated to achieve an optimal balance between the two uses. These efforts will provide a site that functions well as a fair site and can then quickly be transformed into the predetermined residual use. Failure to preplan a residual use or to assume that the residual use plan will quickly evolve after the fair is to almost certainly assure that no residual use will occur. A study of how residual use planning has been done for past fairs and what factors should be taken into consideration in the formulation of future residual use planning processes is the scope of this research.

Methodology of Study

The research effort for this study combined primary and secondary information gathering and analysis. The primary information sources included personal interviews and visits to a world's fair site during fair operation and after its closing. The primary information was supplemented by secondary information sources to establish common traits, problems, and opportunities in the planning of world's fairs and residual use of fair sites. Secondary information sources also provided the historic information necessary to evaluate the successes and failures of past residual use planning efforts and residual use types.

Publicly and privately employed planning or design officials who had been closely involved in the fair and residual use planning for the 1982 Knoxville International Energy Exposition were interviewed during the gathering of primary information. This group was selected because the 1982 fair was underway when the research began, the planning for the Knoxville fair had included residual use considerations, and the persons involved were in a geographically concentrated area which increased the effectiveness of the interview effort. The individuals and their professional titles are shown in Table 1.

Table 1

Officials, Administrators, and Consultatants Interviewed

Public Officials and Administrators

Susan F. Adams, Deputy Executive Director, Metropolitan Planning Commission

Wayne Blasuis, Transportation Planner, Metropolitan Planning Commission

Hank Garant, Administrator, Planning & Development, Department of Community & Economic Development

Greg Kern, Executive Director, Knoxville Community Development Corporation

Private Planning & Design Consultants

David Forkner, Landscape Architect, McCarty, Bollock, Holsaple, Architects- Knoxville

A.J. "Flash" Gray, State and Regional Planning Consultant- Knoxville

H. Don Mauldin, Project Manager, Barge, Waggoner, Summer & Cannon, Engineers and Planners- Knoxville

Bruce McCarty, Principal, McCarty, Bollock, Holsaple, Architects- Knoxville

The interview involved an initial, one-on-one interview and a follow up interview in a combination of individual and group settings. The initial interviews, conducted in October 1982, toward the close of the fair, were used to gather base information and to establish topic areas critical to the study. The second set of interviews was held about 9 months after the fair's close, after those interviewed earlier had reviewed this study's preliminary conclusions and recommendations. The second

interview gave individuals an opportunity to reflect back on the fair experience and to critique and comment on the study's preliminary findings. Their comments were incorporated into the final conclusions and recommendations. This process served as the study's validation method. It was assumed that professionals who had been closely involved in the residual use planning for a past world's fair were "de facto" experts. It was felt that because of their actual experience, they could best evaluate the study's findings.

The secondary information gathering process involved identifying appropriate information sources and then reviewing the diverse sources. Information from pertinent publications was then derived from these sources and analyzed.

Books, periodical, journals, and newspapers were identified as secondary information sources. Books on specific fairs and those chronicling city histories provided significant information. Periodicals provided valuable information, photographs, and site plans of the fairs contemporary to their publication dates. Journals published for the planning and design professions tended to supply the most coverage during the early planning stages of fairs. One newspaper, the Wall Street Journal, was found to consistently report on the progress of individual fairs. It also proved invaluable in providing pre-fair, fair, and post-fair reporting and editorial comment on the business of marketing, managing, and financing world's fairs.

The remainder of Chapter 1 uses the secondary information

sources to provide historical and factual information on past and future world's fairs. The analysis in Chapters 2 and 3 is based on topic areas identified during the primary information and secondary information gathering process and uses case study examples from each to illustrate how and why past residual use planning efforts have succeeded or failed. Additional primary & secondary study examples are used to substantiate how residual use planning processes may be designed for future fairs. The study's final conclusions and recommendations, as mentioned earlier, incorporate the critiques and comments of the interviewed professionals who reviewed the preliminary findings. A review of the social importance, components, benefits and risks of hosting, and the urban design contributions of past world's fairs is discussed in the remainder of this chapter.

3. Purpose and Social Importance of World's Fairs

The reasons for hosting world's fairs have evolved and expanded since the first world's fair, The Great Exhibition of Industry of All Nations of 1851. The 1851 fair was seen as an opportunity to spur technological improvements by gathering industrial products from all nations together in one place. The fair's organizer, Prince Albert of England, felt the fair would also lessen the chance of hostility by demonstrating man's common interests everywhere (Mandell, 1967: 8). After 1851, the scope of fairs expanded to cover agriculture, the arts and social sciences. The 1876 Centennial Exposition was the first fair held to commemorate a past event (Zimmerman, 1974: 67). France's 1878 Exposition was the first to have health and social science exhibits, as well as adding international educational congresses and meetings on topics of world interest (Mandell, 1967: 14). These organized educational events have continued to occur in conjunction with fairs, including the 1982 World's Fair, which served as a forum for symposiums on world energy use and conservation (Kruse, 1982: 17). World's fairs have become the event that chronicles man's technologic and social advances by presenting a logical inventory of civilization for a stated period (Information Services, 1967: s74, 1).

Prince Albert's dream for peaceful interaction between peoples of differing cultures and nations has been a reality. The 1878 fair's theme was "Peace". The only periods when fairs have not occurred, since 1851, is during the time of war. Fairs planned

for 1940 in Tokyo and Rome were cancelled after hostilities began in Europe (Zimmerman, 1974: 71; Hartley, 1970: 38). International visitors, as well as the predominant number of visitors from the host country, are given the opportunity to be exposed to a broad range of cultures, ideas, and beliefs. Nations, corporations, religions, and special interest groups exhibit at world's fairs. The original goal of creating an event to provide a forum for peoples and nations to gather, share knowledge, and compare technologies, exists to this day with a scope that has been greatly expanded beyond industrial technology.

In addition to this somewhat lofty purpose, world's fairs are the event where a glimpse of tomorrow may be seen. A fair is a place ripe for speculating on what life will be like in the future. Fairs are one of the few places where speculation on the future is actually essential to its appeal (Alles, 1973: 26-27). George Eastman's interest in simplifying photographic equipment for amateur use is traced to the Centennial Exposition. The Centennial Exposition also spurred the establishment of technological and industrial schools by providing a glimpse of America's industrial future (Zimmerman, 1974: 64). New York City's 1939 Exposition is best remembered for its bold, futuristic architecture coupled with amazingly accurate predictions of life in the upcoming decades. Looking back, past fairs provide a clear mirror of their times, reflecting, like succeeding editions of an encyclopedia, the products, exhibit techniques, and architecture of their periods

(Zimmerman, 1974: 64). The preface of Dawn of a New Day, a book concerning the New York City 1939 fair, states, "In fact an examination of each world's fair ... would give a flash picture of the epoch"(Harrison, 1980: ix-x).

4. Benefits and Risks of Hosting a World's Fair

There are a number of possible benefits and risks associated with hosting a world's fair. The most apparent benefit is the opportunity to improve the host city's status by staging a successful event. The media coverage of a world's fair is sufficient to create name and event recognition for any host city. A second major factor benefiting the host city and other levels of government is the windfall of tax revenues generated by the fair-related surge in local spending. The Knoxville region reaped a \$25 million tax windfall by hosting Expo '84 (Howland, 1983: 2). The fair-related expenditures of local and state governments may be offset by these tax windfalls. A third benefit is the fair's positive economic impact on the local economy and the creation of new temporary and permanent jobs. The positive contribution a fair can make on the health of a local economy is demonstrated by examining the coincidence of economic depression/recession and world's fairs. Four fairs occurred during or near the end of the Great Depression of the 1930's. While the Chicago Exposition of 1933/34 had been planned during the economic boom of the 1920's, it was later scaled down and held to provide an economic boost to the Chicago

economy (Jackson, 1937: 95). The 1933 San Diego, 1939 New York City, and 1939 San Francisco fairs were all planned to provide a stimulus to local economies (Jackson, 1937: 36; Peters, 1982: 15). This positive economic impact remains important even for less drastic periods of economic recession. During the construction and operational period of Expo '82, Knoxville experienced a lower unemployment rate and had a significantly healthier local construction industry than both the State of Tennessee and the remainder of the United States (Lanier, 1982: 75).

Fairs provide other benefits important to the physical development of the host city. Hosting a fair creates a sense of urgency, increasing the degree of cooperation between the numerous groups involved. Governmental red tape can often be reduced or eliminated if sufficient political clout is available. Government funds become available through special appropriation and increased or redirected established funding categories. At the urging of local politicians, President Jimmy Carter directed \$12.7 million of federal aid to assist the city of Knoxville in acquiring and developing the Expo '82 fair site (Knack, 1982: 9). In addition to these totally federal funds, the state of Tennessee redirected all of its highway construction funds for a three year period to rebuild the interstate highways near Knoxville (Adams, 1982). The combination of these benefits creates a climate that allows an important additional benefit to occur. New, large scale, public or private development projects can become a reality to a city

hosting a fair. San Francisco's 1939-40 World's Fair left a new, man-made island, intended to serve as a municipal airport site (Peters, 1982: 15). Montreal scheduled finishing of its Metro subway system to coincide with the completion of the Expo '67 site, which later became a mid-river urban park. Sponsoring a fair can also serve as a catalyst to private development as in Knoxville, where three new hotels were added to the downtown area. In addition, projects that seem impossible due to their size, complexity, or a political deadlock, can be implemented if done in conjunction with a fair. A downtown city park in Spokane, Washington, which was proposed in the early 1900's, became a reality only when tied to the development of Expo '74. The park and the additional private re-development in downtown Spokane caused a local planner to remark on the effects of tying the park and fair development together, "It's 20 years of urban renewal condensed in 4 years" (WSJ Staff Reporter, 1974a: 1). Fairs, therefore, are vehicles for urban development and can accelerate the pace of that process.

A seemingly important benefit of hosting a fair is to make a direct profit for the host city. While this may be a potential benefit in other countries, it would not occur in the United States. World's fairs in the United States, unlike the remainder of the world, are private, non-profit ventures, and therefore are not connected directly to government. In spite of the potential for financial gain most past fairs, due to lavish spending and poor fiscal management, have returned one-third or less of the original sum invested to host the fair, to their

investors. The reasons for this situation are discussed later in this thesis. However, in instances where development and operational costs were closely monitored and controlled, fairs have been able to break even or have a slight surplus. Knoxville's economic consultant, Economic Research Associates, estimated the 1982 fair feasible if intended as a "break-even" venture. Prior to the fair's opening the Knoxville fair sponsor corporation predicted an \$8.5 million surplus (Calonius, 1983: 37). After the fair closed and the final accounting was completed, the fair was judged to have broken even (Howland, 1983: 2). Expo '82's financing and the city's bond anticipation notes for site acquisition, demolition, and utility construction were arranged only prior to and during a lull in a period of historically high interest rates. Had this not occurred, the impact of high interest rates would have altered the feasibility and profitability of both enterprises (Kern, 1983).

Some fairs have been planned with a deficit in anticipation that the shortfall would be offset by increased tax revenues generated by fair-related spending. Montreal's Expo '67 had a planned deficit of \$50 million, to be borne by local, provincial, and federal government. The government-sponsored fair deficit ballooned to \$250 million by the close of the fair, increasing the debt burden on the government dramatically (WSJ Staff Reporter, 1967a: 18). At best, fairs should be seen as a benefit to local government by generating additional tax revenues and creating new temporary and permanent jobs. However, the need for and cost of additional city services must

be carefully weighed against this revenue increase to determine whether there is a net gain or loss. A thorough assessment of the potential risks of hosting a fair must be made at the same time that potential benefits are being examined.

A host city risks its status and image first, by attempting to organize a world's fair and, later, by playing host to a world event that receives heavy media coverage. A host city's status can be lowered and its image tarnished by hosting a fair that is considered a failure or below-par. New York City's status was affected and its image tarnished by its 1964-65 fair. The fair's gaudy commercial nature cast a pall over the fair and the host city. Events occurring prior to and during a world's fair can also affect a host city's status and image. Knoxville's 1982 exposition was plagued by pre-fair residential tenant evictions, failure of the fair sponsored lodging reservation system, and the inadequacy of the fair site to accommodate the extremely large number of visitors during the early portion of the fair (Mauldin, 1982). Media coverage of these problems lowered fair attendance and adversely affected the status and image of the host city. The long-term effect of those problems on Knoxville's status and image is unknown, however its appearance is probably poorer than if these problems had not occurred.

The second risk a host city accepts by organizing a fair is opposition. Most of the opposition to the fair will probably come from host city residents. Media coverage of local opposition and a faltering public appearance can seriously

affect a fair and the image of the potential host city. While this will probably be a small, vocal group of citizens with sincere, or less than sincere concerns, they can be very forceful in hampering important fair-related decision making processes. One possible reason for public opposition is misgiving about spending or risking public fiscal resources on a seemingly frivolous six-month event. This concern over risking local resources has foundation, drawn from the experience of past fairs. In addition to providing an array of fair-related additional city services, New York City loaned the 1964-65 World's Fair sponsor corporation \$24 million to make permanent site improvements prior to the fair. This money, plus the forecast large financial surplus, was to be repaid to the city after the fair closed. The fair's predicted surplus never materialized and neither did the funds to repay the loan (WSJ Staff Reporter, 1965a: 9).

Host cities also risk public funds through financing permanent public or private facilities necessitated by the fair. Knoxville committed \$32.6 million to finance land acquisition, site improvement, and public and private development on the 1982 fair site. Repayment of a large portion of this money is dependent upon successful post-fair development of a residual site use (Peters, 1982: 19). It was necessary to make this public commitment of funds prior to the fair, before the success of the fair and its residual uses had been determined.

A fourth risk is that the host city will generate unmanageable costs and pass them on to the host nation or divert monies from

other, more necessary uses. For example, lavish grants by French kings in the 19th Century allowed fairs to prosper at the expense of other areas of government (Mandell, 1967: 8). Expo '67's planned deficits ended up at four times the planned amount. This additional \$140 million liability to the provincial and federal government could have financially endangered a less prosperous nation. While this risk may be of little concern to a world power, it should be carefully weighed by smaller nations considering hosting and subsidizing a world's fair.

5. BIE Purpose and Summary of Pertinent Regulations

World's Fairs began with the 1851 international exposition in London. Since then, they have occurred with great frequency except during the World Wars. Due to their positive economic impact, even recessions and depressions fail to curtail fairs and actually prompt their occurrence. Since the Second World War, there has been a continual string of fairs, occurring generally at one-or-two-year intervals (Information Services, 1967: s142 1-2). This enthusiasm for fairs lead to the formation of an international bureau to control the number of world's fairs.

The Bureau of International Expositions (BIE) was formed by international treaty in 1928 to serve as the single international agency to recognize and establish standards for hosting world's fairs. The intent of this treaty was twofold:

To control the number of fairs, thereby limiting the financial expenditures for exhibiting to one fair per year, and; To set standards that must be followed when hosting a world's fair (Information Services, 1967: s 142 1-2). The United States resisted signing the treaty until 1968. By that time it had become apparent that even sponsors of U.S. fairs were, by necessity, required to have BIE approval to attract foreign national exhibits. New York 1939-40 and 1964-65, and Seattle 1962, were all U.S. fairs that had received BIE approval prior to the United States signing the treaty (Caro, 1974: 1093-94; Schmedel, 1961: 1; Schmedel, 1965: 4). Countries party to the treaty are banned from exhibiting at non-recognized fairs, so the only alternative open to members desiring to exhibit at non-recognized fairs is to be represented by a private, pseudo-representative, such as a national chamber of commerce (Schmedel, 1961: 1). In addition to registering world's fairs, the BIE sets standards which must be observed to retain the official world's fair designation.

The wide range in fair size and the varying reasons for hosting a world's fair prompted establishment of two categories of fairs. One category inventories all of mankind's accomplishments and technologies while the other category focuses on only a limited scope of man's accomplishments and technologies. The categories are "Universal and International Expositions" and "Special Category International Expositions" (Bylin, 1972: 2B). The "universal expositions" are the larger, comprehensive expositions, and are held to chronicle a time

period since a past major event. These fairs chronicle all areas of man's progress during the featured time period. The last universal exposition held in the world was Osaka, in 1970. The most recent North American universal exposition was Montreal's Expo '67 which commemorated Canada's national centennial (Strong, 1967: 30). Chicago's planned 1992 exposition is the next planned universal exposition, commemorating the 500th anniversary of Columbus' discovery of the Americas (Peters, 1982: 18). "Special Category International Expositions" are smaller fairs that focus on one topic area of man's endeavors or concerns. These fairs may but are not required to commemorate an earlier event. The majority of recent world's fairs have been "specialized expositions". These include: Seattle 1962; San Antonio 1968; Spokane 1974; Okinawa 1975; and Knoxville 1982. Each fair had a single theme, such as Knoxville's, which centered on man's use of energy. At specialized expositions, national exhibits are expected, but not required, to center on the selected theme.

The frequency at which both types of fair may be held is also controlled by the BIE. The world is divided into three regions for BIE purposes. The regions are Eurasia, the Americas, and the Far East. In each region, a universal exposition may be held once each decade. Specialized expositions may be held every two years in each of the three regions (Information Services, 1967: 599). The Americas region has fairs planned for 1984 and 1986, the shortest time span permitted between specialized fairs in one region. A 1985 fair is planned in Japan, which is

permissible since it is in a different world region.

The first world's fair, in 1851, lasted six months, from May to October, was visited by six million spectators, and ended as a financial success. This fact may be justification enough for the six month durations set by the BIE (Auger, 1967: 14). The single season, six-month duration is a regulation adopted to lower exhibit expenses for participating nations. Past fairs that operated a second season in order to improve their fair sponsor corporation's financial condition or to amortize fair funded construction costs over a longer period have generally ended up in worse financial condition than they would have had they operated only one season. Only Chicago's 1933-34 fair improved its financial position by operating a second season (Jackson, 1937). New York's 1939-40 and 1964-65 fairs and San Francisco's 1939-40 fair did little to improve their financial position by operating a second season. A major reason for this is the high cost of maintaining (and winterizing where necessary) temporary fair structures. Others are the problems of convincing exhibitors to remain a second season and change their exhibits to attract repeat visitors from the first season, and to replace the private exhibits whose sponsors fail and enter bankruptcy after the first season (WSJ Staff Reporter, 1965c: 15). The New York City 1964-65 fair required \$3.5 million to reopen a second season and the deficit from the first season of \$17.5 million increased to \$20 million by the end of the second season (WSJ Staff Reporter, 1965a: 9; WSJ Staff Reporter, 1965b: 7). These factors convinced the BIE to maintain the six

month duration limit since last granting an exception to the 1939-40 New York City fair (Caro, 1974: 1093).

A final regulation important to the subject covered in this thesis is how exhibition pavilions are funded for each category of fair. International pavilions at specialized category expositions are required to be funded by the fair sponsor corporation. At universal exhibitions, the international pavilions may be free standing structures erected by the participating nations or leased interior space built by the fair sponsor corporation. Special category fair sponsor corporations are thus required by the BIE to invest in international pavilions. This requirement, however, does give the fair sponsor corporation architectural control, as well as the potential to design the pavilions for a specific residual use. Domestic pavilions (those housing business, religious, or other group exhibits) may be either privately erected, free-standing structures on leased sites, or leased interior space built by the fair sponsor corporation. All non-permanent fair pavilions are required to be dismantled or demolished at the fair's close. This requirement was adopted since adequate site demolition and resoration proved to be a problem with early fair sites (Information Services, 1967: s99). The BIE has published a manual detailing all of the regulations, but these four regulations on fair categories, frequency, duration, and pavilion construction and financing have the greatest impact on fair site design and residual use planning.

6. Process of Establishing & Hosting a World's Fair

The process and time sequence for establishing and hosting a world's fair is very similar for most fairs. A more-or-less "typical process" is outlined in Figure 1. This process was developed by examining how recent fairs evolved from the conception of the fair idea to the implementation of the fair. The fairs examined were New York City 1939-40, Seattle 1962, New York City 1964-65, Spokane 1974, and Knoxville 1982.

Figure 1
Typical Time Sequence for Hosting A World's Fair

Fair Organizing Group Formation	World's Fair Sponsor Corporation Establishment	World's Fair Sponsor Organizational Activities
1-2 Years	1-2 Years	2+ years
a. Initial feasibility overviews b. Test community support	a. Complete feasibility studies b. Site Selection Process c. Initial financing d. Develop preliminary masterplan e. Complete Environmental Impact Statement f. Federal recognition & BIE sanctioning	a. Establish permanent financing b. Finalize masterplan & general site development plans c. Negotiate government & private participation
Site Development Activities	World's Fair Operational Period	Post-fair Demolition
2+ years	1/2 Year	1/2 - 1 year
a. Finalize detailed site design b. Construct permanent & temporary site improvements	a. 6 month period of operation	a. Remove temporary fair related features

7. World's Fair Components

A fully developed world's fair site is the sum of many physical components. These components, in varying quantities and sizes, are common to all world's fair sites. Each is discussed here to document the components that make up a fair and to illustrate how the components impact or may be impacted by residual use planning.

A. Fair Site

The largest and most obvious component is the fair site. Its selection and specific characteristics, such as size, infrastructure, and ownership, are discussed in detail in Chapter Two, and therefore, will not be covered here. The other fair components are grouped into categories and discussed below.

B. International & Domestic Pavilions

The pavilions that house the fair's exhibits are the first category of components to be examined. World's fair pavilions are grouped into two types - national and domestic. As discussed earlier, BIE regulations determine who is responsible for erecting and funding international pavilions. The majority of fairs are specialized category fairs and pavilion construction costs are a large portion of fair site development. Therefore, the pavilions should be easily converted to an on site residual use which can pay for a portion of construction costs, be easily disassembled and sold for re-erection and use elsewhere, or easily demolished and the materials sold as

salvage. The option selected must be based on the fair's financial capabilities, the host city's objective for having the fair, and the site's residual use plan. The Expo '82 architectural consultants originally proposed a set of international pavilions that could be retrofitted, plug-in housing. The desire of international exhibitors was to have secure, air conditioned, high ceiling structures with black, guts out (unfinished) interiors. This fact, coupled with a limited fair corporation international pavilion construction budget of \$21-\$23 per square foot, resulted in the use of pre-fabricated metal industrial lofts (McCarty, 1982; Forkner, 1982). The pavilion lofts were sold at the fair's end to be dismantled and erected elsewhere. Free-standing international pavilions at universal expositions are generally architecturally unique. Reuse of these structures is often limited or, in some cases, impractical. Many international pavilions from past U.S. fairs have been donated to communities or colleges. The Swedish pavilion at the 1904 St. Louis Exposition was partially dismantled and shipped via rail to a Lutheran college in Lindsborg, Kansas. This has occurred more recently with pavilions from the 1964-65 New York City and 1974 Spokane fairs (Feinstein, 1965: 32; Brinker, 1983).

Domestic pavilions occur as either free-standing, privately erected structures, or fair sponsored structures with leased interior space. It is sufficient to say that these free-standing structures are temporary and must be removed at the fair's end. The possibility of reusing these structures is

dependent upon the structure's durability and the costs and benefits of retrofitting it. Fair sponsored domestic pavilions generally end up being permanent structures, built and financed by the host city. Since the establishment of a successful convention, sports and cultural civic center on the Century 21 Exposition site in Seattle, four more recent host cities have attempted to emulate its success. Some form of convention/sports and cultural facilities was established in San Antonio, Spokane, and Knoxville, and will be in New Orleans, by retrofitting buildings that first served as domestic pavilions. The need for large, open interior space, coupled with the host city's ability to issue bonds to finance the construction of civic buildings, makes this a practical solution. Cash-short fair sponsor corporations are spared the problem of attempting to finance what would otherwise be very expensive temporary structures.

C. Theme Structures

The imaginability of a world's fair is often tied, not to a well designed logo, but, to a dramatic architectural element. This has been true since the construction of the 1851 Exposition's Crystal Palace. These dramatic architectural elements have become known as "theme structures". Theme structures often serve as a site orientation feature, due to their prominence, but more importantly, they shape and create the fair's identity (Zimmerman, 1974: 66; Harrison, 1980: 133; Mandell, 1967: 19). This imaginability is created using one or more design features.

The feature most often used is creation of a dominant vertical element. This was first used in Paris at the 1889 Exposition. The Eiffel Tower was the first clou or "main spike" to serve as a theme structure (Mandell, 1967: 18-19). The Eiffel Tower served again for the 1937 Paris Exposition and the concept of a dominant vertical element was repeated for the 1939-40 New York City, 1962 Seattle, 1968 San Antonio, and 1982 Knoxville fairs. The use of a dominant vertical element as a theme structure has been used so often that fair critics cringe each time a theme structure is proposed at a new world's fair (Von Eckardt, 1982: 72).

The second design feature used to create theme structures is that of mass and void. The theme structure may be a mass or combination of mass and void. The Crystal Palace was the first use of mass to create a theme structure. The 1893 Columbian Exposition's Court of Honor, surrounded by Burnham & Olmsted's White City, was the first use of mass and void. This concept is used infrequently. It was last used at Expo '75 in Okinawa, Japan where a prototypical floating city, the Aquapolis, served as the theme structure (Nanjo, 1975: 43). A third design feature used to create a theme structure is that of a long, narrow linear element. This is being used for the first time at the 1984 Louisiana World Exposition. Its ability to serve as a theme structure and truly create imaginability is unknown.

Three important points must be made before listing the theme structures of past fairs. First, theme structures may contain educational exhibits, such as the Futurama exhibit at the Trylon

& Perisphere theme structure of New York City's 1939-40 fair.

Second, some theme structures for world's fairs have been permanent, private developments (Seattle 1962, Knoxville 1982). Seattle's Space Needle was the first of these and has continued to operate as a private restaurant and observation deck since the fair.

The final point is that at fairs without a theme structure, a dominant pavilion or other site feature has been adopted by the media and later identified by fair visitors as the de facto theme structure. The United State Pavilion at Spokane dominated the fair site, due to its mass and colorful canopy. The pavilion's striking yellow canopy was the fair's dominant visual feature, which resulted in it serving as the de facto theme structure.

Table 2

Selected Theme Structures for Past Fairs

1851	Crystal Palace
1889	Eiffel Tower
1893	White City and Court of Honor
1915	Palace of Fine Arts
1939-40	Trylon and Perisphere
1962	Space Needle
1964-65	Unisphere
1967	Habitat & Man's World Theme Buildings
1968	Tower of the Americas
1970	Festival Plaza
1974	United State Pavilion (de facto)
1982	Sunsphere
1984	Wonderwall (Louisiana World Exposition)

D. Amusement Midway

In addition to exhibits, another important form of entertainment is the amusement midway. The Paris Expo of 1867 was the first fair to have a midway (Mandell, 1967: 13). Midways provide fair visitors an opportunity to relax and find diversion between visiting the pavilion exhibits. Amusement midways are generally located on a concentrated part of the site or on the site's periphery. At Expo '62, '67, and '68, the amusement midways were planned as residual site uses (Peters, 1982: 16&17).

E. Visitor Services

The visitor service components directly benefit or are used by fair visitors. Visitor service facilities may be permanent or temporary and in new or renovated structures. Most visitor service facilities are temporary and can be designed with recyclable materials, as were used in Knoxville (Von Eckardt, 1982: 72). However, a seven story warehouse was also renovated and leased by the fair sponsor corporation in Knoxville for food and merchandise concessions (Gray, 1982). These facilities must be dispersed throughout the site and be identified by a uniform site graphic system which is unobtrusive. A list of specific visitor services follows:

- Food Concessions
- Merchandise Shops
- Information, Map, and Guidebook Sales
- Restrooms, Water Fountains, Storage Lockers
- Stroller & Wheelchair Rentals
- Emergency Services (First Aid, Lost Persons, Fire, and Security Services)
- Entry Gates, Ticket Sales, Passenger Loading Zones

F. Administrative & Support Service Facilities

The administrative and support service facilities provide a base for operations for the fair sponsor corporation. The administrative functions of a fair corporation require office space in the years prior to the fair's opening. This space must be close to or on the fair site. Some fairs have leased near-by private space or, as in Knoxville's case, leased permanent office space on the fair site in a building erected to serve as part of the residual use. Other fair corporations have built temporary on-site buildings for this purpose (Monaghan, 1939: 31). Fair maintenance operations require a different type of building that may be temporary or permanent. An existing on-site structure may be renovated and used for this purpose, as in Knoxville where a hardware warehouse was renovated for use by support services. Such a structure could be later sold to recoup renovation costs or razed after the fair without a large financial loss to the fair corporation. The availability of an on-site structure for renovation and actual space needs determine which option is more prudent for a particular fair.

8. Urban Design Contributions & Achievements of Past World's Fairs

An examination of the permanent urban design contributions made by past fairs would show that fairs have the potential to be much more than six month entertainment extravaganzas. Beginning with the nineteenth century Paris expositions, world's fairs have been utilized as vehicles for urban improvement.

World's fairs have transformed town centers and stimulated the creation of new districts in their host cities (Alles, 1973: 13). Past world's fairs were directly responsible or have assisted in the creation of the following types of urban design and development:

Table 3

Types of Urban Design Resulting from Past World's Fairs

Major urban parks
 Urban riverfront open space
 College campuses
 Civic centers
 Museums
 Convention Centers
 Marinas
 Man-made islands
 Airports

The type of urban design resulting in each host city has been based on whether the city was a growing or mature urban area and on what public needs existed in the host city. A fair's urban design contribution does not necessarily end at the fair site's boundary. Many past host cities have benefited due to the implementation of fair-necessitated off-site development. Completion of Montreal's Metro public transportation was tied to Expo '67's opening date, as were other local public projects (Peters, 1982: 17). Knoxville's interstate highway system was rebuilt and expanded to handle traffic for the 1982 Exposition. Together, the off-site and fair site developments can create significant urban design contributions for their host cities.

The urban design contributions of past fairs are examined in

the remainder of this section. The contributions of early French fairs are examined here since they occurred with regularity and had significant impact on their host city, Paris. Urban design contributions of past fairs in North America are examined after that of the French fairs. Limited financial figures are provided (in unadjusted dollars) for past fairs, where these could be documented. Due to the private nature of U.S. fairs and the potential political backlash that detailed fair expenditure and revenue statements could have, most fair corporations release little more than a final profit or loss figure to the public.

Urban Design Accomplishments of Nineteenth Century French World's Fairs

World's fairs were sponsored by the French government and the city of Paris roughly every eleven years from 1855 until 1900 (Mandell, 1967: 17). The fairs represented a way to display a country's wealth, culture, and industrial superiority (Harrison, 1980: 12&110). The powerful French rulers sponsored the fairs for these reasons and to implement desired urban improvements. Generally, it was accepted that each fair had to be more grand than the one that preceded it. The fairs' urban design contributions paralleled this pattern, beginning with the erection of a single exhibition hall for the first fair and ending with the redevelopment of an entire city district in central Paris for the 1900 Exposition. The first two fairs resulted in the erection of exhibition halls "used irregularly

for salons, ice skating and horse shows" (Mandell, 1967: 46). For the third exposition, in 1878, a new and different exhibition hall was erected at the Champs de Mars site and, because of the advance in Expo's to concern themselves with cultural events, the huge Tocadero Palace was built across the Seine to house those parts of the exposition (Mandell, 1967: 14). The Champs de Mars site was used again for the Expo of 1889. Advances in engineering technology allowed the daring erection of a permanent tower under government subsidy by Gustave Eiffel (Zimmerman, 1974: 67). The 1889 Exposition and the ones preceding it set the stage for the grandest redevelopment scheme of all the French expositions, which involved assembling and constructing the fair site for the Expo of 1900. Paris took the urban improvements of past fairs and created a single, unified, A-shaped fair site in the heart of Paris. The intent of the fair directors was to improve the central area of Paris by creating a major new avenue and to provide open space along the Seine. The project was planned to utilize the axial avenue from the Eiffel Tower to the Tocadero Palace and to develop the aforementioned new urban design, creating new axial views and increasing the granduer of Paris. The 350 acre project required extensive demolitions but created permanent additions to central Paris (Mandell, 1967: 72).

This brief examination of the regularly held French fairs illustrates how the 19th century fairs were used as urban design vehicles throughout the second half of the century in France. While the host cities of other expositions may have used them as

urban design vehicles, this has not been well documented, except in North America and Japan. Here fairs have been used as an urban design vehicle by all but the earliest of fairs.

Early World's Fairs in the United States

Early U.S. world's fairs left few legacies. These fairs were usually held in existing city parks which were often relandscaped for the fair and then returned to recreational use after the fair (Peters, 1982: 14). For the 1853 fair in New York, an exhibition building was temporarily erected in an existing city park. Later, this park became the site of the new York City Library (Mandell, 1967: 9). The 1876 Centennial Exposition at Philadelphia was held in Fairmont Park. While no permanent structures remained after the fair, the concept of utilizing multiple pavilions was introduced in the United States. Audubon Park in New Orleans was the site of the Industrial and Cotton Centennial Exhibition of 1884-85. This was the only new park created for an early U.S. fair (Peters, 1982: 14). Up until this time, world's fairs in the United States had been held in temporary exhibition halls on sites that were not significantly affected by their occurrence and these fairs had not played a significant role in implementing a major urban design for their host cities. The hosting of Chicago's 1893 Columbian Exposition changed this and set a precedent for all fairs that followed it.

1893 Columbian Exposition

Chicago was a fast growing, young city (60 years old) that was more in need of basic public facilities than of redevelopment at its urban center. The fair sponsor corporation established an inter-disciplinary design team for the fair, which included Frederick Law Olmsted, the father of North American Landscape Architecture. As site planner and landscape architect for the fair, Olmsted felt the fair was an opportunity to implement a major urban design. Olmsted successfully lobbied for using a site along Lake Michigan, for which he had prepared a preliminary park masterplan in 1871 (Sutton, 1971: 166-7). Olmsted's fair masterplan and the residual park masterplan allowed development for both uses to successfully occur in a 600 acre area that was originally sand dunes and backwaters (Sutton, 1971: 184). The fair's Palace of Fine Arts became the Museum of Science and Industry. The pavilions had been built on materials excavated from the park lagoon drainage system and the pavilion sites became areas for sports fields and open space after the fair. The site plan also allowed conversion of the fair's canals and reflecting basin into naturalistic, informal waterways. Chicago gained Jackson Park, a major urban design as a result of the fair. Development of the residential areas around Jackson Park were spurred by the fair and the resulting residual development. Olmsted lamented this occurrence because unethical real estate speculators marketed residential lots on the promise that the fair's "White City" was permanent (Fein, 1972: 66). In spite of this unfortunate side effect, the fair

itself was a financial success, costing the fair sponsor corporation \$31 million to stage, and generating revenues of \$33 million (Tying, 1958: 14).

1901 Pan-American Exposition

Buffalo, New York's Delaware Park was the site for the 1901 Exposition. The 350 acre park had originally been designed in 1868 by the office of Olmsted and Vaux (Fein, 1972: 30). The fair's major residual structure was a permanent state pavilion which now houses the county historical society (Peters, 1982: 14). President William McKinley was shot and fatally wounded at the Exposition in September 1901 (Zimmerman, 1974: 69). The fair was a financial failure, having expenses of \$9 million and revenues of \$5 million (Tying, 1958: 14).

Louisiana Purchase Exposition of 1904

The Louisiana Purchase Exposition in St. Louis had one of the largest sites of all expositions (Zimmerman, 1974: 69). The 1,142 acre fair site included part of Forest Park, some private land, and Washington University, which was built as an exhibit (Tying, 1958: 14; Zimmerman, 1974: 69). The fair leased a college building to serve as its administration building. The fair's fine arts building became the City Art Museum. Excess funds from the fair were used to build a statue of St. Louis in front of the art museum and the Missouri Historical Society building (Bryan, 1928: 28). The fair's expenditures were \$20 million (Tying, 1958: 14). The exact amount of the relatively small surplus is unknown.

1906 Alaska - Yukon - Pacific Exposition

The 1906 Alaska-Yukon-Pacific Exposition was held in Seattle on the nearly virgin Union Bay campus of the University of Washington. It was recognized that the fair could provide a lasting benefit by providing a base upon which the campus could be built (Morgan, 1963: 30). The fair's residual permanent improvements included an auditorium, two classroom/laboratory buildings, and a site plan designed by the Olmsted Brothers which included landscaping and a reflecting pond with a vista to Mt. Rainer. Three temporary fair pavilions were retained for a number of years to help the University through its initial period of expansion (Morgan, 1963: 30-31). The fair corporation closed out its books with a surplus of \$785,221.10 (Morgan, 1963: 31).

1915 Panama - Pacific Exhibition

The 1915 Panama-Pacific Exhibition was held in San Francisco on a landfill area which included land owned by local and federal governments (Scott, 1959: 159). The 635 acre site constructed along the Bay created significant new open space for its host city. The fair's temporary Palace of Fine Arts was retained after the fair and only recently rebuilt of permanent materials (Peters, 1982: 14). A significant off-site development, prompted by the fair, was the construction of a civic center which was seen as necessary to host foreign dignitaries and to hold fair-related cultural events (Scott, 1959: 154). Though the fair was responsible for two

significant, permanent urban design contributions, it was a financial fiasco, costing \$50 million to host, while generating revenues of only \$12.5 million (Tying, 1958: 15).

1915 Panama - California International Exhibition

In 1915, down the coast in San Diego's Balboa Park, another fair was held. The fair left an urban park containing fair pavilions, which still house museums and art galleries, and has concert areas and public gardens (Peters, 1982: 15).

United States World's Fairs in the Depression Era

1933-34 Century of Progress Exhibition

The 1933-34 Century of Progress Exhibition served as a stimulus for Chicago's 1930's depression economy. The fair also served as an opportunity to showcase its newly completed civic structures, including an aquarium, planetarium, and natural history museum, and a sports stadium. A man-made island, that served as a portion of the fair site, later became an airport (Peters, 1982: 15). The fair corporation proceeded with financial caution while planning and hosting the event, anticipating breaking even or having a small surplus at best (Jackson, 1937: 95). This attitude paid off; the fair cost \$37.5 million and produced a surplus of \$688,165.35 (Tying, 1958: 15; Jackson, 1937: 122). The fair corporation attributed its surplus to the federal government's waiver for the collection of general and income taxes for all of the corporation's operations (Jackson, 1937: 104-5).

1939-40 Golden Gate Exhibition

The second San Francisco exposition was held to celebrate the opening of the two bay bridges, the beginning of trans-Pacific air service, and the progress of the Pacific nations (Jackson, 1937: 143). The fair was held at the geographic center of the Bay metro area on Treasure Island, a man-made island created on shoals owned by the city of San Francisco. The site was accessible by ferry and the new Oakland Bay Bridge. The fair site was chosen to induce construction of an island whose

residual use would be "one of the world's leading metropolitan air terminals" (Jackson, 1937: 142-43). An airport terminal building was built prior to the fair to serve as the fair's administration building, as were two hangers that served as exhibit buildings (Jackson, 1937: 142-3). The proposed airport never materialized. The Navy occupied the site for a naval base for World War Two. It was first intended to be temporary but later the Navy, "took permanent possession of Treasure Island, thereby putting an end to the idea of a mid-bay air terminal" (Scott, 1959: 243). The federal government had funded \$6,250,000 of permanent improvements through its public works economic assistance programs. The fair corporation funded \$2,315,258 of the permanent improvements that benefited the fair (Jackson, 1937: 142). The fair cost \$23 million and generated revenues of approximately \$14 million, leaving a deficit of \$9.1 million (Tying, 1958: 15; Morgan, 1963: 157).

1939-40 New York World's Fair

The 1939-40 New York World's Fair was held on 1130 acres of a 1285 acre proposed park site at Flushing Meadows in the borough of Queens. The Flushing Meadow site was chosen because of: 1, Its central geographic location within New York City; 2, The availability of undeveloped land; 3, The accessibility of all types of transportation; and 4, The desire of then Park Commissioner Robert Moses to create a new park in Flushing Meadows, which would serve as a new "Central Park" for the entire city of New York (Monaghan, 1939: 29; Moses, 1938: 72).

Robert Moses understood his political strength concerning the fair and told fair promoters that the Flushing Meadows site was the only parkland he would be cooperative on concerning use as a fair site (Moses, 1938: 72). While not being full-heartedly behind the fair, Moses did understand its potential to be used to achieve an urban design that he desired (Caro, 1974: 1084). Moses used his position to gain a political veto over all fair site improvements. By doing this, he was able to get the fair sponsor corporation to fund a reported \$4,206,000 of permanent residual improvements and to pledge the first \$2 million of its projected surplus to pay for the completion of the residual park facilities (Francis, 1939: 170; Moses, 1938: 72-74). New York City and the State of New York invested an additional \$56,000,000 for permanent infrastructure improvements on and near the fair site (Francis, 1939: 169). The fair corporation ended operations with expenses totaling \$51.6 million and revenues of \$33,066,321, leaving a deficit of \$18,723,222 (Tying, 1958: 101&104). Excessive financial expenditures for temporary and permanent structures and site improvements were later blamed for seriously increasing the fair deficit (Schmertz, 1964: 146&150).

Recent North American and Japanese World's Fairs

1962 Century 21 Exposition

The promoters of Seattle's Century 21 Exposition understood from the beginning that while a fair could produce an operating profit, the profit would not be enough to pay the costs of

acquiring and developing the site. Additional underwriting would have to come from somewhere. When city government was approached to possibly fund some of the residual improvements, a city councilman stated, "If a site could be found which could be developed so that it would have lasting value to the city or the state, I am sure the finances can be raised" (Morgan, 1963: 43-44). Eventually, the City of Seattle, State of Washington, and the federal government jointly funded development of a civic center which would first be used as the Century 21 site. Seattle contributed \$15.25 million and the State of Washington contributed \$10.5 million to the site's overall development. The federal government contributed \$9.9 million for the construction of the permanent U.S. pavilion (Stabler, 1962: 1). The fair site was successfully transformed to a civic center because 90% of the civic center buildings were designed to serve both fair and later residual civic uses (Clinton, 1962: 66). A civic center containing amusement, convention, cultural, and sports facilities was thus created because of the fair. The privately owned Space Needle served as the fair's theme structure and, along with the municipally funded Monorail, continued to operate after the fair. The Seattle fair produced a \$92,000 surplus, created a residual civic center, and is considered the most successful example of utilizing a world's fair as a vehicle for urban redevelopment (WSJ Staff Reporter, 1974b: 5; Peters, 1982: 16).

1964-65 New York World's Fair

The 1964-65 New York World's Fair was held at Flushing Meadows, the site of the earlier, unsuccessful 1939-40 fair. The size of the site for the 1964-65 fair was reduced to 646 acres, compared with 1130 for the earlier fair (Schmertz, 1964: 144).

Economy was the key word in planning and preparing the 1964-65 fair site. Robert Moses, who had been Park Commissioner during the 1939-40 fair, saw the second fair as a way to implement the uncompleted 1939-40 park residual use plan. By becoming the president of the fair sponsor corporation, he intended to make the fair successful by controlling construction costs and maximizing the number of exhibitors. The 1939-40 Beau Arts site plan was reused without alteration, due to the existence of asphalt roads, water, and sewer system (Schmertz, 1964: 146). This prompted the resignation of the fair's design board, which desired to change the site plan to improve internal circulation and enhance pavilion visibility. Even the fair's theme structure, the Unisphere, was an economy feature donated by U.S. Steel Corporation. The 120 foot globe had the world's continents attached to a spherical grid. While President Moses maintained that construction expenditures made by the fair sponsor corporation were being vigorously controlled, he managed to have the corporation fund \$22,256,000 of permanent park improvements. The Triborough Bridge and Tunnel Authority, which Moses simultaneously headed, funded \$6,576,000 of permanent improvements. A loan of \$24 million made by New York City to the fair corporation for permanent improvements, which Moses

later refused to repay, brought the city's 1964-65 contribution for permanent improvements to a total of \$31 million (Caro, 1974: 1090-91). An additional \$24 million of permanent improvements were split more or less evenly between the state and federal government. In all, \$83,832,060 of permanent improvements were made on the fair site. Moses had even directed the disposition of the fair's projected surplus of \$56 million to be used to pay for additional residual development of Flushing Meadows Park. Adjacent off-site permanent improvements, which included Shea Stadium, exceeded \$150 million (Peters, 1982: 17). Even a total investment of nearly one quarter of a billion dollars for permanent improvements did not guarantee a success for the residual use of Flushing Meadows Park.

The park today contains hundreds of acres of largely unused parkland (Peters, 1982: 17). The 1939-40 New York City Pavilion was retained, as was the 1964-65 New York State Pavilion. The New York Port Authority's heliport, which has a restaurant suspended below the landing deck, remains. The U.S. Open is played in the U.S. Tennis Association's facility at the site's north end, near Shea Stadium. Alternate residual uses, such as using the site for a university or new town, were rejected by Moses, who desired and tried twice to build a new "Central Park". The fair itself suffered financially due to its blatant commercialism which Moses encouraged. He hoped this would increase the fair's revenues and thereby fund the residual use. The fair sponsor corporation closed its books in 1967 with a

deficit of about \$20 million (WSJ Staff Reporter, 1967b: 37).

Expo '67

Montreal's Expo '67 was a Universal and International Category Exposition celebrating Canada's centennial. The fair was held on two islands and a mile-long pier in the St. Lawrence River. One island, Ile Notre Dame, was completely man-made and the other island, Ile Saine Helene, was created by consolidating three small, existing islands. The earthfill McKay Pier was lengthened and broadened. The original 314 acre site was thereby enlarged to 710 acres (Information Services, 1967). The two islands and pier were to serve as a new housing and civic center in the heart of Montreal. Ile Saint Helene was planned to serve as a mid-river urban park containing cultural facilities, the permanent La Rhode amusement area, a marina, and open space. Ile Notre Dame was to serve as a site for residential development. McKay Pier, renamed Cite de Havre, was to serve a number of residual land uses. A permanent fair pavilion became home to the Canadian Olympic Association (Strong, 1967: 30). Habitat '67, an experimental manufactured pre-cast concrete housing development, also occupies the pier. The actual cost per unit was \$139,000 (in 1967 dollars), or over twice the original estimates (Strong, 1967: 30). This made the Habitat '67 building system remain a prototype and ended plans to expand this housing scheme on McKay Pier and, eventually, to Ile Notre Dame. The 150 unit apartment complex remains today, along with an auto race track at the pier's west end. The fair's success prompted local government officials to adopt the

concept of a permanent fair as a residual use. Many of the international pavilions and their exhibits were donated by the participating countries. This allowed the countries to escape responsibility for demolition costs. The permanent fair reopened in 1968, requiring 20 million visitors a season to break even, a significant number considering the fair had attracted 50 million (O'Connor, 1968: 12). Gone were many of the best international exhibits and films, often replaced by mere trade exhibits. Gone too was the novelty of the fair site, as well as "the excited hubbub generated by a jam-packed fair" (Prinsky, 1968: 14). The permanent fair continued in 1969 and 1970, becoming enough of a political issue that the mayor issued a statement saying the fair was "permanent and would continue next year" (WSJ Staff Reporter, 1970: 16). A much scaled-down version of the fair's "Man and His World" exhibit continues to exist (Peters, 1982: 17).

Expo '67 was a government sponsored world's fair with a planned deficit that would be offset by increases in intra and international tourism. The fair was such a success that the need for additional services dramatically increased its deficit from \$120 to \$250 million. This sum was divided so the federal government paid 50%, Quebec paid 37.5% and Montreal paid 12.5% (WSJ Staff Reporter, 1967-: 15). At the fair's close, Montreal was given the federal and provincial governments' ownership of \$225 million of the Expo's improvements (O'Connor, 1968: 12).

1968 Hemis Fair '68

San Antonio's fair was held to celebrate the confluence of civilization in the Americas and to leave a legacy of cultural and educational institutions that would strengthen the intercontinental bonds that exist among the three Americas. The fair was used to implement a long-planned urban renewal project in downtown San Antonio. The intent of the fair's residual use planning was to create "one of the most significant concentrations of civic structures in America" (MacKay, 1968: 48). San Antonio followed Seattle's lead in using the fair as a vehicle to create a civic center. The city constructed a convention center consisting of an exhibit hall, theater and sports arena on the area of the site closest to the core of downtown San Antonio. A number of restored buildings and permanent pavilions occupy a portion of the site adjacent to the convention center. The area is called "Fiestaland" and was intended to become "a sort of Tivoli Gardens" (Brand, 1982: 6). The crowds never came to Fiestaland and a number of its facilities were slated for demolition in 1982 (Peters, 1982: 16). The fair's theme structure, the 622 foot Tower of the Americas, was built with funds provided by a \$5.5 million local bond issue. An additional local bond issue of \$30 million and a \$12.8 million federal urban development grant funded site acquisition and development. The State of Texas approved \$10 million for the permanent state pavilion which is used residually as the Institute of Texas Cultures (MacKay, 1968: 50). The United States Pavilion was originally slated to

residually house an educational institute. The institute was apparently never funded and the pavilion was razed so a federal courthouse could be erected on the pavilion site. A local planner commented in 1982 on the fair's residual planning saying, "As urban renewal its been a bomb" (Peters, 1982: 16). The "vital urban core" predicted by an article in AIA Journal, failed to take shape on the Hemis Fair site. The residual uses that occupy the site are public, with a large area of the site remaining unused. There appears to have been a lack of realism in the planning assumptions made by both the residual use planners and the fair planners.

Hemisfair '68 was a financial failure and much of this can be blamed on poor fair planning. Fair officials admitted to gross errors in the attendance forecast, which overestimated attendance figures by 20 percent (WSJ Staff Reporter, 1968: 21). This contributed to the inflation of construction and services budgets which ultimately increased the fair's deficit, which was reported to be \$7.5 million (WSJ Staff Reporter, 1974a: 1).

1970 Japan World Exposition - Expo '70

This fair in Osaka was the first world's fair held in the Far East and was the first sanctioned Universal & International Exposition since Expo '67 in Montreal. Kenzo Tange, the fair master planner, used the fair to implement an experimental urban design concept he had advocated in earlier city planning projects for Tokyo and Skopje, Japan. The concept was to create a central gathering area connected to outlying, smaller plazas via mass transit- in this case, enclosed moving

sidewalks. The central gathering area served as the fair's theme structure which Kanzeo Tange preferred to have called "theme space" (Nanjo, 1975: 34). This ordering of the urban environment created a model city allowing high volume movement of large numbers of people and created two scales of urban gathering places. The fair's amusement area was separated from the main site by a rail corridor and the expressway that encircled the main site.

The intended residual use of the site is unclear. The large infrastructure established for the fair handled daily attendance crowds of 300,000 visitors. Possible residual uses would be a university or a new town site. Kenzo Tange, in an interview, indicated that while the design team had given some thought to residual use, the actual residual use and its method of implementation was unknown. His personal opinion was that the fair's trunk facilities (main plaza, subplazas, moving sidewalks, and infrastructure) should become the heart of a new city for 500,000 or the site could be developed as a smaller new town on the 815 acre site, ten miles northeast of downtown Osaka (Japan Architect Reporter, 1970: 34).

Funding for Expo '70 came from a \$150 million grant made by the national government of Japan. Off-site government spending was estimated at \$2.24 billion, which was mostly for new roads and development of the mass transit system that was extended to the fair site. (Hartley, 1970: 38). A 20% profit was projected four months into the fair; the actual surplus or deficit is unknown (WSJ Staff Reporter, 1970: 7). Any surplus or deficit

would have been returned to or absorbed by the national government (Hartley, 1970: 38).

Spokane International Exposition on the Environment-
Expo '74

Spokane's Expo '74 was planned from its inception to serve as an urban development vehicle. The city's central warehouse district, which contained a number of railroad facilities, had deteriorated, leaving an 80 acre area of downtown Spokane in need of redevelopment. At the area's heart was the splendid Spokane River Falls (Montgomery, 1974: 74). With the city's centennial approaching, it was suggested that the area be redeveloped as an urban riverfront park in conjunction with that anniversary. The world's fair came about as an enlargement of the planned city centennial once it was determined that a city event would be unable to generate funds sufficient to support an urban renewal project at the scale needed to rejuvenate downtown (Kasper, 1974: 365). Because the fair was planned to create a permanent park, it was determined that the park's schematic design should provide the framework on which to base both permanent and fair related improvements. The site design concept was a transition from a hard landscape architecture along the river edge bounding downtown to a pseudo-naturalistic design crossing the two islands to the river's cataracts. This theme was used for the fair and residual use site designs (Montgomery, 1974: 74).

Since the objective was to create a significant open space in downtown Spokane, nearly all fair facilities were designed as

temporary structures. Due to the uncertainty of finding a residual use for the U.S. Pavilion, it too was designed to be inexpensive to demolish if necessary. This created an ironic twist when it became desirable after the fair to retain the Pavilion's immense cloth canopy. After initial feasibility studies on how to best retain the canopy indicated it would be a continuing, high cost proposition, the canopy was removed (Montgomery, 1974: 46; Peters, 1982: 18). The remaining rectangular concrete structure houses a skating rink, science center, and outdoor theater.

The Washington State Pavilion was designed for conversion to a city convention center and opera house, not unlike the earlier state pavilion in Seattle. Residual use of the park, which includes arts and crafts shows, a weekly farmers' market, and free concerts, along with normal recreational use, has been lower than hoped for. Hopes that the park would be self supporting have also gone unfulfilled and the addition of a small theme amusement park on 10 acres of the site is being considered (Peters, 1982: 18&19).

Funding for acquisition and development of the Expo '74 site's residual use involved approximately equal contributions from all three levels of government. Local government used a business and occupation tax to fund \$700,000 of site acquisition, clearance, and development costs as well as a general obligation bond of \$5.6 million to provide additional development funds. The State of Washington funded the \$11,900,000 permanent, city owned convention center. The federal government expended

\$13 million to pay for the U.S. Pavilion (\$6.5 million), fund some of the site development, and provide \$2.5 million to cover the cost of converting the fair site to its residual use as a park (Kasper, 1974: 365). Other associated downtown redevelopment which occurred due to the fair was the construction of a downtown-wide skywalk system connecting department stores, a bank tower, and parking garages, and the redevelopment of some existing riverfront buildings to commercial and retail use (Montgomery, 1974: 77).

The fair was projected to cost its sponsor corporation \$23.5 million to host and needed 5 million visitors to break even (WSJ Staff Reporter, 1974a: 1). Fair attendance surpassed the 5 million visitor mark and yet closed with a \$700,000 deficit (Lanier, 1982: 76). This difference was due to seasonal ticket holders visiting the fair three times more often than expected, increasing the cost of fair services provided without significantly increasing fair revenues (WSJ Staff Reporter, 1974c: 1). In spite of its deficit, the fair was considered a success for four reasons. First, the site's downtown location eliminated the need for large outlays for monorails and people movers. Second, the Expo '74 site was small (1/10th the size of Montreal's Expo '67) and therefore was "manageable". Third, the city and other levels of government had paid for site development costs, thus lowering fair corporation costs. And finally, the fair also sped up the urban redevelopment process for the fair site.

1975- International Ocean Exposition- Expo '75

This special category fair in Okinawa, Japan celebrated the theme "The Sea We Would Like to See". The fair's physical planning was based on six main objectives, three of which directly related to the site's residual use planning. The residual use related objectives were:

1. All facilities (designs) were considered in the light of possibilities, or lack of them, or use after the conclusion of the exposition.
2. The grounds were planned to harmonize with the land, customs, and people of the island in order to enable the grounds to serve as a model for future Okinawan development.
3. To make a park of the entire site, maximum care was taken to place the buildings and arrange construction so as to minimize destruction or spoiling of the natural environment. (Nanjo, 1975: 23).

The other objectives influenced facility location by dividing the site into four sub-theme areas, placement of the theme structure- a movable prototypical city- the Aquapolis, and called for the establishment of a swimming beach and harbor to allow visitors to come into contact with the ocean (Nanjo, 1975: 23).

The Japanese central government sponsored the majority of the site improvements and permanent pavilions. Over one-third of the 185 acre site was developed as a permanent oceanside park containing a 7.5 acre artificial swimming beach, aquarium and Oceanic Culture Museum. Additional permanent pavilions sponsored by local government and the fair corporation were a theater, art museum, and exhibit hall. The reason for developing the permanent group of facilities was to stimulate

tourism on Okinawa, an island at the southern end of the Japanese Islands (Japan Architecture Reporters, 1970: 60-101).

The fair site development costs and fair operating surplus or deficit of this government sponsored fair was apparently never reported in English language publications.

1982 Knoxville International Energy Exposition- Expo '82

Knoxville's Expo '82 was planned as an urban development vehicle based on Spokane's earlier, successful use of a world's fair for a similar purpose. The site of the 1982 Energy Exposition was an old railroad yard located between downtown Knoxville on the east and the University of Tennessee (UT) on the west. The majority of the site's warehouse, retail, commercial, and residential structures were outdated and functionally obsolete. The adjoining Central Business District (CBD) had experienced a continuing redevelopment effort beginning in 1972. The 1974 General Redevelopment Plan for Downtown Knoxville outlined four goals for improving the central business district area:

1. Development of downtown as a regional commercial and governmental center with supportive retailing.
2. Improvement of transportation to and within the downtown area.
3. Expansion of in-city living opportunities provided by public and private investment. Private development would be marketed to young professionals and established older persons.
4. Redevelopment of the Second Creek Valley as a transition area between Ft. Sanders neighborhood, UT, and the CBD. It was recognized that this area was key to successful redevelopment of the CBD.

Recognizing in 1974 that Knoxville's situation was similar to Spokane's, a local governmental official promoted the use of a world's fair as a redevelopment vehicle for the Second Creek site. A committee was formed to assess the realities of hosting a fair, which resulted in formation of the Knoxville International Energy Exposition (KIEE) Corporation. A

redevelopment plan was drawn up by Knoxville's Community Development Corporation (KCDC) which outlined a general post-fair land use plan and allowed state-granted urban renewal powers to be used to acquire land and issue bonds to finance implementation of the project (Kern, 1982). Local bond anticipation notes for \$11,660,000 were sold to finance land acquisition, demolition, and utility construction costs. The federal government supplied an additional \$21.15 million in grants, used to pay for site development costs and to establish a revolving trust fund to provide loans for funding private development on the fair site. During the fair's construction process, an update of the KCDC plan was done to integrate the fair-related permanent residual use facilities into the planning and to develop a general approach to be used in implementing the remaining post-fair residual development. The updated plan established criteria to guide the quality and density of the residual development. A competition for the residual development of the remainder of the site was held. It solicited potential developers to make written, qualitative development proposals within a set of guidelines established by KCDC and the city. A residual use implementor was selected shortly before the fair's closing and negotiations concerning the project's final land use diagram, densities, and implementation time frame began.

A number of permanent new and renovated residual use facilities existed at the fair's end. The largest group of renovated residual facilities was Station '82, which included a

railroad station, hotel, freight depot, and foundry, previously owned by the Louisville and Nashville (L&N) Railroads. These structures were sold to a local, private developer who renovated them for restaurant and retail use during the fair and then mixed retail, restaurant, and commercial use after the fair. A seven-story former warehouse and seven Victorian houses were renovated by the KIEE Corporation for retail and exhibit use during the fair. The residual use of these buildings was to be determined by the residual use implementor. New residual use facilities included the fair's theme structure, the Sunsphere. The 266 foot tower was privately developed at a cost of \$5 million. The tower contains the now typical restaurant, lounge, and observation deck. Adjoining the Sunsphere is the city-owned convention center and office building. The 100,000 square foot convention facility was built to serve convention needs for the Knoxville region and was built by Knoxville Exhibition Center, Inc., (KEC), a city sponsored non-profit corporation. The office building has 90,000 square feet of leaseable office space and was constructed to serve as office space for the fair corporation and later as private office space. The city agreed to a KEC-city lease that has the city operate the two buildings and guarantee payment by taking a \$1.9 million per year lease for 30 years. This was necessary to secure construction financing for the convention/office complex and is the equivalent of the debt payment on the \$21 million city bond issue used to finance this facility (Reese, 1981: 41; Gray, 1981: 57; Dodd, 1982: 101). A 299 room Holiday Inn was built on

top of the convention center. The hotel pays the city \$200,000 per year for an air rights lease. A 420 stall, privately developed parking garage serves these facilities and was built at a cost of \$6.7 million (Reese, 1981: 41).

The U.S. Pavilion remains on the site but has an uncertain future. The \$12 million structure requires an estimated \$6 million to retrofit the building for permanent use. Plans for the University of Tennessee to use the building as an energy research center evaporated when the construction budget was slashed from \$40 million to \$12.6 million, greatly altering the building's final form. The federal government also scrapped plans to convert the pavilion to a federal office building due to these high retrofit costs. Later uses proposed included a continuing energy exhibition with a museum on the 1982 Exposition, or an arts center for the Knoxville area. The building's ultimate fate was to be determined on July 14, 1983, when it was to be auctioned off by the Federal government to the highest bidder. However, political pressure and a lack of bids prevented this from occurring. The sentiment in Knoxville during July, 1983, was that the building would eventually be used as a public facility of some type (Gray, 1983; Adams, 1983; Blasius, 1983).

The fair site also contains an 8.8 acre park which includes a three acre lake and the 1,500 seat Tennessee State Amphitheater. The park's construction funding came from a U.S. Department of the Interior grant for \$1.2 million (Gray, 1981: 16). The 1,500 seat outdoor performing facility was funded by a \$3 million

state grant.

Additional land, owned by the University of Tennessee was used for the fair. This area was originally acquired by KCDC and then sold to the University for use as a campus expansion area. The residual use of this land will be determined by UT. A possible residual use is to develop the area as a basketball stadium site with on-grade parking.

The fair site contained 58.9 acres intended for residual development. Forty-seven percent (27.5 acres) of this area had an established residual use at the fair's closing.

Table 4

Summary of Residual Land Use for Expo '82

Land & Structures with Residual Use Upon Fair's Closing

<u>Public Use</u>	<u>Acres</u>	
City of Knoxville- Park & Lake	8.8	
City of Knoxville- Land along Second Creek	.4	
Knoxville Utility Board Substation	.9	
Convention Center & Office Building	5.0	
<u>Commercial Use</u>		
Station '82 (Station, Depot, Foundry)	4.3	
Holiday Inn & Garage	1.6	
Miller's Garage & Warehouse	1.4	
Sunsphere	.8	
<u>Other</u>		
Southern Railroad Right-of-Way	4.4	
	27.5	47%

Land & Structures with No Committed Residual Use (for disposal)

U.S. Pavilion (This 6% may or may not produce taxes depending on who purchases it- sale proceeds to U.S. Treasury)	3.5	
Three proposed commercial tracts	5.0	
Two proposed residential tracts (includes Candy Factory & seven houses)	15.9	
	24.4	41%

Land Undeveloped- Held for Future Use (not for sale)

University of Tennessee	7.0	12%
(An additional 10 acres of UT land was used during the fair.)		

Note: 22.2 acres, 38% of the site, is held by government and are non-tax paying land users.

(Peters, 1982; Gray, 1981: 20 & table 1)

Major and minor offsite development occurred in the central business district due to the fair. These included construction of two mid-rise hotels, renovation of an existing parking garage adjacent to the new convention center, and construction of a skywalk over a seven-lane street, to connect the fair site to downtown. An additional \$224 million in street and interstate construction funds were used to up-grade roads to handle the fair related traffic (Knack, 1982: 9).

The Knoxville fair was a financial success in that it broke even. The fair had been projected to produce up to an \$8.5 million surplus but it did not (Calonius, 1983: 37). The fair's anticipated revenues were projected to be \$99,700,000 (U.S. Department of Commerce, 1979: 83).

Future North American World's Fairs

1984 Louisiana World Exposition

A special category world's fair with the theme "Freshwater Rivers of the World" is planned at New Orleans in 1984. The fair site is an 82 acre tract adjacent to the Mississippi River in downtown New Orleans (WSJ Staff Reporter, 1983a: 31). The site was selected from a group of potential sites because it offered the greatest residual use benefits (U.S. Department of Commerce, 1982: 3,1). A number of existing wharf structures have been leased from private owners and renovated for use as interior exhibition space for the fair. These structures revert to the previous use after the fair (U.S. Department of Commerce, 1982: 3,7). An \$88 million convention and exhibition center has

been built to house the fair's international and state pavilions. This structure will receive local, state and federal funding and covers 15 acres of the site. The convention center is seen as a residual facility that will compliment and encourage growth in New Orleans convention and tourist trade. Another new, two story, 18,000 square foot structure is being built that will first serve as exhibition space for the fair and then be converted residually to a wharf facility on the first floor with commerical space on the second floor (Peters, 1982: 18). Additionally, a number of historic warehouse and storefront buildings in the area near the fair site are projected to be restored and undergo adaptive reuse due to the fair (U.S. Department of Commerce, 1982: 3,7).

The residual use planning for the New Orleans fair site is somewhat unique. The site will contain new land uses such as the convention center and some river-front open space. The existing wharf facilities will be renovated for the fair and then returned to the former use, thereby upgrading an existing land use. Both residual uses are intended to strengthen important segments of the local economy in addition to the short term boost created by the fair.

The Louisiana World's Exposition itself was projected to create a slight surplus of \$977,000 although this amount was contested by the U.S. Secretary of Commerce who forecast the fair would leave a deficit of \$2,023,000 (Variety Reporter, 1981: 1).

1986 World Exposition- Expo '86

Vancouver, British Columbia, is the host city of Expo '86, a special category world's fair sponsored by the Government of Canada and operated by a Crown Corporation of the Government of British Columbia (Public Affairs, Expo'86, 1982). The fair's theme deals with transportation and communication and is the first North American fair to use two sites. The use of the two sites is tied to the fair's transportation theme and residual use planning. The two sites are located on opposite sides of Vancouver's Central Business District and are tied together by a new, permanent, \$700 million elevated rapid transit line (Peters, 1982: 19). The northern site is located within a 221 acre area scheduled to be transformed from sawmills and railroad yards into a mixed use "new town-in-town" (Todhunter, 1983: 80). The fair is located on 35 acres programmed to contain public facilities and open space adjacent to the False Creek Inlet. A number of provincially sponsored public facilities are to serve as fair exhibition space and later provide facilities for the provincially-sponsored redevelopment project (8.C. Place). The residual facilities include an arts, science and technology center, a forestry center, children's world, and waterfront theaters (Todhunter, 1983: 82). An objective of the residual use planning was to tie the redevelopment to the remainder of Vancouver. The fair related residual facilities are therefore accessible by the elevated rapid transit line, a six lane through-road, a pedestrian and bicycle path system that ties into the existing city fabric and adjoining waterways.

(Todhunter, 1983: 80-81). The fair's transportation theme is thus evident within the residual use planning and these systems should ultimately contribute to the residual development's success.

1992 World Exposition

Chicago was selected as the site for the 1992 "universal exposition" celebrating the 500th anniversary of Columbus' discovery of the New World. The fair's theme is "Age of Discovery" and will be located on a portion of the 1933-34 Century of Progress site south of downtown. The site will contain 600 acres including lagoons and a new 180 acre island to math Northernly Island, a landfill project created for the 1933-34 exposition (Kidder, 1982: 5). A ten year, \$3 billion city public works program will provide the fair with a number of basic site improvements including new sewers, an expanded subway system, and interstate highway improvements. The main legacy of the fair will be a huge new park with a large marina on the city's south side, unbisected by Lake Shore Drive (Peters, 1982: 19).

Other Planned World's Fairs

A number of future world's fairs are planned throughout the world, however information on the fairs and associated residual planning was unavailable. The fairs are mentioned to document that fairs are a continuing phenomenon.

A special category world's fair is planned for 1985 in Tsukuba, Japan. The host city is one of Japan's new technology cities and residual use planning is undoubtedly oriented to

reinforce the city's purpose of improving Japanese technology. Another western Pacific world's fair is planned in Brisbane, Australia, in 1988 (WSJ Staff Reporter, 1983a: 31). A bid by the French government to have Paris host a "universal exposition" in 1989 was abandoned due to opposition by Parisians, including the city government (Reuter's Reporter, 1983: A16). New York City, more specifically the Borough of Queens, hopes to become sanctioned to host the 1989 fair (WSJ Staff Reporter, 1983b: 25). The location has not been announced however the Flushing Meadows Park site would be a likely location. Possibly a third attempt would successfully formulate and implement a viable residual use plan for the area.

Having reviewed the residual uses and urban design contributions of past and planned world's fairs it is appropriate to determine the major considerations for world's fair implementation and its impact on residual use planning. These topics are outlined and discussed in Chapter Two, using examples of past and planned fairs.

Chapter Two

Major Planning Considerations of World Fair Implementation and Residual Use

1. Site Selection Process

The site selection process is an important part of planning a world's fair because it affects both the success of the fair and the residual use feasibility. Site selection and residual use feasibility are much closer related than it would first appear. Whatever the benefits sought from hosting a fair, an objective residual use evaluation must be included in the site selection process. Only when this has been done will the optimum site be selected. The trend appears to be that fair sites selected using an objective residual use analysis generally have been successfully transformed into the desired residual use. The opposite has occurred for sites where the residual use analysis was entirely subjective or omitted from the site selection process. The site selection process must therefore become an analysis which balances the needs of the fair with the feasibility of using the site residually.

Residual use of a fair site is an important consideration in site selection for four reasons. They are:

1. Fair site development is capital intensive.
2. Many site improvements are permanent in nature.
3. Fair duration is too short to fully capitalize the improvements (depreciate).

4. The prevalent use of public funds to acquire fair sites and construct improvements requires that long term benefits must occur to repay the host city.

The City of Knoxville spent an initial \$8.5 million on primarily permanent utility improvements within the Expo '82 site (Mauldin, 1982). This was a significant public investment for improvements that the city hopes will serve the site in some residual capacity. The environmental impact statement for the 1984 Louisiana World's Fair evaluated the public investment necessary by assigning two years of the site improvement's 40 year economic life to the fair. This method attributes one-twentieth of the investment as a direct cost of hosting the fair (U.S. Department of Commerce, 1982: 5-32). This provides a more rational approach of capitalizing the public investment and shows that to fully recoup its investment the city must be able to assign most of the costs and receive most of the benefits from the residual use. New York City loaned \$24 million to the fair corporation for permanent site improvements on the 1964-65 fair site, expecting to be repaid by the fair corporation, from its profits. The unsuccessful fair not only failed to repay the city but, due to the lack of planning, left a site serviced by utilities of questionable value to a large, low density city park (Caro, 1974: 1107&1091). From this experience it can be seen that, before any public funding, it should be established that the investment will be of value to the proposed residual use and that the major portion of capitalization will be assessed against the residual use.

Site Characteristics Considered During Site Selection

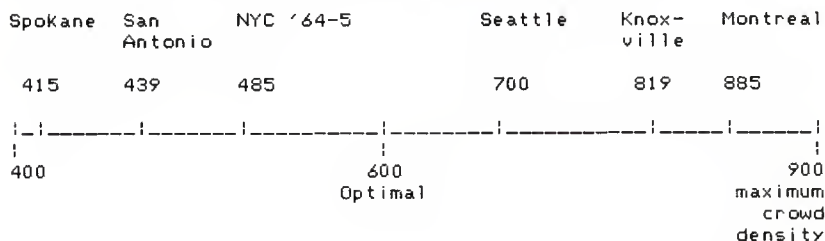
Several factors must be considered when choosing a fair site, including site size and shape, access to transportation systems, availability and capacity of the utility infrastructure, and the natural resource base. These factors can influence both the success of the fair and the residual use for the site.

Site size

This is probably the most obvious characteristic, yet it is a complex process to determine the minimum size acceptable. While first category fairs are generally held on large sites of 500 acres or more (St. Louis 1904, 1000 acres; NYC 1939-40, 1130 acres; Montreal 1967, 710 acres; Osaka 1970, 815 acres), most second category fairs have occurred on sites of less than 100 acres (Seattle 1962, 75 acres; Spokane 1974, 80 acres; Knoxville 1982, 72 acres). The site size is influenced primarily by the expected attendance for the fair. For example, the Knoxville International Energy Exposition economic feasibility study established a minimum site size based on daily attendance projections and crowd density per acre of fair site. Daily average attendance was estimated two ways, based on past fair attendance patterns. Past fair crowd densities were examined and a judgement made on the optimal and maximum crowd densities. An examination of past fairs established 900 persons per acre as the maximum crowd density. An optimum density was judged to be 600 persons per acre. A summary of crowd densities is shown in the following figure.

Figure 2

Crowd Density (per acre) of Past Fairs



Note: Optimal and Maximum estimates by Lemmon, 1978
 Knoxville estimate by author, others by Lemmon, 1978

Knoxville's projected crowd density was 800 persons per acre on 74 acres, and the actual density, estimated by the author, was 819 persons per acre for the 72 acre fair site (Lemmon, 1978 :IV-2 & IV-4; adjustments by author).

Use of the projected total attendance and selected crowd density per acre allows calculation of the minimum site size. It must be recognized that a site's shape, topography, access, or contiguity may force the minimum site size to be adjusted upward (Lemmon, 1978: IV-3). A range of past fair site sizes is shown in the table below.

 Table 5

Site Size (in acres) of Recent World's Fairs

First Category

New York City	646
Montreal (includes waterways)	710
Osaka	815

Special Category

Seattle	75
San Antonio	92
Spokane	80
Okinawa (over 1/3 of site was parkland)	185
Knoxville	72

Site Shape

The site's configuration impacts its development design possibilities and potential. A square, rectangular, or similar shaped site will allow a greater range of design and development potentials than would a narrow, linear site or a site made up of non-contiguous parcels. The shape of the Knoxville site prompted some creative solutions in designing pedestrian circulation for the fair, but may hinder redevelopment of the lower narrow section of the site. While fairs have been proposed on non-contiguous sites (Boston Bay Islands 1976) or linear sites (Long Beach pier and Philadelphia railroad air rights), no such site has made it past the concept stage (Peters, 1982: 18; WSJ Staff Reporter, 1965: 4).

Access To Transportation Infrastructure

The fair site must be accessible, preferably by more than one transportation mode. The importance of site accessibility for mass transit buses and adequate loading/unloading areas was stressed during many of the interviews with persons involved in the Knoxville exposition. A pedestrian overpass & designated crosswalks further served the needs of pedestrian fair visitors and improved the connection between downtown Knoxville and the fair. Off-site transportation modes and capacities are also an important consideration. The condition, design and capacity of local streets, highways and interstate highways could adversely affect access to a fair. The interstate system in Knoxville required \$225 million of improvements including replacement of the junction of two interstate highways and creation of a beltway around north Knoxville. Montreal scheduled completion of its Metro subway system to be operational by the opening of Expo '67 and it served the Expo '67 site with three stations (Information Services, 1967: s92, 2). The United States' only example of a fixed route mass transit system providing access to a fair site was the Swedish built \$3.5 million monorail at Seattle (WSJ Staff Reporter, 1960:9). The aerial gondola and chair rides often found on the world fair sites tend to serve as a recreational activity rather than as a viable transportation mode, due to their limited capacity, and they have no affect on site access.

Availability and Capacity of Utility Infrastructure

The utility infrastructure must be capable of serving the fair's peak daily attendance in addition to the area it serves surrounding the fair site. Fairs have prompted construction of needed public sanitary sewage treatment plants, sanitary sewage trunk lines and storm drainage system as experienced in New York City for the 1939-40 fair (Moses, 1936: 9-10). The capacity created to serve the fair can later be used for the residual site development. In most cases the utility load created by the fair's daily attendance will be greater than all but the most intensive residual land uses.

Natural Resource Base

Topography The topography of the surrounding area is as important as is the actual site's topography. Local topography will affect the visibility of the site, views out of the site, and air movement in the site, in addition to affecting site design and development costs. Spokane's location in a basin initially created concern about dangerous air pollution due to the fair (Bylin, 1972: 28). Knoxville's hot muggy climatic conditions in late summer caused a concern that air movement might be restricted down the Second Creek valley if new architectural features were not carefully sited. The site's architecture was thus planned in relation to the existing topography to maintain exiting air flow (U.S. Department of Commerce, 1979: 61). The topography of the fair site must be

sufficient to meet general site planning requirements such as having adequate slope to create surface drainage, and be developable as a barrier-free pedestrian circulation area. Excessive topographic elevation change will lower the intensity of development allowable on the fair site as it would in most other development.

Surface Water Features Surface water has been consistently identified as an important site selection feature since the early European world's fairs (Auger, 1967: 17). The 1893 & 1933-34 exposition sites were selected and designed to emphasize Chicago's tie to Lake Michigan (Sutton, 1971: 183-84; Jackson, 1937: 92). Even when a natural creek has been channelized and buried under a fair site, as New York 1964-65 and in Knoxville, man-made water features replaced them and were used as design elements to create interest (Schmertz, 1964: 146; Mauldin 1982).

Site Drainage & Flooding A fair site requires the development of a storm drainage system and protection from flooding, as does any other urban development. The concept of planning open space systems in conjunction with floodways, common to any urban land planning, is applicable to fairsite planning and was used on the Knoxville site (U.S. Department of Commerce, 1979: 60-61).

Subsoil & Geologic Conditions The need to fully examine the subsoil and geologic conditions probably has more bearing on residual use than on the temporary fair buildings. In both

cases, the subsoil and geologic conditions affect the design of structural foundations and footings.

Subsoil investigations at Knoxville showed that while no geologic voids were present under the site, a portion of the site consisted of a deep fill of marginal quality, requiring special foundation design for large structures located on that area (Gray, 1981: 12; U.S. Department of Commerce, 1977:68).

Other Site Characteristics Other characteristics can be designated based on specific fair or residual use needs. The Knoxville Environmental Impact Statement listed eleven criteria for site selection. Four which were specific to Knoxville's residual use goals appear first in the list below (U.S. Department of Commerce, 1977: 68).

- 1.Proximity to existing business facilities
- 2.Proximity to supporting facilities (parking, restaurants and hotels)
- 3.Potential for improving community aesthetics
- 4.Maximization of residual benefits
- 5.Accessibility
- 6.Compatibility
- 7.Size (50 to 100 acres)
- 8.Availability
- 9.Configuration (Multiple sites versus a single unit)
- 10.Provision of visibility and visual impact
- 11.Water access or water utilization

Two Concepts of Site Selection

Two concepts of site selection have been identified by studying the methods used for past fairs. The basis for the differentiation is on how the idea of hosting a world's fair originated within the host community. One concept is based on a situation where the idea of hosting a fair was conceived and, later during the world's fair planning process, a site was selected. This concept is titled "Hosting Fair Predominant". The other concept is based on an alternate situation, where the idea of hosting a world's fair originates during the time that development strategies are being considered for a specific urban site. This second concept is titled "Residual Use Predominant". For the first concept, the majority of site selection analysis involves identifying and evaluating sites within the host city. The site selection analysis for the second method differs in that it largely involves studying the feasibility of utilizing a world's fair as a development vehicle. Potential residual uses are generally better defined for the second concept since the idea of developing the site pre-dates the idea of hosting the fair.

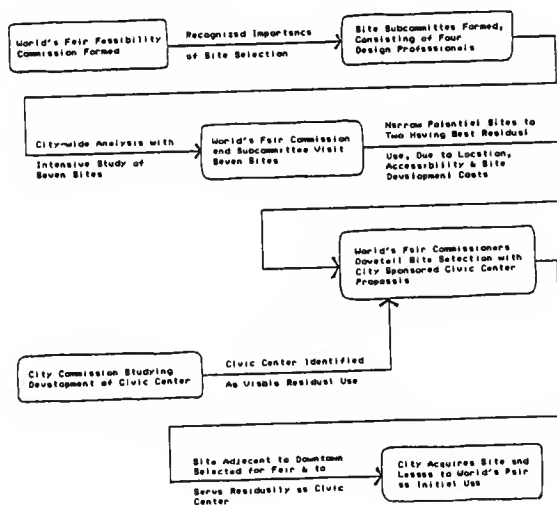
A. "Hosting Fair Predominate" Site Selection Concept

In Seattle, the idea of hosting a second world's fair in 1962 was conceived as an event that would bolster Seattle's image, attract new industry, and provide a boost to Seattle's economy. The idea of hosting a fair was firmly established prior to

selecting a site. A review of potential locations revealed that the only sites available, that were not federally-owned or that required massive landfill operations, were adjacent to downtown Seattle. One of these sites was under concurrent consideration for the location of a proposed city-funded civic center. Negotiations between the fair sponsor corporation and the group pushing the civic center produced an agreement to host the fair on the site of the proposed civic center, thereby determining the fair site and establishing its residual use.

Figure 3

Seattle Site Selection Process



(based on text of Morgan, 1963: 45-53.)

A study of other fairs where the "Hosting Fair Predominant" concept applies tends to support a conjecture that Seattle's experience is typical. The San Francisco 1939-40 fair was held on the newly created Treasure Island, intended to serve residually as a city-owned airport. Only after the fair was announced and a site selection analysis done, was the long sought idea of a new municipal airport site realized. Sites for other early fairs such as New York City 1939-40, Chicago 1933-34, and Seattle 1904, were selected after the idea of hosting a fair was rooted in the host community and local sites and, to some degree their potential residual uses, were evaluated.

B. "Residual Use Predominant" Site Selection Concept

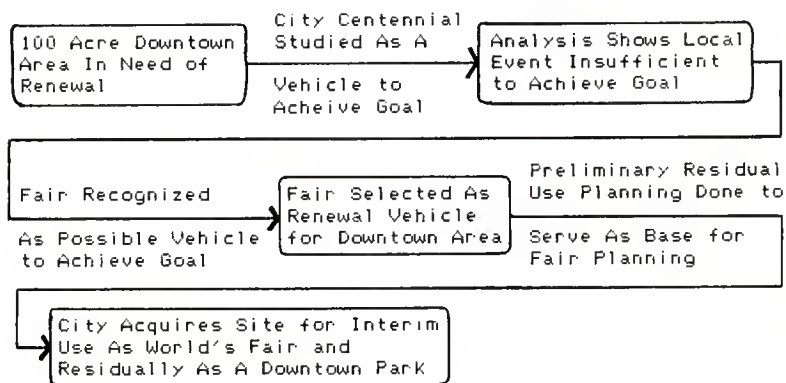
The idea of hosting a world's fair to serve as a development vehicle has occurred often and has been the impetus for many expositions. When the origins of recent North American fairs are examined, a pattern appears to be forming where world's fairs are being viewed more often as a viable potential development strategy when key urban sites are to be developed. A case in point is the way the 1974 Spokane fair site was selected and the fair established as the vehicle to provide a basis to implement the residual use.

Spokane's riverfront had been industrialized early in the 20th Century. By mid-century the area suffered a decline as buildings became outmoded and companies moved out from the city center, creating an industrial slum. The idea of creating a

riverfront park by demolishing the slum area languished until it was coupled with the idea of having a regional celebration for the city's centennial in 1974. It was soon realized that to gain the momentum required to implement the park, a world class event was necessary. The development strategy was then changed from utilizing a regional event to a world class event. The desired riverfront park was realized by utilizing the fair as a development vehicle.

Figure 4

Spokane Site Selection Process



(based on Kasper, 1974: 365-66.)

The Spokane experience was emulated by Knoxville and Vancouver, B.C. (1986) when deciding on development strategies for key urban sites within the host cities. The reasons for using a world's fair as a development vehicle are:

1. Speeds up the development process by often cutting a lot

of red tape (Knoxville- Carter quickly committed funds) and creating a sense of urgency by establishing the fair's opening date as a concrete completion date (WSJ Staff Reporter, 1974: 1). "It's twenty years of urban renewal condensed into four years," said a fair aide.

2. Makes public and private funds available that otherwise would not be. All levels of government have contributed funds for fair site acquisition, development and operation for past fairs. The federal government has provided indirect funds through the Department of Housing and Urban Development urban renewal and open space grants, Department of the Interior park development grants, and Federal Economic Development Agency grants for local economic development, in addition to funding federal pavilions. State governments have funded site facilities such as Knoxville's Tennessee State Amphitheater & the convention centers created in Seattle & Spokane. Local governments have served as federal grant recipients and created local taxes or issued bonds to fund site acquisition and development. In many cases, it is obvious that without a world's fair, the funds would have been used differently or not raised at all.

3. Creates a tangible objective to achieve, prompting the potential of community-wide support and benefit.

World's Fairs have been promoted within their host communities as a vehicle to achieve a previously identified city objective. For example, in San Francisco 1939-40, the fair prompted the building of Treasure Island as both a public works project and

to serve as a new municipal airport. (Scott, 1959: 242). Spokane's Expo '74 provided the momentum to implement a seventy-year-old plan to reclaim the Spokane River Falls (Progressive Architecture Staff Reporter, 1974: 74). Knoxville's Expo '82 started the process of redevelopment of Lower Second Creek area targeted for redevelopment in a 1974 city centre plan.

For these three reasons and possibly other circumstances unique to each site and fair, world's fairs often serve as development vehicles. However, for the project to be successful, emphasis must be placed on insuring the success of the fair itself, in addition to serving as a means to an end. In the case of NYC's 1939-40 and 1964-65 fairs, it can be argued that NYC Park Commissioner Robert Moses subverted the purpose & finances of each fair to serve "only as a means to other ends." (Caro, 1974: 1082). Moses milked both fairs of millions of dollars for the funding of permanent park improvements at the undeveloped Flushing Meadows park in exchange for the use of the park as a world's fair site. This, coupled with Moses' overriding concern that all improvements be designed to best serve the residual use rather than accomodate some of the fairs' needs, contributed to the failures and huge deficits of each fair (Caro, 1974: 1084).

Model Processes For The Two Site Selection Concepts

The earlier section on site selection concepts explained how the two concepts were identified and gave two examples specific to Seattle and Spokane. By examining a number of additional fairs a "model process" was developed for each concept. The site selection processes examined were for the following fairs: Chicago 1893; Seattle 1904; Chicago 1933; NYC 1939-40; San Francisco 1939-40; Seattle 1962; NYC 1964-65; Montreal 1967; San Antonio 1968; Spokane 1974; Knoxville 1982; New Orleans 1984. The model processes are illustrated below and include characteristics common to each concept.

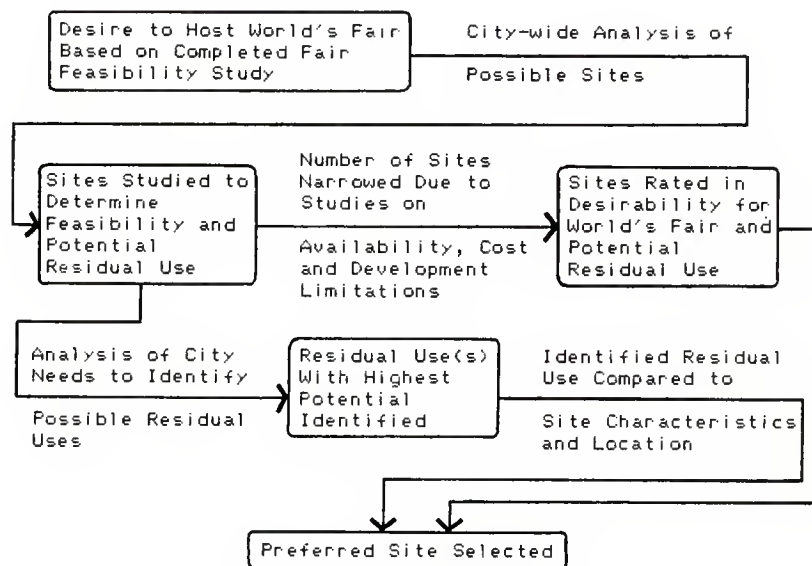
A. Model Process: Hosting Fair Predominant

The "hosting fair predominant" site selection process is the more complex of the two, since potential sites and residual uses must be identified and evaluated. Final site selection may be heavily weighed on advice of the design professionals involved, as occurred when Olmstead selected Chicago's Jackson Park as the site for the 1893 Columbia Exposition.

Open lands under local public ownership tend to be identified as potential sites, as in the 1930's when the city owned Flushing Meadows area was used for the 1939-40 New York World's Fair. While open federal lands may receive the initial consideration as fair sites, the federal government is usually unreceptive to leasing its land for such use.

Figure 5

Hosting Fair Predominant

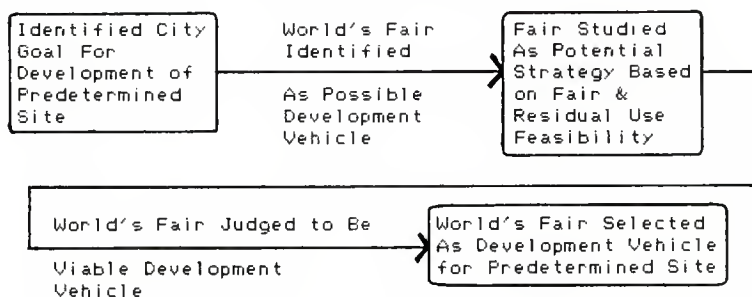


B. Model Process: Residual Use Predominant

The "residual use predominant" site selection concept has fewer steps than the other since the site selection evaluation is primarily done to determine if a world's fair is a viable development strategy for the potential site. This concept has been used about the same number of times for North American fairs as the other concept. This concept has been utilized in built-up urban areas where large-scale redevelopment is necessary.

Figure 6

Residual Use Predominant



Linking Residual Use Planning to the Local Market

During the site selection process an evaluation of potential residual uses must be made for each site under consideration. An important factor in assessing the desirability of potential residual uses is to determine how that use interacts with existing local conditions.

To be successful, the residual use must fulfill local needs, fit within local market constraints, and compliment and be complimented by other local development projects. An examination of three past residual use developments points out how, to be successful, each proposed residual use must be evaluated to determine how well it will serve local needs and fit within the local development market.

Seattle Center, the 1962 exposition's residual use, is often

cited as the most successful fair-related development in North America (Peters, 1982: 16). Buildings constructed to be used by the fair made up 90% of the permanent development (Clinton, 1962 : 66). While additional, privately-owned buildings were proposed in a 1965 residual development plan, the Center's success did not hinge upon their completion (Lyndon, 1965: 200). The facilities to create a successful civic center were already in place.

The need of a civic center had been established before it was considered as a residual use. Local support for the project was sufficient to obtain local bond and state legislative funding. At the close of the fair, the site was ready to be retrofitted for its use as a civic center. The combination of tying together community support, public funding, and a well-thought-out residual use strategy to fulfill an established community need, illustrates the success of coupling residual use to the local development market.

The case of San Antonio, although similar in intent, had vastly different results. The fair was seen as a keystone to spur downtown redevelopment, transforming the fair site into a "vital urban core", creating one of the most significant concentrations of civic structures in America (MacKay, 1968: 48&50).

The residual use plan was a combination civic center containing an exhibit hall, theater and area, educational facilities, and a Tivoli Gardens-like amusement area called Fiestaland. Whether anyone connected with the fair understood

what benefits the fair could realistically provide is unknown. An examination of the fair's planning efforts raises doubts about whether an analysis was ever conducted on how the residual use would fit into downtown and if it would be supported by the local market. The fair's attendance projections, the basis for all fiscal fair planning, were so flawed that a fair spokesman termed them "misleading, saying the projections were based loosely on attendance at the Seattle World's Fair and involved some mathematical errors", (WSJ Staff Reporter, 1968: 21).

A later article indicates that a reason for retaining many of the fair's pavilions, boutiques, and restaurants was the hope of capturing tourists on their way to Mexico's 1968 Olympic Games (Brand, 1968: 6). Presently, the question of what to do with the site is a periodic item on the city council agenda, with several of the site's smaller buildings scheduled for demolition in 1982 (Peters, 1982: 16). Whatever the community needs were, they apparently did not include a complex of educational facilities (School of Tomorrow and the International American Center) located by an amusement area. Where the funding for the additional educational institutes was to be found is unknown. While the Texas Pavilion was successfully transformed into the Institute of Texas Cultures, the U.S. Pavilion, likewise planned to house an educational institute, was later torn down and the site used for a federal courthouse. A state office building was also located on a portion of the unused site (City Planning Department, 1972: 49).

San Antonio's residual use planning seems to have been

conceived to carry on the lofty goal of furthering the fair's theme of the confluence of civilizations in the Americas through educational and entertainment means without ever determining if there was community support, funding, and an audience for it.

Knoxville's residual use plan differs from the previous examples. Rather than provide a publicly-funded civic center, its intent was to implement an earlier city plan of redeveloping a vacant railroad yard beside downtown into a mixed used development including retail, office, research, and residential land uses. The city, through its quasi-public redevelopment agency, the Knoxville Community Development Corporation, established a general land use plan for the 58.9 acre site and implemented the fair related permanent residual development. This involved local public funding for a convention center with an office tower and parking garage, a park, and the state funded amphitheater. Private sources funded construction of the Sunsphere and restoration of three existing buildings. The fair corporation funded restoration of one additional existing building. When the fair ended, 47 percent of the site was serving in its residual use. An additional 12% of the site was owned by University of Tennessee, to be held for future university use. The tract containing the United States Pavilion, which is six percent of the site, may be sold as surplus federal property. For development of the final twenty-one acres (35%) the city contracted with a private development firm to design and build the one-quarter commercial, three-quarters residential project. The specific aspects of the

project such as project design, land use density, and build-out schedule were to be determined by the developer under the supervision of the city. While certain problems do exist concerning the site's public/private land ownership ratio and the development density necessary to pay off the public funded improvements, Knoxville's residual use is tied to a pre-existing city plan developed by a citizen task force.

2. Site Acquisition Methods

Factors affecting site acquisition must be considered during the site selection process. Availability of an adequate land area, number of land owners involved, presence of competing land uses (development projects), land value and demolition costs influence the desirability and feasibility of a site. An additional assessment must also be made of the return on investment if the property is to be disposed after the fair, or of the benefits it will provide if it is retained. A review of past world's fairs provides one common trait of site acquisition. World's fairs' sponsor corporations have always leased rather than purchased their sites. Only the methods used, parties involved and specific site improvement agreements have varied. While this may make site acquisition appear to be a simple process for the fair sponsor corporation, the complexities involved are transferred to the fair site owner, which is usually the host city.

Since land acquisition is capital intensive and world's fair sponsor corporations are short term business ventures, a third party who owns the land or has the ability to finance land acquisition must be introduced into the acquisition process. For past fairs this third party has included host cities, universities, private individuals, a fraternal organization, federal military reserves, utility companies and railroad companies (Morgan, 1963: 30&96; Scott, 1959: 159; Zimmerman, 1974: 69; Industrial Design Staff Reporter, 1974: 40).

Leasing Local Government Land

Host cities have most often provided the fair sites. Existing city parks have been used as fair sites since the first world's fair which was held in London's Hyde Park in 1851 (Mandell, 1967 : 9). North American expositions have used park sites beginning with the 1876 Centennial Exposition in Philadelphia's Fairmount Park (Peters, 1982: 14). In Chicago, parks have provided sites for two past fairs and will be the site for one future fair in 1992 (Kidder, 1982: 5). Fairs have also prompted acquisition of large land areas for city parks such as New York City's 1,258 acre Corona-Flushing Meadows Park (Moses, 1936: .9) and Spokane's 100 acre riverfront park (Industrial Design Staff Reporter, 1974: 40).

In all documented cases an agreement was made concerning what costs the host city or its park department would bear and the fair sponsor corporation's obligations for restoration or residual development financing. In at least one case, a surety bond was required to insure that temporary fair structures were demolished and restoration of the park site was completed. (Jackson, 1937: 93) For the two New York City fairs a very large amount of permanent park improvements were funded by the fair sponsor corporation. The 1939-40 fair funded \$2,606,000 in permanent improvements and an additional \$24,000,000 was spent on improvements by the 1964-65 fair corporation (Francis, 1939: 172). The \$24,000,000 for the 1964-65 fair was a loan from New York City and was never repaid (Caro, 1974: 1107). While many of the 1964-65 fair's financial problems can be traced to other

management problems, the fair sponsor corporation's inability to repay a loan for what would normally be city funded improvements should help establish a rule that fairs can finance only a very limited number of site improvements; that those improvements funded should be vital only to the fair; and that a fair should not be looked at as the goose who can lay a golden egg to fund residual use improvements. Both New York fairs violated this rule and their financial failure can, in part, be blamed on this.

In other cases, cities have purchased land for a residual use and utilized the fair as an urban development vehicle. San Francisco, in preparing a site for its 1939-40 fair, created Treasure Island on shoals in San Francisco Bay for use as a future airport site (Scott, 1959: 242). Seattle, San Antonio and Knoxville purchased land to serve first as fair sites and later as civic centers or as central business district revitalization projects.

Leasing Federal Government Land

The only documented case of federal lands leased for a fair site is the use of a portion of the Presidio Military Reservation and Fort Mason for San Francisco's 1915 Panama-Pacific International Exposition (Scott, 1959: 158-9). An attempt to lease federal military land for the 1962 Seattle fair was quickly rebuffed by the Department of Defense (Morgan, 1963: 45).

Leasing University Land

Universities have also leased land to promote campus development. The University of Washington's Union Bay campus was leased to the sponsors of the 1909 Alaska-Yukon-Pacific exposition and the fair provided a legacy of both temporary and permanent improvements including many of the original classroom and laboratory buildings (Morgan, 1963: 30-31). The Administration Building and part of the campus grounds were leased from Washington University for the 1904 St. Louis exposition in addition to some private and city park lands (Bryan, 1928: 28). As was the case with the 1904 St. Louis fair, private individuals, private organizations and even universities have and continue to lease lands as fair sites.

Leasing Private Land and Buildings

The proposed 1984 Louisiana World Exposition in New Orleans will utilize a number of privately owned wharf structures or land parcels. The leases negotiated were typically for one dollar plus the enhanced value of the property or structures as increased by fair funded improvements (U.S. Department of Commerce, 1982: 2-3). In Seattle, one private fraternal organization, the Masons, leased their building, which was within the fair site, to the fair sponsor corporation rather than allow the city to condemn and acquire the property (Morgan, 1963: 96).

Agreement for Use

Past and planned fair sites have included land and improvements that could not be acquired due to an unwilling seller and/or prohibitively expensive relocation problems. In these cases, the owner has made such intensive on-site investments on the property in question has such an important locational factor that to relocate will create a cost far above the fair sponsor corporation's or host city's financial means. For these situations an agreement for use with conditions specific to each situation is more successful than purchase and relocation. Two such property owners that appear frequently in the literature are utility companies and railroad lines. Of the two groups, the utility companies appear to be the more cooperative. Spokane and Knoxville both had large scale electrical lines or substations on-site. In Spokane, overhead electrical lines that once stretched over the Spokane River Falls were encased into the structure of pedestrian suspension bridges (Progressive Architecture Staff Reporter, 1974: 74). This created a dramatic site amenity out of a visual liability while avoiding major relocational expenses. At Knoxville, a major substation serving the downtown area was transformed from a visual liability into an exhibit once it was established that relocation would be both expensive and difficult. The substation was painted and an interpretive display created by the utility owner to explain its function. It was the opinion of one planning professional involved, that most fair visitors did

not realize the true purpose of the substation display (Mauldin 1982).

Railroads have been less cooperative but agreements for use have been reached. In one case, however, an unexpected event entirely changed the negotiating stance of the railroad involved. The site selected for Spokane's fair contained tracks and unused passenger stations owned by the Great Northern and Burlington railroads. The removal of these facilities had been proposed early in this century by the Olmsted Brothers' landscape architectural firm. Even the proposed redevelopment of the area as a world's fair site was insufficient to obtain the two railroad companies' consent to relocate the lines. Only a chance in timing concerning the merger of the two rail lines made these crosstown tracks unnecessary and allowed removal of all tracks and structures (Industrial Design Staff Reporter, 1974: 40). The fair and its residual downtown park, by themselves, would not have had enough political influence or the financial resources to achieve removal of the rail facilities. This lack of bargaining power can be substantiated by the experience at Knoxville, where fair and city officials were unable to negotiate the removal of a spur rail line through the fair site.

Two railroads originally owned land within the Knoxville fair site. The Louisville and Nashville (L&N) Railroad had a group of unused buildings and rail spurs. The Railroad willingly sold these facilities to the city's redevelopment agency. Negotiations with the Southern Railroad ended in relocation of

its switching yard and an agreement for use concerning its spur line through the site. The spur line crosses the Tennessee River after passing over the site's south boundary. The cost of replacing the thousand foot long railroad bridge was judged too expensive to be financed by either the fair or city. For the duration of the fair, unimpeded pedestrian access was allowed on the railroad right-of-way during the day and the two daily trains were rescheduled to run during late night hours when the fair was closed. Within the use agreement the Railroad retained the right to fence both sides of the entire right-of-way after the fair was over. This action would divide the residual development in half and impede the transition between downtown and the Fort Sanders neighborhood (Gray 1981: 13-14). The only cost effective way to resolve this problem appears to be to negotiate track useage rights that would allow Southern to utilize the L&N railroad bridge one-half-mile downstream. It was the opinion of many planning officials that while this was not achieved before the fair, it would be accomplished after the fair if the residual use developer felt it was critical to having a successful project (Gray, 1982).

This discussion on utility companies and railroad lines points out one fact: While relocation or acquisition of these facilities often does not appear to be an insurmountable task early in the site selection and acquisition planning, the presence of either or both land uses could exclude an area from availability for use as a fair site.

3. Analysis of Site Improvements and Associated Costs

A number of site improvements are typically required before an area can serve as a world's fair site and later be transformed into the selected residual use. Not all improvements built for the world's fair will remain to serve the site's residual use. Many of the fair's "surface" improvements such as walkways, landscaping, and pavilions are intended to be temporary but many other improvements such as underground utilities, roads, bridges, renovated buildings and new permanent buildings are intended to serve both the fair and residual use. Within this section, these site improvements will be identified and the factors of how they are designed, located and financed will be discussed.

The site improvements which occur on most if not all fair sites are:

- Demolition and Clearing
- Utility Systems
- Walkways, Streets and Bridges
- Renovated Buildings and Structures
- New Permanent Buildings and Structures
- Temporary Fair Buildings

At least three parties are involved with planning and financing the initial site improvements. The major party, in terms of affecting the entire site, is the landowner, which is generally a unit of local government. A second party, which finances improvements related directly to the fair, is the fair sponsor corporation and the third party is private investors who erect permanent structures to serve the fair and the residual use. Post-fair site improvements are omitted from this discussion

because they occur beyond the time frame of pre-fair residual use planning.

The costs of these improvements are not inconsequential. A cost estimate of the basic site improvements at Knoxville's Expo'82 site is shown below:

Table 6

Basic Site Improvement Cost Estimate
for Knoxville's Expo '82 Site

	Projected <u>1977-1982</u>
Demolition	338,000
Grading	776,000
Site Utilities- mechanical	1,655,000
Site Utilities- electrical	1,117,000
Lakes & Channels	269,000
Retaining wall, paving & fences	1,266,000
Landscaping	2,093,000
Site Structures	1,271,000

Estimated total	\$8,825,000

Knoxville Community Development Corporation and
Knoxville International Energy Exposition, Inc.
Site Improvement Cost Estimates (KCDC, 1977: VII-11).

The actual cost of these Expo '82 basic site improvements was closer to \$8.5 million (Mauldin 1982). Additional local and federal government funds paid for the \$21 million convention center/office building and the \$12.6 million U.S. Pavilion.

The total cost of these permanent site improvements cannot realistically be charged against the cost of the fair. The

environmental impact statement for the proposed 1984 Louisiana World Exposition contains the following financial model to assess the fraction attributable to the fair. Permanent site improvements are assumed to have a forty-year useful life and to be installed one year before the fair. Therefore, $1/20$ th of the total cost of permanent improvements is attributable to the fair and the remainder to the residual use (U.S. Department of Commerce, 1982: 5-32). Whether these costs are actually assessed and collected from either the fair sponsor corporation or the residual use developer will depend on the local government and its attitude toward the fair and residual use development. At the least, this information helps determine the amount of costs assignable to each site use and the amount of benefits received by both site uses. An analysis of each site improvement type follows.

Demolition and Clearing

This site improvement must be preceded by an evaluation of existing site structures to determine which, if any, structures should be saved for renovation and reuse. In Knoxville, the Environmental Impact Statement further contained a guideline for reuse of building materials from razed structures (U.S. Department of Commerce, 1977). The cost of removing derelict structures, foundations, streets, and railroad lines must be considered, as well as the cost of performing subsurface exploration to determine these site characteristics. The total cost of razing and clearing a site will depend on site access,

size configuration, intensity of past land use and the complexity of existing site structures. While the reuse of some salvaged building materials may be desirable from an historic recycling standpoint, it is doubtful that this reuse of materials would lower the overall cost of demolition and clearing the site.

Utility Systems

Changes in utility systems on fair sites usually involve upgrading the quality and increasing the capacity of the existing site utility systems. These systems include the water distribution, sanitary sewer, storm drainage, electrical, gas and other fair-specific utility systems. Whether these improvements are temporary or permanent in nature depends upon the permanence of the structure served and the total level of utility demand needed to support the residual use. An example of varying utility demand levels in relation to residual use can be illustrated by comparing Seattle's residual civic center with Spokane's residual riverfront park. Seattle's civic center covers the entire site and is large enough to house simultaneous sporting, cultural and convention events. The civic center therefore requires high capacity utility systems throughout the site to service this demand. Spokane's riverfront park is primarily a passive outdoor area with the former U.S. Pavilion serving as a recreation center. Spokane's former Washington State Pavilion, on the shore opposite the park, serves as an

opera house and convention center. The total utility demand at this site is lower than the Seattle Center's needs and it is concentrated at the opera house and convention center.

Therefore, the majority of utilities installed in the site's park area for the actual fair did not need to be permanent unless the utilities included trunk lines to serve offsite development.

Utilities installed to handle fair related demands will typically be sized much larger than those needed for the residual use. In Knoxville, site utilities on the 73.4 acre site were sized to handle demand for 78,000 persons per day (Lemmon, 1978: IV-1). Due to local land ownership, use, and development constraints, it is safe to assume that Knoxville's residual land use density will produce a demand lower than that created by the fair. This excess capacity is somewhat predictable and can be handled in two ways. For utilities such as water mains and sanitary or storm trunk lines, on-site excess capacity can be rationalized to allow for a future intensification of land use adjoining or uphill from the site. An alternative method would be to install a permanent utility system to handle residual use demand with additional temporary lines to service the higher fair demands. This second method might be justifiable where the residual use will have dramatically lower utility demands than the fair and where excess capacity for future on or off-site development is presently not desired. An analysis of construction cost differences between the methods, amount of excess system

capacity, and residual use type would determine which method is preferred for a specific site. The general pattern for past fairs has been to size the permanent utilities to serve the fair and provide residual excess capacity.

Determining the location of site utility improvements is a process of identifying which existing utilities are useful, which additional utilities are to be added and where the optimal location is for the new construction. To determine the optimum location, a decision must be made whether "optimal" relates to the fair design, the residual use, or a combination of both. The process of utility location design at Knoxville was based on the fact that adequate water and electrical service was available at the site's boundary and that a sanitary sewer trunk line ran through the site. Existing utilities within the site were initially considered expendable although, in the final design, some were utilized to lower construction costs. For areas where residual development appeared certain, permanent water mains were installed. These were located along the two street right-of-ways that bisected the site. The mains in this area were 6" or 8" trunk mains of ductible iron. In areas where residual use was uncertain, PVC plastic water mains were installed to reduce construction costs and lower the loss when the lines were abandoned after the fair. Service laterals to both permanent and temporary structures were also PVC plastic lines. All sewer lines on-site fed to the existing sanitary sewer trunk line and were PVC plastic lines.

Electrical service for the site was underground and these

lines were located using two methods. The types of equipment used for temporary and permanent electrical service were identical, making location of the lines the only real variable. For permanent buildings, transformer pads and meter centers were placed in locations which appeared best over the long term. Transformer pads and meter centers for temporary fair buildings were placed in locations best for the fair, which possibly would be unusable residually. An additional chilled water system was installed to cool the fair buildings that, due to the uncertainty of the residual use's actual design, can be considered a fair-specific site utility that would not serve residually (Mauldin 1982).

Walkways, Streets, and Bridges

Installation and removal of paved surfaces and bridges are both expensive processes. Reuse of either existing paving and bridges or the combination of fair and residual needs to allow dual utilization of these improvements is desirable. Due to the extent of walkways necessary on a fair site it can be anticipated that a majority of the walks will be removed after the fair. Use of a material like asphalt, which can be taken up easily and recycled would lower post-fair demolition costs. Pedestrian bridge locations could possibly be the same for the fair and residual uses. At Knoxville, fair-related pedestrian bridges were left on-site for future use or dismantling at the discretion of the residual use developer (Gray, 1981: 38-40 & Exhibit 5). This strategy increases the potential benefits of

this fair related construction but does not saddle the residual developer with a large cost, should the bridges be later razed.

Most Category Two fairs have sites small enough that extensive roads are not a serious design constraint. In the case of Spokane and Knoxville, a portion of existing roads were closed or abandoned for the fair and other cross site roads were combined and reconstructed to provide for the separation of pedestrian and vehicular circulation as well as to improve cross site circulation. Knoxville's only permanent on-site road service was to the Miller department store warehouse, convention center, and renovated railroad buildings. This road served as a major north-south walkway during the fair to connect the aforementioned facilities to the U.S. and other pavilions on the fair site. Concern was expressed in the area redevelopment plan that this street could become overused due to its narrow width (30 feet) and importance in serving the renovated railroad buildings and the convention center. (Gray, 1981: 36). An additional important factor that was overlooked in the report was that the existing lake and the proposed adjacent park is accessible from the convention center only by crossing the service road. Should the road become a heavily used service and access road it will create a barrier and lower the useability of the site's open space. The planning and design process for on-site streets must recognize that this situation can easily develop and, once existing, cannot be easily solved. Financing for internal streets serving private or quasi-public uses, as in Knoxville, would undoubtedly be done with private/quasi-public

funds.

At Spokane and Knoxville a cross-site bridge and a viaduct were temporarily closed for the fairs. Both were then used as pedestrian bridges and, in Knoxville's case, this allowed for a portion of the site to have two levels of exhibitions and other features. Many improvements to the Clinch Avenue viaduct in Knoxville were temporary, due to uncertainty about whether or not the viaduct would remain closed after the fair (Gray, 1981: 26). Retaining the option to reopen the viaduct was a prudent decision since it provides the city and the residual developer with increased flexibility in determining the final residual use design.

Only for New York's 1964-65 World's Fair have existing streets and bridges totally restricted the layout of a fair site. In this case, the reason for forbidding alteration of the existing park streets was that New York City Park Commissioner Robert Moses declared that the fair was to be planned with no planning and because he saw the fair only as a way to finance additional residual park site improvements (Caro, 1974: 1093). Reuse of the existing Beau Arts site layout along with its maturing street trees, planted for the 1939-40 fair, did save construction costs and added an air of permanence to the site. However this did not overcome the site design's flaws including the many dead-end streets that many visitors avoided on the single circulation system of streets which visitors shared with buses, wheeled passenger transports and service vehicles (Schmertz, 1964: 146).

Renovated Buildings and Structures

Existing site buildings and structures provide a basis for creative reuse for the duration of the fair and possibly residual use. While existing buildings appear as logical candidates for adaptive reuse, other, more mundane structures, such as viaducts, bridges and railroad trestles should also be considered for reuse. The master architect for Knoxville's Expo '82 expressed a purely design reason for renovating existing buildings. His reason was that old masonry buildings gave balance to the temporary fair buildings and added that a better balance of architectural elements would not have been achieved had the Knoxville site had more old masonry buildings. Renovating the existing buildings also helped to maintain an historic architectural tie to the adjoining Fort Sanders neighborhood (McCarty 1982).

Renovation of site buildings and structures can be accomplished using either fair, governmental or private funds. For renovation that directly benefits the fair and whose residual use feasibility is questionable, fair funded adaptive reuse is the only alternative to razing the building or structure. The Chinese Pavilion at Knoxville's fair was fronted by a large outdoor deck which rested on a portion of an abandoned railroad trestle. Another railroad feature, Southern's bridge over Cumberland Avenue, connected the north and south halves of the Knoxville fair site. These projects both benefited the fair and were funded by the fair corporation.

The Knoxville site also contained a seven-story warehouse that

needed renovation before it could serve the fair. After no private developer could be found to buy and renovate the building, the fair corporation paid to bring the building up to code, installed air conditioning and let the fair tenant finish the interior as desired (McCarty, 1982). The cost of completing the fair's portion of the work was around \$70,000 (Gray, 1982). Private funds financed the adaptive reuse of the old L&N railroad buildings. These two and three story buildings are smaller than the renovated warehouse and are located on the corner of the site nearest downtown, where the residual use plan called for a commercial land use. The size, location and fact that the buildings could be converted to the residual use plan's suggested land use would have made these buildings much more attractive than a seven-story single structure surrounded by a proposed residential land use of unknown design and density. The uncertainty of how vehicular access and parking would serve the building, should Clinch Avenue remain closed after the fair, compounded this problem. The Knoxville Community Development Corporation will continue to own the renovated warehouse until at least some of these unknown variables are better defined. This situation, although not optimal, can be contrasted to Spokane where all on-site buildings except a clock tower from one of the two historic railroad stations were demolished, leaving a large cultural gap in the city's historical architecture (Bylin, 1972: 28).

New Permanent Buildings and Structures

A review of past world's fairs in the United States reveals that, very often, the fair leaves a legacy of three types of new permanent buildings. The three are a United States pavilion of rather unique architectural or structural character, an on-site administration building that the fair corporation has operated out of, and at least one large convention, sports, and/or cultural building that housed the smaller, private, domestic exhibitors during the fair. The funding for buildings is provided by the federal government, fair sponsor corporation or others, and local government, using a combination of local/ state/ federal governmental funds respectively. Of the three, the U.S. pavilion, a structure that appears to local interests as a gift from above, is often the most frustrating for fair planners, residual use planners, and others involved to influence in design, property disposal and final residual use (McCarty, 1982; Peters, 1982: 16&17; U.S. Department of Commerce, 1977).

U.S. pavilions are a product of congressional politics and high level bureaucratic processes. Whatever desires and aspirations the fair sponsor corporation and local interests may have for the design and the residual use of the pavilion, the final product is a distillation of these politics and processes. The U.S. Department of Commerce (D.O.C.) is the government agency responsible for coordinating federal recognition and participation in world's fairs. Working with as many as over twenty federal agencies, it is the D.O.C. that controls the

design and construction process of U.S. pavilions (U.S. Department of Commerce, 1975: 6-10).

The problem of producing a building which can serve as a major exhibition pavilion and later be economically converted into a selected residual use has been recognized as an important design criteria in the Knoxville environmental impact statement and other D.O.C. documents (U.S. Department of Commerce, 1979: 11). The previous fair in Spokane had a pavilion that was designed to be partially dismantled at the fair's end with the remaining permanent structure to include an outdoor courtyard, amphitheater and a rectangular, 50 by 200, concrete, box-like structure. The design reflected the D.O.C.'s desire to create a residual structure that would have some flexibility for reuse (U.S. Department of Commerce, 1975: 26). This was in response, no doubt, to the unsuccessful U.S. Pavilion for San Antonio's Hemisfair '68 which was slated originally to house an educational institution and was later razed to provide a site for a new federal courthouse. Therefore, the problem of finding a locally acceptable residual use for permanent U.S. pavilions is not a new problem.

When a U.S. pavilion is planned and constructed for a site, a number of governmental and political factors come into play. The site for the pavilion must first be acquired by the fair sponsor corporation and deeded to the federal government. By doing this, local control over fair and residual use planning for this portion of the fair is lost. While the D.O.C. attempts to incorporate local needs and desires into the pavilion's

program, political and bureaucratic forces control the final funding, design, and cost saving techniques used to construct the pavilion, as well as final disposal. While the decision on whether the building will be temporary, partially permanent, or permanent can be influenced by local forces, they cannot influence the final design (Dodd, 1982: 6; McCarty, 1982).

In Knoxville, a residual use program put together by the fair's master architect and the University of Tennessee for the U.S. Pavilion was for a residual energy research center. The program was chopped and changed until the resulting building required a \$5-6 million retrofit budget and, due to cost saving techniques such as using painted metal surfaces, the building will be expensive to maintain (McCarty, 1982). At the end of Expo '82 the two original proposed residual users no longer desired to take over the pavilion due to high retrofit and maintenance costs (Knack, 1982: 12) and the only local groups who wanted the building could not realistically have afforded the true market value of the former pavilion. Based on the history of these three past fairs, and given an understanding that early U.S. pavilions for world fairs were temporary structures, a movement from permanent to temporary structures for U.S. pavilions may be in order. The only recent highly successful residual use of a former U.S. pavilion is Seattle's 1962 structure that later became the Pacific Science Center. This occurred at the beginning of an era in which educational institutions were vastly expanded and the national economy boomed, thus benefiting this particular residual use. If a similar situation

could be foreseen for the proposed public residual use of a U.S. pavilion, possibly a case for building a permanent pavilion could be made.

Administration buildings for the fair corporations have been common for the major U.S. world's fairs (1904, 1933-34, 1939-40 NYC, 1939-40 SF, 1962, 1964-65, 1982). Most often, these have been permanent buildings and have been constructed on the premise that it would cost less to build than rent similar office space for the number of years involved. This was not hard to justify in at least New York City's 1939-40 World's Fair which had been renting four floors of the newly completed Empire State Building prior to moving into its own office building (Tying, 1958: 23). The question of why a short-lived and generally undercapitalized business venture would desire to build a permanent administration building is an interesting one.

Some fair corporations such as St. Louis 1904, San Francisco 1939-40 and Knoxville 1982 have found other parties to fund construction of these permanent structures. In St. Louis, a new classroom building for Washington University was leased to house that fair's administration functions (Bryan, 1928: 28). The administration building for San Francisco's 1939-40 fair was jointly funded by the fair corporation and federal government to serve residually as an airport terminal (Jackson, 1937: 142-3). Knoxville's fair administration was housed in a city sponsored, 90,000 square foot, office tower adjacent to the new convention center. The city agreed to guarantee payment on the \$6 million in bonds on this structure and intended to sell it upon

completion of the fair. Office space needs of the fair corporation must include a somewhat prestigious decor, easy access to the fair site, and must be economic in overall cost. However, residual use of this building must be considered and an evaluation made of whether it is more prudent to lease existing off-site office space or construct an on-site building with a predetermined residual use.

The third common permanent residual building is the city owned convention, sports and/or cultural center which is financed with either local or state government funds. During the fair, these structures housed either the smaller corporate exhibitors or, in some cases, the host state exhibit. Since 1962 each U.S. world's fair, except New York, has had a residual convention center (1962 Seattle, 1968 San Antonio, 1974 Spokane, 1982 Knoxville, proposed 1984 New Orleans). This trend has developed for two reasons: (1) Fair corporations for Category Two fairs provide interior space for small exhibitors and (2) Host cities have desired to share in the growth of the convention market which creates new jobs and brings outside money into local economies.

Temporary Fair Buildings

There are five types of temporary fair buildings: (1) international pavilions, (2) domestic (corporate) pavilions, (3) concession buildings, (4) merchandise shops and (5) visitor service buildings. International pavilions for Category Two

world's fairs must be constructed by the fair sponsor corporation. Fair corporation funding for such buildings is limited, due to the Bureau of International Exposition regulation that restricts charges a fair sponsor corporation can assess international exhibitors. Knoxville's original international pavilion program called for structures that would be very energy conscious and that could be retrofitted residually with plug-in housing units. A fair corporation imposed construction budget of \$21-23 per square foot effectively cancelled this plan. Furthermore, the reluctance of international exhibitors to be among the first to make an early commitment to exhibit and to finalize space requirements compressed the pavilion construction period (McCarty, 1982). In response to these problems of budget and short time frame, the Knoxville fair architects developed 24 by 24 foot metal sided building modules that, when combined, created air-conditioned buildings that could be disassembled, sold, and moved elsewhere after the fair (Forkner, 1982). This building system appears to be prudent from an economic standpoint and met the needs of the international exhibitors.

Domestic pavilions are privately sponsored and funded by business, religious organizations, and governmental agencies. While many private exhibits are located in fair-leased interior space, some of the larger exhibitors choose to construct freestanding, single sponsor, structures. The fair corporation supplies utilities to the site and charges the exhibitor ground rent and utility service fees. The largest concern that the

fair sponsor corporation has is ensuring that the domestic pavilions are razed or removed from the fair site upon the fair's closing. This is best assured by requiring the private exhibitor to post a bond for the cost of demolition.

Concession buildings that serve food and drink usually are walk-up service stands that employ outdoor informal eating areas. The major concern is to provide an inexpensive structure that has visual appeal, provides the utilities and work space to prepare food in a sanitary manner, and may or may not be removed and reused elsewhere. Budget allowances for these structures are set by the cost of meeting concessionaires' needs and what the market will bear.

The design of merchandise shops is similar to concession stands but does not require the heavy-duty utility services. Visual appeal, opportunities for passers-by to see into the shops, ability to lock up the shops at night, and locations along heavily used walkways are the merchandisers' needs that must be met. The fair corporation's interest is to provide structures that meet these needs and can be easily disassembled and sold at the fair's end. Knoxville fulfilled the merchandisers' needs and lowered the shops' construction cost by commissioning a design that was easily assembled and disassembled which utilized secondhand industrial glass plates that could be sold and recycled (Von Eckardt, 1982: 70-71). This procedure should be successful at future fairs as well.

Visitor service structures is a catch-all category of small fair structures placed on-site to provide for visitor needs,

which include ticket sales and entry turnstiles, information booths, wheelchair/stroller rental, restrooms, and emergency services (first aid, fire station, lost-child haven, etc.). All functions require a minimum of utility services, with the exception of restrooms and the first aid facility. A number of prefabricated structures are available to serve the varying visitor needs and could be reconditioned or sold as-is upon the close of the fair. The cost of providing these structures and the services housed in them must be added into the admission ticket price and recouped through admission ticket sales.

Chapter Three Approaches For Establishing Residual Use

Host City Commitment to Fair and Residual Use

Support for hosting a world's fair and the commitment to utilize that fair as a development vehicle to implement a residual use plan must be recognized as two separate goals. Support for the fair may require that long term benefits occur, however, these benefits can be intangible (i.e., improved city image) or tangible (i.e., residual development on the fair site). This means that support for a fair may exist without commitment to utilizing the fair as a development vehicle. Likewise, a fair is only one of many alternate strategies available for developing a specific site. Therefore, commitment to redevelopment cannot be assumed to be support for a fair. An analysis of the support and commitment from four major groups for a world's fair and its residual use development must be made.

Elected city officials, non-elected city administrators, local business leaders, and the community (or general public) as a whole, are the four groups that must be analyzed to determine the level of support for the fair and commitment to implementing the residual use.

Elected officials, by supporting a fair and residual use plan, run the risk of political defeat and public humiliation should either goal be a failure. However, the chance to be associated with a successful fair and residual use project is

generally an inducement to help gather elected officials' support at best, or indifference at worst (Adams, 1983). Due to the long planning and implementation time period involved for the fair and residual use, it can be assumed that the individual elected officials will change and vary the level of commitment to both goals.

A high level of support and commitment from non-elected city administrators is essential to receive the cooperation and coordination that is required from city government. To establish support and maintain their commitment, city administrators must be convinced that the fair and residual use will provide lasting fiscal benefits and assist in implementing existing city programs and plans. Unlike elected officials, these administrators will frequently stay with the city government during the entire planning and implementation period and provide the continuity necessary to carry out the fair and residual use development.

Local business leaders' support is important to the fair sponsor corporation since these executives often provide the seed money to establish a fair and later assist in helping to secure the large-scale financing. The commitment of business leaders to implementing the residual development is important from a political as well as economic standpoint because of the collective clout such persons can have in local affairs.

The community as a whole is the largest of the four groups in absolute numbers but is represented in the decision making process by elected officials. The elected officials,

non-elected city administrators, and fair sponsor corporation officials can best assess community support via public information meetings and forums. While referendums have been called for to determine public support for past fairs, the value of such a vote is dubious. It was the consensus of non-elected city administrators in Knoxville that pulling off a positive referendum would be hard to accomplish for any issue, and to simplify the complex issues involved into a simple yes-no vote eliminates the role of elected officials within local government.

When a fair is to serve as a development vehicle for a desired urban design scheme, it must be recognized that conflicts between the planning and design requirements of the fair and the residual use are inevitable. It is important that this be recognized early in the planning process. Decisions can then be made concerning which site use will prevail in defining the land area involved, in establishing the conceptual land use plan, in locating permanent site improvements, and in determining the ultimate land ownership pattern. The more detailed the agreement between the fair corporation, city government, and other involved parties, the less is the potential for later disagreement. The manner in which this matter is resolved should directly relate to the host city's objectives for hosting a fair. For a fair planned to provide intangible benefits such as improved city image, site design for permanent improvements should favor the fair versus the residual use, to assist in creating as successful a fair as possible. When the fair is to

serve as an urban development vehicle, the permanent improvements necessary for the fair should be made to conform to the residual development's conceptual land use and ownership plan. The concept of tying site design issues to the host city's objective in having a fair is important, and in the case of utilizing a fair as an urban development vehicle, creates the need for an analysis of the cost-effectiveness of utilizing a fair as a development vehicle and an analysis of the host city's ability to manage pre-fair growth and post-fair adjustments.

The planner in charge of coordinating Knoxville's conceptual land use planning felt, in looking back, that an economic analysis should have been made to determine whether a fair was the most cost-effective way of developing Knoxville's fair site. In such an analysis, the benefits of accelerated development, including increased federal and state grant amounts, should be weighed against the increased public sector work load, the consequences of inherent quick (and possibly incorrect) decisions, and the potentially inflated construction costs due to the artificial local shortage of qualified construction contractors and materials. Based on such a study, it was the opinion of the forementioned person and two additional planners that normal development might be a more cost-effective and better site development strategy for some potential fair host cities (Adams, 1983; Blasius, 1983). Such a study of Knoxville's development area might have indicated that a normal (i.e., non fair induced) development might have been more cost-effective than the fair for the Second Creek fair site (Gray, 1983).

Host City's Ability to Manage Pre-Fair Growth and Post-Fair Adjustments

A host city's ability to manage and direct the intensive thrust of urban development that occurs prior to a fair is a factor that must be considered when evaluating the benefits of hosting a fair. Equally important is the host city's ability to manage the economic adjustments that follow a fair. The basis for an evaluation of this topic must be an examination of the host city's historical growth rate, the host community's opinion concerning urban growth, and the local planning agency's orientation (reactionary vs. anticipatory) and use of planning methods.

The historical growth rate of potential host cities should provide more information than simply the annual amount of change in the city's population. It is also an indicator of the strength of the local economy, the area's ability to attract and hold industry, and the local government's competency in providing services, and it serves as a benchmark to both assess the public's opinion concerning growth and their reaction to potential fair-accelerated growth. In all but the most robust of local economies, a fair would dramatically increase the host city's rate of growth whether measured in population figures, construction expenditures, or dollars of the gross local economy. In a slow growing city the potential for a surge in growth related repercussion is greater than in a city accustomed to higher growth. An examination of Knoxville's historic growth rate would show a city which boomed in the early decades of this

century then decreased to a relatively slow growth rate until fair related growth began in the late Seventies and early Eighties. The sudden surge of growth had certain repercussions that were beneficial and negative. For example, an action taken by city official who hoped to encourage the foreseen sudden growth had a long-term negative affect on hotel and motel safety in Knoxville. Recent disasterous hotel fires across the United States had prompted the revision of national model fire codes for hotel construction. The new codes corrected deficiencies common in past construction and increased hotel patron safety by incorporating new safety devices such as smoke alarms and sprinkler systems. Adoption of the revised codes were postponed by the city to encorage hotels and motels to be built for the fair by avoiding the cost of the added safety measures. A growth oriented city might have taken a longer term viewpoint and adopted the revised codes to improve the safety and overall quality of the fair-related hotel construction boom (Adams, 1983).

A dicotomy may exist within the host community concerning urban growth. Community leaders are generally pro-growth, realizing its importance in improving the local economy and expanding the local tax base. The general public may see growth only as a threat to the status quo or as a tool for economic gain by local special interest groups. Any assessment of a host community's opinion concerning growth should take this situation into account when trying to predict community reaction to a proposed fair and the associated urban growth. In addition to

the community's opinion concerning growth, it is the manner in which the local planning agency manages, controls, and directs growth that will determine the host city's success in achieving the goals associated with hosting the fair.

Local planning agencies respond to growth in a myriad of manners however, and, for this discussion, only two broad concepts need to be examined. Reactionary and anticipatory planning are concepts at opposite ends of the planning continuum. A city with an historically low growth rate would be expected to respond to a surge of fair-related growth in a reactionary manner. Uncoordinated planning efforts would have varying impacts on the urban design and quality of development within a host city. Sudden overbuilt pre-fair development will set the stage for rather drastic post-fair adjustments, when an economic shake-out will occur among the development spurred and overbuilt due to the fair. A city with a planning agency accustomed to controlling, directing, and managing growth would be expected to accomodate the surge in fair-related growth differently (Adams, 1983). More planning coordination in assessing various development proposals would be expected as well as less of an attitude to approve every pre-fair development proposal. Such a position by a strong, growth management oriented agency could lessen the severity of the post-fair economic shake-out. An examination of long term city demands for all kinds of development, with special attention to the lodging and restaurant industries is a key element in decreasing the negative impacts of post-fair adjustment.

Residual Use Market Analysis

Whether the residual use involves a public, quasi-public, or private development scheme, an appropriate market analysis must be made. Potential residual uses must be subjected to a market analysis, as would any other development, to ensure that the proposal is viable. As described in Chapter 2, residual use must be linked to local market conditions. For past public and private residual use developments that have failed, the developers appear to have either neglected to make a market analysis that would have helped them to examine and understand community needs and local market economics. Even a development project associated with a world's fair must be subjected to an objective market analysis.

There are problems associated with completing the market analysis that must be recognized and weighed. The initial analysis must be done using only sketchy or nonexistent data and be projected forward four to seven years, the typical period from the inception to implementation of a world's fair.

The host city and possibly the fair corporation would be responsible for conducting the initial market analysis and subsequent updates until the residual use implementor is selected. Once selected, the residual use implementor assumes the responsibility of updating the market analysis. The host city should continue to monitor the market analysis updates to ensure that changes in local conditions are recognized and incorporated into the updates. Changing national economic

conditions and development trends should also be noted and reflected in each update. The time period between updates might vary due to the frequency of change in local conditions and national trends. At a minimum, a yearly update in the period prior to the fair would be useful to ensure a place for the residual use within the local development market. An examination of the course of action taken by Knoxville, and how a continuously updated market analysis would have benefited those involved, follows.

Knoxville's residual use planning was based on a 1977 development feasibility analysis concerning the fair site, which was later supplemented by a 1981 conceptual land use planning study. The 1981 plan updated some of the 1977 analysis and established a conceptual land use diagram. For analysis concerning market issues, both studies relied heavily on secondary information taken from public and private planning reports on downtown Knoxville. While each study did address certain market issues, a comprehensive market analysis was not undertaken. It was the opinion of many planners involved with Knoxville's site that such an analysis should have been made (Adams, 1982; Gray, 1982; Kern, 1982). The long time period between Knoxville's two studies also raises the issue of updating and adjusting the market analysis as needed during the residual use planning process. Specific examples of issues important when proposing residual land uses which should be covered in a market analysis follow.

The first issue involved is whether the local market will

accept the density necessary to support the mechanism used for financing the public investment at the fair site. The cost of publicly funding the land assemblage and utility construction costs utilized tax increment financing so that the added tax value of the private redevelopment would pay the debt service on the bonds. The large public investment involved necessitates that, in order to produce revenue sufficient to service the tax increment and bond debt, all private residual land use densities be intensive by Knoxville's standards.

The site's land use most sensitive to increased density is housing. If housing is to pay a proportionate share of the bond debt, it will require a density far exceeding all existing residential development in Knoxville. How this new, higher density housing will be received by home buyers in the Knoxville market is unknown. Overcoming initial buyer's resistance to purchasing a new type of higher density housing with an untested resale potential is an issue that would have been addressed in a comprehensive market analysis.

Another issue involves changes in market conditions that occur, invalidating demand projections. All of the new prime office space and four new Class A hotels in downtown Knoxville have been constructed since 1972. At the close of the fair, the downtown provided 50% of the local prime office space in nine major buildings. Nine additional office projects within downtown were proposed at that time, which would increase the area's office space square footage by 84% (Adams, 1982). Using a 1981 survey that lists 928,816 gross square feet of office space

in the Central Business District and an annual absorption rate of 93,000 gross square feet, an 8.39 year supply of new office space would be supplied if these structures were built (Gray, 1981: 58; Bash, 1978: III- 10&11). Even if not all of these existing CBD proposals are built, it points up the fact that any office development on the exposition site will have to compete in an already competitive office market. Any office construction on the exposition site would add to this supply, and it should be noted that the two larger exposition tracts will require on-site parking structures to serve the parking demand created. While the exposition site does offer large tracts under single ownership that are immediately available for construction, it seems optimistic to assume that the exposition site will capture the 40-45% of the new office space as predicted by the 1977 Economic Research Associates study, based on the present competitive market situation. The added cost of the required parking structures may be offset by similar needs for other CBD tracts or by public funding of the parking structures. Whether the land costs would differ between the exposition site and CBD is also an unknown factor. The establishment of threshold incremental tax yields limits the minimum investment level acceptable for each site (Gray, 1981: 52). This amount could be high enough to make the development proposal of a scale so large that integrating it into the local market could be a problem or involve such a large investment that the risk involved would be unattractive to potential financiers.

Inclusion of a new hotel in the development of either of the two larger tracts, as suggested by the second consultant's study, would create a fifth Class-A hotel within the downtown area. The 1977 ERA study recommended construction of a 250 room hotel prior to the exposition followed in three years by a 500 room hotel, taking into consideration the construction of the new Hilton Hotel (Bash, 1978: III-20). The Holiday Inn built on the exposition site actually provided 299 rooms and the new Quality Inn provided an additional 200 rooms, creating over one thousand Class A rooms in downtown Knoxville. The additional rooms make adjustments in hotel need projections necessary and may postpone or eliminate feasibility of a hotel on the exposition site during the desired period of site redevelopment. Also worth noting is whether convention activity, named in the ERA study as the growth segment of the local hotel industry, will grow at a rate sufficient to support the existing four hotels plus an additional hotel.

Residual Use Implementor Selection

The selection of a residual use implementor involves defining the residual use implementor, adopting an implementation strategy, establishing the selection process, and determining when the selection process should be made.

The type of implementor and implementation strategy used on fair sites has changed from that of the early fairs. The publicly implemented residual facilities of early European fairs reflected the desire of autocratic rulers to create grand urban

corridors and spaces within their capital cities (Mandell, 1967: 10). The residual uses of North American fair sites were publicly implemented civic facilities until the 1960's. Seattle's successful privately owned and operated Space Needle and San Antonio's publicly owned but privately operated Fiestaland were the first jointly implemented, public/private residual use projects in North America. Knoxville's mixed-use, publicly-assisted residual plan, is the latest example of this continuing trend of public/private cooperation to implement residual use development on fair sites.

Shown below are five entities available to participate as residual use implementors in developing world's fair sites.

Table 7

Potential Residual Use Implementor Entities

Local government

State government

Federal government

Quasi-public corporations or foundations

Private development companies

The residual use implementor may be a single entity or a joint-venture between any of these entities. The basis for defining which entities will participate is the host city's goals for having the fair. For residual development requiring public/private cooperation or a public/private joint-venture, it

is critical that each entity's responsibilities, capital contribution, and degree of risk be clearly stated in the contract between them. It should be recognized that certain host cities may be limited to accepting only the risk of assembling land, clearing it, servicing it with utilities and reselling it. This may be due to either laws restricting the role of local government or by what is acceptable politically within the host community (Kern, 1983). Knoxville's state-given redevelopment powers allowed land assemblage, clearing, utility installation, and resale to private developers. The local political arena would most likely have prevented the assumption of any additional risk required to complete the desired residual mixed use development. In other host cities it might have been possible or necessary for local government to assume additional risk in order to attract a private implementor or to make it possible to achieve the city's development goals. Along with selection of the implementor, there must be an adoption of an implementation strategy. As with the selection of a residual use implementor, the adoption of an implementation strategy must be based on the host city's goals.

The need to determine which type of implementation strategy would best serve Knoxville's residual use goal was discussed in the fair's environmental impact statement (U.S. Department of Commerce, 1977: 71-73). Seven potential implementation strategies were listed (see table below) and evaluated.

Table 8

Potential Residual Use Implementation Strategies

- *Private redevelopment without any local, state or federal (government) involvement.
- *Private redevelopment with government assistance.
- *Local government redevelopment with sale back to the private sector.
- *Local government redevelopment with lease back to the private sector.
- *Local government redevelopment and retention.
- *State government redevelopment and retention.
- *Federal government redevelopment and retention.

These types would be applicable to any world's fair within the United States. Once the residual use implementor entity(s) have been defined and the implementation strategy adopted, the host city must next select the specific entity to serve as residual use implementor.

A residual use project entailing only public facilities or public sponsored development would be implemented by either the host city or its quasi-public development corporation. Residual use projects containing private development require the establishment of a selection process. The process could utilize either an invitation to submit proposals, an open competitive process, or a combination of these or other methods, unless specifically prescribed by law. Knoxville sent invitations to submit proposals to a number of private development companies and also advertised to attract potential development companies. Due

to the limited number of organizations qualified to submit proposals, the response rate to the advertising was very low. The organization eventually selected had not received an invitation to submit a proposal, but had heard of the competition through word of mouth (Kern, 1983).

The use of multiple private implementors could be considered if the host city can maintain adequate control over the residual use implementation. The degree of planning required prior to the selection of multiple private implementors would have to exceed that necessary when using a single private implementor. This would help insure that piece-meal development does not take place. Knoxville considered using more than one private implementor for its private development. This would have allowed smaller, local firms to compete for development contracts. However, concern for maintaining the residual development schedule and creating a consistent quality of development later ruled out this alternative (Kern, 1983). Possibly more important than the design of the selection process is the timing of the selection process.

The implementor selection process timing has a potentially great impact on residual use planning and the speed by which the use can be implemented after the fair. It was the consensus of those involved in planning Knoxville's fair, that the earlier a residual use implementor can be selected during the fair planning process, the better. The general agreement among the same group was that Knoxville, which selected their private residual use implementor during the closing weeks of the fair,

had waited too long. Valuable community self-confidence created by the fair was thus lost, while the site sat empty and the community waited to find out the private implementor's final plan for the area. Had the implementor been chosen earlier, this downtime would have been decreased or eliminated and the host community would have been able to reap the residual use's benefits sooner.

Residual Use Implementor's Involvement in the Fair and Residual Use Planning

The need to select a residual use implementor early in the fair planning process was established in the preceding section. This allows greater input by the implementor in the fair planning process on matters concerning residual use. Possibly the most important input to be contributed by the implementor concerns the public/private land ownership and land use plans. These plans should be developed early in the fair planning process, jointly by the host city, residual use implementor, and fair sponsor corporation. This plan can then serve as the framework upon which locational decisions concerning the general residual development, renovation of existing buildings, new permanent fair buildings, and temporary fair structures are made. While the land ownership and land use plans are being formulated, at least two additional agreements must also be negotiated.

An agreement between the host city and the private implementor must be negotiated to determine the amount of pre-fair

investment that will be required of the private implementor. Any host city or fair sponsor corporation that sees this pre-fair investment by the private implementor as a way to solve fair-related site improvement funding problems may soon find itself without a private implementor. The long lag time between pre-fair investment and post-fair cash flow provides a rationale to limit the investment required. The benefits gained by the host city in having an immediately implementable residual use vastly outweigh any pre-fair financial concession by the private implementor that can delay or imperil that residual use.

The second agreement that must be made between the residual use implementor, host city, and fair sponsor corporation concerns the degree of the private implementor's involvement in fair planning and design decision making. It should be understood that either the host city or private implementor may desire to limit the degree of involvement to facilitate the decision making process during the typically hectic fair planning process. It was the opinion of the Knoxville masterplanning consultants that an additional entity with decision making power might have made it impossible to produce the work necessary in the time available (Forkner, 1982). While this does not rule out close involvement by the private implementor in the fair planning process, it does establish the need to assess alternate involvement levels. Three are shown below.

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Table 9

Level of Private Implementor Involvement
In Fair Planning Process

Residual Land Use/Ownership Plan only.

Residual Land Use/Ownership Plan and Fair Masterplan.

Residual Land Use/Ownership Plan, Fair Masterplan, and
Detailed Fair Site Plans.

At a minimum, the developer should be involved in developing the residual land use/ownership plans since the feasibility of the residual use is influenced by these plans. The need for additional fair planning involvement by the private implementor must be based on the implementor's desire to be involved, the host city's desire to include the implementor, and the host city's goals for having the fair.

B. Identified Alternate Planning Approaches

Three alternate planning approaches were identified through examination of the planning processes of past world's fairs. Each approach differs in the manner and degree of how the residual use planning was done. While two of the three residual uses were publicly implemented civic facilities, privately implemented residual development could have been substituted by adapting any of these approaches. Additional planning approaches may exist or could potentially be developed. However, these three approaches were selected because each has been utilized previously and has applicability for use by future fair planners.

Approach #1- Residual Use Provides A Framework For Fair Design

Approach #1 utilizes a schematic site design concept for the residual use as the basis for all fair planning. The residual use is established first, along with a program and schematic site design concept for the site. The program and schematic site design concept establish the residual land use pattern and the locations of permanent fair related buildings and site improvements. Because the residual schematic site design concept is established first, all permanent fair planning and design can be adapted to fit within that concept. Temporary fair related improvements can be located as needed for the fair since they will be removed and not impact residual use. By establishing the residual use prior to the fair, a two to three

year time period exist while the fair is constructed and held, when the detailed residual use planning can be completed. This should allow residual use implementation to occur either simultaneously with, or immediately following, the fair tear down period. Therefore, the time period when the site is inaccessible to the public is dramatically decreased and, potentially, less of the fair-created momentum will be lost. Utilization of this approach will work well for public, quasi-public, and institutional residual uses. For such uses, the host city is most likely to be the residual use implementor. This would decrease the number of communication and decision making entities, potentially speeding up the fair and residual use planning and design process. When private development is included as a residual use for this approach, additional time will be required at the beginning of the fair planning process to select the private implementor, to negotiate the development contract, and formulate the residual use program and schematic design concept.

The residual use planning of Spokane's Expo '74 fair site utilized this approach. The residual use planner developed a program and schematic site design concept that guided the development of the fair masterplan (Progressive Architecture Staff Reporter, 1974: 74). The residual use of a park located around the Spokane River Falls fit well with the fair's environmental protection theme. This fit aided in developing permanent site improvements that served both the fair and the residual park (Industrial Design Staff Reporter, 1974: 40).

Spokane's most serious mistake in utilizing this approach was neglecting to seize the opportunity of developing detailed residual use site development plans prior to the fair's end. Had this been done, the residual park development could have been implemented sooner. It can be assumed that the shorter the time period between the fair's closing and the beginning of the residual use, the easier it would have been to program events in the park and attract adequate audiences.

Approach #2- Fair Planned With A Pre-determined Residual Use

Use of Approach #2 implies that all the fair's permanent buildings and site improvements will be designed to first serve the fair and then allow conversion to the residual use. Unlike Approach #1, where a schematic site design concept exists prior to the fair's design, the residual use and fair design for Approach #2 are developed in tandem. The final masterplan can therefore be expected to contain some design compromises between the needs of the fair and residual use. Potential users of this approach must understand that conflicting needs between the site uses will occur and that compromise is inevitable. By developing the design of both site uses simultaneously, less time should be required than if the design for each use were done separately. This may be seen as a benefit because it would shorten the entire fair and residual use planning process somewhat. Preparation of detailed residual use plans should be possible prior to the fair's closing so that conversion to the residual use can occur during or immediately after the fair tear

down period. Again, like in Approach #1, this would allow public access and use sooner, with less of a loss of community momentum.

Utilization of this approach will work well for public residual uses where the host city will serve as implementor. Having only two groups - the host city and fair sponsor corporation - should decrease the problem of ambiguities in how to design the site to serve both uses. Private residual use could be introduced into the planning process so long as time was available to involve a third party(s) in the fair design process for permanent structures. Planning for privately implemented residual uses on land containing temporary structures could occur either during the fair planning process or after that and before the fair's closing.

Seattle's 1962 World's Fair was planned using this approach. During the site selection process, a site was chosen that had previously been identified as a possible civic center site. The fair was thus designed for conversion from fair site to civic center after the fair, with ninety percent of the fair's buildings to be retained for residual use (Clinton, 1962: 66). This pre-planning is the reason why Seattle's fair is cited most often as having the most successful residual use of all North American fair sites.

While the vast majority of fair buildings were planned for a known residual use, the final residual use plan included not only the fair site, but a perimeter area as well. A lack of direction concerning who should implement the projects in the

perimeter area prevented total realization of the plan's goals. Additional development proposed within the fair site on land owned by the local school district never occurred. This failure was a result of planners establishing design proposals for land that was not owned by the city, whose owners had no desire to lose control of it other than temporarily, during the fair period (Lyndon, 1965: 200). A second, similar failure to implement the final residual use plan occurred on the fair site, and concerns proposed development on the Nile Temple site. The fraternal order that owned the Nile Temple fought for and won the Temple's preservation prior to the fair by allowing the fair to lease the building. This did not prevent the forementioned planners from proposing its demolition after the fair, to serve as a site for a museum. After having fought the host city and fair corporation once over the Temple's preservation, the fraternal order did not entertain the proposal long. Fortunately, these projects were not crucial to the success of Seattle's residual use. Future host communities and fair planners should take note of this example. Fair and residual use planning can occur and be implemented only on land owned or controlled by the residual implementor.

Seattle's fair incorporated private residual use, which improved the success of the fair and residual use. The Space Needle concept was developed fairly late in the fair's planning (Morgan, 1963: 137). Its location on the fair site has been criticized because it was located by the pre-existing land ownership patterns, rather than by site design principles

(Lyndon, 1965: 199). However, the tower created not only a symbol to serve the fair and then the host city, but also served as the first experiment of injecting private development into a primarily publicly implemented residual use.

Approach #3- Fair Planned With Conceptual Residual Land Use Predetermined

Approach #3 occurs when the residual use has been pre-determined and a conceptual land use plan is developed for the residual use in conjunction with fair planning. This approach differs from Approach #1 in that no residual use schematic site design concept exists prior to fair planning. It differs from Approach #2 in that the goal is to develop a residual land use plan entailing the permanent fair buildings and developable fair site land, rather than to primarily develop buildings usable by both site uses. The desire to develop a conceptual land use plan to guide the residual use implementation also differs from the other two approaches. Approach #3 implies a greater degree of involvement by private implementors in designing, developing, and operating the major portions of the residual use. This increased public/private cooperation or joint venture development parallels a trend in other types of current urban development.

The use of Approach #3 allows the host city greater latitude in developing a mix of public and private land uses to serve community needs. This creates a situation more administratively complex than the other approaches because one or more private

implementors will be involved in negotiating, developing, and designing the residual use development. Since the feasibility of the residual use is dependent upon the conceptual land use, it is advisable to select a residual use implementor(s) early in the fair planning process. This would allow the private implementor to contribute to the development of the conceptual residual land use plan. Such a contribution would improve project feasibility and increase the private implementor's commitment to the project. Approach #3 would not be used to implement primarily or totally public residual use plans since either Approach #1 or Approach #2 are better suited for that purpose.

This residual use planning approach was used by Knoxville. The host city's goal was to develop a mixed use residual development that included publicly and privately implemented projects. This departure from the past's primarily public residual use plans, called for a new planning approach emphasizing public investment to leverage private development.

While it is too early to pass final judgement on the success or failure of Knoxville's residual use, a few comments concerning its planning approach are in order. Knoxville attempted to create the first residual use plan that entailed major on-site private development. The host city's consultants advised against developing a design via competition and, instead, suggested that the developer be allowed latitude to develop the final site development plan. Therefore, a conceptual land use plan was the city's planning goal. A second

land ownership plan, however, defining either actual land areas or public/private ownership percentages, was never made. This resulted in possibly too much land in the development area remaining as public land. The impact of this problem was discussed earlier in this chapter. Knoxville's other problem was to delay selection of a private residual use implementor until shortly before the fair's closing. It was the general agreement of the public and private planners involved with Expo '82, that the city postponed the selection too long. Further, it was their opinion that it would have been possible to sign a private implementor at least one to two years earlier than occurred, and felt that future fair's taking this planning approach should select and involve a developer from the beginning of the fair planning process. The tendency of past host city's to forestall preparation of a detailed residual use plan until shortly before the fair's closing seems common to all three approaches. This fact is hard to understand, considering the enormous amount of time and large amount of public and private investment involved in planning and developing fair sites, whatever the planning approach used.

C. An Analysis and Evaluation of the Three Identified Alternate Residual Planning Approaches

The three identified alternate planning approaches were analyzed to determine how each affected ten factors concerning residual use. The list of factors was developed by examining issues common to all the identified residual use planning approaches. The factors and a brief explanation of each is listed below.

- a. Residual Use Identification - Analyzes when the residual use is typically identified in the fair planning process.
- b. Potential for Non-implementation of Residual Use - Examines the potential for the planned residual use not occurring.
- c. Residual Ownership Type(s)- Identifies the probable ownership types associated with each approach.
- d. Effects on Fair Design- Evaluates the approaches' impact on the methods used and design parameters of the fair.
- e. Locational Impacts on Public Investment- Assesses the potential of matching public investment for land acquisition and infrastructure development to residual use.
- f. Public Funding Commitment- Evaluates initial public funding needs, public investment recapture potential, and possible continued public funding needs.
- g. Tax Base Impact- Analyzes impact of the residual use on the local tax base.
- h. Private Implementor Involvement Impacts- Evaluates private implementor opportunities and constraints.

- i. Community Needs Impact- Assess potential to meet both publicly and privately implemented community needs.
- j. Length of Transition Period- Analyzes the probable length of the time when the fair site will undergo transition to its residual use.

Approach 1. Residual Use Provides A Framework For Fair Design.

Implies a public, quasi-public, or institutional residual use.

a. Residual Use Identification

Requires a commitment to a specific residual use schematic design prior to design of the fair. Commitment should include residual land use plan, financial feasibility analysis, and community response to proposed use.

b. Risks Incurred By This Residual Use Approach

Risk of residual use not occurring should be low if the requirements of the commitment are upheld.

c. Residual Ownership Type(s)

Public, quasi-public or institutional uses are the most likely to be used for this approach, due to the pre-fair planning and the long term commitment required.

d. Effects On Fair Design

Establishes perimeters that the fair can be designed within to best serve residual use. Provides preliminary plan by which permanent structures can be located.

e. Locational Impacts On Public Investment

Has the greatest potential to match public investment for land acquisition and infrastructure development to residual use.

f. Public Funding Commitment

Initial public funding would be necessary for land acquisition, infrastructure and site development. There is little or no opportunity to recoup initial public investment. Continuing public funding will be necessary for site operations.

g. Tax-Base Impact

Due to public nature of residual uses, private land acquired creates a tax loss since it would be taken off the tax rolls. However, this might be offset by renovation of adjacent building or redevelopment of adjoining land parcels.

h. Private Implementor Involvement Impacts

Potentially long lead time, high up-front costs with no immediate return on investment could make a private residual use planned using Approach #1 unattractive to private implementor. However, if host city could mitigate some or most of these problems, attracting a private implementor might be possible.

i. Community Needs Impact

This approach has the greatest potential to meet public community needs if related to physical improvements such as open space, public facilities, etc. Community needs could be programmed into residual design. Risk exists that the community

needs could change over the long period between initial residual use planning and final implementation.

j. Length of Transition Period

This approach has a potential for short-term transition period since planning, design, financing/funding could be completed and residual use construction contracts let by the time the fair ended.

Approach 2. Fair Planned With Pre-determined Residual Use.

Implies mix of public and private residual uses.

a. Residual Use Identification

The residual use is identified prior to fair planning period and incorporated into fair masterplan by designing building and site improvements to serve both site uses.

b. Potential for Non-implementation of Residual Use

Potential is decreased once planning studies are completed concerning fair and residual use physical needs compatibility. Introduction of private residual development increases potential according to the quality of project feasibility studies, private implementor commitment, and portion of the total fair site involved.

c. Residual Ownership Type(s)

Ownership is assumed to be primarily public with some private ownership.

d. Effects On Fair Design

Locations of permanent fair structures must be based on best assumption of how residual use will fit on site and how permanent buildings will fit into this. Permanent structures may end up hindering residual design.

e. Locational Impacts On Public Investment

Requires that public investments for land acquisition areas and infrastructure locations must be planned using "best assumption" method of how to serve the fair with consideration of residual use type. Infrastructure adapted later to serve residual use design.

f. Public Funding Commitment

Initial public funding would be necessary for land and acquisition, infrastructure and possibly site development. Opportunities to recoup initial public investment is very limited. Continuing public funding would vary based on proportion of public to private facilities.

g. Tax-Base Impact

Introduction of private investment will offset some loss due to conversion of land from private to public ownership. If no private investment occurs on site, situation is the same as for the tax impact factor for Approach 1.

h. Private Implementor Involvement Impacts

The residual use will determine extent of private sector involvement. Possibly private development will be limited to a

permanent theme structure or similar limited form of development.

i. Community Needs Impact

Has an opportunity to meet limited community needs by providing for private investment opportunities not generally made by government. Time frame between community needs assessment and project implementation is slightly shorter than Approach 1. This may lower risk of community needs changing prior to residual use development.

j. Length of Transition Period

Period potentially is longer than for Approach 1 if residual use planning is not completed prior to the fair's closing. Possibly the same, shorter, or longer period than Approach 3.

Approach 3. Fair Planned With Conceptual Residual Land Use Areas

Implies mixture of public and private land uses.

a. Residual Use Identification

Residual land uses are identified and a conceptual land use plan established for the site in conjunction with fair site planning.

b. Potential of Non-implementation of Residual Use

Potential risk is higher than Approach 1 or 2 since a major portion of the site's development will depend on private market forces.

c. Residual Ownership Types

Can be public or private although majority should be private if public expects repayment or return on the initial public investments. Higher the proportion of land used for public uses, the more intense private development will have to be to do this via tax increment, etc., financing. The more public land withheld from private development, the fewer design/development options available to residual developer.

d. Effects On Fair Design

Defines areas where permanent buildings will be located and where temporary fair structures will be located based on residual use plan and land ownership plans. Allows for planning of fair site development to continue as residual use development.

e. Locational Impacts On Public Investment

Public investment for land acquisition and infrastructure location can be planned to serve residual use based on land use types proposed. Temporary utility lines installed where residual land use does not warrant permanent infrastructure.

f. Public Funding Commitment

Initial public funding necessary for land acquisition, infrastructure, and possibly some site development. A possibility exists to recoup some or all of initial public funding through tax increment financing, etc. Continuing public funding would vary based on proportion of facilities or

the funding for continuing operations assumed by private residual user.

g. Tax-Base Impact

Introduction of privately funded residual use development should dramatically increase the tax yield for the site. Tax increment financing may delay the full impact of an expanded yield for 10 to 15 years or until the tax increment bonds are paid off. A high proportion of public land within a site will lower the amount of increase in tax yield.

h. Private Implementor Involvement Impacts

Involvement of private implementor is limited only by the creativity of the residual use planners and the local development market. Private implementors will be reluctant to commit large amounts of up-front money without a fairly quick chance to receive some return on investment. Such implementors can serve a dual process of providing facilities for the fair that will then be adapted, as needed, for the residual use.

i. Community Needs Impact

Has an opportunity to meet public and privately implemented community needs by creating opportunities to provide for needs that can occur only through private development. Some publicly implemented community needs could suffer if development is totally private.

j. Length of Transition Period

Varies according to when residual public/private developers

were brought in on job, could range from immediate residual development to a considerable lag period (1-2 years).

The preceding analysis and evaluation is graphically summarized in a matrix in Figure 7.

Figure 7

Alternate Residual Planning Approaches

	APPROACH #1	APPROACH #2	APPROACH #3
A. Residual Use Identification	Commitment to a specific residual design	Specific residual use is identified	Residual land uses are identified.
B. Potential for Non-Implementation of Residual Use	Lowest of the 3 approaches	Higher than #1, < or = to #3	Higher than #1, < or = to #2.
C. Residual Ownership Types	Public, quasi-public or institutional	Public with limited private	Majority private with some public.
D. Effects of Fair Design	Great- Residual use is basis for fair design	"Best assumption" for both fair & residual use	Land use/ownership plan directs permanent & temporary fair design
E. Locational Impacts on Public Investment	Greatest potential to match fair & residual needs	Potential to design to adapt to residual needs	Potential to match needs of residual land use types & fair
F. Public Funding	High initial funding. Low recapture of capital. Continuing public operational funding.	High initial funding. Low recapture of capital. Possible continuing public operational funding.	High initial funding. Highest potential to recapture capital. Possible continuing public operational funding.
G. Tax Base Impact	Decreased on-site taxes. Possibly increased off-site taxes.	Decreased on-site taxes with some offset possible. Possibly increased off-site taxes.	Increased on-site taxes. Increased off-site taxes.
H. Private Implementor Involvement Impact	Little or none.	Higher than #1 but very limited	Highest potential. Creativity & flexibility needed.
I. Community Needs Impact	Highest potential to serve publicly implemented needs	Has opportunity to meet publicly implemented needs with limited privately implemented needs	Highest potential to meet privately implemented needs.
J. Length of Transition Period	Potential for short transition period.	Probably longer than #1, < or = to #2	Probably longer than #1, < or = to #2

Chapter Four

Conclusions & Recommendations

The background information in Chapter One, along with the analysis in Chapters Two and Three, first provides historic information on residual use and then examines the interrelationship of planning a world's fair and planning for a residual use to occur on the fair site. As this research progressed it became apparent that just as each world's fair is an unique event, so is the planning approach necessary to create a beneficial residual site use. The intent of the research was thus to identify and examine in depth the common traits, problems, and opportunities involved in residual use planning for world's fair sites. The need to study the process of planning for residual site uses on a world's fair site exists because fair site development is capital intensive and many of the site improvements necessary are permanent in nature. In addition to these two facts, a world's fair's duration is too short to fully depreciate the cost of these improvements. Therefore, because of the prevalent use of public funds to finance land acquisition and site improvement costs, some form of long term benefits must occur to repay the host city and other levels of government for this investment. To insure that these long term benefits occur, an objective residual use plan must be formulated. The residual use plan and the benefits sought, whether economic, social, cultural, or physical development oriented, must be tailored to help fulfill the host

city's objectives and goals for having the fair.

To establish the basis for the design of future residual use planning approaches, three past residual use planning approaches were identified. These approaches varied in the degree that the proposed residual development had been physically defined and the extent to which residual land ownership patterns were established in relation to the planning for the fair. It is recognized that these approaches serve primarily as guides from which new and different approaches will evolve to meet each future host city's goal and objectives for having a world's fair. The other topical conclusions of this study follow, beginning with an examination of why cities will continue to vie for the opportunity to host a world's fair.

The demise of world's fairs has been predicted since their inception in 1851. However, world's fairs are a phenomenon that will continue to occur as long as the fairs have a potential to provide either one or both of the following benefits to their host cities.

First, world's fairs are a very visible tool to promote and improve the image of a host city while providing a positive economic boost to its local economy. Second, fairs also have the potential to serve as urban design vehicles. The reasons for utilizing a world's fair as an urban design vehicle include the acceleration of the development process for the selected site and the potential of obtaining public and private funds that otherwise would not become available. Additionally, hosting a world's fair creates a tangible objective to achieve,

enhancing the potential for community-wide commitment and support to achieve this objective. This support and commitment is necessary from three groups within the host city.

Implementing a world's fair requires the support and a large degree of commitment from the host city's governmental leaders, its private business leaders, and the remainder of the host community. This support is necessary because of the myriad of sanctioning regulations and social, economic, and site development problems involved. It is essential that local government, the fair sponsor corporation, and the local business sector work together to achieve as successful of a fair as is possible.

A residual use that is perceived as viable by the three forementioned groups is essential in order to obtain the large public and private investment necessary to assemble, clear, and develop a world's fair site. While development of the fair site and implementation of the residual use may involve a mix of public and private funds, only private funds are used to sponsor world's fairs in the United States. World's fairs in the United States are privately sponsored by non-profit corporations established solely for that purpose. Fair sponsor corporations borrow capital from the private financial markets with the ability to repay based on the generation of adequate revenue to cover fair administration, construction, and demolition, and operational expenditures. Cost containment has been a very important management function for all financially successful fairs.

The federal government's implied policy of not providing direct subsidies to world's fairs held within the country is unique among host nations. However, this does not mean that fairs are not affected by or benefit from the actions of government. Fairs require federal recognition to obtain international sanctioning from the B.I.E. in Paris. World's fairs benefit from the governmental funds spent to assemble, clear and develop urban sites whose first user is a world's fair. Additional federal, state, and local funds are sometimes necessary prior to the fair to correct off-site deficiencies in the local transportation, waste disposal, water pollution control, or other large, publicly funded systems. The logic behind making these public expenditures is that the funding will either leverage an additional private investment, thereby expanding the local economy and increasing tax revenues or create a public facility that will improve the quality of life within the host city. This logic implies the necessity to plan for residual development on the fair site and such an effort requires the services of planning and design professionals.

Since the early United States world's fairs, fair sponsor corporations and host cities have sought the services of planning and design professionals to aid in the tasks of fair site selection, fair site design, and residual use planning. Documentation indicates the involvement of planning and design professionals in these processes for every U.S. fair since the 1893 Columbia Exposition. Although planning and design professionals probably performed similar tasks for earlier

fairs, this involvement is not well documented. Site selection is a critical task in which planning and design professionals have had influence. The importance of site selection was recognized early in this research process and studied in detail. This resulted in the documentation of two reoccurring site selection processes.

Two site selection processes were identified by examining historic information. The basis of differentiation was found to be the host communities' motive for hosting a world's fair. The first process, termed "Hosting Fair Predominant", was more common in the pre-World War Two period of U.S. world's fairs. In these situations, the host cities' motive was to establish the community as a world class city, and site selection encompassed a city-wide site evaluation process. During the post-war period, a second site selection termed "Residual Use Predominant", was most common. The cities' motive for hosting these fairs was to develop a specific site. This has been utilized for nearly all fairs of this period. Therefore, the site selection analysis for the second process centers on whether or not the proposed site has sufficient characteristics to support a world's fair as a first user of the site. A world's fair in the second process serves as an urban design vehicle implementing a desired development on a predetermined site. An important consideration in the second process is whether a world's fair is the most desirable development implementor for the predetermined site. During the site selection process, site acquisition strategies must be developed

and possible site acquisition problems assessed.

The site acquisition process for world's fairs differs from that of other development projects. World's fair site acquisition generally involves a third party who has the ability to raise the large amount of capital necessary to purchase and hold land. This third party may be a local governmental unit, a quasi-public corporation, or a university that will benefit by acquiring the land for some future residual purpose. In some cases, fair sponsor corporations have leased private land and buildings to serve as part or all of the fair site. This practice allows owners to continue previous land use and ownership after the fair's closing. Some land acquisition problems are best overcome by obtaining leases or, in the case of railroads and utility companies, to obtain an agreement for use. The significant impact that railroads and utility companies can have on a land acquisition plan is generally not understood until an impasse arises between the rail or utility company and the party acquiring land for the fair site. Railroad and utility development is land and capital intensive. High relocation costs, the owner's reluctance to move from or lose a strategic line or location, and the non-applicability of the threat to use eminent domain severely limits the options available to the fair-sponsor corporation and the entity acquiring the land. Additionally, the existence of land development operations within some rail and utility corporate structures also inhibits the sale or influences the price of land that has high development potential and might yield

significant profit if held and developed in-house. Rail and utility company holdings must be recognized as factors that can potentially stall a land acquisition plan and impact the residual use plan's feasibility. Another special land use related to the fair can have great impact on the residual plan. This fair related land use is the United States pavilion and concerns its planning and ultimate ownership.

U.S. Pavilions have historically been temporary structures erected for the duration of the fair. Only since 1962 have these pavilions been designed to be permanent structures with the intent of providing greater long-term benefits. However, the problem of developing a new innovative architectural or structural design to create an exciting pavilion, when coupled with increasingly limited federal budgets, tends to produce buildings that require high retrofit costs. Potential residual occupants of these architecturally unique pavilions tend to be the local government or other public institutions that cannot readily afford the high retrofit costs and eventually are forced to abandon the idea of occupying the pavilion after the fair. The federal government also recognizes the significance of the retrofit costs and has been reluctant to use past pavilions as federal office space. U.S. pavilions are sited on prominent locations on the fair sites and have impact on residual use feasibility. Present federal regulations require the land parcel under the pavilion to be donated and deeded to the federal government. This practice effectively removes or limits local control over the residual use of important areas within

the world's fair sites.

The issue of local control points out a larger issue of the host city's ability to manage and control fair related growth and economic impact. One important factor in weighing the desirability of using a world's fair to improve a city's image and status or to serve as a redevelopment vehicle is whether or not the host city can manage and control the pre-fair growth boom and post-fair adjustments. For a city considering hosting a fair to serve as an urban design vehicle, this issue is critical. In such a case, the decision must be made about whether the city will benefit more from the fair induced accelerated growth, with its inherent miscalculations due to the squeezed time period for planning and construction, or more from the slower pace of normal, non-fair development. The examination of post-fair news reports on host cities' economies shortly after the closing of a fair points out the need to anticipate post-fair adjustments within the local economy. An overall contraction of the economy should be expected after the fair closes and the fair induced boom ends. An important post-fair adjustment which is often not objectively examined is how the proposed residual use of the fair site will fit into and influence the local economy. While most public or private development projects undergo detailed, objective public need or market analysis, this process has not been completed for most past residual fair site developments. Past public residual uses have often been planned without a needs analysis and past private residual use planning has occurred without a

comprehensive market analysis. This concept of performing a thorough public need or market analysis takes on additional importance when an ongoing trend within residual use planning is examined. There is a transition presently taking place in the types of residual use proposed for future world's fair sites. This topic is the last of the study's conclusions.

Residual use types are in a state of transition from totally publicly financed-and-owned residual uses to a mixture of publicly and privately financed-and-owned residual uses. This transition began in 1962 with the construction of Seattle's Space Needle, which was the first privately financed and owned permanent residual world's fair structure in the U.S. This transition parallels the overall development market where an ever increasing number of mixed use projects with varying ownership types are being developed through public and private cooperation. This trend is foreseen as continuing, as evidenced by the residual uses currently planned for future fair sites.

Recommendations

Six recommendations concerning residual use planning were drawn from the preceeding study. Four of the recommendations impact the overall residual use planning effort while the other two recommendations concern specific site planning issues. These recommendations are based on the following premise. In the recent past, world's fairs have successfully been utilized as urban design vehicles and the trend for cities to host fairs

for this reason appears to be increasingly prevalent. The following recommendations are therefore made with this fact taken into consideration.

1. City commitment to residual use is essential

The host city's commitment to having a residual use plan realized through this development of a site is essential and must rank higher in importance than the host city's commitment to the fair, if the fair is to be successful as a development vehicle. Community goals for the residual use should be formalized early in the planning process and serve to guide all fair and residual uses of the site. Within these goals there must be recognition that certain costs must be weighed against the benefits that will occur due to the proposed fair and residual development.

The community goals should be formalized using some form of citizen input. Communities that are unable or not willing to attempt to receive these types of commitment should eliminate a world's fair from the list of development vehicle options available to them. After this is completed, elected officials must be allowed to serve their roles as decision makers for the complex questions involved.

2. Selection of Residual Use Implementor

A residual use implementor (developer) should be designated prior to fair planning, using either a quasi-public development corporation, government/private joint venture, or an independent private developer. In the last two cases, the firm may be

chosen through an open competitive process or invitation to submit proposals. A residual land use plan should be established by the implementor and host city, designating land ownership types (public, non-tax-producing, or private, tax-producing) and general land uses. All subsequent fair and residual use planning, including the market analysis and public/private financing strategies, would be based on this residual land use and ownership type plan.

3. Market Analysis

A series of market analyses must be performed that evaluate the residual use proposal and establish, briefly, alternate land uses or development schemes available, in case market forces change or the projected demands that the residual use is to serve are met elsewhere. These market analyses would begin with an initial study formulated by the host city or its representative, that would serve as part of the prospectus for attracting potential residual use implementors. Each subsequent study would refine earlier analysis as more detailed information becomes available concerning the fair and residual plans, and to reflect changes in the land development market.

4. Tax Increment Financing

Tax increment financing is a viable form of financing residual use, as long as the majority of land ownership is private. This bestows a greater number of design and development options on the residual use implementor and helps insure that the associated bonds will be paid. To protect the interests of the

host community and local government, an analysis of past local application of tax increment financing for other urban developments should be made, to assist in determining its viability and desirability as a potential funding mechanism.

5. Utilities Planning

Utilities construction for a fair site involves a large public expenditure. Benefits received from utility installation can best be optimized by having a land use or general development plan for the residual use, which can be used as a basis for utility planning. Where this is not possible, the host community must accept a suboptimal utility plan and the excess construction or retrofit costs necessary to adapt it to the residual use.

6. U.S. and Other Permanent Pavilion Planning

United States pavilions should be planned and funded as temporary structures to be razed at the fair's conclusion. Host communities or private residual implementors who desire a permanent U.S. pavilion should finance all construction costs above those of a temporary structure. If a permanent U.S. pavilion is to be constructed, its location should be selected so as to best serve the residual use.

Private development of a structure to serve as a U.S. pavilion should be considered, with the possibility of a long term federal residual use if appropriate for the site and local space needs of the federal government. The existing federal requirement of land ownership donation for U.S. pavilion sites

must be amended to allow substitution of a short-term lease so local control over this land is not forfeited to the federal government.

Importance of the Research to Landscape Architecture and Opportunities for Further Research

The importance of this research to the field of Landscape Architecture becomes apparent when the variety of planning and design activities involved in planning a world's fair and residual site are examined. The traditional skills associated with Landscape Architecture, such as site selection, master planning, site planning, site design, and design implementation document preparation, are required to host a world's fair. Additionally, activities including fair feasibility studies, environmental impact statement preparation, local economic and social assessments, community input and comment sessions, and the many portions of the residual use planning process require the skills and talents of Landscape Architects as well as other professionals. The Landscape Architects' range of planning and design skills can be called upon to assist in obtaining a fair site design and residual use plan which can be successfully implemented ecologically, economically, and financially. These three goals should be seen as the Landscape Architect's professional responsibility to society, the party that ultimately provides the capital for the fair and residual use development. Due to this risk of capital which involves large amounts of both public and private funds, Landscape Architects

involved in these activities should strive to identify and comprehend the important and complex issues involved. It is the intention of this research to contribute new knowledge to this largely undocumented, yet important area within Landscape Architecture and the kindred planning and design professions. This study, however, investigated only a few of the large number of issues involved in world's fair and residual use planning. Many additional research opportunities exist and three are briefly discussed here.

Each world's fair is an unique event as is any residual use planning effort for the fair's site. A research opportunity exists in each past world's fair to examine in detail the form of residual use planning that was completed and the degree to which it was a failure or success. A review of Knoxville's residual use planning effort would be an appropriate and valuable study after a period of five years (1987-88) has elapsed. Such a study would either assist in validating or challenge some of the analysis contained in this study. Secondly, an additional research topic suggested during the 1983 Knoxville personal interviews was that of an economic study which would evaluate whether it would be more economical to implement a proposed urban design by use of a world's fair as a development vehicle or the more normal vehicles of urban development (Adams, 1983; Gray, 1983). While certain parameters and assumptions would be necessary to conduct such a study, the results could greatly influence current ideas concerning the hosting of fairs to implement urban design. Lastly, research

opportunities exist to examine the social, economic, and ecologic costs and benefits of hosting similar special world events such as the Olympics. Like world's fairs, the Olympics are world events that require tremendous amounts of planning and investment and which have the potential, like fairs, to create successful and enduring physical legacies.

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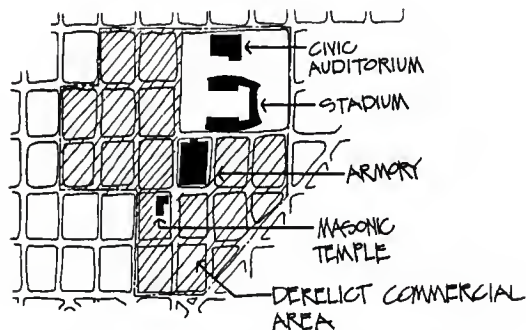
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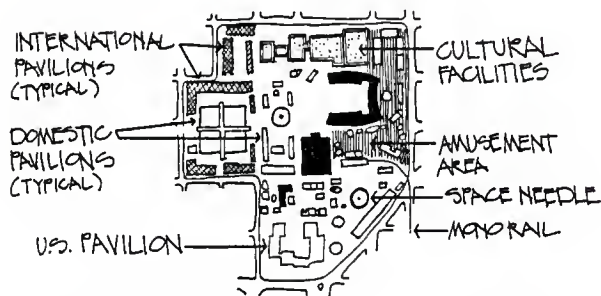
Appendix

Prefair, Fair, and Residual Land Use Diagrams
for North American World's Fairs, 1962-1982

1962- Seattle, Century 21 Exposition Site

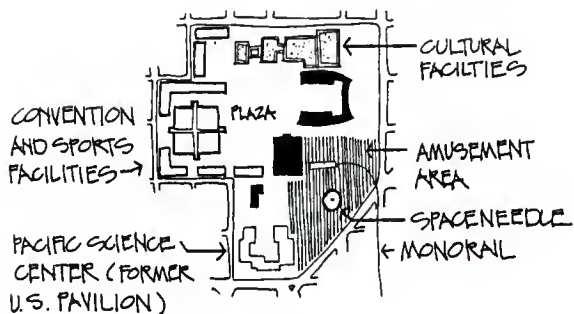
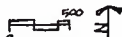


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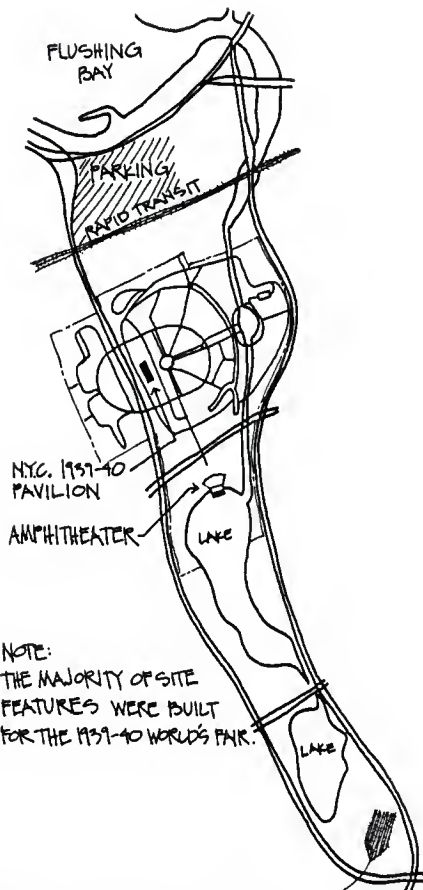


FAIR LAND USE-1962

1962- Seattle, Century 21 Exposition Site, cont.

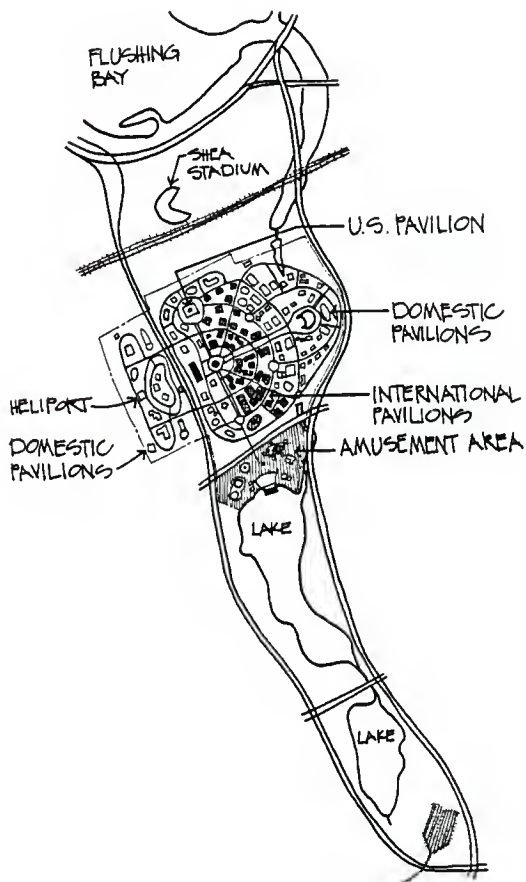
RESIDUAL LAND USE - 1962 

1964-65- New York City, New York World's Fair Site

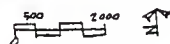


PREFAIR LAND USE - 1964-65

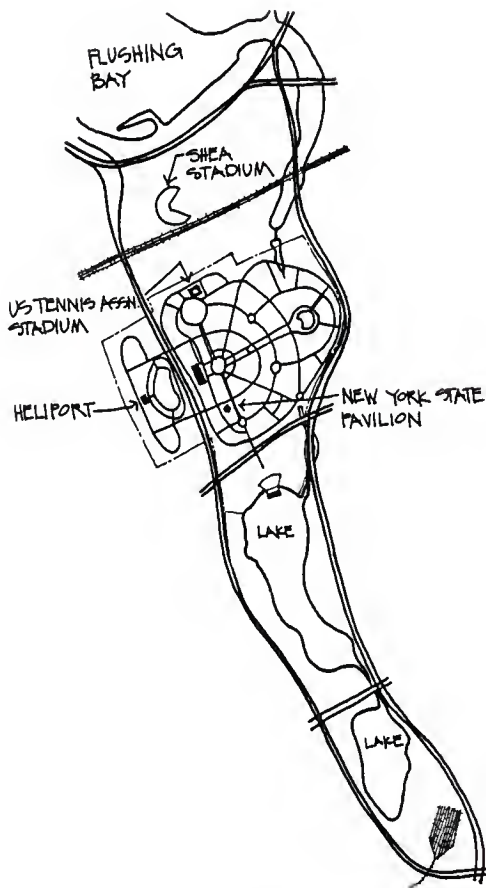
1964-65- New York City, New York World's Fair Site, cont.



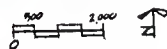
FAIR LAND USE - 1964-65



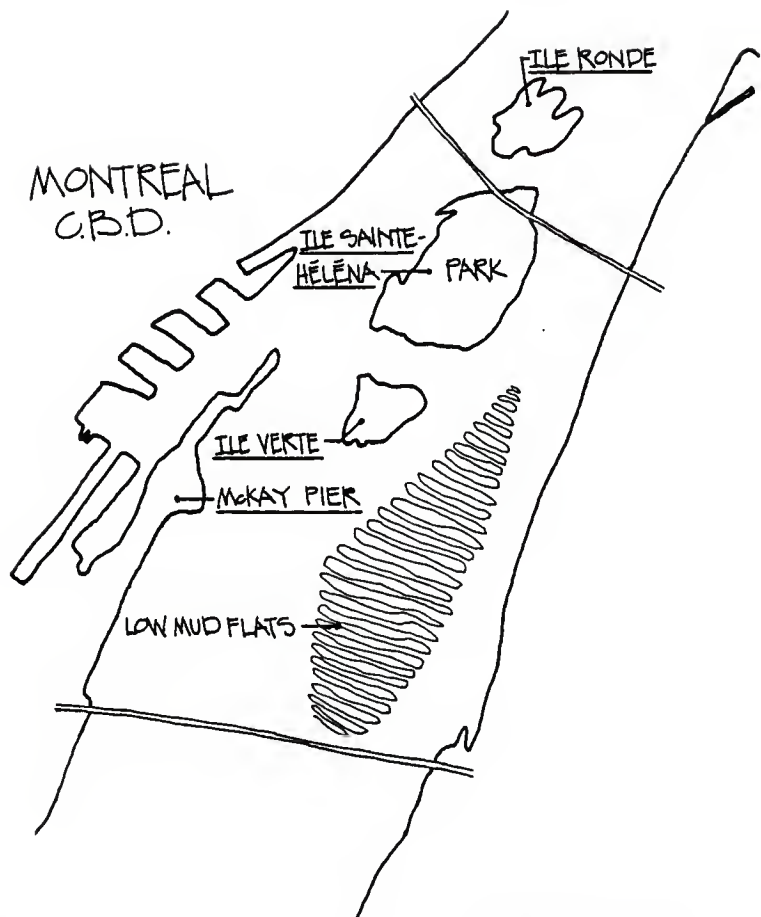
1964-65- New York City, New York World's Fair Site, cont.



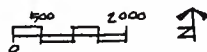
RESIDUAL LAND USE - 1964-65



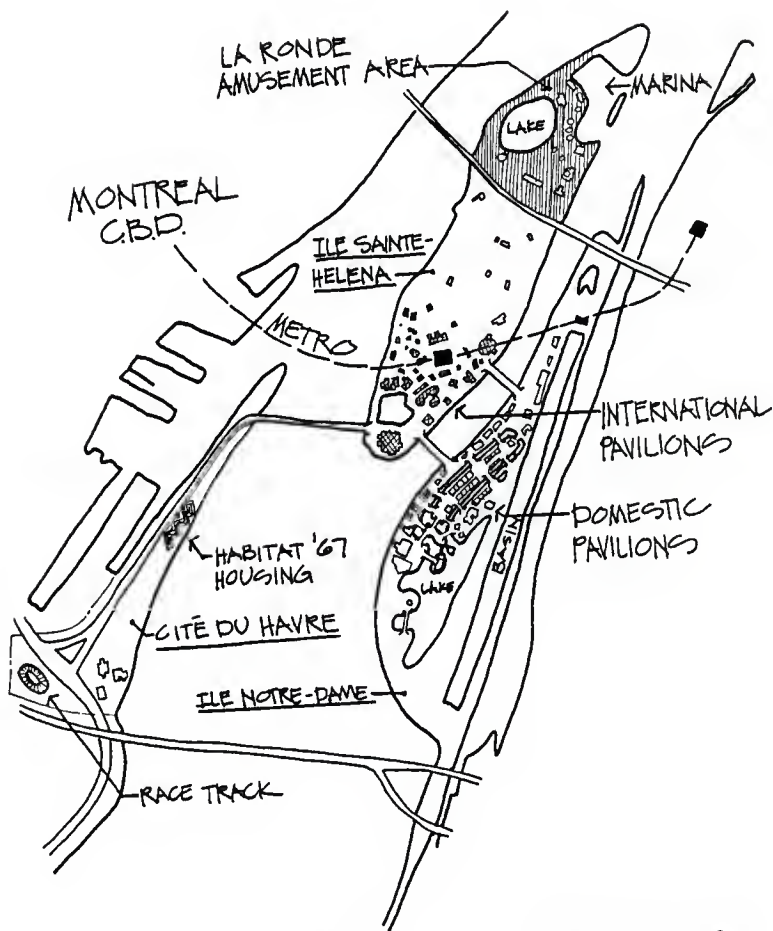
1967- Montreal, Expo '67 Site



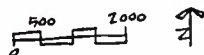
PREFAIR LAND USE - 1967



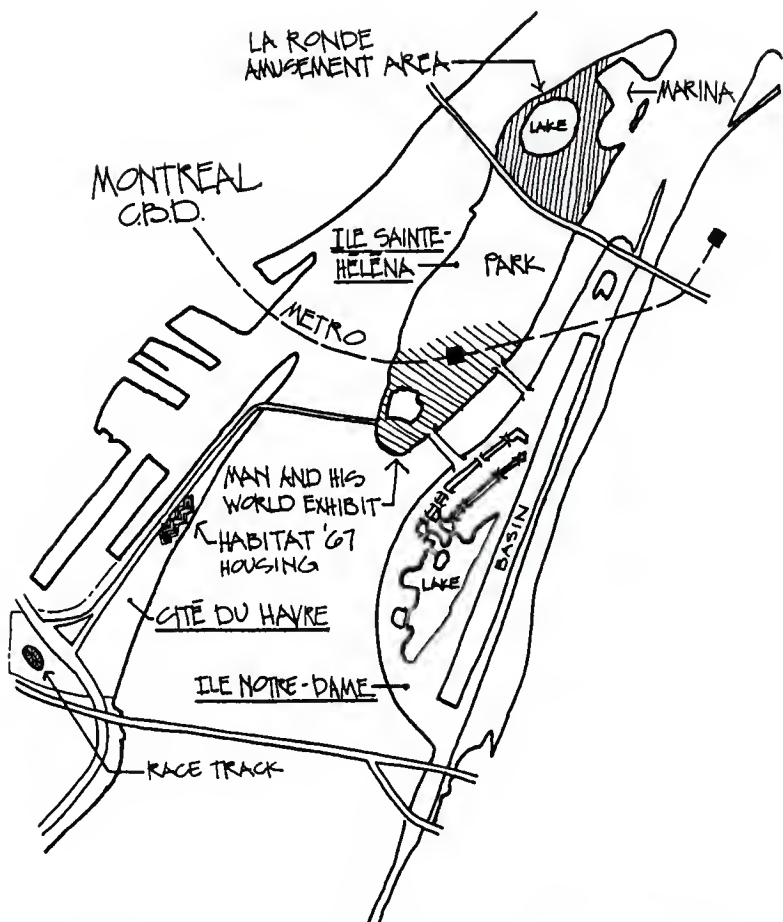
1967- Montreal, Expo '67 Site, cont.



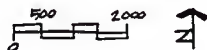
FAIR LAND USE-1967



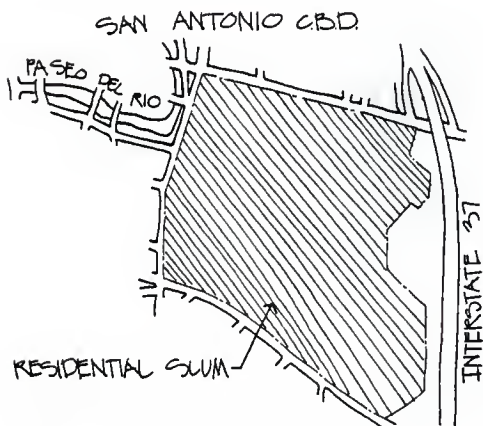
1967, Montreal, Expo '67 Site, cont.



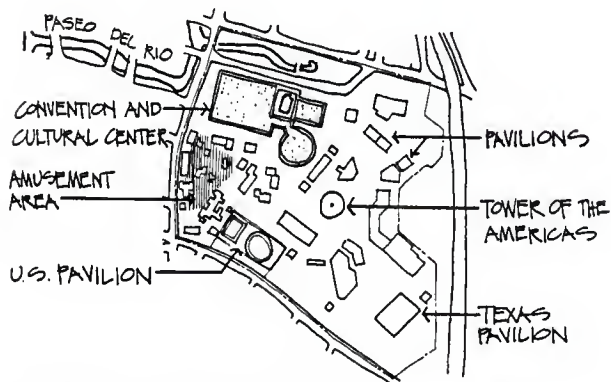
RESIDUAL LAND USE - 1967



1968- San Antonio, Hemisfair '68 Site

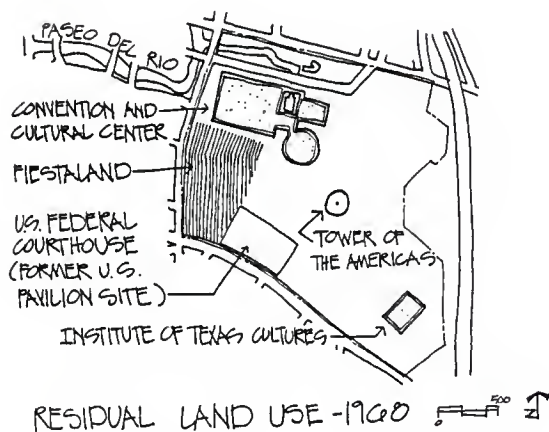


PREFAIR LAND USE - 1968

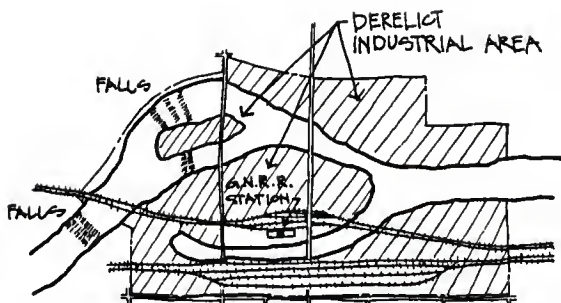


FAIR LAND USE - 1968

1968- San Antonio, Hemisfair '68 Site, cont.

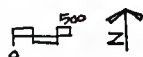


1974- Spokane, Expo '74 Site



SPOKANE C.B.D.

PREFAIR LAND USE-1974

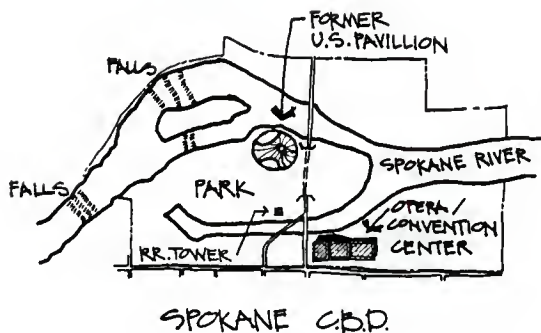


SPOKANE C.B.D.

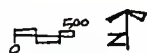
FAIR LAND USE-1974



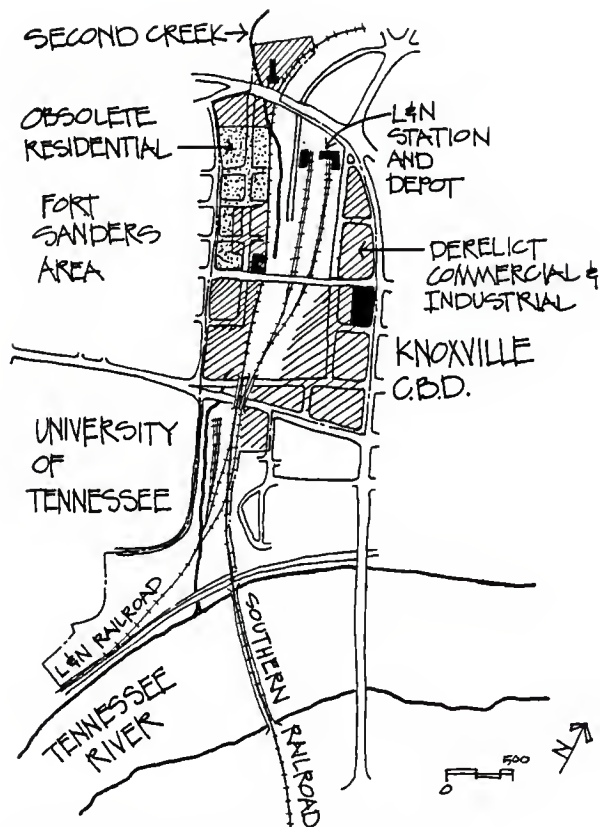
1974- Spokane, Expo '74 Site, cont.



RESIDUAL LAND USE-1974

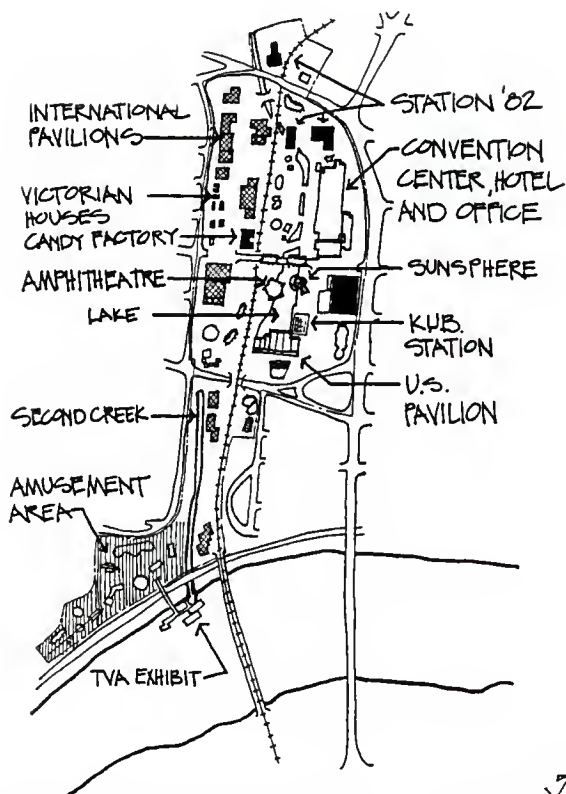


1982- Knoxville, Knoxville International Energy Exposition

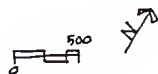


PREFAIR LAND USE-1982

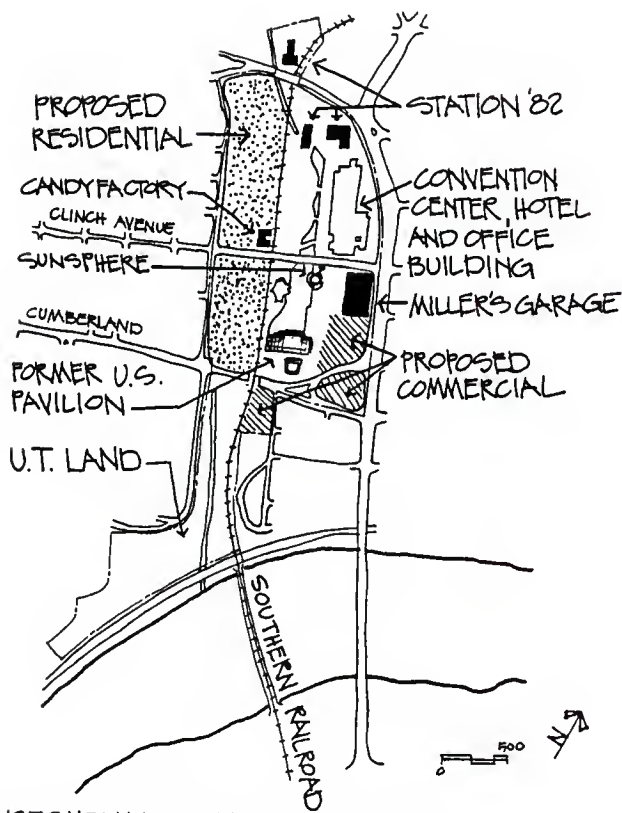
1982- Knoxville,
Knoxville International Energy Exposition, cont.



FAIR LAND USE-1982



1982- Knoxville
Knoxville International Energy Exposition, cont.



RESIDUAL LAND USE-1982

RESIDUAL USE PLANNING
FOR WORLD'S FAIR SITES

by

JOHN ROYSTER

B.S., South Dakota State University, 1977

AN ABSTRACT OF A MASTER'S THESIS

submitted in partial fulfillment of the
requirements for the degree

MASTER OF LANDSCAPE ARCHITECTURE

KANSAS STATE UNIVERSITY
Manhattan, Kansas

1984

ABSTRACT

World's fairs are international events that entail large amounts of pre-fair planning, require large public and private capital expenditures, and can potentially provide their host cities with long term benefits via residual (or post-fair) development on the fair site. The objectives of this research are to document how residual use planning has been done for past world's fair sites, determine the interrelationship between site selection and residual use feasibility, and evaluate past fair site residual planning and implementation methods and approaches. This study utilizes secondary research sources for fairs prior to 1982 and personal interviews of government and private planning officials involved with Knoxville's 1982 International Energy Exposition. Since world's fairs occur sporadically and in varying cities, information concerning past fairs' residual use planning and implementation was widely dispersed. The goal of compiling this information was to provide a single source where residual use planning methods, residual use types, and residual use development financing techniques are documented. While residual use planning remains a function between local government and the fair sponsor corporation, residual use types are changing from totally publicly funded civic uses to publicly and privately sponsored mixed land uses. This parallels general real estate development trends with state and federal government agencies providing development assistance grants to fair host cities, much like

other urban development projects.

Two site selection processes were identified from examination of past fairs, and a model process developed for each. The processes differ, dependent upon whether the host city's objective is to have the fair primarily to improve the city image or to serve as an urban development vehicle. Fair site acquisition methods involve leasing land from private entities and all levels of government. Private utility companies continue to resist use or sale of their properties. Due to the large public investment necessary to develop a fair site, long-term public benefits must accrue to the host city, thereby lowering the amount charged against the fair.

Five factors important to establishment of the residual use planning approaches are analyzed. The host city's goal plays an important role in the analysis of all five factors. Three alternate planning approaches are identified from past fairs. Each approach varies due to residual use type, implementor(s) involved, and timing of residual use planning. The utilization of the alternate approaches is analyzed and evaluated using ten factors common to residual use planning for world's fairs. Specific case studies are analyzed for past utilization of each approach. Future utilization of these approaches is dependent upon the three forementioned differentiations and on the the host city's objective for having the fair.