# A REUSE SOLUTION FOR DERELICT INDUSTRIAL SITES: THE CASE OF TWO NAVY YARDS

by

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TO MOM AND DAD

## Foreword

Few subjects today receive as much lip service as does the American economy. With the slightest perceptible drop in disposable income, an American quickly dons his economist hat and begins to pontificate on the short-comings of the United States to compete in the world marketplace. The younger generation of this nation has never known a time without these soapbox speeches; to us, wide-eyed economic prosperity is a remnant of post-war newsreels and the yellowed pages of Life magazine. Rather, American youth today are growing up during an economic age of diminished expectations[1],; we are no longer conditioned to believe that our standard of living will exceed that of our parents. In fact, many today are convinced that our economy is destined to continue its downward spiral. To think in this vogue mindset is easy; the flurry of discordant images which fills our urban life, dulling the consciousness and rendering critical thinking into captious cynicism, is a powerful narcotic. Unfortunately, this behavior is not the result of some hallucinogen, rather it is conditioned by our real surroundings.

The dire physical state of America's cities clearly is endemic to the great share of social maladies afflicting this nation. There is ample evidence to suggest that the long term prosperity of this country rests on the health of our urban areas. Thus, today's inheritance of urban degradation must not only be acknowledged and understood, but dealt with constructively. Fortunately, the myriad crises which America must grapple with in coming years pale in magnitude to the nation's gifted legacy. The true fruits of America -- individual liberty and freedom, general economic and social well-being, technological advancement and accumulated historical knowledge, etc. -- are indisputable. Not only are we today better equipped than ever to understand the complexities of modern life, but we may draw from a wealth of past experiences in solving problems analogous to our own.

In some measure, the current state of urban areas may be ascribed to the natural functioning of our capitalist economy. The trade off for

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[1]This assertion is examined in MIT Professor Paul Krugman's book, *The Age of Diminished Expectations*

economic growth automatically implies an incipient degradation of environment quality, namely our physical surroundings. Cities come into being to serve our economic interests. Since their nature is in part fashioned by economic criterion, they may be thought of as inputs in the aggregate productive system. As these processes change, the physical remnants of past activity: land, buildings, property may unfortunately come to be viewed by the market as residual wastes.

Thus, the built environment serves as an archaeological record of the changing political and economic order of the United States. In the post World War II era, America essentially abandoned its cities and focused on urban perimeter growth. Though the recent decade's initiatives in restoring downtown areas has been admirable, the city by and large is still neglected. Marginal lands, those with little profit incentive to marketplace developers, have been overlooked. In the past twenty years, a new chapter has begun to be scripted. Derelict industrial land - area once employed by industrial uses but rendered unusable today without some degree of reclamation - has become a prominent feature of America's urban landscape. This land-use crisis is the physical manifestation of our economic shift from a manufacturing and productive base towards a system reliant on services. These vacant "dinosaur" sites (i.e. large, obsolete design and extinct in function) such as shipyards, steel mills, military industrial complexes, etc., no longer employ thousands or provide municipal revenue. Instead, their disuse implies joblessness and local economic strife.

Historically, America's cities and their inhabitants have been forced to bear these true social costs stemming from business failures induced by the dynamic shifting of the economy. These forces have been triggered by both the natural evolution of the free market system, but also by the unrestrained predatory tendency of competition which allows businesses to march forward in spite of the social consequences of their actions. Over time when these two forces coincided, serious shocks (e.g. depressions) were felt in the nation's cities. Though America's capitalistic system several times veered off track, progressive minded reformers strove diligently to repair the externalities and inequities resulting from failures in the economic and political orders. The Robber Baron Age inspired the Progressive Era; the Roaring Twenties prompted the New Deal. During

these periods of enlightenment, social planners fused idealism with pragmatism, in a sense re-inventing America. Today's turmoil in all cultural spheres (political, economic, social) suggests the 1990s will be a watershed decade in American history.

Like any of the other today's needed reforms, the task of restarting American industry requires an amendment of the political status quo, as well as a future government commitment. The federal government must increase its support for technical assistance so that the country's best minds and dedicated spirits may be mustered to confront these problems. As well, the populace must realize that some belt-tightening must take place, before matters may be ameliorated. This calls for a new breed of political actors who can relate to the real people living in this country.

Veiled beneath concerns for their own individual well-being, Americans possess a moral concern for the nation's future. Leaders must galvanize this spirit to motivate the needed change. This can only be done by appealing to collective identity that is the basis of being an American. That is, reformers must work to reaffirm that the "American Dream" applies to everyone in this country. This slippage is no more clearly demonstrated than in the South Central Los Angeles Riots happening at this writing. When the proper technical assistance is provided, individuals, believing in the greater good, will ameliorate their own condition and in so doing, improve the social welfare as a whole. A first start is by expanding our time horizons. Change will take time. Private enterprise must not acquiesce to shareholder demands of quarterly profits; likewise, investors must take a longer term view with their capital. As well, consumers must suspend immediate gratification to insure for future consumption. The following work details a progressive reform which demands this long term vision.

Cambridge, Massachusetts
May 1992

**Acknowledgements**

During my five years at MIT, I have made the eight-hour train trip between Boston's South Station and Baltimore's Penn Station seemingly countless times. During this day long experience, I could usually manage to concentrate on my studies for the first few hours or so. But, by Trenton I would find myself slouched down in the seat, my eyes fixed on the fleeting landscape of dilapidated buildings and abandoned factories passing beyond the window. My personal curiosity in the future of these spaces led me to this topic.

I wish to thank for their personal contributions in the compilation of the case studies, both Mr. Richard Aneiro, President and CEO of the Brooklyn Navy Yard Development Corporation and Mr Doug Herberich, Project Manager of the Boston Marine Industrial Park who both conceived the development solution described herein.

I am grateful to my thesis advisor, Professor Gary Hack who was a likely choice to assist me in this quest since he seems to know something about everything. I also want to recognize my thesis reader, Professor Jerome Rothenberg whose eloquent style of economic investigation and public policy formation I wished to emulate. As well, I am indebted to Professor Robert Fogelson whose keen insights into Urban History first prompted my interest in planning, and whose generous nature helped to continually nourish it over the years. Further, thanks to the many professors and other individuals at MIT who challenged and taught me how to think about solving problems, and in doing so, developed a man interested in probably too many different areas for his own good.

Personally, I must mention Brian Teeple, my roommate and fraternity brother, who put up with my random tangents and helped to keep my sanity in check. Finally, as the importance of my family in my life cannot be described in words, I will not try. Simply, love to my parents, identical twin Thomas, and sisters, Maria and Suzanne.

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## ABSTRACT

Many U.S. cities will soon find themselves the unwitting inheritors of large-acreage, marine industrial facilities. The spatial fallout of the shift to a post-industrial economy and the end of the Cold War, these "dinosaur" sites -- large, functionally obsolete and extinct in purpose -- represent a large increase in the supply of vacant space, at a time when industrial space demands are in flux. The resulting market disequilibrium suggests an abundance of unwanted industrial space.

The multitude of problems with these sites tends to obscure their potential value from private sector view. The local municipality, which becomes the site's owner by lack of market interest, is pressed not only to find a new use for the site, but in the meantime must endure the economic hardship owing to its disuse. Already debt-saddled, the public sector is ill-equipped to finance redevelopment. However, these sites possess development potential, misinterpreted by market signals, which the city is capable of realizing. This thesis examines two successful industrial reuse cases, New York's Brooklyn Navy Yard and Boston's Marine Industrial Park, which circumvented this quandary by taking a new approach to economic development.

These empirical-based results suggest a reuse strategy which strategically maximizes the facility's beneficial characteristics with respect to the city's present service-oriented economy. The solution involves creating an industrial center geared towards small land and water-dependent firms which produce goods and provide services vital to the functioning of the larger service sector but which are unable to afford downtown rents. These users exhibit a willingness-to-pay which complements the prevailing land rent gradient of these dinosaur sites. The following details the physical, marketing, financial and managerial considerations to implement this sustainable development scenario with minimal public assistance.

Thesis Supervisor: Gary Hack

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## Introduction

U.S. industry historically championed the seas of world trade. The dominance of U.S. output over foreign producers was a testament to the American economic system. However, with the gradual sinking of U.S. competitiveness over the past thirty years, demand for domestically produced products such as steel, automobiles, chemicals and heavy equipment has set sail for foreign shores. In the wake of this industrial exodus, a significant portion of marine land, once employed by industrial uses like shipyards, navy yards, steel plants, etc. has become derelict. The much talked about peace dividend portends many more similar sites. Surprisingly, marketplace developers have neglected to consider redevelopment of these derelict lands in spite of their locational attributes -- proximity to major metropolitan areas and transportation access -- which make them ostensibly quite attractive for redevelopment.

In truth these sites have a tremendous number of physical problems (e.g., decaying infrastructure, environmental contamination, obsolete buildings, etc.) which present a serious financial hurdle for private redevelopment. Further, the title of these thesis deems the sites as being *derelict*. Websters Third New International Dictionary defines this word as:[1]

> [2]Derelict: **1a.** a thing voluntarily abandoned or willfully cast away by its owner with the intention of not retaking it and rightly claimed by the first person who takes possession of it. **b.** a tract of land left dry by the sea or other body of water receding from its bed.

Thus, this term imparts both a figurative and literal meaning to the following discussion. Figuratively, the marine metaphor above reflects the spatial distribution of these sites. In a literal sense, these facilities, industrial or military "cast-offs", become public property because no private interest will take possession of them. In fact, many companies find it more advantageous to abandon these sites rather than to retrofit them. This may be due to the private sector perspective that there exists a large amount of land in this country which is easier and less expensive to develop, than to undertake the costly reclamation of these scarred industrial spaces. While a handful of cities such as Baltimore, Boston, New York, San Diego and Charleston, SC have successfully revitalized

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[1]*Webster's Third New International Dictionary of the English Language Unabridged.* (1966). G and C Merrian Company: Springfield, MA , p. 607.


Figure I-1 Derelict cranes stand idle at the South Boston Naval Annex-August 1975 (photo compliments of BMIP)

a small fraction of their industrial waterfront, the majority of similar landscapes across the country do not have the potential to be converted into glitzy tourist meccas, condo projects and shopping malls. Instead, their lack of marketplace demand has required the local municipality to become their developer.

This thesis explores the potential for restoring these sites to productive industrial use by maximizing strategic site attributes subject to the demands of the existing economy. Since the conventional wisdom of market research indicates little value in these sites, this work examines successful redevelopment cases which have proven otherwise. From this empirical examination, a new development concept and implementation strategy for these sites is suggested. The distinctiveness of this proposal is that development is steered by a place-driven strategy. Here, a site is considered in terms of its potential uses -- as opposed to a predetermined use informing the choice of which site to develop. The premise of this argument is that these sites have a value concealed from the marketplace's perspective. Namely, the long time horizon needed to realize a return requires a discount rate lower than prevailing market levels, thus precluding private sector investment. However, government may step in and override these market signals. While the costs and benefits of this action are specific to each site, the cases explored in this thesis suggest that the level of government investment needed can vary greatly -- from moderate to minimal investment. Further, redevelopment is undertaken with the mandate that new use be market-viable, that is capable of sustaining its operations without public assistance. Thus, the public benefits (e.g., job creation, municipal economic enhancement and others) are demonstrated to outweigh the cost commitment of government. This concept is accompanied by several divisions of considerations which must be understood to apply this model to a given site. The discussion is roughly sketched as follows.

Section one alerts the reader to the potential for increase in number of large, vacant, formerly industrial single-user tracts in coming years. This is attributed to both a change in the composition of the U.S. macro economy and the political metamorphosis that the world is presently experiencing. These macro forces have induced micro adjustments in the economic markets which underlie them. The changing structure of the industrial space market is then examined. When the the aggregate supply increase in industrial space is reconciled with the alterations of market demand, the resulting market disequilibrium suggest a large increase in the stock of vacant industrial space. The extrapolation of this

trend brings to light the burgeoning problem of derelict industrial land. The future of this problem in America is discussed. Then follows a brief examination of British efforts with the similar experience. Here, their work with derelict land is reviewed to give the reader a proper context for the importance of action. Finally, the scope of this thesis is narrowed, by defining the locational characteristics of the sites applicable to this thesis. As the cases studied are both large acreage, former navy yards centrally located in major metropolitan areas, the following discussion is most applicable to similar facilities. Nonetheless, this study suggest general lessons for the restoration of any former industrial site to productive use.

Sections two and three examine the cases of the Brooklyn Navy Yard and the Boston Marine Industrial Park respectively. Both former shipbuilding and repair yards, these sites, during the past ten years, have designed a new approach to redevelopment. Their successful outcomes mark a paradigm shift in economic development thought, and suggest a model that will be of interest to similar cities in the not too distant future.

Section four establishes the economic motivation for taking development action, and highlights considerations for the model's use. First, the cost and benefits of a publicly involved redevelopment effort are discussed. Then, a new framework for economic development is outlined, with a special emphasis on the virtue of small firms in economic growth. The principal thought of this section is that today's evolving service-sector economy demands specialized goods and support services to function -- in the author's words *customized service goods*. The firms which supply these needs are by nature small. They play an integral part in the productivity of the larger economy. For a multiplicity of reasons, they are a perfect group to occupy these derelict marine sites. Further, a balance between water-dependent and other land uses for these sites is suggested. The chapter then introduces the industrial reuse solution entitled by the author the *Customized Products and Service Center* concept. Here, the physical, marketing, financial and management considerations which distinguish this empirically formulated model from other efforts are explored. Thus, the practitioner of city economic development may use these ideas as a guide for similar developments.

Finally, the conclusion answers the question of why government should be called upon in this process. Here, it is argued that by the nature of the derelict

land government is inextricably involved, and that, in spite of its entanglement with the problem, government is well-equipped to be part of the solution. The model's benefits: new venture creation, job generation, market viability, etc. are highlighted. The model's assumption of ceteris paribus (i.e. all things held equal) is then relaxed, and its feasibility in today's political climate explored. That is, if changes have taken place since the case study sites were developed, namely the erosion of federal support, what changes must be effected in order for this model to operate? Thus, this thesis looks at the problem of unemployed marine industrial land, outlines a pragmatic program for its reuse, and serves as grass-roots starting point for urban reform.

# SECTION 1

## The Industrial Reuse Issue

## 1.0 The Industrial Reuse Issue

In upcoming years, many cities across the United States will unwittingly find themselves the inheritors of large-acreage, industrial facilities. These complexes, sprawling in many cases over a hundred plus acres of urban land, will become public property because no private sector buyers are likely to come forth. Their divesting interest, either a heavy industrial user or the United States military, can no longer make use of the site because of lessened demand for its product. Likewise, other large industrial concerns are uninterested in purchase because the property is too costly to refit for today's industrial production requirements. Now, the city is not only pressed to find a new use for this site, but it in the meantime suffers the consequences of losing a once integral segment of the local economy. As the new owner and developer of the site, the city must ask what use this site can support, and discover whether the benefits of restoring this site to productive use justifies the level of public investment needed to do so.

This chapter looks at the causes behind the emergence of these large derelict sites. Two trends, a change in America's economic base and the deactivation of the military industrial economy, are examined in terms of their contributions to this land-use problem. Both are found to contribute to a surplus supply of industrial land. Concurrent with this result, a shift in preferences for the industrial space demanded by existing users has further exacerbated industrial space vacancy. The net result of these supply and demand shifts is an abundance of vacant industrial space with attributes little demanded by conventional markets. The industrial space market is then disaggregated to detail the specific demands of its separate users, and the potential for each class to reuse this industrial space is examined. The case for concern about derelict land is then made by examining British efforts with the same experience. Finally, the parameters of the sites examined in this thesis are defined. Thus, the relevance of the ensuing case studies and reuse model is established in its appropriate context as part of the larger problem of land dereliction.

## 1.1 The United States in a Changing World Economy

American industrial prominence reached its pinnacle in the decades following World War II. The prophetic statement,"to the victor, go the spoils" was clearly demonstrated in the aftermath of this conflict. The American industrial machine which had fueled the Allied victory was the only survivor left to supply the consumption needs of the world. After the war, every other industrial power had been both physically leveled and economically destroyed. Thus, the United States enjoyed a period of unsurpassed demand for its products. However, this decided advantage was due, in large part, to the extraordinary circumstances of the War, and as the former great economic forces were rebuilt, this disparity gradually diminished. A 1989 MIT study on American industrial productivity[1] attributed the American economic advantage during this period to five major factors. These included: the size of the American marketplace, a great comparative advantage in technology, the skill and training of the American work force, the tremendous wealth of the nation in terms of GNP, and the American expertise in management. In the years following the war, each of these relative advantages was diminished as former industrial powers, namely Japan and Germany- followed America's lead, and in doing so, regained their economic prowess.

In addition, the MIT study proposed a more telling measure of the vitality of industrial output named *productive performance* [2]. Accounting for characteristics like quality, timeliness of service, speed of innovation, flexibility etc., this proved a caustic indictment of post-war American firm behavior. While the MIT study attributed the decline in U.S. competitiveness to the management of American companies, other studies have looked for causes in the management of the U.S. economy. These macroeconomic factors include a low domestic savings rate, the budget deficit and the behavior of the U.S. dollar. Although identifying the causes to the American industrial downturn and ways to reverse it are still matters open to debate, the evidence of the decline is real and quantifiable.

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[1]Dertouzos, M. L. with The MIT Commission on Industrial Productivity (1989) *Made in America* (New York: Harper Perennial, 1990),p.25-45.

[2]This variable included less easily quantified variables as product quality, customer service, and product development speed along with productivity.

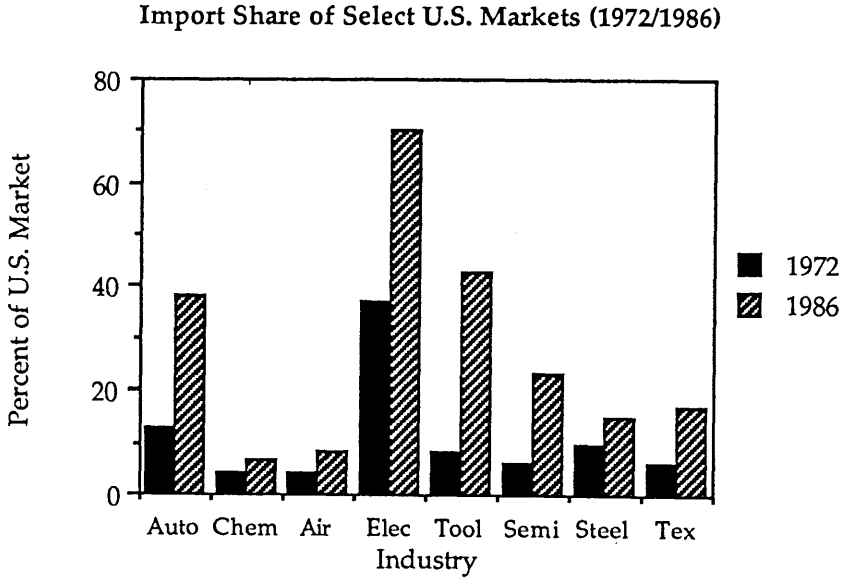
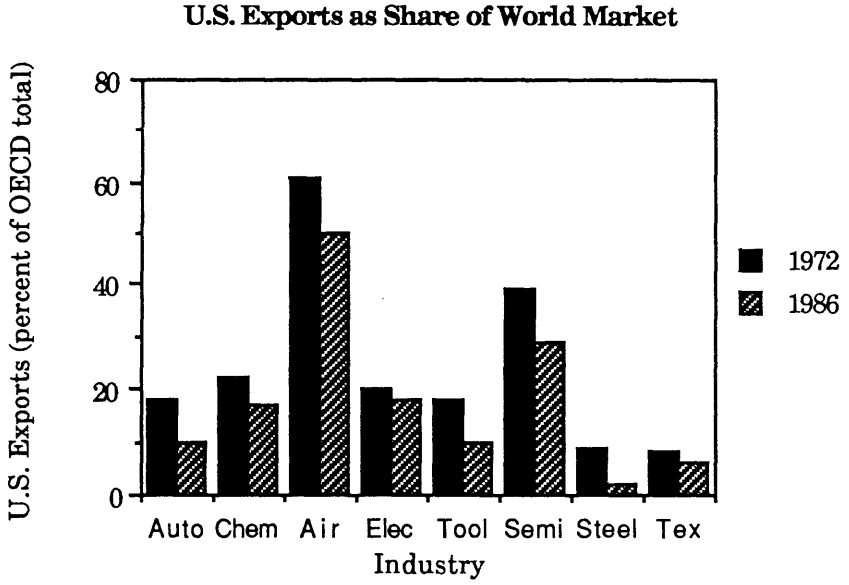



Figure 1-1 The above graph demonstrates how over the sixteen year period studied, the U.S. increased its imports of foreign goods in each of the industries studied by the MIT commission. The below graph depicts how, over the same period, U.S. goods lost world market share in each of the select industries. The two effects taken together imply a serious decrease in economic competitiveness. Industry abbreviations: Auto - Automobiles; Chem - Chemicals; Air - Commercial aircraft; Elec - Consumer Electronics; Tool - Machine Tools; Semi - Semiconductors, computers & office equipment; Tex - Textiles. (source: Deterouzos, M., Lester, R.K. and Solow, R.M. (1989). *Made in America: Regaining the Productive Edge.* p.5).



The inability of American firms to produce a quality, and competitively priced product is demonstrated in the lessened demand for U.S. goods, both at home and abroad. Not only have imports as a percentage of the U.S. market risen in key industries like automobiles, machine tools, steel and consumer electronics, but a drop in Foreign demand for similar U.S. products, has greatly impacted domestic production levels. The net result from the two forces is seen in two effects. The first is a marked decrease in the number and size of firms in the above mentioned industries. This is evidenced by both an increase in plant closures and a decrease in the number of employees in the industry. Second, the composition of the domestic economy has been transformed, as the decline of heavy integrated manufacturers has been offset by the growth of the service sector of the economy. A rise in businesses ranging from financial services to fast food is indicative of this trend. However, while manufacturing jobs have disappeared, physical remnants of the industries remain. The scattering of industrial plants, ranging from outmoded multi-level factories to vacated shipyards, map this decline and mark the point of departure for the discussion of this thesis.

### 1.2 The United States in a Changing Political Order

While the United States' economic woes during the past two decades have brought somewhat dismal tidings, the reverse has been true in nature of the world's political structure. The end of the Cold War - marked by the collapse of Soviet communism and the unification of Germany - certainly must be viewed as a harbinger of world peace. However, in the meantime a tremendous amount of adjustment, not only abroad but at home will take place, namely the down-sizing of the American military machine. Similar to the aforementioned industries, the decline in demand for defense services and products (e.g., peacekeeping, ordinance and ammunition production, and even battle, etc.) will cause a resultant drop in its supply. This dynamic has garnered attention recently in much-publicized issues ranging from decreasing the Defense budget and size of the standing army, to the shrinking of defense contracting industries. While land-use planning implications of this type of change have been felt from the mid

1960s, the payment of the peace dividend in upcoming years suggests a tremendous fallout of spatial issues on the planning horizon.

In contrast to the rather recent emergence of land formerly employed by industrial uses, the issue of military surplus sites has been well examined in the past two decades. A string of 60 plus base closings in the mid-1960s put in motion the question of what to do with these vast parcels of land. These bases were closed over a fifteen year period ending when Congress mandated that environmental and economic impacts be addressed before it would grant its consent to shut down an installation with over 300 employees. A Pentagon study issued by the Office of Economic Adjustment, created in 1961 to aid communities with base closings, reported the following findings.[3] From the disposition of 100 bases between the years of 1961 and 1977, 138,000 civilian jobs replaced 93,000 former ones; 12 four-year colleges and 33 vocational-technical training centers were created; 75 bases were converted into industrial and office parks, and 42 bases were employed as general aviation airports. With the warming of the cold war, the base closing issue has been re-ignited. In early 1989, in conjunction with a newly created Congressional Commission on Base Realignment and Closure, the Pentagon issued a list of 86 bases slated for closure by 1995. With the process aided by a new exemption from the Congressional mandate, the Department of Defense had at first hoped to shut down these bases in an "All or Nothing " vote. The measure failed to pass. Nonetheless, the majority of bases are likely to be closed by the originally intended date. Currently, the military operates nearly 4,000 facilities in the U.S. which employ some 1.1 million civilians and 2.1 million military personnel. One of the nation's largest land owners with 24 million acres nation wide, the Pentagon will doubtlessly slate further sites for disposition as the political climate thaws.

The ostensibly optimistic picture of the base closings painted by the Pentagon is an under-statement of the task of base conversion. Rather, each case tells a different story of sometimes triumph, but more often of the trying circumstances in its redevelopment process. Additionally, several fiscal factors crucial to the feasibility of these projects will be noticeably absent in the next round of base closings. First, the Defense Department

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[3]Guskind, R. (1990). "Picking Up the Pieces", Planning, p.13.

will no longer be practically giving away the land and buildings as it did during the 1960s. Rather, Congress has ordered the DoD that disposition of newly surplussed holdings take place at fair market value. By market rates, some of these lands are extremely valuable. San Francisco's Presido, overlooking the Golden Gate Bridge, with its spectacular view and 400 historic structures, will most likely become a park.[4] However, the majority of the bases are much harder sells. Marked rather by unremarkable structures, non-optimal locational attributes, and environmental risk, these bases, are being priced, in addition, too highly for the majority of private developers. Finally, the federal support given to the conversion of bases closed in the 1960s, including infrastructure rehabilitation grants, and low-cost loans, will also most likely be absent this go around. Instead, already debt-saddled state and municipal governments will be asked to carry this burden. Thus, redevelopment of these sites today poses a serious challenge.

Along with the planned base closings, is the ominous contraction of the Military Industrial Complex. This market, composed of roughly 20 multi-billion dollar corporations and hundreds of smaller companies, is fueled by close to $300 billion dollars in military contracts awarded yearly by the Pentagon. Cuts in military spending - which currently represents 44% of the nation's discretionary budget - are expected to result in a loss of nearly 1 million civilian jobs by 1995.[5] Thus, those corporations, whose existence is predicated on the U.S. military budget, will desperately struggle for what money remains. Along with cutting employment roles, they will divest a large amount of their industrial space. This aspect of the spatial effects of the peace dividend is only now beginning to be explored.[6] Rutgers University researchers have formulated four adjustment models of conversion from military to civilian use each organized around a different target: converting the company, converting the local economic base, converting the workers, and converting the facility.[7] Their research notes

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[4] Guskind, R. (1990).p.15.

[5]Hill et al.(1991). "Converting the Military Industrial Complex: : The Experience at Six Facilities." *Journal of Planning Education and Research* 11, p.21.

[6]A treatment of the ramifications of the economic conversion of the military industrial economy is given in Markusen, A., and Yudkin, H. (In Press). *Dismantling the Cold War Economy*. New York: Basic Books.

[7]Hill et al.(1991). p.19-36.

that each approach has been little studied, and few actual cases have proven successful by any of them. The Rutgers group advocates the facility conversion model, where community, workers and local government initiate efforts at conversion. A variant of this approach is later promoted in this thesis.

## 1.3 The Changing Market for Industrial Space

While the contributions of industrial space from both the failures of American heavy industry and the down-sizing of the U.S. military machine have and will continue to cause supply shocks in the industrial property market, changes in the needs of existing users are transforming market demand. Not only has the economic change lowered the aggregate demand for industrial space, but in many cases the old stock of space, has been outmoded by technological innovation. The dynamic between these shifts in supply and demand has important consequences for land-use particularly in older, urbanized areas. The market forces at work must be carefully delineated so as not to be confused with one another. The industrial property market is divided typically into five classes, each representing a stages from the conception of a product until its sale to the retail market. These are: research and development facilities, fabricating plants, assembly buildings, distribution warehouses, and specialized showrooms. Each division has its own specialized needs which have been changing over time.

### 1.3.1 Research and Development

Research and development space is the starting point in production. Business functions include scientific and engineering research, product development and testing performed by a spectrum of high-tech industries; the largest fields include aerospace, computers, telecommunications, instrumentation, and biomedical. Coupled with their diversity of functions, these user groups have very specialized space demands and siting characteristics. Many desire complex laboratory facilities, with structural requirements limiting vibration, dust, outside exposure, etc. In the past decade, industrial parks which service these functions have been primarily

sited in prime locations featuring attractive natural attributes, reflecting the importance of the work environment. Almost without exception, this market needs three features to evolve[8]. The first is ready access to a trained, highly-educated and specialized work force. This includes both the scientists and engineers to do the research, and the technicians capable of building prototype devices. Secondly, corporate patronage or venture capital is needed to start these small firms. Finally, the presence of a major university allows for joint-ventures, technical support, and help in securing government research grants. Investment in this property class has proved to be highly risky, but in many cases, highly lucrative. Comprising over 20% of all industrial space in America, the research and development class consists of over 50,000 firms[9]. Enticed by the economic boost of their work force, and the potential of the R&D market to grow, the public sector has joined the private sector in developing new high-tech clusters. Nonetheless, the performance of this class is subject both to technological change, as well as the underlying performance of the macro-economy.

### 1.3.2 Heavy Manufacturing and Fabrication

The second major industrial space classification is heavy manufacturing and fabrication. The linchpin of the industrial economy, these large-site facilities are predominantly company owned. Users vary greatly from petrochemical, steel fabrication and automobile to machine tools and pharmaceuticals. Hard hit by the demand downturns for their products, American firms have been pressed to revamp their production technologies to be competitive. In former years, these plants were often located in planned industrial districts; important siting characteristics were access to raw materials, low utility rates, large pools of labor and a source of water for operational processes. As well, firms required the ability for inter-modal transportation service-- a meeting of water, rail and highway - to both bring in raw materials and ship out their products. The

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[8]Landauer Associates, Inc. (1989). "The Industrial Property Market," Urban Land, p.28.
[9]. (ed.) *Business and Industrial Park Development Handbook.* ULI- The Urban Land Institute, Washington, p. 42.

nature of these heavy uses created noxious pollutants--odors, noises and smoke. The presence of these dis-amenities influenced distinct spatial patterns in land-use. In response to declining demand and the plethora of negative incentives, ranging from high labor rates to environmental regulations, the heavy industrial market has seen little new addition to its stock. New plants often are located in rural areas, or on few occasions, built from a refitted peri-urban site.

### 1.3.3 Assembly and Light Manufacturing

This third industrial property classification, is well-liked by communities because of its "clean" nature and its job potential. Traditionally, these industries required intensive labor supply -- and many were located by large cities to take advantage of labor pools with low wages. Older buildings to accommodate these functions were designed vertically, with multiple floors of manufacturing space to take best advantage of expensive urban land. Beginning in the late 1950s, a switch to new manufacturing processes, particularly automated assembly systems, favored large single story spaces over the existing vertical space. In addition, advances in transportation allowed for workers to commute more easily, while goods could be shipped greater distances by truck. Emphasis was put on large, energy efficient horizontal structures with good trucking access, located in areas with low prevailing labor rates. No longer cost effective for manufacturing uses, the aging vertical spaces found in the cities were either adaptively reused or demolished.

Recent technological changes today have lowered both space and labor demand in light manufacturing. Compact robotics, just-in-time production and other devices mark advances which stress the minimization of time -- the most costly input. The pressure to remain competitive, driven by foreign operations, has taken the efficiency game to new heights. In addition to competitiveness concerns, many firms have exited the market, contracted or moved because of spatial concerns. Their industrial plants were often located in areas which later became more populated. The encroachment of commercial and residential establishments, made efficient operation difficult. Crowded streets, limitations on street usage, insufficient parking and truck access, have

force these industries to relocate to ex-urban areas with better highway access.

### 1.3.4 Warehouse and Distribution

After the goods have been manufactured, they move to warehousing and distribution sites. This fourth category is marked by its large space requirements, low-employment to built-space ratios, and a dependency on transportation access. These sites are typically found within a 75-mile radius of the city. Bridging the gap between manufacturing sites and large population centers, the functioning of these facilities is closely tied with consumption levels. The majority of goods are shipped by truck, although access to both air transport -- an increasing trend, and to rail access -- a subsiding requirement are both important. Communities resist warehousing space mainly because of truck traffic, and the lower property tax revenues as opposed to other industrial uses. As a market class, it is the most accommodating for reuse. Although technological innovation seeks to reduce inventory, thus lessening demand for warehousing space, this group has been relatively undisturbed by recent technological advances. Likewise, warehousing has represented the largest portion of industrial space absorption in the 1980s[10].

### 1.3.5 Specialized Use

The final category of industrial space is an agglomeration of low-technology activities. The largest component of this grouping is specialized showrooms. Examples of these might be for furniture, textiles, or electronics. Wholesale supply companies (for example electrical, plumbing and building needs, etc.) are a second major use. This class is not rigorously defined because users' needs vary. Each though, typically demands ample parking, proximity to a major population center, and trucking access.

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[10] Beynard, M. D. (1988). p. 40.

## 1.4 The Industrial Park Concept

To meet the needs of these five classifications, marketplace developers created the industrial park concept. While planned industrialized areas have existed in some form or another for the past 90 years[11], only since the early 1960s did today's conception of the park come into being. Modelled in some sense as an industrial version of the suburban sub-division, industrial parks have grown rapidly in number over the past twenty years. A definition of an industrial park was established at the Dartmouth College Conference on Industrial Parks in 1958. It read:[12]

> An industrial park is a planned or organized industrial district with a comprehensive plan designed to insure the compatibility between the industrial operations therein and the existing activities and character of the community in which the park is located. The plan must provide for streets designed to handle truck and other traffic, proper setbacks, lot size minimums, land use ratio minimums, architectural provisions, landscaping requirements, and specific use requirements, all for the purpose of promoting the degrees of openness and parklike character that are appropriate to the harmonious integration into the neighborhood.

Various other standards, both physical and operational, were established. This planning coincided with a period of debate concerning the creation of land use controls and industrial zoning. Planning groups created a series of zoning criteria which defined the needs of industry, promoted the protection of existing industrial land, and provided future space for industry to grow.[13] During the 1970s and 1980s, industrial parks evolved in keeping with the changing needs of businesses. Locational and transportation characteristics, with the exceptions of railway and waterway access considerations, increased in importance. As well, a new

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[11]The ULI handbook credits Chicago's Central manufacturing/Original East District, a 260-acre track developed by the Union Stock Yard and Transit Company in 1902 as the first industrial Park in America.

[12]William L. Baldwin, A Report on the Dartmouth College Conference on Industrial Parks in Beynard, M. D. (1988). p. 8.

[13]ULI handbook credits Seward H. Mott and Max S. Weherly work, *The Prohibition of Residential developments in Industrial districts*, Technical Bulletin no. 10 (Washington, D.C.: ULI, 1948) with the development of these criteria. Beynard, M. D. (1988) p. 20.

emphasis was put on tenant services and amenities. A recent article described, the role of industrial parks today:[14]

> The mission of industrial parks is to allow economic development organizations. to sell or lease industrial tracts of land with services conducive to industry growth. Industrial parks supply infrastructure, often reduce land costs, bring complementary firms together, provide efficient delivery of needed public services like fire and police, reduce traffic around plant facilities, and provide efficient access to transportation systems such as highways, railroads, waterways and airports. In addition, industrial parks can provide for the centralization of auxiliary services such as marketing, business/industrial supply, health and emergency care, security, maintenance and construction.

The excitement over this newly developed template for industrial productivity and job creation caused both public and private developers to overshoot demand. As a result, the creation of new parks, did not so much facilitate new businesses, but compete for already existing firms, forcing developers to concentrate on marketing an economic package to entice new tenants.

At a time when industrial space demands are in flux, and increasing vacancy in several sectors is contributing to an oversupply of space, today's developers have sought to specialize. With the advantage of a buyer's market, users have demanded that space remain technologically current to be employed. By catering to a particular market segment, and providing the amenities demanded by the given group, developers have realized limited success in the creation of specifically-designed industrial clusters like biotechnology parks. Some, notably Trammel Crow, Inc., have attempted to mix several of the industrial classifications together in the same park. These attempts to mix showroom, warehousing and manufacturing facilities in the same complex, requiring 200 to 500 acre sites, are possible for only the most well-capitalized developers.[15] Less specialized space, like that found in general business parks has struggled. In 1988, the U.S. Economic Development Agency, who had helped to fund a number of these underutilized parks, hired a consulting group to make recommendations for revamping the listless sites. This effort produced a

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[14]Reisdorph, D.H. (1991). "Industrial Parks as an Economic Development Asset", *Economic Development Review*, p. 29.

[15]Landauer Associates, Inc, (1989). p.29.

new book, and helped spawn a whole body of literature devoted to renovating poorly planned, or functionally obsolete industrial parks.[16] While many former industrial buildings and properties have been successfully adaptively reused for other real estate uses like retail, the primary determinant in their successful reuse has been location. Hampered by less desirable attributes such as adjacent industrial uses, deteriorating structures and environmental hazards, a significant number of formerly employed industrial sites, particularity integrated manufacturing and heavy user sites, are limited in their development potential. For a number of reasons, private developers have neglected to return these lands to productive functions.

### 1.5 The Problem of Derelict Land

Land which was formerly employed, and now is no longer is use may be described as derelict. As earlier explained, through a dramatic series of changes in both the economic and political spheres of the United States within the last twenty years, a tremendous amount of land and number of buildings once used for heavy industry and defense purposes has, or will soon be vacant. This large increase in the stock of vacant industrial space has been accompanied by a technologically-driven alteration of the space demands of today's industrial users. The net result is a surplus of unwanted sites. If this excess of industrial space is not redeveloped for new uses, it will eventually mount into the land-use predicament of derelict land. This problem is described to alert the reader to the serious long term consequences of a disequilibrium in the industrial space market. First, the state of the derelict land situation in America is examined. Then, a brief inspection of the efforts of the British, who are encountering this crisis presently, is given so the reader appreciates the magnitude of reclamation needed if early preventive measures are not taken.

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[16],Reisdorph, D.H. (1991). p. 29. The new book is: Joyce Stark et al., Industrial Parks: A Step By Step Guide. Kansas City, Missouri: Midwest Research Institute. 1988.

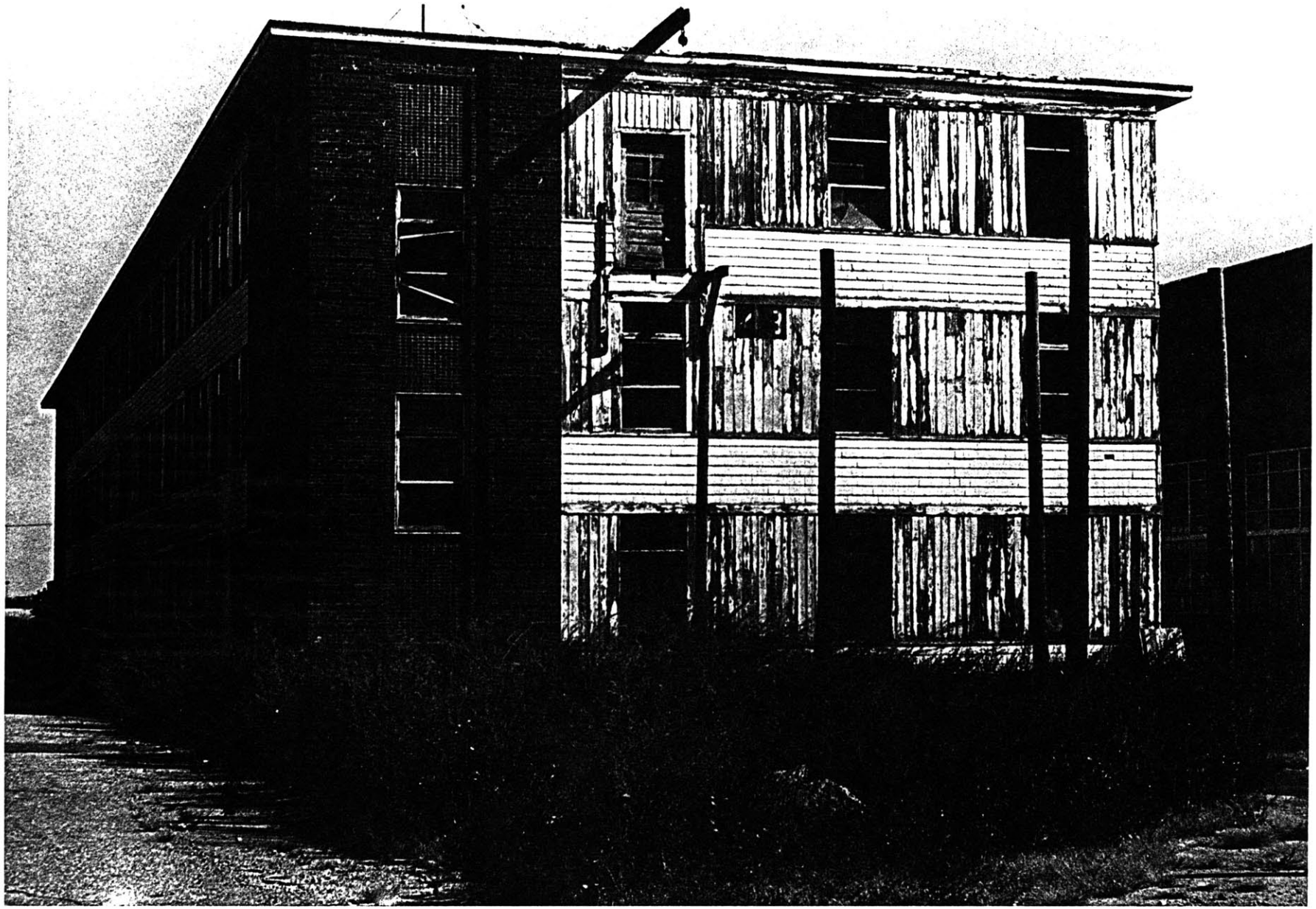

Figure 1.2 Building 48 of the Boston Marine Industrial Park: an example of industrial dereliction. (photo courtesy of BMIP)

### 1.5.1 Derelict Land -- The American Experience

On the American front, scant academic attention has been paid to planning for existing or potential dereliction. The phenomenon of industrial dereliction in America was recently noted in a 1990 Rutgers University Study entitled, "The TOADS: A New American Epidemic."[17] TOADS, an acronym for "Temporarily Obsolete Abandoned Derelict Sites", are wide ranging by the authors' definition. They are described as:

> ...Scattered, random unused parcels of land of varying size and shape. Some have abandoned structures; others are only empty lots. They are no longer used productively...Often they have been damaged by previous industrial or commercial use, by single or multifamily housing which is no longer occupied, or by proximity to such uses. TOADS include abandoned warehouses and plant facilities, homes, large housing projects, railway and canal lines, mines, landfills and tracts of overgrown land.
>
> TOADS historically have appeared in the wake of economic change that resulted in bankruptcies or closings (for example, the leather tanning industry, slaughterhouses, shipyards, railway lines). More recently, large numbers of companies, such as those in the textile, steel, and pharmaceutical industries, have moved to the suburbs, outside the region, or to another country; the resulting closings and abandonments have resulted in large numbers of TOADS.

While the authors are examining a larger problem, their definition of TOADS is really a combination of the industrial dereliction concern of this thesis as well as the problem of residential abandonment. Their description of the birth of TOADS is similar to the causation asserted earlier in the chapter. An interesting distinction of the TOADS concept is that these sites are distinguished by community sentiment. The paper continues:

> First, there are the TOADS that were once productive and valued by the surrounding community, but then were abandoned by their owners. Examples might be a no-longer-operative steel mill factory, brewery, furniture plant or textile mill. Once the linchpin of the community, the huge buildings lie in ruin, and their surroundings are filled with mounds of waste. Other examples might be dilapidated old warehouses or abandoned housing projects.

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[17]Greenberg, M. et al. (1990). "The TOADS: A New American Epidemic", *Urban Affairs Quarterly*, Vol 25 No. 3, p.435.

> A second type of TOADS are sites that were once productive, but even then were LULUs (locally unwanted land uses), disliked by their neighbors. For example, the local slaughterhouse, leather tannery, and paper mill may have created an awful stench in the surrounding community while they were in operation. Now that they lie abandoned, their ruined structures no longer concern residents. Formerly LULUs, they are now TOADS.
>
> Finally, there are the TOADS that are no more than vacant parcels of overgrown land. They may not have been developed for a long time, perhaps never, because they were the wrong size of shape or were badly located. They have been skipped over because of their proximity to other TOADS, or LULUs such as landfills.

The first two types are typical of the sites this thesis addresses. However, all three classifications share similar advantages and disadvantages. In most cases TOADS possess economic potential. Located on what could be considered prime inner-city land, their disuse has several effects: one, the community loses potential tax revenue; two, they deter new development, depress property values, and encourage further dereliction; and three, they contribute a social malaise or blight on the surrounding community. Thus, the authors assert that these sites contain an uncapitalized value, which if realized, would solve many of the accompanying problems of TOADS. Aside from presenting a development opportunity, these complexes merit attention because they raise serious public health and safety concerns. For instance, frequently hazards such as toxic wastes are stored haphazardly above ground, or buried in leaky tanks or containers at TOADS sites.

Although the issues surrounding TOADS are many, relevant American research attempts have been few. The authors find that almost all concern has been focused on residential abandonment. With the exception of some study on the adaptive reuse of industrial buildings for uses like condominiums and festival marketplaces, little attention has been given to industrial reclamation, particularly for industrial reuse. Generally, study of land dereliction has been from a public health perspective, which recognizes the possible harms - both physical and social - of abandoned areas rather than its untapped value. However, the issue of industrial dereliction has received a tremendous amount of study, documentation, debate, and action in Great Britain.

### 1.5.2 Derelict Land -- The British Experience

As opposed to the recent American concern with derelict land, the British interest dates back almost fifty years. There are several reasons why the British have focused so intently. The first may be that England, having experienced the industrial revolution prior to the United States, might as part of a cycle, have experienced the need for land reclamation first. A second consideration is whereas technological innovation necessitated the movement of American industrial enterprises to undeveloped land outside the urban rim, when the same pressure acted on the British no similar land was available. That is, their potential for new industrial development was seriously constrained by a lack of undeveloped land. A third assertion is that the movement to reclaim industrially derelict land grew out of the programs to restore areas badly damaged by the Second World War. Finally, American business competition may have forced British industrial facilities to close, much like Japan is doing to America today. Whatever the case, the vigilance of British Planners in addressing this problem has produced an exceptional resource for Americans to study before attempting to confront our own situation.

The preface to E.M. Bridges book, Surveying Derelict land, begins with this eloquent definition of the subject at hand:

> The Landscape which surrounds us has been modified by successive generations, so our heritage is an amalgam of much that is fine and splendid, and also much that is unsightly and dangerous. Land in this second category, which has been spoiled by industrial activity and subsequently abandoned, perhaps because of changes in technology and world economic conditions which rendered the processes and plant obsolete, is frequently described as derelict.

Bridges' acknowledgement that our inheritance is in large part the spoils of past generations, and that our legacy may be of the same conveys an important moralistic tone. At the outset, the British discussion of derelict land, though later explored in economic and social cost terms, is motivated by a stewardship responsibility of the earth.

Similar to *Greenberg et al.*, Bridges attributes a large source of dereliction to "a legacy of industrial and domestic architecture which was

nearing the end of its useful life."[18] However, the British study of derelict land encompasses land degraded by a larger spectrum of sources. Disused land generally stems from five categories of past uses. They are: mineral working; dumping and waste disposal; industry; transport; and services (military, etc.). The British, thus, have taken efforts to classify land by their different sources of dereliction, and to design the proper reclamation programs accordingly. This process has involved defining derelict land, distinguishing among its stages, and identifying its attributes. Classification of these sources allows the problem to be quantified. Bridges' book deals specifically with how to recognize and properly record the attributes of a derelict site. By compiling this information, a catalog of lands can be made, which indexed by sources of dereliction, demonstrates both the magnitude and given characteristics of each form of despoiled land. This classification serves two functions: to arrange sites into logical practical groupings, and to act as a map legend. It makes sense to identify these sites and then organize them cartographically since they have a distinct spatial distribution which is an important component in their redevelopment.[19]

The recognition of the phenomenon of derelict land leads to two questions: why does it occur? and why do anything about it? To answer the first, the result of any type of industrial production must immediately imply some level of environmental degradation. Technological changes in industrial production processes demand different types of accommodation for industry. Firms have been confronted with the decision to refit, reclaim or repair their current site, or move onto new pastures. Because there is no market for despoiled lands, an externality has resulted. Firms do not adequately price the land's intrinsic option for uses other than industrial development, nor the societal costs (health, aesthetic, obstruction of economic activities) which results from their site abandonment. Once land is developed, it loses its flexibility for diverse farming practices, forestry, water supply or recreation. Consequently, people and industry have encroached on productive agricultural land at the city's edge, leaving decaying houses and abandoned factory sites in the center city. Some

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[18]Bridges, E.M. (1987). *Surveying Derelict Land*, Clarendon Press: Oxford, p. 1.
[19]Bridges, E.M. (1987). p. 7.

researchers have suggested that this "derelict land mentality is the an inevitable consequence of industrial growth."[20] Rather, if firms faced the true social cost of their land use, in lieu of their present fiat to degrade land and move on (or many times go bankrupt leaving the derelict land in public hands) this problem might be corrected.

Assuming that this process will happen, the motivation to stem its harms must be established. More than than the moral conviction mentioned earlier, this mandate must make economic sense. The challenge is prove that the sum of the benefits from taking measures to restore derelict land outweighs the costs. Here, the difficulty is to quantify these figures because both costs and benefits come in the form of directly measured inputs but also much more vague notions of societal goods and bads. Derelict land growth may be halted in two ways. First, by internalizing the external societal costs mentioned above, firms will be discouraged from further degradation. A second more pragmatic approach is to recognize that these lands exist, and to establish a market for their reuse. The thrust of this thesis is to demonstrate that these sites do have value, and that demand, with some degree of public intervention, may be created for them.

Having acknowledged, and systematically examined the problem, the British have taken measures both to begin stemming future dereliction, and to reclaim presently despoiled land for new uses. By imposing growth constraints on peri-urban and agricultural land, further bolstering an already acute shortage of land for residential and industrial development, the British concentrated attention on the derelict land question. In 1966, the government enacted an official derelict land policy and set aside money to fund reclamation projects. Originally, this money was spent primarily on land damaged by mining operations, but has since been expanded to cover inner-city land, particularly industrially derelict land. The beginning of efforts to deal with derelict land, spurred a voluminous amount of academic literature on the subject. British scholars have addressed the amount of derelict land, its specific features, the economics of its reclamation, the needed social and legal policies, and implementation

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[20]Wallwork, K. L. (1972). *Derelict Land: Origins of a Land Use Problem*. David & Charles, Newton Abbot, England, p. 295.

strategies necessary to have an effective program. As well, documented case studies on large reclamation projects discuss the empirical nature of these efforts.

### 1.5.3 The Docklands Case

Since this thesis looks at the industrial redevelopment of U.S. marine industrial space, the most salient British case example is the City of London's Docklands project. The Docklands is an eight-square mile area that was once the home of the British Empire's Merchant Fleet -- and until 1921, the largest enclosed dock system in the world[21]. Of the area's 5100 acres, 2000 of these were considered industrially derelict in 1981. Formerly the home to the ship-repair, port facilities, food processing, manufacturing industries etc., the Docklands experienced a dramatic confluence of negative economic forces during the 1950s through 1970s akin to those happening in the U.S. today. These changes not only devastated the physical environment, but had drastic effects on employment; between 1960 and 1980, registered dock employment in the area fell by 25,000 to a level of only 4,000. In 1981, the government of Britain established the London Docklands Development Corporation (LDDC) to provide public assistance in a vast redevelopment scheme for the area. The LDDC's chief executive summarized its purpose as follows:[22]

> ...to bring land and buildings into effective use, stimulate existing and new industry and commerce, create an attractive environment, and ensure the right housing and social facilities are created to encourage people to live and work in the area.

With its goal to stimulate private investment in the area by first providing public funds to repair infrastructure and perform some level of land and building reclamation, the LDDC hopes to eventually achieve a private/public leverage ratio of 5 to 1. The LDDC is provided by the government with £60-80 million a year which is spent mainly on purchasing and preparing land, improving infrastructure and the

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[21]Church, A. (1988). "Urban Regeneration in London Docklands: A Five-Year Policy Review" *Environment and Planning C: Government and Policy 6,* 187-208.
[22]Church, A. (1988). p 189.

environment, and marketing the area. By providing this framework, the government has hoped to prime the pump for private investment. These programs have achieved their intended purpose; between 1981-1986, the LDDC spent some £279 million, while the private sector invested some £1182 million. In recent years, both the pace and relative percentages of employment have slowed. Nonetheless, the Docklands policy of demand-led planning has been successful. The inducements to industry are not direct cash subsides, but rather attempts to remove financial and bureaucratic restriction which strangle small businesses. Critics, however, point out that little attempt has been made to maintain existing industries, particularly manufacturing.

This division among the types of economic pursuits encouraged by the Docklands is clearly shown in its new job creation. The majority of the nearly 6,000 jobs which had been created in the district, during its first five years were service-sector jobs. This is alarming because the explicit policy of the LDDC is to "ensure the area's long-term regeneration by laying the foundations of a community based on employment that will last."[23] The tremendous disparity between service and manufacturing jobs is a dubious sign for this proposition. The Docklands' relevancy to this thesis is to alert the reader to the magnitude of public investment utilized in past attempts to revamp derelict land. While the jury is still out on the long term success of the Docklands, it is clear that securing a federal government commitment of Docklands' magnitude in the U.S. is unforeseeable. Thus, while the aim to restore depressed areas in the U.S. to productive use is similar, the methodology to do so must be markedly different in order to be implemented.

### 1.6 Defining the Scope of this Investigation

Although numerous municipalities have undertaken redevelopment efforts of former industrial districts, the majority of these have not been for an industrial reuse. Rather, private sector redevelopment efforts have generally converted former industrial buildings into mixed-use projects or glitzy tourist attractions. The true TOADS cannot support these uses. Rather, the constraints of market-

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[23]Church, A. (1988). p 189.

governed development strategy imply that they will always remain industrial in character. The changing character of the U.S. economy makes even this a questionable fate. Realizing that the number of so called "dinosaur" industrial landscapes -- large facilities with technical extinct attributes -- will continue to increase in upcoming decades, the challenge in urban areas is how to restore these derelict properties to future productive use.

The assertion that these derelict sites should be reclaimed is not simply a platitude. Rather, they possess a value which current market signals overlook. The call for government assistance in developing these sites, however, provokes two questions, namely "Why?" and "How Much?" First, private development is constrained by a multitude of factors: environmental risks, high land prices, rehabilitation costs, etc. If a development is undertaken, it may take years to realize any return. In the developer's eyes even this is questionable. The competitive nature of the industrial space market suggests that new additions to the rentable stock of space will further drive down rents. Thus, there is essentially a disincentive to the private sector to redevelop these sites.

Rather, government involvement is required to catalyze development. This is predicated on the case that the public benefits like job growth, enhancement of the local economy, municipal revenues, and relief from harms of dereliction outweigh the required public expenditures. Further, a successful project needs an investor like the government with a long term vision, and a distant recapture period for its capital. Historically speaking, the realm of municipal economic development has attempted many strategies to re-employ these lands -- not without it share of failures. However, this thesis proclaims a concept which shows that with minimal government assistance, a public/private development cooperation can realize long term value in these facilities. The successful case studies examined herein have been predicated on a new paradigm in economic development thought. The thinking is to use a market driven, place-based strategy to develop new industries and thus create new jobs.

The challenge in this approach take the site as given, and to concentrate on matching its distinctive strategic attributes to the needs of the greater metropolitan economy. This is in marked contrast to programs which one seek to make a new industry work at any given site; or two, chose the site based on the demands of a predetermined use. Thus, while the sites may vary greatly by their


Figure 1.3 The Boston Marine Industrial Park's Building 46 - a former cement works- is a typical derelict structure.(photo courtesy of BMIP)

qualities, the model for their redevelopment is the same -- maximizing the benefits of each complex's situational characteristics subject to the demands of the greater economy. In addition this task is performed in a market-driven framework essentially free from public assistance. The reason for this is two fold. First, pragmatically speaking, public money to fund such undertakings is scarce today. Second, the project by being forced to stand on its own develops a resiliency and long-term viability that it would otherwise obtain if dependent on public support. Several cases have proven, that with only minimal levels of government assistance, large inner-city TOADS can once again become an integral part of the city's economy.

This thesis is concerned with the elements that have made for the successful industrial reuse of urban, waterfront, industrial derelict land. The discussion is limited to studying the use of large-tract sites, that is significant acreage (from fifty acres upwards). These may be former integrated manufacturing operations or military properties. Since this problem is particularly acute on the East Coast, examples are limited to this area. As well, the sites are formerly single-user, thus the problem of site assembly is not addressed. Finally, the thesis is limited to marine sites which are in close proximity to major metropolitan centers. These are typical characteristics because the original industrial use demanded water access for transportation and urban proximity for labor. Thus, the concerned sites exhibit the underutilized value provoke by the TOADS discussion, yet also the potential to manifest the harms of British dereliction upon further neglect.

Based on two case studies, New York City's Brooklyn Navy Yard and the Boston Marine Industrial Park, the strategy utilized in these projects is generalized in terms of how to approach a similar site. The lessons drawn from the case studies should be of use, as cities now and in the future, suddenly realize that one of these TOADS has hopped onto its doorstep. The following case studies suggest how to turn a TOAD site into a crown prince.

# SECTION 2

## The Brooklyn Navy Yard

## 2.0 The Brooklyn Navy Yard

At the main entrance gate of the Brooklyn Navy Yard, an odd assortment of vehicles streams in and out. A tractor-trailer with marine containers, an armored car, a seafood truck, and a pre-fabricated house on a trailer file by the security guards en route to their destinations within the 261-acre site. This fleeting glimpse of the gate, demonstrates both the high volume and variance of industrial uses happening in the park today. A former shipbuilding and repair facility jettisoned by the U.S. Navy in the mid-Sixties, the once-thriving, and then abandoned yard is again teeming with productive activity. The case of the Brooklyn Navy Yard is a model of the successful application of an industrial reuse strategy for an aging urban industrial site. More than the serendipitous result of a confluence of positive factors and market timing, the project illustrates the importance of a pragmatic, positive process, which overcame initial negativism and eventually beat what had previously been considered all odds.

The Brooklyn Navy Yard project is a one of the few bright spots on the New York City's waterfront. An industrial park, marketed both to water-dependent uses and small businesses, the roughly 4.5 million square feet of old industrial space, has been adaptively reused and is now 98% occupied. This success is in spite of the lagging national and local economies which have wreaked havoc on the vacancy rates of the yard's competitors. The yard's success has come without any government subsidies to its tenant companies. With little other government assistance, this project has proven a new model of how to think about aging industrial complexes.

Although the Brooklyn Navy Yard is today a vibrant complex of small and medium size business activity, ten years ago, few would have predicted its rebound. Several attempts to revamp the yard after the Navy's exit in the 1970s floundered. Another deteriorating and derelict waterfront site, the yard was a prominent reminder of the seemingly irreversible tide of economic depression that flooded the majority of the City's waterfront. Beginning in 1980, the efforts of the Brooklyn Navy Yard Development Corporation led by President and CEO Richard Aneiro, stemmed these rising waters by developing and implementing a new strategy for the yard's future. Aneiro's philosophy on economic development and marketing

Figure 2.1 Aerial Photo of the Brooklyn Navy Yard, 1991 (site perimeter as marked). Note proximity to downtown Manhattan. (photo courtesy of BNY)

emphasized the yard's positive attributes and in doing so, realized a great value in the site which had been overlooked.

## 2.1 Site Context and Characteristics

The Brooklyn Navy Yard was established in 1781 as a private shipbuilding facility. The site for the shipyard, developed along Brooklyn's Wallabout Bay in the *East River*, was chosen to take advantage of the natural deep water, its available space and the area's large and skilled labor force. The Navy's first ship was built there in 1798, and the Navy soon after contracted to purchase the yard for the sum of $40,000 in 1801. During the next century and a half, the yard was instrumental in positioning the maritime defense of this country. 100 wooden ships for the War of 1812; fourteen Civil War ships including the iron-clad Monitor; The U.S.S. Maine -- made famous in the war cry of the Spanish-American War; and submarine chasers for the German U-Boats of World War I were all fabricated in the yard. The BNY's true claim to fame came in World War II, when the yard built or repaired over 5,000 ships whose ranks included most notably the battleships: the *North Carolina*, the *Iowa* and the *Missouri* (sight of the Japanese surrender) as well as several distinguished aircraft carriers. The efforts during the War gained the yard the nickname, "the Can-Do Shipyard", for the optimism and determination of its work force -- a legacy which today's efforts at the yard are well-suited to continue.

By the end of World War II, the complex had grown to 290 waterfront acres, housing over 178 buildings with 4.3 million square feet of interior space, six acres of pier facilities and six graving docks including two of the largest drydocks in the world. At its peak, during World War II, the yard employed over 70,000 workers. The natural harbor of New York had made this area the greatest maritime center on the earth., and during the war era, the facility came to anchor the city's marine industrial heritage. In the decades following the War, a dramatic transformation in the composition of the New York Metropolitan economy drastically reduced marine activity, to a point, when contrasted with levels fifty years before seemed like extinction.

The shift of the city's economic base away from a manufacturing and trade towards a service-based economy was the resultant of many forces.

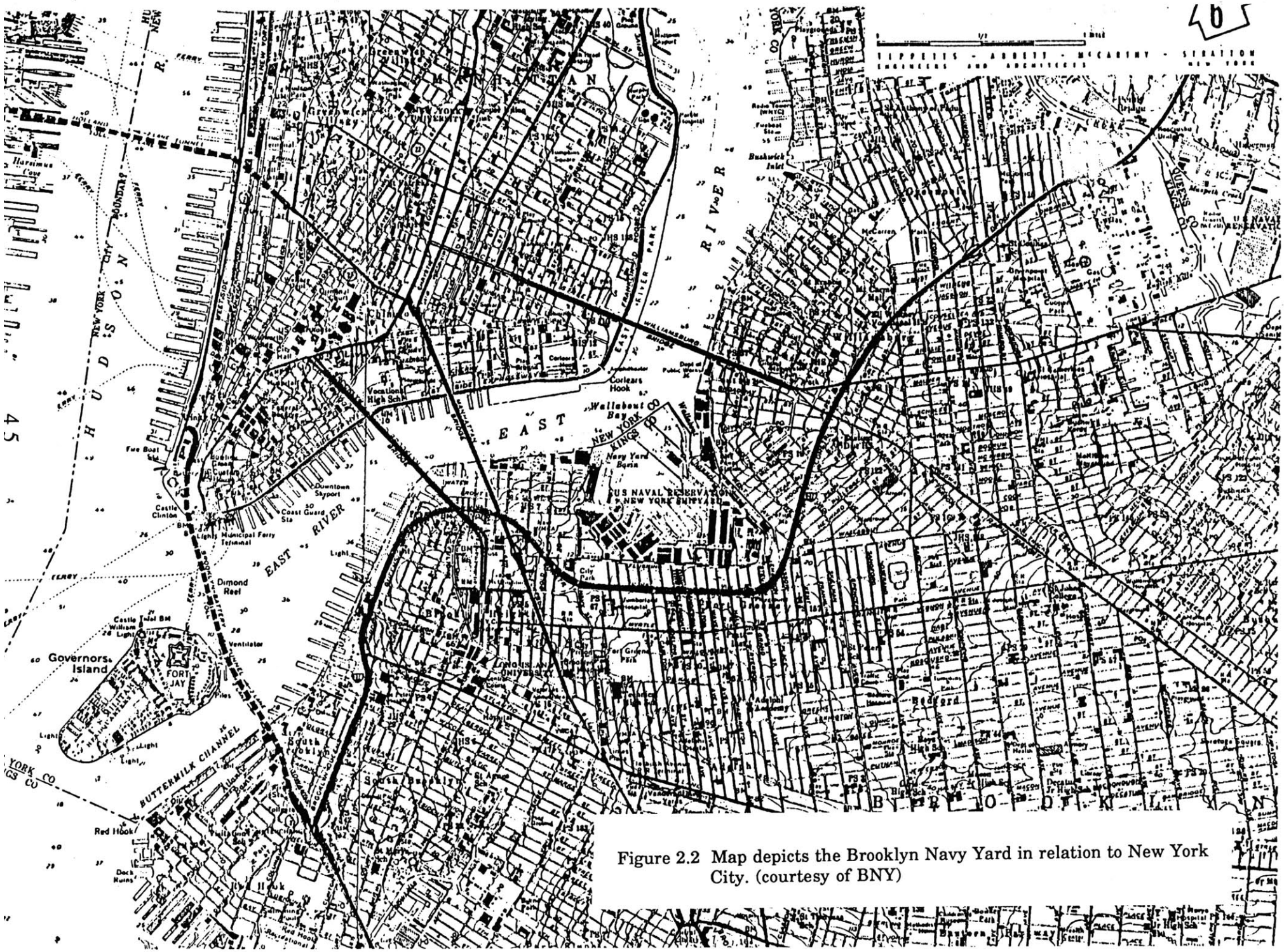


Figure 2.2 Map depicts the Brooklyn Navy Yard in relation to New York City. (courtesy of BNY)

A profound series of technological innovations changed the space demands for industrial users. At the same time, manufacturing moved to regions with lower labor costs. These economic factors were coupled with political policies which neglected the needs of industrial firms for those of the service sector. City fathers pursued a strategy to attract financial, insurance and real estate (FIRE) firms to create a white collar economy. Ironically, As the Brooklyn Navy Yard Development Corporation's (BNYDC) Richard Aneiro pointed out, the insurance and financial industries historically evolved in New York because of the city's mercantile economy which demanded insurance, brokerage and trust services. The emphasis on service sector growth came at the expense of the industrial sector both directly and indirectly. The higher prices brought by these firms, such as land rents and wages, indirectly out-priced industry, while direct inducements from city government to developers of office towers bolstered this effect. No such policies were enacted for manufacturing concerns. Thus, the majority of marine related industries from cargo and cruise ships to shipbuilding, which survived on the industrial base, were unable to maintain their competitiveness due to increased space costs and labor rate differentials. With the resultant ebb tide of industrial activity from the city's shores, the U.S. Navy, which also was experiencing lessened demand in the post-war period, made plans to leave.

Through a gradual process running from 1955 to 1970, the U.S. Navy prepared to leave the yard. Gradual cutbacks, and the expansion of new bases in the South and West, slowly diminished the amount of work performed at the facility. In 1966, the Navy announced plans to vacate. The offer to assume control of and eventually purchase the yard came to New York City at a very inopportune time. In the midst of the urban crises of 1968, the city reluctantly took control of the site through an occupancy permit and issued the first of its subleases. The site was formally turned over to the City in 1970 for $24 million - delivered not in cash, but in exchange for a forfeiture of accounts receivable from the Federal government. Critics responded that the exorbitant price was seven orders of magnitude greater than what the explorers had paid for the entire Island of Manhattan.

Initially, the city sought a single user to purchase or lease the entire site, with the second best scenario in mind of leasing the site to two users.

In 1971, in the face of such failed attempts, the city leased the property to a non-profit organization entitled Commerce Labor Industry Corporation of Kings (CLICK). The acronym foreshadowed things to come. Adopting virtually the same policy as before, CLICK handled the yard for the next ten years, insisting on restoring the yard to use by luring large marine concerns. Hampered by corruption which led to four management turnovers, CLICK at its height only managed to lease the space to 30 companies employing 1500 people. During this period, the corporation's management and directors were involved in scams involving kickbacks, phony work contracts, and allegations of pilfering of plant and equipment.[1] While the BNY success story begins in 1980, at the point where CLICK left off, the physical conditions which the new administrators of the site inherited were the same or worse than those during CLICK's tenure. In fact, CLICK began several projects, mainly the demolition of some 1.5 million square feet of space which are, in light of today's success story, some of the grimmest moments in the yard's history. CLICK never clicked!

### 2.2 Site Attributes

Shortly after CLICK inherited the yard, a study was commissioned to survey the yard to propose a development plan and to design an implementation strategy. In the five years between the study's completion and CLICK's dissolution, few of the study's recommendations, with the exception of some demolition, were acted upon. By 1980, the study still proved useful for the BNYDC because the structural analysis of buildings left standing was still accurate, and the plan did provide certain well-thought development considerations.

#### 2.2.1 Buildings

In 1970, the portion of the Brooklyn Navy Yard under CLICK's control was 261 acres. An adjacent 30-acre navy base with officer and enlisted personnel housing was separately control, and is today under

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[1]Garbarine, R. (1991). "Navy Yard A Haven for Small Users." The New York Times, Real Estate Section (Wednesday, July 3), reprint.

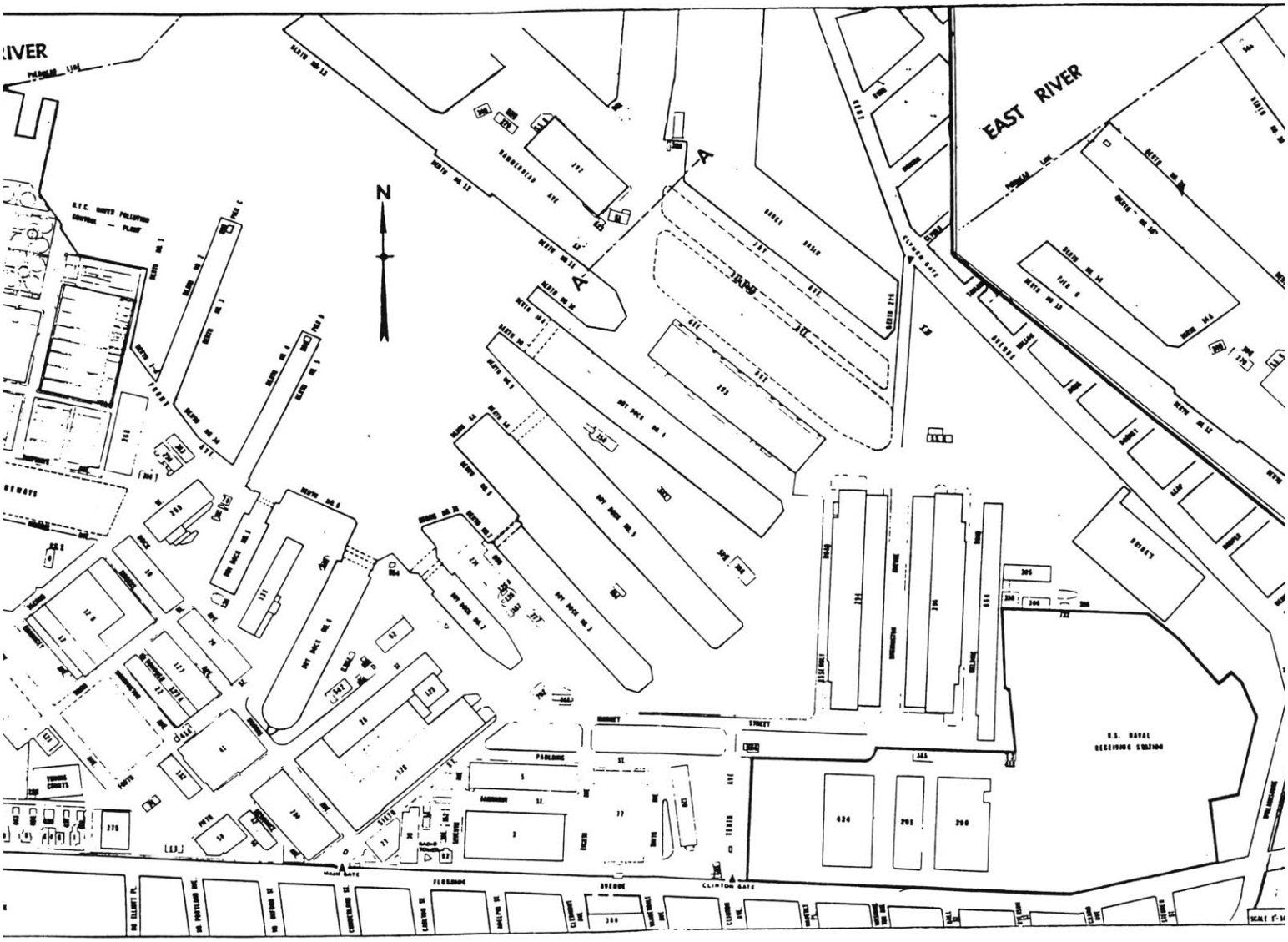


Figure 2.3 Site Map of the Brooklyn Navy Yard's 263 acres. ( courtesy of BNY)

consideration for redevelopment. The project site contained 163 structures classified as buildings by the Navy. About 96% of the 6 million square feet of these buildings were in 54 larger buildings. The smaller buildings were a collection of support buildings (e.g., pump houses, electrical vaults and bicycle sheds). About 50% of these larger buildings were built from the mid-nineteenth century up until the 1920s. They were primarily single story, brick bearing wall, shop-type buildings. The remaining fifty percent were built between 1940 and 1944. Their major construction material was concrete, steel and wood frame. The buildings were classed as the following types[2]:

> 1. Shop - Buildings which were designed and used as shop buildings. ..These buildings have ceiling clearances varying from 35 to 104 feet. A total of 27 buildings have an aggregate floor space of about 2,956,000 square feet of space.
>
> 2. Offices - Buildings designed as offices, barracks, dispensary or other uses... Best suited for administrative or light industrial use. A total of eight buildings having an aggregate floor space of 1,551,000 square feet of space.
>
> 3. Storage - Smaller buildings which do not lend themselves to other uses without extensive renovation. There are a total of 15 buildings of this type, having an aggregate floor space of about 991,000 square feet.
>
> 4. Miscellaneous - Buildings which were built for special purposes to service shipyard activities. There are only four buildings of this type, with an aggregate floor space of about 255,000 square feet.

The engineers surveyed each building by a list of criteria which included: type, dimension, structural condition, architecture, floor load, floor height, column spacing, internal circulation, reuse potential and cost to rehabilitate. While the majority of the buildings were found to be structurally sound, and in some cases even architecturally appealing, the decision whether or not to demolish was predicated upon the engineers' valuation of the building's suitability for current market users. The study noted in some cases that while large ceiling heights in some buildings (upper range from 47 to 104 feet) might be prohibitively expensive to heat and maintain, they also could be excellently suited to a user who needed such clearances. The end result was a series of recommendations to keep

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[2]Tippetts-Abbett-McCarthy-Stratton: Engineers and Architects (1970) *The Brooklyn Navy Yard, A Redevelopment Plan*, Fordam University - Center for Urban Affairs,p. 124.

only buildings which with relatively little expense, could be renovated for industrial use. Of the 54 larger buildings, the plan called to demolistion all but ten buildings, maintaining about 2.5 million square feet. Ironically, the report recommended certain buildings, suitable for reuse should be demolished. It read[3],

> Eleven of the larger buildings, aggregating a floor space of about 1,428,000 square feet, or 25% of the total floor space of the larger buildings under detailed consideration are suitable for limited types of specific industrial use without extensive modification. These buildings interfere with the site development plan and should be demolished in accordance with the staged redevelopment program.

The majority of the smaller buildings with the exception of some 26 miscellaneous buildings, where slated for demolishing. All told, the report recommended maintaining approximately one-half, or three of the six million square feet of built space on the project site. By 1980, when the Aneiro group took over, CLICK had cleared roughly one and a half million square feet of this space, ceasing efforts only because the expensive demolition costs had depleted their operating funds, of the 163 structures from 1970, only 60 remained.

### 2.2.2 Waterfront Facilities

The Brooklyn Navy Yard was designed to build ships, repair them and provide port facilities for cargo and crewmen. The complex was outfitted with five drydocks and six piers. By today's standards, the yard is still the second largest operating ship building infrastructure on the East Coast -- next to Norfolk, Va. The dry docks range from the granite-floored Dry dock Number-One built in the post civil war era to the huge Dry Dock Number Five, capable of handling any ship afloat today. The 1970 study found that the waterfront facilities, including crane service, were in good shape, and required no major repairs to be restored to operating capacity.

### 2.2.3 Location and Transportation Access

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[3]Tippetts-Abbett-McCarthy-Stratton: Engineers and Architects (1970), p. 133.

Situated directly across from the Lower-East side of Manhattan along the *East River* in Brooklyn, the navy yard is blessed with proximity to one of the largest consumption locations in America. The yard's benefit comes in its superior access which allows it to serve the 20 million plus population of the Tri-state New York Metropolitan Area. Excellent service by road, water and rail, greatly enhances the yard's value.

Trucking access was the first attribute planners examined. The facility is bounded by the Brooklyn Queens Expressway, a leg of the New York City's inner belt (circumferential) highway. The six-lane road way links the site to the borough of Queens to the North by the Triborough Bridge and reaches Staten Island to the south by the Verrazzano-Narrows Bridge. The site also is extremely accessible to Manhattan by the Brooklyn or Manhattan Bridges. The local streets which service these major highways are also well positioned. Ramp access, a primary consideration for road linkage is well afforded, as well as the presence of major arterial routes. Thus, the site has possibilities to serve both the Metro market, but also inter-regional markets, as well. A second benefit of the site is its superior rail access, both within the site and linkage to the entire New York system. In 1970, practically every building in the site was served by an internal railroad system which measured 19.0 miles. The rail facilities were well designed both in geometric and efficiency terms. The site was served with freight connecting possibilities with practically every track leading to the metro area. Finally, the study noted the potential of the yard's excellent deep water access and waterfront facilities which were the primary determinant in its original creation.

After addressing the physical features of the site, the CLICK plan proposed a design and development strategy. The major points addressed included economy of land use, flexibility, use of existing facilities, internal circulation, site subdivision, utilities, open space, design concepts and a staging system of redevelopment. In the ten years when CLICK controlled the site, they never advanced past the first stage of the plan which called for matching tenants with existing facilities for interim use and demolition. Fortunately, the discontinuation of the plan may have sparred long-term damage.

The failure of the navy yard during the 1970s was the product of mismanagement and poor planning The level of public commitment and

expense needed to undertake the plan, coupled with a precarious reliance on the market to financially support the project, doomed it to failure. The lack of progress in realizing the physical possibilities of the site was the result of thinking in the wrong planning paradigm. Master planning in the spirit of urban renewal neglected the reality of renovation costs, marketability, and current operating problems. Unable to collect account receivables, ensure routine maintenance, and manage without corruption, CLICK put the yard on a course for permanent closure by the fall of 1981. In the wake of phony contracting scandal, the city government dissolved CLICK and created the Brooklyn Navy Yard Development Corporation. Charged with the mission to bring back businesses and employment to the yard, BNYDC assumed the yard under desperate circumstances. One of the yard's biggest tenants, Seatrain Shipbuilding had just entered bankruptcy with an accumulated debt to the navy yard of over three million dollars. Thus both the physical and financial situation forecasted a dubious future.

### 2.3 Development Strategy and Implementation

On November 24, 1981, Mayor Koch reorganized the Board of Directors of the Brooklyn Navy Yard, charging them with the responsibility of "reinvigorating the Yard as a center of commercial and industrial growth." Further, he mandated them to create new jobs, make the yard economically profitable, and recreate its former image as the "Can-Do yard"[4]. To the Board, Koch appointed a representative group of New Yorkers from diverse racial, ethnic and business backgrounds. With their financial expertise, knowledge of community behavior and shared desire for the yard's long term success, the Board chose Richard Aneiro as President and Chief Executive Officer of the development company. Trained as an industrial engineer with a Harvard MBA, Aneiro had worked in city government, but had no experience with development. That being the case, he welcomed experimentation, and with a long term vision, took short steps which produced real results.

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[4]Brooklyn Navy Yard Development Corporation (1982). *1982 Annual Report,* p. 3.

When Aneiro and his group took the helm of the Navy Yard, they assumed control of a sinking ship. Before even long-term solutions could be planned, certain leaks had to be literally plugged. BYNDC took steps to stop taking on water, before beginning the process of bailing out. Operational structure, energy, and site maintenance were the first three issues tackled by the new administration. Revamping management was the first step. Aneiro set about to raise productivity and lower costs. Instituting a competitive bidding process, he and the BNYCO lowered insurance premiums by 25%; decreased corporate staff by 17%, and saved $400,000 in payroll annually.

Energy cost savings was a second immediate concern. A poorly organized energy strategy was running annual deficits of $1.2 million. Prior to 1972, the navy yard had been energy sufficient. In 1940, the Navy constructed a powerplant to generate steam and electricity to service the yard's heavy demands. In its early years, CLICK decided to shut down the plant and purchase steam, electricity and compressed air from outside sources. At the time, this strategy was cheaper, and CLICK was able to profit by purchasing the lower cost energy and reselling it to its tenants. In the long-run, the concept created serious problems. Although CLICK no longer produced the energy, it was still responsible for maintaining the integral infrastructure which delivered energy to the tenants. Old and full of leaks, the steam system lost almost 40% of its carrying load. Further, there was no metering system on the individual buildings to monitor how much each tenant consumed. Finally, by purchasing and reselling, CLICK had put itself in the risky situation of insuring its tenant's utility bills. This fear was realized when Seatrain Shipbuilding, the yard's anchor tenant, went bankrupt sticking the navy yard with $500,000 in outstanding charges which the corporation had no choice but to pay.

After securing a five-million dollar capital investment grant from the city to restart the yard's steam production system, BNYDC reversed energy losses in the first year by repairing the distribution system, and installing meters. In addition to lowering tenant energy bills by 25%, the improvement allowed the yard to link up with the surrounding community. Aneiro's group worked out a plan to partially supply some of the 11,500 subsidized housing units which rimmed three sides of the site with the

yard's cogenerated steam. This action gave them access to federal Urban Action grant money, as well as state funds.

Today, Building 41 - the former coal burning powerplant shut down by CLICK - is being refitted into a modern, gas-fired cogeneration facility. Made possible through a forty-million dollar investment by a private energy firm, the project will supply 170 megawatts of power by 1994, and sell 7 of these megawatts to the navy yard businesses at a 25% discount from current prices. Slated for demolition in CLICK's original plan, the plant escaped the wrecking ball when the demolition project ran out of money. The building is a prime example of BNYDC philosophy that buildings still have value long after their intended use has become technologically obsolete. As the 1991 BNYDC annual report reads,

> These buildings need not be torn down or stand idle, simply because usage and standards have changed. Rather, they can be recycled and upgraded into productive and profitable uses. [5]

Finally, the new powerplant should help attract future marine users by make ship repair work less costly, and more competitive.

The final quick action that Aneiro 's group took in its first year was to clean up the site and prepare a new plan to repair and maintain the yard's buildings and infrastructure. The years of neglect had put many of these structures on the brink of ruin. Repairs were performed on a leak in the yard's freshwater system which was causing an estimated 140 million gallons to run into the *East River* annually. Using over 100 tons of asphalt, the City's Department of Transportation fixed potholes which had made much of the yard's six miles of road network unnavigable. The Department of Sanitation hauled out over twelve million pounds of garbage which had collected in the yard during this period. Turning attention towards buildings, BNYDC halted further decline of the structures through stop-gap efforts. Instead of large lump sum investments, BNYDC economized using available money in places where it was most needed. Leaky roofs were repaired, not fully replaced. Windows on the upper floors of buildings were replaced first, since they tended to be more heavily weathered, and bottom floor windows where only changed when money became available.

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[5]Brooklyn Navy Yard Development Corporation(1991). *Report of the Brooklyn Navy Yard Development Corporation, June 1991.*

A Summer Beautification Program, sponsored by public and private agencies, employed 70 youths who painted and landscaped parts of the yard. Finally, an unused 1971 grant from the Department of commerce was collected to finance the restoration of two of the yard's largest buildings. Having established some semblance of order, Aneiro and his group developed a market-wise approach to reuse buildings.

**2.4 Financing**

On first inspection, the physical structures in the Brooklyn Navy Yard did not seem to hold much promise. The multi-story buildings, with broken windows and leaking roofs, ranged in age from forty to one-hundred eighty years old. These were quite different from the model requirements of modern day manufacturers: single-story, large floor, efficient spaces, etc. To adapt these buildings to present day market specifications would be both extremely costly and risky. The city at several points in the early years of BNYDC suggested that the entire site should be leveled and prepared for mixed use development.

Aneiro explained that it was at this point, he developed the yard's concept. At the time, the City of New York was pursuing several other adaptive-reuse industrial parks -- The Brooklyn Army Terminal and Industry City at Bush Terminal. These developments, aided by large public subsidies, were attempting to capture medium-sized users. While the BNYDC enjoyed the cooperation of City government, its mission was to make the yard self-supporting independent of any government subsides. With the exception of the power plant project and City funded maintenance projects like street and sewer repair, the BNY development was created independently of public assistance. During its inception, the BNYDC, a not-for-profit corporation, had signed a 99-year lease with the city for the 261-acre site, and was obligated to pay ten percent of its gross rent roll each year. The revenue remaining after lease obligations and expenses was to be reinvested in the yard. Thus, Aneiro had neither the benefit of the modern building types and amenities of his suburban competitors, nor the government subsides and tax incentives of his public rivals.

Relying solely on free-and-clear income to finance Yard improvements like building renovations, the BNY was forced to sustain its

own growth. Aneiro emphatically points out that development was achieved with zero public investment. In his words, "The lack of government support is a weakness and a strength because you (the park) develop a resilience you would not get otherwise." Pressed to meet on-going expenses (e.g., payroll, maintenance, etc.), the BNYDC was forced to actively market the park while carefully watching costs simply to survive each month. As well, Aneiro and his colleagues had to find creative solutions to help fund improvements. With their "feet-in-the-fire" the BNYDC learned to survive by designing the new marketing and leasing concept explored below.

### 2.5 Marketing

A fundamental tenet of the BNYDC's market approach recognized that competing with other industrial parks for tenants would mean losses for all concerned. The high levels of infrastructure investment needed to make BNY space attractive to firms could not be supported by the low market rental prices brought on through competition. Aneiro reasoned that if a company willingly relocated to the navy yard because of low space rents, it would just as soon leave when a new lower cost bidder appeared. He explained[6]:

> The earlier concept saw the yard going to major industries with a huge ribbon-cutting and nine million jobs. In the end they were trying to steal business away from somewhere else - and that just wasn't going to work.

Not only was this game a losing proposition, but its end result was futile. The goal of economic development in his eyes was to create value, not to steal away business from neighboring New Jersey, Connecticut, or the City itself. His view was not singularly focused on the future of the yard, but perspicacious in scope -- looking at the entire Tri-state economy. What was good for New York should trickle down to its neighbors, and vice versa. Thus, Aneiro had framed the problem differently from his predecessors. He now looked to create a market, rather than take a market share.

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[6]Seaton, C. (1990) "Navy Yard Gets Landlegs and Biz." New York Daily News, Sunday April;l 1, 1990, p.3.

During the past ten years CLICK had marketed the Yard to medium sized users who needs ranged from 10,000 to 50,000 square feet. This resulted in a distribution of half-occupied buildings throughout the site. Here, the ground floor was typically leased and the upper and loft floors remained vacant. Aneiro sought to optimize the use of these existing buildings. He started experimenting by dividing these left-over spaces into smaller units. At the time, a lot of lip service was being given to the virtues of small business creation, but not much more. Aneiro explained in a recent article[7],

> Everybody spoke about the importance of small business, but nobody was doing a thing about it. Small business was on the run. I couldn't compete for large business either. I didn't have properly landscaped, tree-lined buildings and parking lots. I had a 150-year old facility with leaky roofs.

While the BNYDC still attempted to market the yard to many of the larger users whom CLICK had failed to attract, Aneiro began a private agenda of trying for small users. By small users, he was not "talking about the federal definition of five hundred or fewer employees and under $100 million in business, but rather shirt-sleeve owner businesses." He explained, "I'm talking about people coming out of their garage or kitchen."[8] The market for this space was at the time of Aneiro's conception undefined. Almost without exception, industrial space brokers would not list space that small - 10,000 square feet and under- since their profit was negligible. This indicated to many, even board members of the BNYDC, that there was no demand for such space. Through his persistence, Aneiro convinced the Board to grant him the funds to renovate the first building into units geared at smaller users. The roughly $100,000 invested to sub-divide the space was funded by free-and-clear income. However, the BNYDC was spared great financial expense by making tenants responsible for building out their own space. Since neither the BNYDC nor most tenants could afford to pay for this work, but many times the tenant was qualified to perform the work himself, an allowance lease was offered. For example, the Navy Yard might charge $10 per square foot

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[7]Skelly, R. (1992). "BNY Shoots for Ship Repair Contracts." *Water Ways - New York's Waterfront News* (February), February 1992, p. 23.

[8]VIA (1990) "A Cause for Optimism." *VIA* - Port of New York-New Jersey (August), p.14.

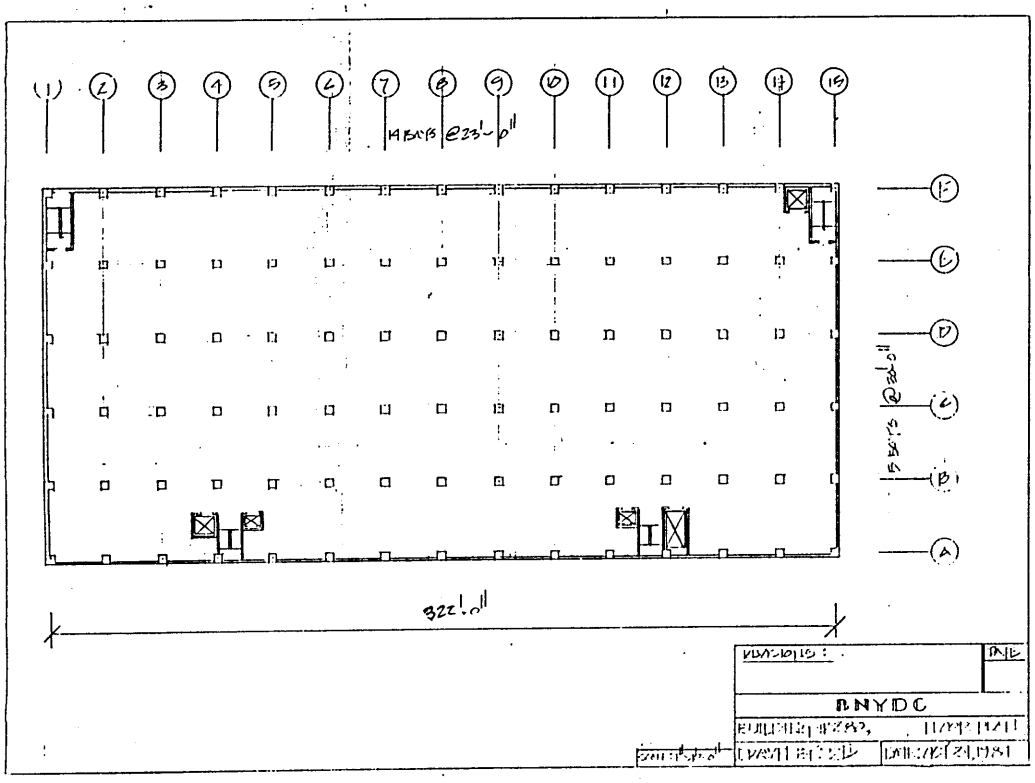
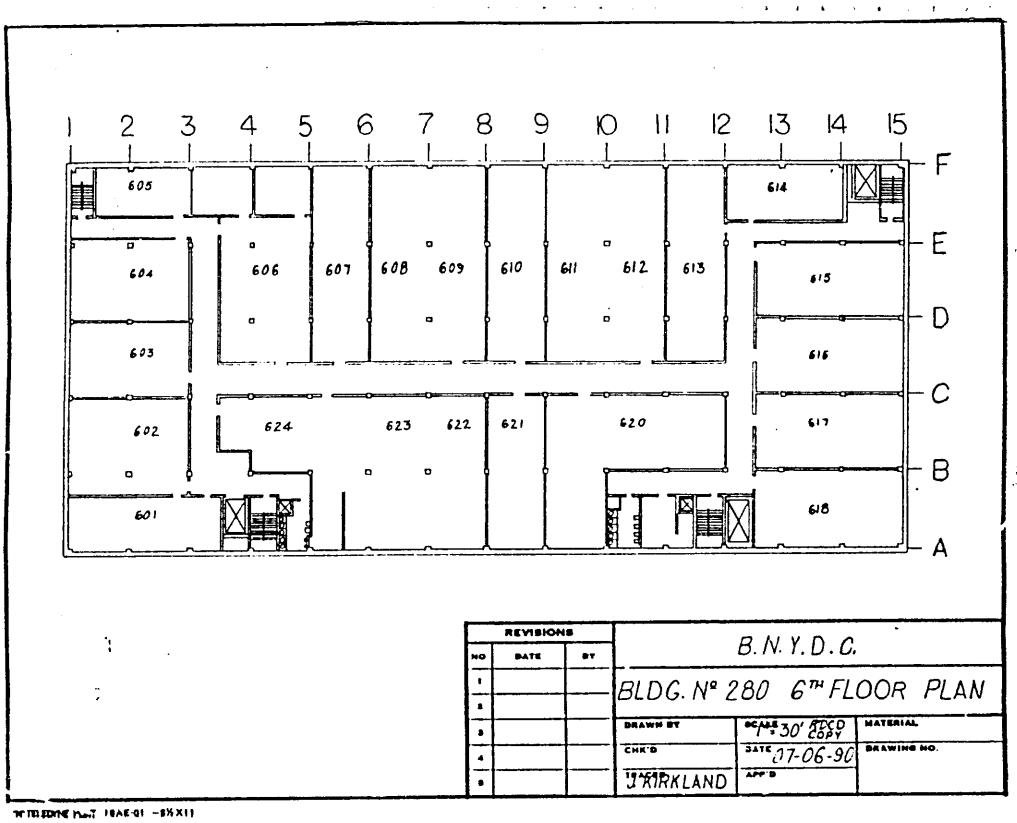



Figure 2.4 Blue prints demonstrate how BNYDC engineers sub-divide large floor plans into small space offerings. (courtesy of BNY)



and grant a $7 dollar allowance for improvements. Thus, the tenant performed needed repairs and built out space according to BNYDC specifications, and only paid $3 per square feet.

The effort to lease this building, divided into 18 units ranging in size from 2000-3000 square feet, took over five months. Initially discouraged, the BNYDC staff decided upon a more rigorous marketing effort to target these potential businesses. The next building renovated, filled its twenty units in a month's time proving what Aneiro had suspected. Figure 2.4 demonstates the sub-division of a typical floor. Not only did this strategy provide for more workers per square foot of space, it actually brought a larger gross rent total from each building. To find new users, Aneiro and his team where determined to go out into the community and seek them out.

Aneiro began a multi-pronged initiative to attract new users. He reasoned that these new users did not read the New York Times for industrial space listing, instead they found out about these spaces through neighborhood contact. These entrepreneurs were the type who read the neighborhood weekly paper cover to cover. Since advertising is costly, Aneiro figured that by doing the reporting and writing themselves, the BNYDC could have the benefit of free publicity. He started mailing monthly press releases to the 45-50 local papers his staff identified. These spots, which highlighted the positive community benefits - new jobs, beautification programs, etc - were designed to be readily pasted into the copy -- a time saving device to lure desperate editors tired of reporting about church bazaars and craft fairs.

Next, Aneiro used some clever networking skills to meet potential users. First, he spoke with his existing tenants to inquire if their business suppliers or acquaintces had possible space needs. He also wrote letters to all the firms who supplied the Navy Yard in its present redevelopment efforts from window manufacturers to janitorial companies. Second, he contacted all the neighboring economic development corporations and merchants associations to tell them about the new space offerings at the yard. Following these letters, he made a point to frequent the monthly membership meetings held by these groups, spending many evenings with interested parties.

A third fruitful device employed by Aneiro was to work with the neighboring utility companies to help drum up business. His belief was that whenever small companies thought of starting up or relocating, they came to these companies with their questions. The phone company would receive inquires about small systems and service, while the gas, steam and electric companies would have many potential customers needing their services, but not sure where to find them. He believed that the utilities had a stake in helping him since these companies would become new customers. The plan worked. Consolidated Edison, New York Telephone and Brooklyn Union Gas all willingly aided his efforts by relaying contacts and even sponsoring publicity materials. To further bolster his marketing efforts, Aneiro began the publication and mailing of a biweekly newsletter to members of all the above mentioned parties. By 1992, the list had grown to over 3,000 names.

This ingenious and resourceful marketing strategy continues to play a major part in the yard's success. Throughout the BNYDC announcements, a prevailing positivism comes across. This may not seem out of the ordinary in some places, but in New York City, a town shrouded in self-inflicted gloom, bombarded by nightly news reports of the latest failures, crimes and hoodwinks, and constantly reminded by decaying monuments of its past glory, optimism turns heads. Richard Aneiro's genuineness and sanguinity must also be considered as a reason behind the navy yard's success. To maintain the yard's 98% occupancy rate, Aneiro "networks like mad". A testament to his communication abilities, a row of three-inch spiral loose leaf binders rim the walls of his office; one is filled about every two months with a copies of every personal letter he has written. In addition, he frequently contributes opposite-editorial pieces to the New York Times and business journals about business strategy and public policy in New York.

### 2.6 Sustaining Economic Development

A critical element in the yard's long term stability was finding the proper tenant mix. Through its new orientation towards small business, the yard enjoyed increased growth and job creation. Yet, in the midst of these fledging efforts, the yard maintained a crucial reliance on the marine-oriented companies who paid the majority of the rent roll. While the tenant base was beginning to diversify, the yard was still as greatly

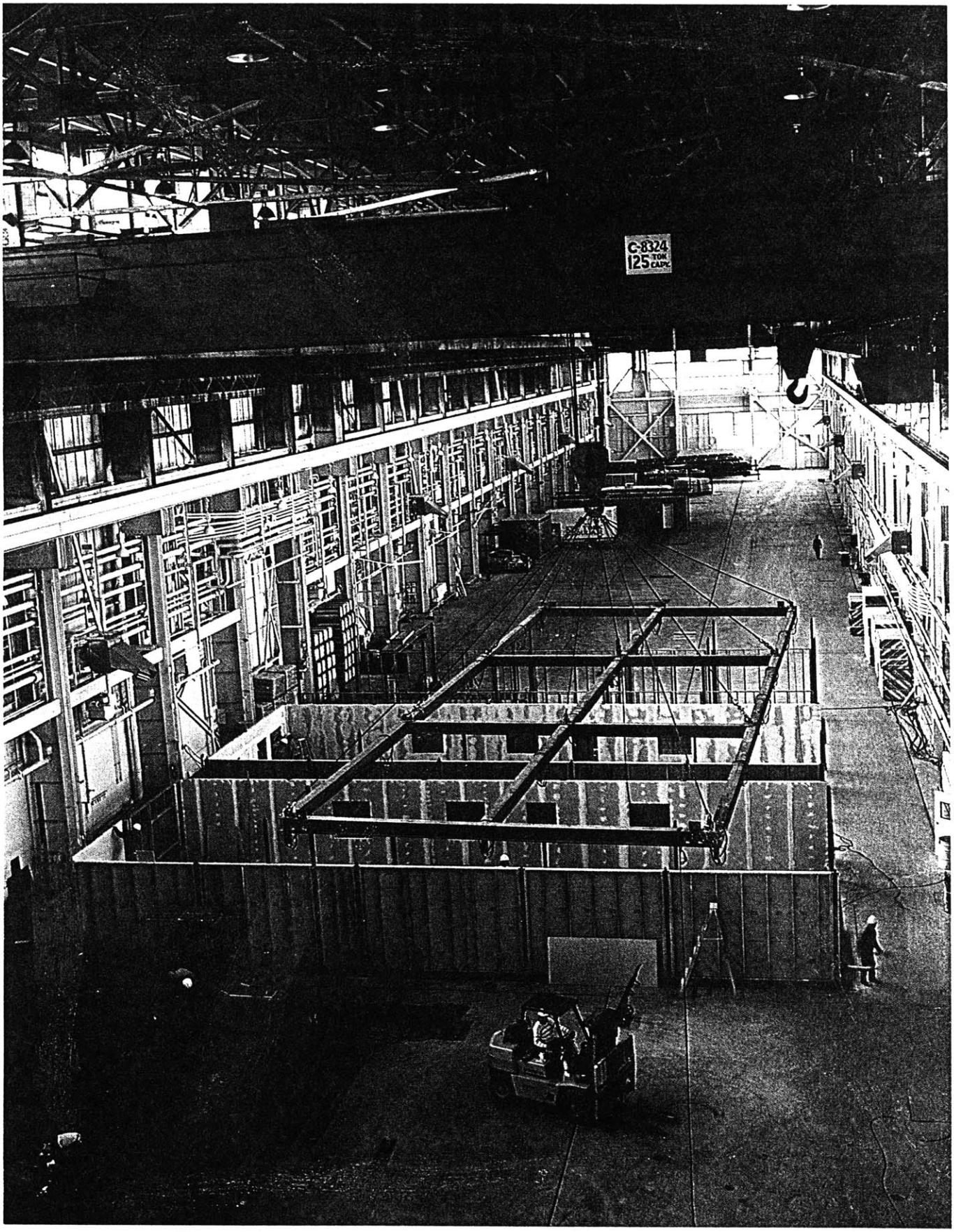



Figure 2.6 New York Modular, Inc. manufactures housing by making use of the large ceiling clearance and existing crane service of a former BNY ship barn. (photo courtesy of BNY)

exposed as when Seatrain Shipbuilding collapsed in 1981 leading to the reorganization of the yard. In late 1986, potential disaster struck again, as Coastal Drydock and Repair Company, which employed at the time 2,000 of the yard's 2,800 workers filed for bankruptcy. Not only did Coastal generate 50% of the yard's income, but it left the Navy Yard with a $4.7 million dollar unpaid rent bill. In the tenuous years which followed, Aneiro team stepped up efforts towards small business and developed a new maritime strategy. BYNDC initiated a world-wide marketing effort for their drydock and ship building facilities. Aneiro explained that[9],

> When the smoke cleared, the only visible interest was from one-small Brooklyn based shop interested in expanding, and a new start-up business. We took a chance on these very small firms, and it paid off.

Realizing the fruitlessness of catering to large maritime companies, the BNYDC essentially took the same tack towards the marine market, as it did towards small land based businesses. Their new tenant companies, Westly- Thomas Industries which concentrates on the commercial market: barges, tugs and small ships, and G. Marine Diesel which works on larger Navy repair contracts, have done well. In addition other small marine companies from pipe-fitters to electronic companies have followed. Today, the yard is a competitor for large Navy business and is currently trying to land a $150 million contract phased over the next 5 years. The facility is now competitive, not only because of its size - second only to Norfolk on the East Coast - but because the BNYDC has worked to overcome obstacles which inhibited projects in the past. The first step was trying to meet the lower costs other facilities provide. The smaller, leaner companies are being able to do this. The second measure was to attract commercial business by dispelling the conception that the yard was only for Navy vessels. Aneiro reasoned that since ships ply the harbor waters everyday, and New York is an end port on their trips, that the City should be able to return to its natural attraction as a ship repair center. He is bullish on the Yard's future prospects for repairing commercial vessels. The majority of merchant ships afloat today are twenty years older or more, and a great wave of ship repair is projected in the coming decade. While the BNY's success in tapping this market will no doubt rest on external variables like

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[9]VIA (1990), p.15.

wage rates, the BNYDC has taken every effort to ensure that its tenant companies may competitively bid for contracts.

The BNY shows that the redevelopment of marine industrial sites must not rely solely on maritime business, nor land based business, but some combination of the two. The existing infrastructure and open space allows maritime work to be done very inexpensively. These tenants should be spatially located next to the water and the buildings specifically designed for their use. The remaining outlying structures should be filled with the small land-users detailed earlier. In addition, the two do not necessarily compete with one another. The water-users demand the open-space and marine infrastructure that would normally go unemployed by the land-users. Thus, not only does a combination of the two diversify the development's risk, but also it maximizes use of the facility and enriches the economic composition of the surrounding community.

Achieving long-term stability at the yard has been accomplished by fostering diversity in the tenant mix. In 1992, no user represents more than eight percent of gross revenues. While both maritime and small enterprise are very risky businesses, the yard has maintained a superior occupancy rating, well-above the regional and national averages. Not only has the yard buffered against market risk, but it seems to persevere in spite of bedrock economic fluctuating. This is the result of two factors. First, BNYDC works hard to bring in more tenants than it loses each year. Even with a 1991 turn-over rate of 7%, the yard attracted 18 new companies that more than made up for the loss of 12 tenants. This is in spite of marketing efforts by competitors who have followed BNYDC's example. Brokers who once ignored small users, now actively battle for each new company that comes on the market. Second, Aneiro feels that the small business make-up of the park does not react to the macroeconomic signals by which most investors read the economy. He states[10],

> The small businessman doesn't respond to the economy that you read about in the Wall Street Journal. He responds to the opportunity that he sees and is willing to bet on. The future is not the big board at the stock exchange. The future is the guy who makes flanges and small pipe parts or sells shark fins for soup.

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[10]Carpenter, C. (1990). "Navy Yard's Bustling with Small Businesses." New York Post (Tuesday, May 1), reprint. p.3.

Further, Aneiro attributes long-term stability to the yard's industrial make-up. The majority of concerns are manufacturers, producing a saleable product. He argues that when the economy contracts, services are the first areas consumers cut, and by relying on a productive base this risk is greatly mitigated.

### 2.7 Packaging the Product

To complement its marketing efforts and achieve its tenant mix, BNYDC has used innovative financing and leasing techniques. With the benefit of the tax-free lease, BNYDC was able to offer space rents ranging from $4 to $7, competitive with the surrounding areas. An economizing, incremental approach to redevelopment has resulted in success. Each building is viewed as an asset. Demolition has become a double evil -- it costs money and destroys a structure capable of being inexpensively refitted. Most tenants build out their own space in exchange for BNYDC rent credits. This lets BNYDC keep down costs, and insure that tenants don't incur large start up debts that threaten their survival. Special arrangements with start-up companies include special allowances and custom tailored payment schedules. Maritime tenants receive equally supportive treatment. These firms have much more space and capital intensive needs than the small businesses. They are required to pay an initially low base-rent and a percentage based on the number of vessels they repair.

Emphasis is also placed on keeping tenants happy once they have located in the yard. A major directive is insuring security. . Here, the past history of a military base lends virtue. Erected by the Navy, an eight-foot stone wall topped with barbed-wire rims the facility and deters mischief. $1.5 million is spent annually to maintain a sixty-member security force. Relying not on a contract security firm, but on a force composed of workers from the local neighborhood, Aneiro points out that,[11]

> Your own security people will have more of a stake in the operation than workers from a contract firm. They see this as more than just a job, and take a lot of pride in protecting the complex.

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[11] Skelly, R. (1992).p.4.


Figure 2.5 The BNY operates its own security force of 60. Vehicles are monitored as they both enter and exit the site. (photo courtesy of BNY)

Because of this good work, the BNYDC is able to boast a crime and violence free yard -- a major drawing point for small companies. For example, a big advantage to this off-road facility is being able to load and unload trucks at the company's convenience. Firms can do business without dealing with crowded streets and sidewalks, causing traffic back-ups, or worrying about goods being stolen out of the truck. The business community has become tight knit, and strangers stand out. Company owners feel secure as their merchandise is protected by security precautions including a 24-hour mobile patrol and registration of vehicles as they enter and leave the yard.

Aneiro and his group, realizing the cohesion among small-companies, have enacted measures to help companies band together. BNYDC hosts a biweekly luncheon for all presidents of tenant companies which features a visiting guest. These events both help show the yard off to visitors, and allow small companies to network with themselves and outsiders. Recent visits representative of the program include a Russian

trade delegation, and the Lieutenant Governor of New York. A second policy that has helped the yard is Aneiro's personal contact with each of his tenants. When the yard was under 100 companies, he used to talk with each owner roughly once a week. As the yard has grown, he and his staff still make a point to keep tabs on companies and meet with each member roughly once a month in the BNYDC office. He explains that the owners of these start-up companies do not have the management acumen of an M.B.A. Rather, they are technicians who have developed their skills, but who know little about management. He jests that most of the book-keepers are brothers-in laws, while the orders are handled by mothers. While this problem is not uncommon at other small-business centers, Aneiro has a different philosophy for its solution.

Realizing the need to educate many of his tenants with even the most rudimentary of business skills from computer literacy to book keeping, Aneiro set up a night series taught by a local community college. After inviting all his tenants, no one expressed interest and he ended up filling the first night's lesson on word-processing with the members of his own staff. He now notes that entrepreneurs are only ready to learn the next step in their business when their back is against the wall. He disagrees with the incubator concept which both subsidizes business and forces them to learn these skills. Thus, the prevailing wisdom of the BNYDC is to give new companies room to grow, but not to tell them how to run their business. When, sooner or later they ask, BNYDC then offers assistance. This help ranges from installing a computer system, to exerting influence on a bank president to extend a company's loan terms. For the larger marine companies, Aneiro goes to bat to win Navy and commercial contracts. Although these actions explicitly aid the companies, BNYDC gains by fostering tenant loyalty and insuring their long-range commitment to the yard.

As the yard has set a smooth course in recent years, sailing strong with 98% occupancy levels, Aneiro has examined new avenues for growth. A natural second step in the yard's progression from developing businesses and renewing a reliance on the waterfront is to foster trade. In 1989, BNYDC created U.S. Foreign Trade Zone No. 1 from a reconditioned 17-story concrete and steal warehouse in the yard. This 1,000,000 square foot building, specially licensed by the department of Commerce, allows

importers to bring in their goods and assemble or remake them before paying customs duties. Further, even though the yard is extremely safe and the building itself is described as a fortress, if any goods were stolen, the crime would be a smuggling offense enforced by the U.S. Customs Service.

A second pioneering concept is the Brooklyn Navy Yard Industrial Coalition (BNYIC), founded in late 1991 to give small businesses a voice in major projects. In response to the Gulf War, Aneiro and many of his tenants were eager to begin in the work of rebuilding Kuwait. As Aneiro researched the possibilities of foreign trade, he realized the number of stumbling blocks, and the nature of the complex web which envelops foreign trade. This alone would be too great for anyone company to overcome, so Aneiro founded the Coalition. The purpose of the group is to band together all the businesses in the yard to position them as a force in bidding for national and international contracts, and forming joint ventures. The coalition helps the outsider realize how varied the navy yard business are. A list of the of Industrial Coalition firms is given in Exhibit 2.7. With the blessings of Congressional Leaders, the Coalition, like any other large trade organization, can exert political influence. The BNYIC, as explained in its promotional materials, is intended to:

> ...bring Navy Yard businesses together to form joint ventures to handle projects and contracts requiring a multiplicity of skills, disciplines and capabilities....Specifically the Coalition: represents member firms in marketing and other initiatives; communicates with other organizations and governments; serves as a project manager on diversified BNYIC joint ventures; coordinates joint ventures with non-coalition firms; and provides conference and telecommunication facilities to its members.

An example of the coalition at work would be the tackling of a mixed-use development from start to finish. Each skill and discipline required in such a project, from architectural planning to specialized contracting and even interior finishing, could be supplied by firms located in the yard. In short, the coalition, like many of Aneiro's other ideas seems obvious, but is really quite profound. This concept unifies the expertise from different firms, and focuses it on one problem. More so, it empowers a group, that each taken singularly, could not compete for even a fraction of the bidding. Thus, the

# The Brooklyn Navy Yard Businesses

A&S Furniture
A. Braun Co.
Ace Surgical Supply
Acme Brass, Inc.
Active Fire Sprinkler
Advantage Mailing Systems
Advantage Presort Services Inc.
AggerTrading Co., Inc.
Alcotel, Inc.
Aleutian Corporation
All County Business Essentials
All Seasons Enterprises
All Ways Natural
Amis International Inc.
Anderson Design Studios
Anfrank Fabricating
Applied Electric
Applied ElectricTechnology
Applied Microbiology
Ares Printing
Artery, Inc.
Assessment Resources &Techn.
Bernardos Prints
Big HornTransportation
Brinks, Inc.
Burke Supply Company
Carmenco International
Charles Miller Storage
Circle Line Statue of Liberty Ferry
Cobblestone Antiques
CogenerationTechnologies
CoparTrading
Correll Interiors, Inc.
Coston Ship Supply
Craft & Craft
CreativeTechnologies
CriterionThread Mills
Cromland Inc.
Cross Construction Co., Inc.
CSM Systems
Court Street Office Supplies
Cumberland Packing
Cypress Upholstery
Dalton Sulmers Furniture
Daves Gold Merchandise
David James Press, Ltd.
Dealers Electric Motor
D&L Carpentry
Dynasty Warehousing & Packing
Eastern Die Cutting Equipment
Egged Trucking
ElizabethYamin,Visual Artist
Engraving Studio
Evan Hughes Furniture
Exquisite China
Fisch Brothers Casting
Full Service Packaging
Fulton Surgical Supply
G. Marine Diesel, Inc.
Ga-Ro Die Cutters, Inc.
Garvilla Contractors, Inc.
Gary Dolgoff Comics
Haiti Observateur
Harbor Marine
Harper Motors
Hinckley Design
House of Trimmings
Howell Petroleum Products
I. Gold Co.
In-Press Marketing Corp.
Inner City Maintenance
Interboro Securities
International Resources
J.R. Micrographics
Jones Pest Control
Josef KahanWholesale Fruit
Kent Import Export Co.
L. BrooksTrucking
L.E. Contstruction
L.N.S. Electronics
Lebo Sewing Supply Co.
Lloyd Interiors
Long Live Rock
Manufacturers Clearing House
MapTrucking Inc.
Maritime Works, Inc.
Marjo Associates
Marzac Enterprises Inc.
Mastrelli Signs
Mede Cutting
Metal Fabrication, Inc.
Mirrorcraft, Inc.
Modern Plastic
Modern Rad, Ltd.
Morgan Architectural Design
Motorola, Inc.
N. Karp Salvage
National Graphic Arts Corp.
National Hatter
Nemko, Inc.
New York Modular, Inc.
New York Planter
NGP, Inc.
Norval Inc.
NY Protective Covering
Ocean Electronics
Orbit Flange
Page Packaging
PCM Construction, Inc.
Pepper & Potter
PerfectaWatch & Dial Printing
Perhi Design
Personalized Monograms
Peterson Cutting Equipment
Pioneer Specialties
Plaza Carriers
Product Design & Development
Queens Art Windsor
Rainbow Folding Box & Printing
Reliable Pillow
Ressler Importers
Rex Apparel Inc.
Rose Solomon Co.
Ruckel Manufacturing
S&F Warehousing
S.F.C. Trading Corp.
Santa Fe Construction
Scott Jordan Furniture
Sculptural Engineering
Selective Knitwear, Inc.
Sen-Gane Power Systems
Sign Here Now Inc.
Speco Electrical Co.
St. Joe Distributing
Stiegelbauer Associates
Strand Freight
Success Binding Corp.
Syntrom Construction Corp.
Tactype/Grafade
Takahashi Woodworking
Tap Electrical Contracting
Teamwork Construction
Thermomechanics
Transamerica Wine
Transitexim
Two P's Plus
V.M. Trucking
V&S Machine Works
Van Dyke Hatters
Vanguard Inc.
Vanity Concepts Inc.
Warren Robertson
Watson Services
WestlyThomas Industries
Wise Excavating
Wythe Upholstery
Z&L Tool
Zoli Distributors
Zomax Industries

**Exhibit 2.7** The above list demonstrates the great variance of industrial functions of BNY tenants. (courtesy of BNY)

center works collectively by forming a multi-disciplinary task force to confront complex problems. This BNYIC innovation is yet another reason that the yard has flourished; it is the product of creatively addressing the needs of small businesses.

### 2.8 The Brooklyn Navy Yard Today

In 1981, when the Aneiro administration took control, the yard contained 30 users employing 1,800 people with some space rents as low as 20¢ a square foot. This March the yard welcomed its 194th tenant, while the number of workers grew to over 4,000. Only 50% leased in 1980, the yard is 97% leased today -- with the biggest user comprising only 8% of its rent roll. Creative solutions in adaptive reuse, phasing in redevelopment, marketing for new tenants, and insuring tenant growth have put the yard on a bright corse for the future. Goals for the next decade are to achieve 350-500 businesses employing 7,500 -10,000 people.

Pioneering efforts in developing space for small users, BNYDC managed to find a balance between marine-based activities and land-based uses. By making marine infrastructure available to smaller indigenous water dependent-users, the BNY allows area firms to competitively bid for projects without the burden of heavy overhead space costs. Further, the BNY's small-user marketing innovation proved that the outlying areas of the marine park are better filled by small firms which underlie the service sector economy by producing goods used in services industries, supplying goods and even servicing these servicers. Here, the BNY does not incubate start-up firms; but rather, it provides a "safe haven" for small companies constrained by or forced to flee from their original urban space. The BNYDC succeeds by knowing how to find the small user, and then keep her happy. Thus, Aneiro and his colleagues have redefined the economic development game played within and between cities. New growth comes not by stealing large users, but nurturing new and existing markets.

The Brooklyn Navy Yard teaches many lessons, mentioned now in passing but explored later, on how to think about the potential of derelict large-user marine sites, and more broadly, how to think about economic development. For one, using a traditional market-based approach to assess the development potential of these sites, one can easily overlook the real

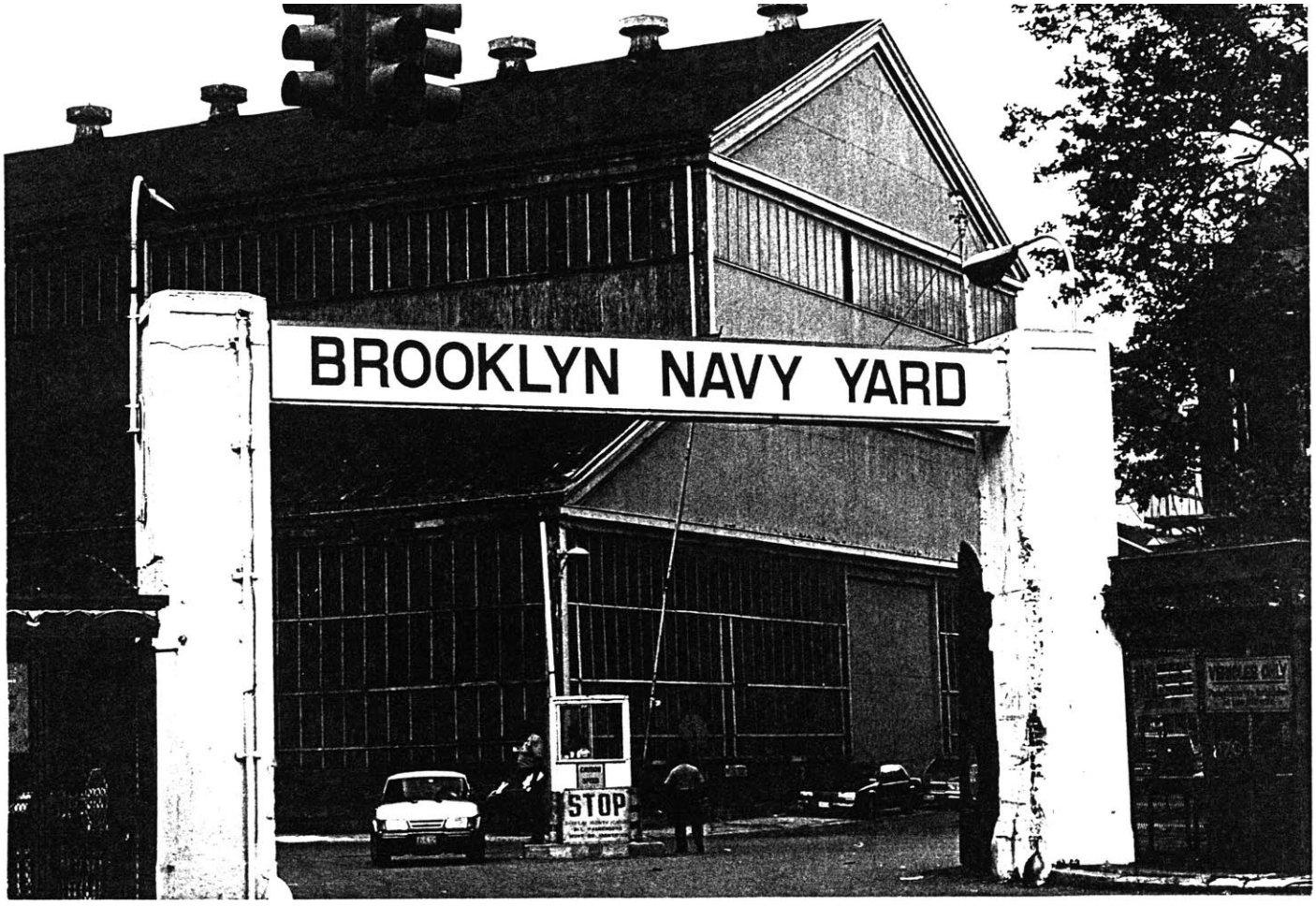


Figure 2.8 The Brooklyn Navy Yard -- "The Can-Do Yard" (photo courtesy of BNY)

development opportunity. The Brooklyn Navy Yard project demonstrates that with public sector cooperation and only modest levels of funding, the waterfront can be successfully reused for industry. These projects only require public financial support enough to repair infrastructure -- no different than the needs of any new housing subdivision. But, they do not require large public subsidies to individual companies in order for business to survive.

In this vein, development timing is incremental, which allows for sustainable growth of new firms and lowers exposure to financial and market risks. Further, one cannot overestimate the importance of a positive attitude -- promoting a yard's "can-do" theme to outsiders and tenants alike through an active marketing campaign. Success breeds success. Finally, there is real, but not easily quantifiable benefit to a restoring a blue collar work force to the communities that surround these sites. Many times these are the only jobs available to minorities and recent immigrants. These new jobs are a first step to solving the myriad of community problems in cities today.

Richard Aneiro and his colleagues have proven that by creatively assessing the attributes of a site, and by using pragmatic efforts to match them with the existing needs of the municipal economy, derelict land can be reclaimed. Here, *development really means adding value*. Ultimately, the success of this type of redevelopment effort relies on the vision of the people behind it. The process is not a simply a one-time physical reclamation of space, but a dynamic learning process which requires constant input. When a given source of money is exhausted, or a critical tenant industry fails, the development's marketing, building and financing strategies must adjust. Similarly, when operations are running on an even keel, the manager must explore new avenues, like the Coalition, which will ensure future growth. Thus, the value of these sites is limited only by the creativity of the mind that undertakes the challenge of redeveloping them.

# SECTION 3

## The Boston Marine Industrial Park

## 3.0 The Boston Marine Industrial Park

Located less than two miles from Boston's downtown, the Boston Marine Industrial Park (BMIP), is a thriving enclave of the type of industrial activity that once developed Boston. The city-owned development comprising 3.1 million square feet of industrial/manufacturing space is located on 191 acres which were previously the South Boston Naval Annex shipyard and the Boston Army Base. The area is now home to over 150 companies, employing 3,500 workers in industries including garment, printing, food processing and shipbuilding, as well home to a 30-acre publicly-run container cargo handling facility and a passenger cruise ship terminal. Developed and managed by Boston's quasi-public Economic Development and Industrial Corporation (EDIC), this project has created a new source of jobs, bolstered the local economy, and restored to use a large tract of land threatened by dereliction.

When the Navy announced that the annex would close in 1975, and its work force of 5,000 be laid off, the City found itself in the unenviable position. A large tract of vacant land, filled with obsolete industrial facilities, this site would be costly simply to maintain. During the first two years of the EDIC's tenure as owners, no marketplace proposal for developing the site materialized. No longer content with stewarding the site for future private redevelopment, the EDIC formulated an industrial reuse plan and implementation strategy for the vacant shipyard that has over the past 15 years proven successful. The BMIP's uniqueness rests in the innovative place-driven approach the EDIC employed for economic development. Focusing development efforts on maximizing value by matching the site's distinctive attributes to the city's economic needs, the EDIC created a new model for the publicly initiated reuse of a large urban industrial site.

### 3.1 Creation of the EDIC

The EDIC was founded in 1971 by the City of Boston in the wake of the exodus of many industrial and manufacturing firms from the urban area. In its enabling legislation, the EDIC proposed to "retain existing industries, attract new industries, and promote the sound economic growth

Figure 3.1 Aerial Photo of the Boston Marine Industrial Park (site perimeter as marked). Note proximity to downtown Boston. (photo courtesy of BMIP)

of the city."[1] The EDIC legislation attributed the loss of jobs in large part to the fact "that many existing industrial and manufacturing facilities were underutilized or vacated. " Furthermore, the act provided that the EDIC would help establish, "new industrial and manufacturing sites required to attract and house new industries and to retain existing industries in need of expansion space."

In conjunction with its charter, the newly founded EDIC adopted three basic guidelines for its policy. They were:[2]

1. To encourage types of development, consistent with the public interest, which will maximize employment opportunities for the unemployed and underemployed of the city.

2. To return to productive use those public and private land areas and buildings which are now vacant or underutilized.

3. To utilize those recourses within the framework of a balanced program designed to conserve and expand existing commerce and industry as well as create and attract new industrial and commercial activity which will have the greatest impact on the City of Boston.

Implicit in the EDIC mandate was the directive to help facilitate private industrial development in the city, not to duplicate it. To this end, the EDIC would use its political clout to help expedite the process. In September of 1975, the Board of Directors of the EDIC determined that the site of the present BMIP was a "decadent area" as defined in the corporation's enabling legislation. By declaring the naval annex as such, the EDIC recognized that without some form of public assistance, the site would have a little chance of being successfully redeveloped. This was conclusively proven, by the fact not one private sector plan came to fruition in the two and one-half years after the base closing was announced.

### 3.2 Site Context and Characteristics

The current area known as the BMIP is the result of a consolidation of two mutually exclusive sites, the South Boston Naval Annex, and the Boston Army Base. The adjacent parcels, which occupy a combined 191

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[1]EDIC (1975). *Economic Development Plan for the Boston Marine Industrial Park* , p.4.
[2]EDIC (1975). p.4.

acres, were developed in separate stages. The EDIC first controlled the 161-acre naval annex in November 1975, and later purchased it in 1977; the 30-acre army terminal was purchased in 1983. The first development stage began with select portions of the naval annex in 1979. The second development stage integrated the army base's major 1.6 million square foot structure known as Building 114 into the already functioning BMIP. While the sites are thought of as one today, their development is more easily explained separately.

The history of the naval annex is part of a larger legacy of the ship building and repair business in Boston. The Boston Naval Shipyard, known popularly today as the Charlestown Navy Yard, was established at the turn of the 19th century by the Federal Government in large part due to the concentration of like activities existing in the city already. The area's natural deep water port, and its proximity to Europe made the city a strategic stronghold for naval activity. With the passing of World War I, and the increased demands on the Charlestown site, the Federal government purchased, in 1920, from the Commonwealth of Massachusetts the South Boston Naval Annex site. Aiding in the duties of the mother yard, the annex was particularly useful in being the only drydock north of Philadelphia capable of handling capital, or very large sized ships. The repair and building activity of the yard reached its peak in 1943, with an employment level of nearly 50,000. As the war era passed, the lessened demand for the annex's services led to its sparse use. The machine shops and other capital equipment of the annex were slowly cannibalized for use in Charlestown Yard. As part of a sweeping number of military base closures, the annex was official closed July 1, 1974. That year 5,900 jobs were directly lost from the site, in addition to a substantial decline in port activity.

In 1974, the EDIC working in conjunction with the Boston Redevelopment Authority (BRA), commissioned a land use study for the naval annex. Taking into account the findings of economic feasibility studies, traffic and environmental considerations, as well as planning and architectural aspects, the study determined that the site was best suited for

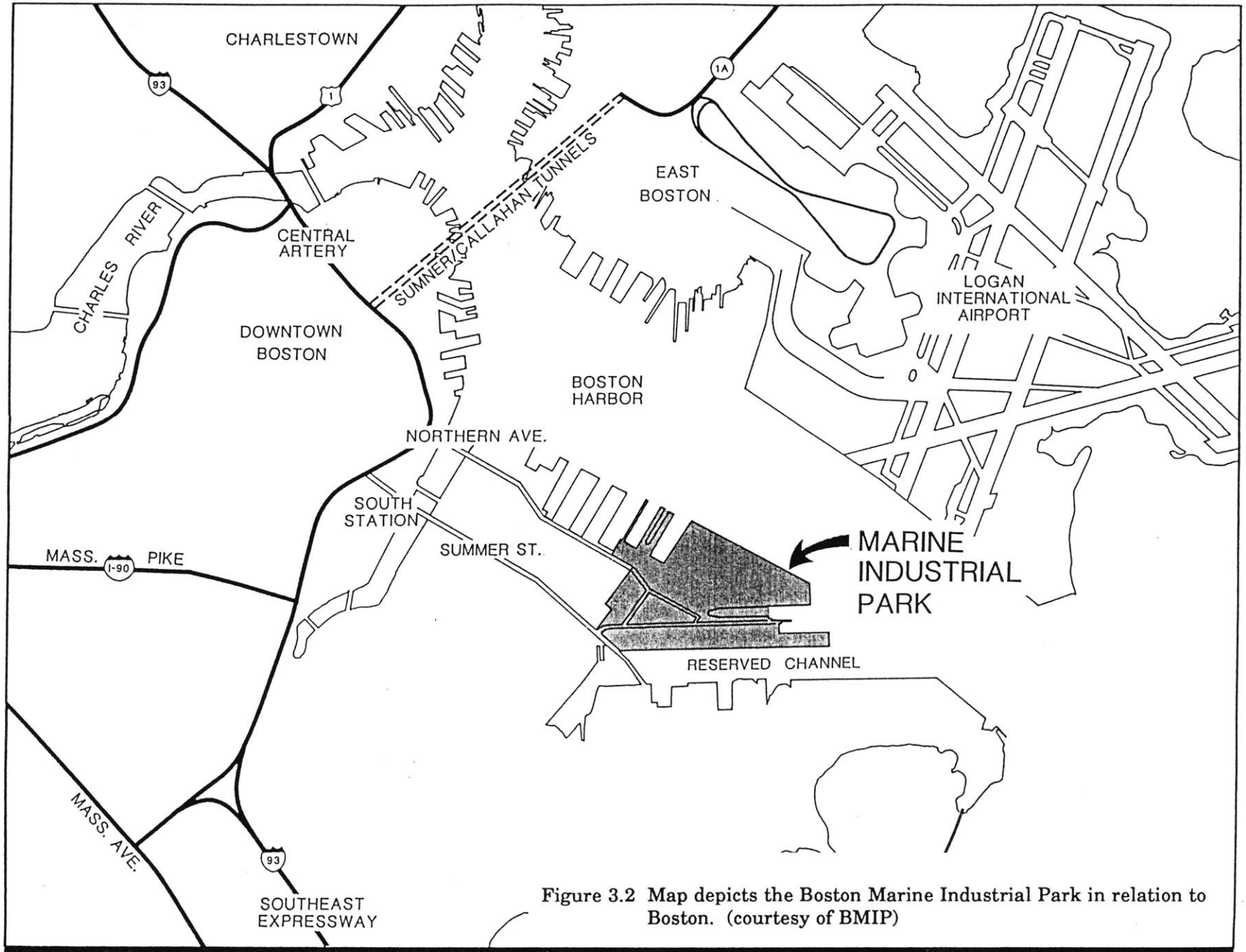


Figure 3.2 Map depicts the Boston Marine Industrial Park in relation to Boston. (courtesy of BMIP)

## Vicinity Map

Raymond L. Flynn, Mayor
Stuart J. Vidockler, Chairman
Donald A. Gillis, Executive Director

**EDIC/Boston**
ECONOMIC DEVELOPMENT and
INDUSTRIAL CORPORATION
38 Chauncy Street, Boston, MA 02111
(617) 725-3342

an industrial reuse.[3] The authors of the study reasoned that this reuse was appropriate because of the site's proximity to similar adjacent uses, its land use history, the lack of nearby residential development, and its accessibility to regional and inter-regional expressways. Further, the proximity to Boston's Logan Airport implied at the time that an industrial use was desirable since the airport's noise disturbance precluded higher uses like housing. Ironically, this negative amenity which forced industrial development is today given high economic priority due to airport-industry linkage.[4]

The development of the adjacent Boston Army Base (also known as the Boston Army Terminal) represents the second chapter in the BMIP's creation. In 1982, the army announced plans to cease operations at the 31-acre site and relocate. This left the EDIC with the opportunity to acquire one of the largest buildings in Boston -- Building 114. The site, owned by the Army for 70 years, still holds vivid memories for the thousands of men who debarked from it during World War 11. Built at the beginning of World War I, the structure, which measures one-third of a mile long by 125 feet and rises eight stories, was designed to store trucks and tanks. Its sturdy construction, 14 foot high ceilings, many freight and elevator shafts suggested that the building had great potential for renovation. Realizing the benefits of the already established BMIP, the addition of the army terminal helped to enhance the overall image of the site, and catalyze the park's development. In both the naval annex and army base stages, planners first looked to the site's distinctiveness, in terms of its location and site features, to formulate a development strategy.

### 3.3 Site Attributes

The existing built form and infrastructure were the second critical determinant in the site's redevelopment potential. Generally well-maintained by the U.S. Navy through its years of operation, the annex was

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[3]EDIC (1975).,p.4, based on the *Engineering Survey of the Boston Naval Shipyard for the EDIC*, Booz, Allen & Hamilton, Inc. August 23,1974.
[4]EDIC (1975). p.3.

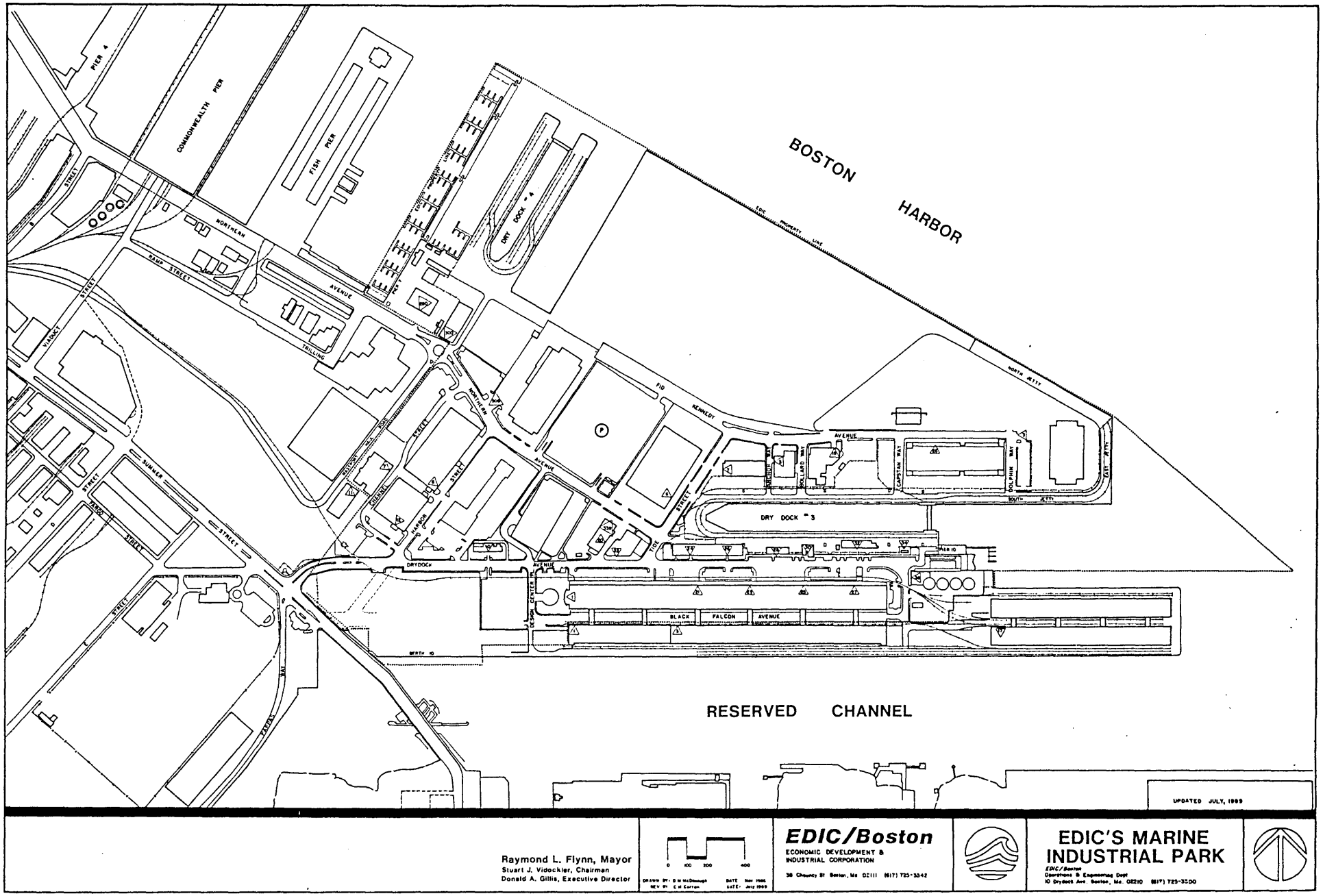


Figure 3.3 Site Map of the Boston Marine Industrial Park's 191 acres.
(courtesy of BMIP)

nonetheless quite susceptible to rapid deterioration at the time of its conveyance to the EDIC. After the site had been slated for decommissioning, and the Navy had ceased operations in July of 1974, the General Services Administration (GSA) of the Federal government maintained and protected the site for over a year. The GSA then announced that it lacked funds to sustain this operation. In November of 1975, EDIC assumed this obligation, although it did not yet own the annex. This was a prudent step, since in a similar case at the Brooklyn Navy Yard, the neglect of maintenance duties during the period of disposition cost the city well over one million dollars. The care taken by EDIC helped considerably in protecting the value in the yard's waterfront facilities, buildings and infrastructure.

### 3.3.1 Buildings

At the time of the EDIC proposed redevelopment plan, the existing conditions of the annex's buildings were mixed. The yard's most significant structures included five major industrial buildings, two warehouses and many support buildings. The Booz, Allen & Hamilton survey reported that while several of the structures could be utilized with minor repair work, the majority needed at best major repairs, but others would best be demolished. The excerpted table below summarizes the results of the building survey.[5]

| Section of Buildings | In Fair or Poor Condition |
|---|---|
| Roofs, gutters, flashing | 61% |
| Floors | 48% |
| Exterior walls, windows, doors | 91% |
| Plumbing and heating | 78% |
| Electricity and Lighting | 83% |

The study found that the most promising part of the structures were their floors and foundations. Addressing the conditions of the buildings would be a major component of the development program.

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[5]EDIC (1975). p.18.

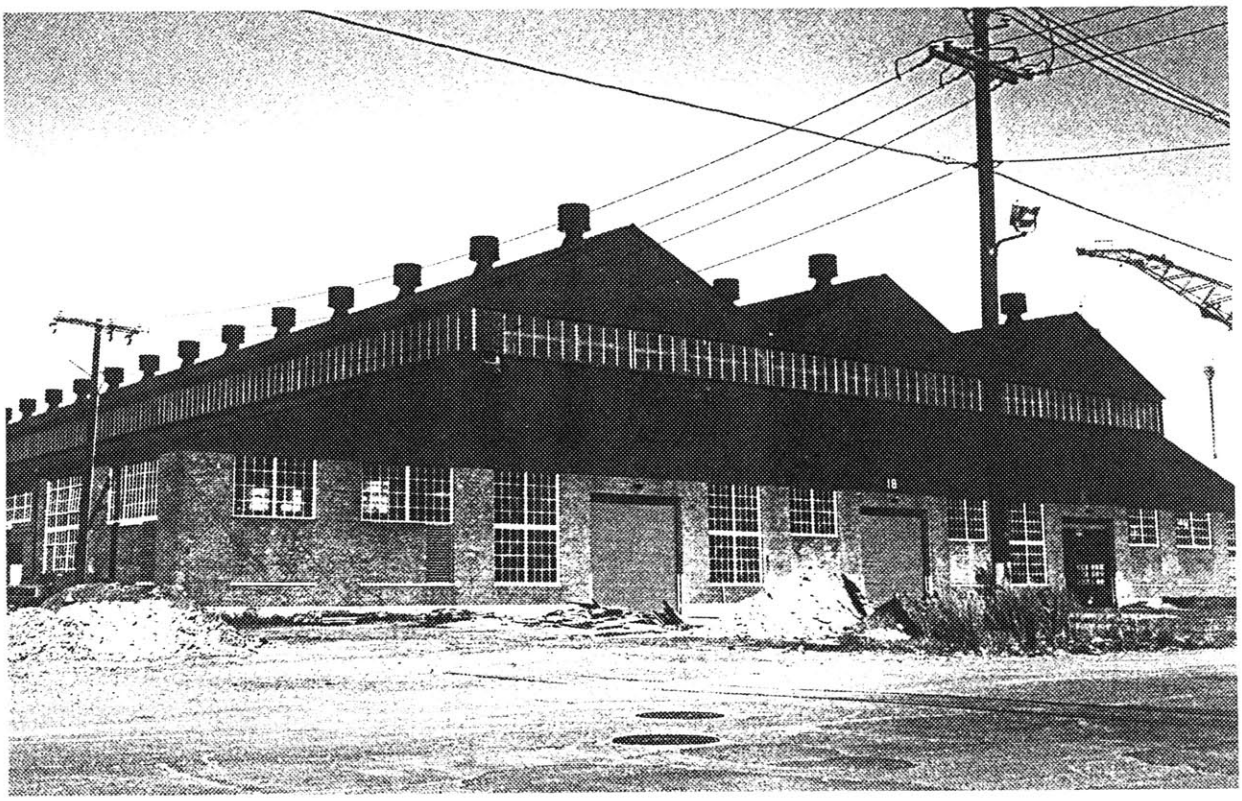

Figure 3.4 Building 18, a ship barn, typifies the tremendous buildings found on these derelict sites. It is now home to J.J. Daly - a distributor of business forms. (photo courtesy of BMIP)

A second consideration of the suitability of the site for building was its surface condition. A large tract of land, roughly 167 acres, the naval annex was built on was fill -- flat and quite suitable for industrial construction. This land, which was reclaimed from the inner harbor, was quite similar to land elsewhere in Boston. In fact, bedrock was encountered from 35 to 98 feet below the surface, which implied that any type of construction, including those with heavy foundations was permissible on the site. Furthermore, a large percentage of the site was open. At the time of the conveyance to EDIC, the site had a building density of only 10,908 square feet per acre of land.[6] This large amount of open tract land, not only provided the possibility for new buildings, but also gave the developer the luxury of employing land intensive amenities such as parking at a very small cost.

Not only were the physical determinants of the site hospitable for development, but the existing zoning of the property enabled practically any

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[6]EDIC (1975). p 9.

use for the site. At the time, the tract was zoned W-2 which allowed for "public services, office, display or sales space, wholesale business or storage, water freight or passenger terminals, any industrial use which required waterfront access, and any ancillary use incidental to a permitted use." These included most types of housing. Thus, existing zoning was a positive factor in the BMIP development.

### 3.3.2 Waterfront Facilities

To capitalize on the benefits of water access, the EDIC needed to make significant expenditures in marine construction for docks and piers which already existed on the site. The existing waterfront infrastructure at the time of the proposed park is shown. With the exception of the Drydocks 3 & 4, the remaining structures including Piers 1-8, the jetties, and the bulkheads were all in need of significant repair or demolition. Since, the main value of the facilities were in the drydocks, the EDIC benefited from the fact that they needed only minor repairs.

### 3.3.3 Infrastructure

A third and fundamental consideration for the feasibility of redeveloping the annex was the condition of its existing utility service. As the property had been operated by the navy for the past fifty years, the general condition of the infrastructure was good in comparison to other derelict sites. However, in the ten years prior to disposition, the Navy performed little up-keep, and certain costly parts of several systems were allowed to deteriorate to the point of obsolescence. The on-site systems included sanitary, storm drains, fresh water, steam distribution and electric power distribution systems. By the virtue of the yard's maritime locale, it had been subjected to harsh, corrosive conditions which shortened the average usefulness of these types of services. The steam service was identified as too costly to operate given its condition; the fresh water system with its weakened joints and asbestos lined concrete pipes presented the largest infrastructure impediment.

The army base development stage was not dissimilar in site conditions from the naval annex. Along with its excellent location,

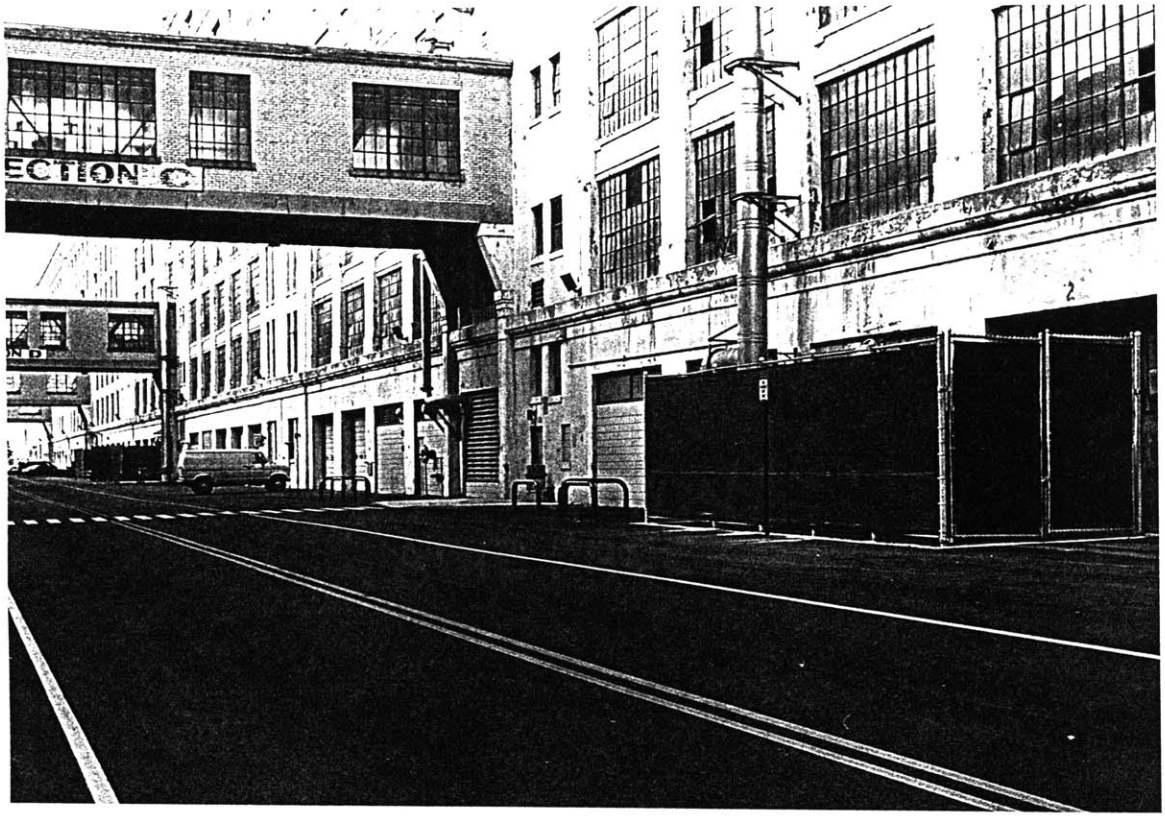

Figure 3.5 EDIC utilized a combination of local and federal money to repair infrastructure such as this roadway. (photo courtesy of BMIP)

waterfront and rail access, the terminal brought with it many of the same problems as the annex, namely in utilities and infrastructure. However, the most glaring difference between the two was the value of Building 114. The huge, eight-story building had excellent potential for sub-division for smaller users, and because of its sound construction, had the ability to accommodate heavy machinery on its upper floors. Furthermore, the building was actually a collection of six identical buildings placed together. With a $75,000 grant from the Department of Defense, the EDIC commissioned a study to ascertain the scope and cost of renovations. The consultants determined that new mechanical, electrical and utility systems for the building would be needed.[7] The challenge now became to see if the benefits of redevelopment could outweigh these significant costs.

[7]City of Boston (1982).*City Record*, Boston, MA, May 17, 1982, p.318.

### 3.3.4 Location and Transportation Access

Although the South Boston Naval Annex served an auxiliary function to the Charleston Navy Yard, it occupied a larger acreage. Located at the mouth of Boston's Inner harbor about two miles south-east from the Charleston Yard, the annex was well suited to industrial marine redevelopment. With roughly 100 acres on the main channel of the Boston Harbor, enhanced by a 35-40 foot water depth at wharf-side, the annex could readily accommodate any of the size of the marine traffic which passed through the Harbor. The area was already bounded by many heavy industrial users in the Port. In addition to the site's excellent facility to handle water transportation, the EDIC examined the conditions concerning road and rail access.

The BMIP was at the time of its creation, and still is today, well-served by a road transportation network to both regional and inter-regional expressways. The park lies about one and one-half miles from the Massachusetts Turnpike-Central Artery interchange. Several combinations of connector streets make this access reasonable. In addition, the EDIC proposed several routes to minimize the community disruption due to truck traffic. Traffic impact studies suggested that the projected traffic demands from the site's redevelopment would be compatible with the existing conditions.[8]

Another important spatial consideration was the site's accessibility to rail. At the time of its conversion, the naval annex was served by the Penn-Central Railroad right-of-way. The number of grade crossings on this route became an issue, and part of the redevelopment plan addressed this issue. The site was also well-linked to the Boston subway, with bus service from the site to MBTA stations in South Boston, South Station and Haymarket. Thus, the site's location and existing intermodal ability among water, rail and road services were extremely beneficial development assets.

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[8]EDIC (1975). p.28.

### 3.4 Development Strategy and Implementation

In light of the site context and characteristics and the prevailing market conditions of the Boston economy at the time, the EDIC formulated several project objectives for the BMIP. The first was job creation -- a hope for 2,000 new jobs by 1985. The second was to restore industry to the City of Boston by providing good space at competitive rents. The third goal was to bolster municipal fiscal stability through an increase in property tax revenue. Other objectives included enhancing the competitive features of the Boston waterfront to its users, and insuring the community of South Boston participated in the process. The EDIC also stated three guidelines which would insure that short-run actions would not preclude any long term solution for the site. These included: that the site while under EDIC would remain industrial in nature; that the site would not be sold piecemeal during the development process; and that new construction on site would be minimized until a final land-use plan had been formalized.[9] To achieve these goals, the EDIC outlined a program based on financial strength, marketing and timing.

The Building 114 renovation program had slightly more directed goals. At the time, the City of Boston was threatened with the potential flight of many garment manufacturers from the Chinatown district. Dispossessed by increased land rents due to office construction, firms found it increasingly difficult to manage their light industrial activities, which summed in aggregate ranked second in the city's economy. Realizing that time was of the essence, EDIC planners felt that the enormity of Building 114 could easily accommodate the needs of these manufacturers, but a workable plan was needed before these firms folded or left town. An economic study of the needs of garment manufacturers showed that 28 garment companies which had to potential to relocate would occupy at their present size, 670,300 square feet, or a little less than half of Building 114's 1,650,000 square feet. This discrepancy ultimately led the EDIC, to develop Building 114 in two separate projects, the Bronstein Industrial Center to house the light manufacturing companies and garment trades, and the Boston Design Center, a gallery of wholesale furniture and furnishings.

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[9]EDIC (1975). p.78.

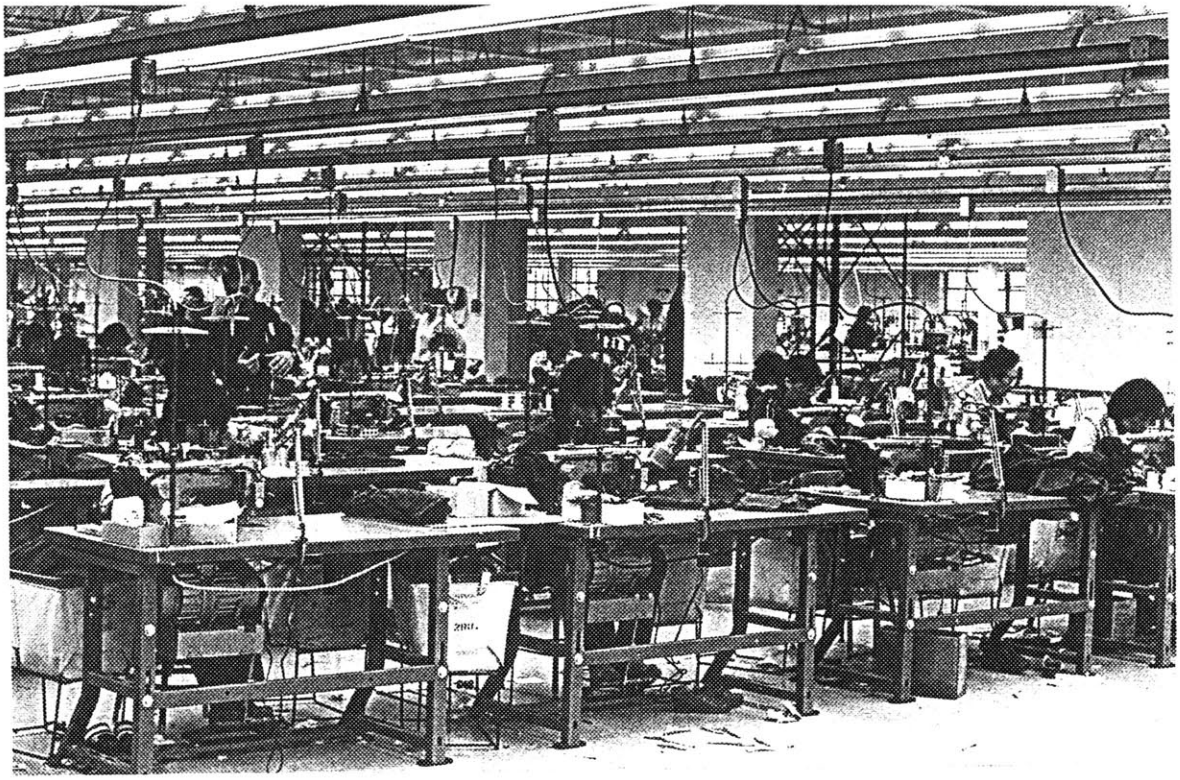

Figure 3.6 The garment workers of the Bronstein Industrial Center. (photo courtesy of BMIP)

Development of the Design Center was a separate private development undertaken by a partnership between Richard Flier Interests and the Dallas Market Center.

### 3.5 Financing

The EDIC proposed in 1976 to purchase the naval annex site from the General Services Administration for $4.9 million. This agreed-upon price, reflecting the GSA appraisal of market rates, included $4.2 million for the 161 acres and $700,000 for property -- cranes, machine tools and the like. The proposed funding came from a Massachusetts Land Bank purchase money mortgage which obligated the EDIC to make interest only payments for the first five years, at which time the debt would be refinanced. In their proposal, the EDIC outlined a three stage capital improvement program over the five years. Based on rent projections, the pro-forma analysis of the project suggested a positive cash flow in both the best and worst case scenarios.

The availability of public money during the creation of BMIP was a indispensable ingredient in its success. EDIC officials found that it was absolutely critical to find some means of public support for rebuilding the infra-structure. For instance, the park today is bounded by almost 2 miles of waterfront bulkhead. The tremendous expense in repairing these deteriorating structures could not be supported by free and clear income from rental revenues. Thus, the EDIC took a two-fold attack. First, they sought large and small public grants, and issued bonds to pay for infra-structure improvement. A large portion of the park was renovated through successfully obtained Urban Development Action Grants (UDAG) and Economic Development Administration matching grants. The latter was extended provided that the city or state would match the funds. The EDIC also made use of several General Obligation Bonds which were granted through the city to pay for infrastructure improvements. With concerns such as utilities and streets provided for, the EDIC concentrated its efforts on redeveloping certain buildings in a strategic order that depended on the needs of potential tenants. The rents derived from these buildings would help pay park expenses, pay the interest on the bonds and contribute towards the operating budget of the EDIC. As more buildings came on line, and the rent roll increased, the operation would become self-sustaining, help make the EDIC financially independent of the City. Eventually, the BMIP would even yield enough money to invest in new projects.

In the Army terminal case, the EDIC purchased the building from the GSA in 1983 for $3.5 million, and spent $1.4 million in pre-construction and site improvement work. The previously-conducted building survey suggested that renovation costs to the building itself would be on the order of $18 million dollars. In light of the dual project strategy, the EDIC utilized a mix of private and public funds for the industrial center, while the Design center was completely privately financed. To finance the Bronstein project took some creative maneuvering. By virtue of the EDIC's public mandate, it had access to several avenues of municipal monies. Three primary forms of financing, an Urban Action Development Grant (UDAG), an Industrial Revenue Bond and equity in the form of syndication were used to underwrite the $14.4 million dollar cost to renovate the Bronstein Center. The EDIC received $3.7 million dollars from the Federal Government's UDAG grant at a three percent interest rate. The Industrial Revenue

Figure 3.7 The BMIP's Building 114 -- eight stories tall, a third of a mile long. (photo courtesy of BMIP)

Bond, backed by letters of credit supplied to the EDIC by two Boston Banks, raised $6 million dollars. The remaining sum came from equity syndication.[10] While investors were initially skeptical about the project's success, they were lured by the 20% tax credit for renovating a building over 40 years old, in addition they benefited from preferntial tax treatment prior to the Tax Reform Act of 1986. By leasing the ground under the building and selling the improvements to the syndication, EDIC structured the deal such that the investors were able to capitalize on these benefits.

### 3.6 Marketing

The marketing program was fundamental to the success of the BMIP. Like the development of the park itself, this element was divided into several stages. First, the EDIC concentrated on marine users, secondly on general manufacturing firms who were being forced out of the city by high space rents, and finally on a new market of service goods producers and service industry suppliers who valued the BMIP's many advantages. By reducing the park's reliance on any one of the three tenant groups by aiming at all three, the EDIC managed to diversify the risk of tenant turnover due to a downswing in any one sector. Additionally, the majority of these firms are small, thus no one makes up a significant share of the rent roll. Each marketing track proved successful because it was taken with a dedicated commitment to meet the individual needs of tenants.

A fundamental element of the BMIP plan was to integrate both marine and land-based users into the same park. The original intention in the creation of the BMIP was to preserve this site for the water dependent users who were once vital to the area economy. The EDIC directed efforts to accommodate large indigenous firms whose current existence was being threatened by higher space rents. Several ship building companies, notably General Ship, were maintained, as well as, the smaller specialized repair companies who accompany them. A second major marine presence was established with the creation of the 30-acre Massport Marine Terminal along the park's prime marine frontage. The long term lease between the

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[10]Beynard, M. D. (1988). (ed.) *Business and Industrial Park Development Handbook.* ULI- The Urban Land Institute, Washington, p. 194.

EDIC and the state's transportation authority, Massport, provided for the creation of a high-tech container terminal and break-bulk cargo handling facility whose primary user today is the Subaru automobile company. However, the realization that marine industries could not support the park led the EDIC to explore land-based users for the marine property.

As in the case of water-dependent users, the EDIC chose to pursue a strategy to fit new land-based users into existing space, while concurrently making modifications to space not presently suited to market needs. Based on the site features analysis, planners inventoried the type of space, and pinpointed each potential user category. The table below summaries the various use categories and distribution of built space.[11]

| Use | Square Feet | % of Distribution |
|---|---|---|
| Office | 96,878 | 6.8 |
| Light Manufacturing | 140,935 | 9.9 |
| Heavy Manufacturing (!st floor space) | 370,841 | 26.1 |
| Heavy Manufacturing (loft space) | 154,264 | 10.9 |
| Dead Storage | 47,484 | 3.4 |
| Light Mfg. and/or Warehousing | 608,778 | 42.9 |
| TOTAL | 1,418,880 | 100% |

The EDIC then compiled a list of industries, based upon their analysis, who all things equal (e.g. rents, access, etc.) would prefer an urban location to a suburban one. These included the heavy industrial classifications: SIC 3444 sheet metal work, SIC 3551 food products machinery, and SIC 3564 blowers, exhaust and ventilating fans. These industries, in addition to others were targeted for the heavy manufacturing spaces. The market for warehousing space was not as specified, although planners felt it more competitive. Nonetheless, the EDIC felt that the urban location could prevail over its suburban competitors, especially in cases of distribution centers for urban outlets. Light manufacturing was one of the most intensely pursued industrial divisions because it provided a higher number of jobs per square foot. The EDIC identified the prevailing light manufacturing candidates in New England mostly likely for recruitment. These included: male, suits & outerwear; women's suits & coats; wood partitions,

[11]EDIC (1975). p.66.

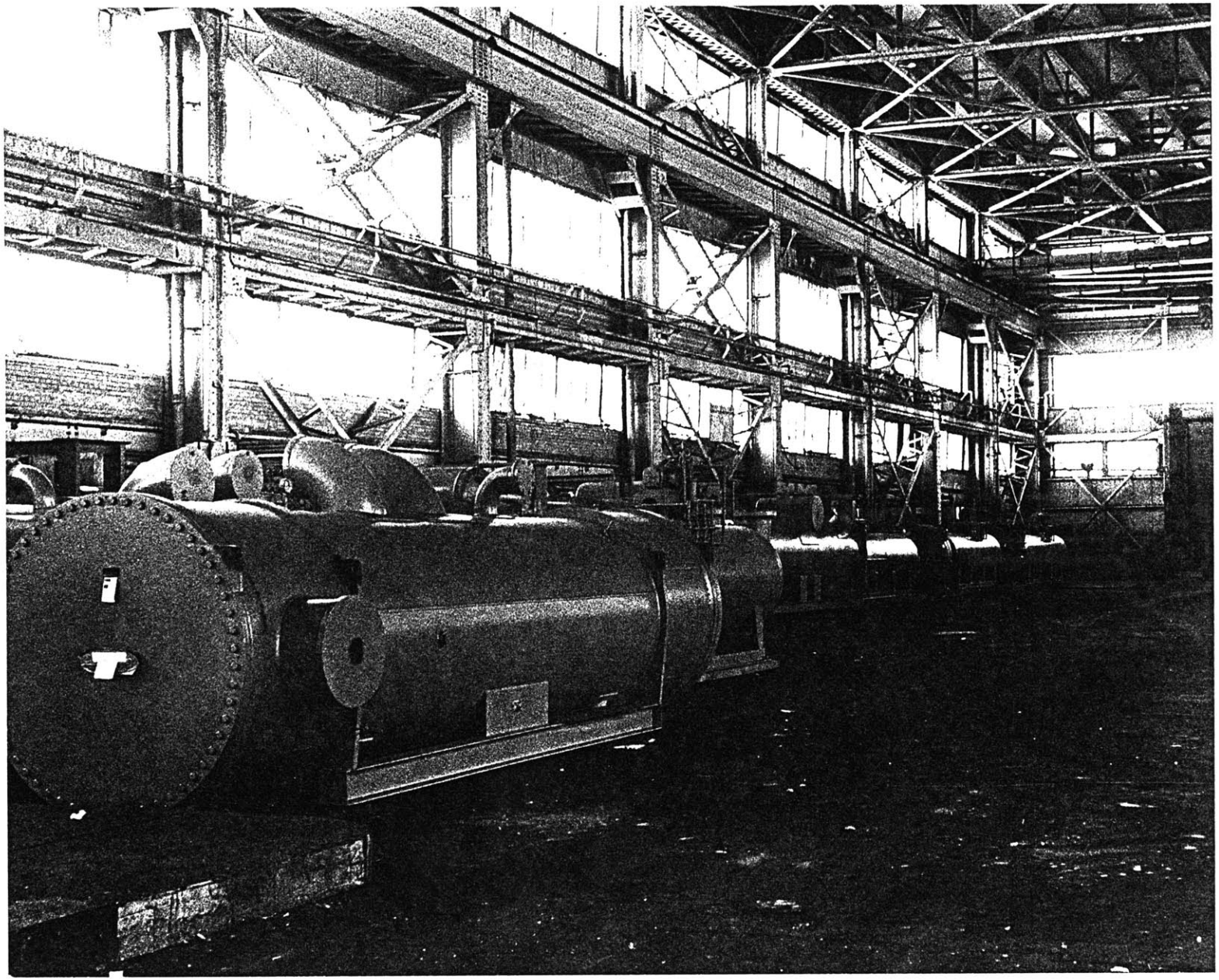

Figure 3.8 The interior of a BMIP fabrication shop provides excellent space for a marine boiler manufacturer. (photo courtesy of BMIP)

shelving and office fixtures; bags- except textile; books, publishing and printing; commercial printing; typesetting; photoengraving; ophthalmic goods; signs and advertising displays.

To attract tenants to the site, the EDIC proposed an incentive lease policy. The lease would be structured on a net basis with the lessee assuming the costs of heat, electricity and any additional services needed for their proposed use. While brokers anticipated that the market would value this space lower than suburban offerings because of the inefficiency of utility systems like heat, the EDIC felt that the locational advantage would make up for this shortfall. As well, the EDIC worked with each prospective tenant to custom design a package to their needs. Varying the lease configurations by altering payment sizes and timing intervals, EDIC based its rent collection schedules on each firm's ability to make payments. Finally, although the EDIC originally planned to make in lieu payments of city property tax payments of 30% of the tenant income to attract small users, this measure was never found necessary. Rather, while the EDIC is willing to provide firms assistance in obtaining favorable outside financing, technical training and business management advice, it avoids subsidizing private business ventures. There is very little use of tax exempt financing and city provided subsidizes directly through the EDIC.

Various marketing efforts were slow going at first. Building 33, the first renovation project, took over six months to attract its first tenant, and over 1 year to reach full occupancy in 1980. Marketers began to target firms which were suppliers for downtown businesses, as well as servicers like business couriers, printers and product distributors. This strategy worked well as a market niche of small companies who had difficulty finding space to meet their needs downtown, lacked the manpower for security, and required reasonable rental levels found BMIP quite attractive. Flexibility was key in this process. Initially, when the Bronstein Industrial Center was financed, the EDIC obtained lease-up commitments for 70% of the space. However, during the two year construction period many of these firms broke their commitments. The EDIC was able to successfully renegotiate the terms of its financing based on their conviction, complemented by the testimony of local brokers, that the market for these small users existed. Today the space is 100% leased. About 40% of the space is leased to publishing and printing firms, 25% to garment companies and the remainder to companies which produce goods for service industries. Basic leasable units are

17,500 square feet with an allotment of 2,500; 5,000 and 7,500 square foot smaller sub-divisions.[12]

The EDIC also bolstered their marking efforts through good public exposure and community involvement. The attempt to restore an industrial base and working jobs to the waterfront was viewed as a noble pursuit by the local community. Further, the progress happening in their backyard had supplanted fears of eventual dereliction and the abandonment of their neighborhoods. Sponsoring activities like the Annual St. Patrick's Day Parade in South Boston also drew attention to the park. Hundreds of thousands of Boston area residents visited the park in the summer of 1990 when the Aircraft carrier U.S.S. John F. Kennedy was moored at the park's North Wharf. By focusing media attention on their activities, the EDIC helped generate both community support and political pressure to further their ends. The park was 90% leased in 1992 with many of the lease terms being 6 to 12 years. The average square foot annualized price ranges from $3- $4, which is in line with prevailing market rates. The net leases include pro-rata share of commons maintenance costs, as well as utility expenses.

### 3.7 Site Planning and Building

The physical planning, construction and phasing of the BMIP was also critical in its success. Beginning in 1979 with the renovation of Building 33, continuing through the grand opening of Building 114, and to today, when several small built-outs and park projects are in the works, the momentum of reclaiming this once derelict site, has remained steady and acted as a model for the fledging firms that now call it home. The first important mark of the EDIC model is an incremental approach. Using the available resources at each given point in time, planners sought to maximize the impact of each improvement subject to each class of potential new tenant. Restoration of drydocks and several piers, allowed General Ship to operate, and competitively seek ship repair contracts, at a time in the early 1980s when the Reagan Administration's policy was to retrofit the Navy fleet. With the addition of light manufacturing in various buildings, most noticeably in Building 114, electrical systems needed to be upgraded. Finally, as smaller users came to the park, emphasis shifted towards build-outs and

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[12]Beynard, M. D. (1988). (ed.) *Business and Industrial Park Development Handbook.* ULI- The Urban Land Institute, Washington, p. 196.

accommodating individual needs. Rather than speculatively subdividing space like initial efforts, buildings were re-engineered only after close to 80% in lease-up commitments were obtained. Instead of attempting to redevelop the park in one effort -- a plan neither financially feasible nor prudent in view of the market, the EDIC's tact was to develop small fires of industrial activity which would eventually overtake the area. This would happen as more firms learned of the site's quality space offering, its desirable characteristics like plentiful parking and off-street loading, its reasonable rents and pleasant working conditions.

In addition to timing, design was a second physical tool employed in rebuilding the park, helping to reinforce the goal of providing a clean, safe and efficient environment. Proper planning insured not only good traffic flow within the park and security, but also lent the BMIP a sense of place. Uniform signage, street ornamentation, visitor kiosks, and pedestrian amenities established a unifying theme between the varying buildings and uses. Furthermore as part of the EDIC's contribution to the Boston Harborwalk plan which called for pedestrian access to a significant portion of Boston's marine frontage, the addition of pocket parks, like a drydock observation area, and outlooks on the harbor, diminished the hard edges of a typical work place environment. Not only did these details help to attract new tenants by making good impressions, they indubitably aided existing firms by promoting good employee dispositions and in turn, increasing productivity.

In the early stages of the annex development, a code of urban design guidelines which monitored items like tenant improvements, open space, parking areas and vehicular access was established. The addition of the army terminal created a need to unify two distinctly separate areas. This was achieved by re-orienting the Building 114 front entrances to the ends of the building and altering the facade to make the building face into the site, rather than towards the wharf. Access was enhanced by the removal of two of the three rail- lines along the building and the widening of drydock avenue. The remaining rail line is still used at nights several times a week. The Boston Design Center's private developers lent a style to the building through a classic revival front entrance and center pediment. Gray, pink, green and red granite were designed around the white exterior of the building, and a marble lobby was built. After the demolition of two dilapidated structures in front of the building, a 19,000 square foot plaza

Figure 3.9 Landscaping, side walks and site amenities like this bus stop make the BMIP a pleasant place to work. The Boston Harborwalk plan puts focus on the marine character of the park (photo courtesy of BMIP)

was cobbled in front of the building with a centerpiece of the fifth casting of August Rodin's *Cybele* sculpture.

### 3.8 The Boston Marine Industrial Park Today

Today, the EDIC boast the BMIP to be 3.1 million square feet of "New Englands finest industrial/ manufacturing space."[13] The park is home to over 150 companies employing 3,500 workers. This companies include: The Boston Design Center, Leslie Fay (women's clothes), Au Bon Pain (The central bakery/distribution center for its retail outlets), General Ship, Subaru, Coastal Cement among others. While in retrospect, the plan to outfit this space for service and manufacturing industries which supply the needs of downtown firms seems self-evident, it was not the case ten years ago. Planners at the EDIC had a vision to provide a safe, affordable, well-

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[13]EDIC/ Boston (1990) *Growth in the Nineties: Perspectives for Strategic Economic Development in Boston.* EDIC, Boston.

located space for small to medium-sized companies to do business. Today, the park is self-sustaining -- helping to provide operating revenue to the EDIC and even surplus monies for new ventures. The case demonstrates how the EDIC used a place based strategy, irrespective of many negative market signals, to create a viable development. Rather than attempting to attribute the park's success to a set of factors -- like location, government assistance etc., one should realize that its is the process of examining the sites attributes in terms of the city's needs that makes this approach successful.

EDIC officials claim that the first step is to take a look around at what is happening in the city. Responding to needs of disgruntled existing local firms, in this case, the garment companies, led to the attraction of national firms. The Boston Design Center is a case in point. Small design companies were accommodated and larger firms then followed. Working with individual clients to satisfy their particular needs whether they were truck access, or large floor areas, the EDIC has managed to create a harmony in the park among its tenants. This fosters an atmosphere of enjoyable working conditions which both attracts new users, as well as, satisfies present ones. With excellent commuting conditions and plenty of parking, employees are spared much of the hassle of commuting to and from work. Instead, their day is spent in a pleasant community, alive with entrepreneurial spirit and business activity, yet absent of the congestion of downtown.

The BMIP development is significant because it marks a new way of think both about the work place, and the relation of public and private sectors in insuring its productivity. Without a public commitment to help restore the infrastructure, the BMIP project would never have been realized. The City's commitment to restoring this space for productive use, and its willingness to serve the business community demonstrate the integral relationship between the jobs and tax revenues that small businesses provide and the quality of life in a city. The EDIC also showed value can be created when initial market signs indicate otherwise. Finally, the BMIP is significant in being one of the first attempts nation-wide to provide a base for the service goods producers, suppliers and servicers that are vital to the functioning of the city's service based economy.

# SECTION 4

## A Model for Industrial Reuse

## 4.0 A Model for Industrial Reuse

The past two case studies suggest a means to achieve the purported, yet scarcely realized value in derelict land. While conventionally performed market analysis suggested that these sites had little redevelopment potential, and their accompanying economic development plans insisted that the city involved undertake grand efforts to restore industrial activities, real life practice proved differently. Rather, experience clearly demonstrates that by pursuing a carefully informed industrial reuse program, these former industrial sites may be restored to market-viable, productive centers of the economy providing thousands of newly created jobs. The objective of this chapter is to establish the motivation for undertaking such efforts; to define the concept presented in these two models; and to elaborate on important considerations in their redevelopment processes.

The cases chosen for this thesis are remarkably similar. Both former Navy yards - roughly the same in size and centrally located in a major metropolitan area - these sites were development successes in spite of conventional marketplace thought which forecasted failure. Further, they both became a well-occupied industrial park composed of marine and land based users. As evidenced by the case studies, each park's means to achieve this end exhibits important similarities and differences with the other. Thus, the two cases taken together propose a reuse scenario which is defined henceforth. The distinctions in their approaches are continually drawn upon to suggest various permutations in this concept.

### 4.1 The Decision to Act -- A Cost/Benefit Approach

A fundamental lesson drawn from the British experience with derelict land is that differently despoiled sites command different uses. The very basis of Bridges' purpose in authoring the text, *Surveying Derelict Land* is to devise a means to distinguish among types of dereliction and to present a list of developmental considerations for each possible case. The wealth of successful experiences in Britain ranges from reforestation projects over former strip-mines to renovation of former industrial sites. Various new uses include agriculture, forestry, housing, industry,

amenities, recreation and nature conservation. This thesis is interested in the one particular segment of these programs that has restored industrial uses to these sites.

The first step is to evaluate the potential costs and benefits of such an undertaking. However, conducting such a rigorous analysis of this problem is difficult, and has rarely been attempted.[1] Not only are the issues involved troublesome to qualify, but the onerous task of measuring and quantifying these considerations is, by the present economic means, wrought with complexity and almost certainly doomed to failure. The environmental aspects, in particular, do not have readily available market prices, and severely confound such a process. Rather, the majority of the British efforts have been motivated by a sense of moral responsibility or stewardship for their lands. A classic example is as follows:[2]

> Industry and other users of land must realize their responsibilities. It seems a terrible indictment on us all if users of land only act when prompted by planners. They can and should do what is required to preserve our land heritage without pressure. After all, we all stand to gain or lose by what is done or not done.

In addition, the recognition of the irreversibility of land, that is once it is developed for industry, it can never regain its productivity as an environmental consumption good, has prompted laws which constrain "green field" development and focus efforts on reusing derelict land. Thus, in a macro sense, establishing the motivation to reuse derelict land, given the nature of the problem and the investment of economic analysis needed to attempt such a feat, is a heroic endeavor. Furthermore, the potential for motivation like that of the British moral conviction is conspicuously absent in this country. However, on a micro level, weighing the costs and benefits of redevelopment is achieved more readily, especially in the case of industrial reuse where factors have market prices attached to them.

Back-of-the-envelope calculations to determine the profitability of redeveloping a site for industry are often so discouraging that most developers can not justify the cost of pursuing a professional market study.

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[1]University of Liverpool Environmental Advisory Unit (1987). *Transforming our Waste Land: The Way Forward.* Her Majesty's Stationary Office, London, England. p.92.
[2]University of Liverpool Environmental Advisory Unit (1987). p.99.

Figure 4.1 A stretch of roadway in Boston's Marine Industrial Park prior to redevelopment. (photo courtesy of BMIP)

In both the cases, government took action only after a period of several years when no private interest was expressed in the navy yards. Since the emergence of large tract derelict urban sites has come to bear through the failing of marketplace developers to concern themselves with these opportunities, the impetus to action has traditionally been viewed through the lense of municipal economic development as opposed to the private sector. Experience from both cases suggest that exists future potential for a private/public sector partnership. This will be evident as the process of development is explained later.

### 4.1.1 A New Perspective on Economic Development

Generally the aim of economic development has been to enhance the local private sector economy through government sponsored actions. Such efforts are justified because the broad shifts and major transformations in the national economy induce structural changes in the daily workings of local markets. Adjustments to these pressures on the local level are not simply the paper calculations of government economists, but are real -- missed mortgage payments, municipal library closures and worker lay-offs. Slowed by attitudinal and institutional barriers, revitalization of the economy has demonstrated the need of catalytic government assistance and planning.[3]

In the past two decades, economic development programs have centered on three goals: increasing employment or reducing underemployment, increasing personal income, and improving the fiscal base of the community. Each of these are inner-related dynamic functions as a change in one induces changes in the other two, which in turn effect the original factor. Five variables have been shown to influence these goals. They are: the migration of employees, the change in the employment size of existing firms, the birth and death rates of firms, the location of private expenditures and public expenditure patterns.[4] The thinking about how to

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[3]Luke, J. S., Ventriss, C., Reed, B. J., and Reed, C. M. (1988). *Managing Economic Development: A guide to State and Local Leadership Strategies.* Jossey-Bass, San Francisco, CA.Chapter 1.

[4]G.C. Pulver, "Community Economic Development Strategies" in Luke et al. (1988). p. 183.

affect these goals by utilizing the above variables has changed markedly during economic development's twenty year history. Traditionally, four approaches have been recognized to diversify and create new jobs:[5]

1) Attraction of business by recruiting enterprises from outside the region to relocate in the area.
2) Retention of companies that are considering locating in another area or closing their business operations.
3) Formation of new businesses driven by local entrepreneurs with good ideas and a business plan.
4) Expansion of existing enterprises to facilitate the growth of indigenous businesses.

Earlier efforts centered on the first two strategies, while planners today think in terms of the latter two. The distinction between these two policy groupings is shown by contrasting elements of each. The following list was compiled by University of Nebraska researchers to instruct government policy makers on how to view economic development.[6]

[5] Luke et al. (1988). p. 27.
[6] Luke et al. (1988). p. 27.

## Table 4.1

Economic Development Perspectives

| *Outdated Strategies* | *New Strategies* |
|---|---|
| Industrial attraction and plant relocation | Local, "homegrown" business enterprise development |
| Reliance on federal policy guidance and assistance | Reliance on state and local leadership |
| Focusing on large manufacturing firms | Focus on smaller and younger firms |
| Providing low cost labor | Providing skilled and flexible labor |
| Providing low cost-land and tax subsidies | Providing accessibility to advanced technology and financial capital |
| Expansion into regional and national markets | Expansion into international, global markets |
| Increasing jobs and employment opportunities | Wealth creation and increasing the number of employers |

Source: Luke, J.S. et al. (1988)

The shift in thinking described above is clearly demonstrated in the Brooklyn Navy Yard case. Early efforts by CLICK attempted to lure large manufacturing firms back into the city. After this failed, the BNYDC's process of fostering the growth of new enterprises and offering shelter to those indigenous firms threatened by pressures elsewhere in the city proved successful. Not only does this case follow approaches three and four from above, but results came through employing these *new strategies*. This new brand of economic development has several implications for the dinosaur sites discussed in this thesis. The first is an emphasis on the small business market. Not only has this approach been proven in the cases, but it confirms what scholars have for sometime recognized as the most important component in new job creation.

### 4.1.2 The Virtues of the Small Firm

A 1979 MIT watershed study conducted by David Birch, who studied 5.6 million businesses from 1969-1976, reported that two-thirds of all new jobs were created in firms with under 20 employees, and 80% were in firms with under 100 employees. His findings concluded that:[7]

- small independent firms, despite their difficulties in obtaining capital and their inherently high death rates, are the major generators of new jobs in the economy;
- employment growth in regions owing to the migration of establishments from one state to another is negligible;
- few of the new net jobs are created by larger, well-known corporations;
- job loses each year are about the same in every region of the country; and
- small firms are almost four times more likely to expand than contract, while larger firms are 50 percent more likely to shrink than grow.

Not only are small business more likely to produce new jobs and induce economic growth, but they also add less easily quantifiable benefits to the health of the community's economy. These, recognized by the University of Nebraska researchers include:

**Technological Innovations.** Several studies including one performed by the National Science Foundation and the National Science Board have reported that small firms develop over twice as many innovations as larger ones do. As well, they are more efficient per dollar of research money invested and per employee.[8]

**Responsiveness to the Community.** The size and specializations of small firms allow them to interact more easily with other small firms and produce a final product more quickly than one larger, integrated manufacturer. Since small firms are fully accountable for only one easily

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[7]David L. Birch, The Job Generation Process, Research Report prepared for the U.S. Economic Development Administration, in Luke et al. (1988). p. 72.

[8]Gellman Research Associates, Inc. *The Relationship Between Industrial Concentration, Firm size and Technological Innovation* (1982) prepared for the NSF, and the National Science Board, *Science Indicators* (1976) in Luke et al. (1988). p. 72.

distinguishable element or through-put in a productive process, they develop greater expertise in this task, and diligently insure its quality. In a larger sense, small firms have a greater interest in the welfare of the community because their tenuous existence is a direct function of the local economy. Thus, they are more likely to cooperate with government in solving problems than are larger employers whose interests are spread across many communities.

**Economic Diversity and Stability**. By having a large number of small business spread across many industries rather than several large firms with few markets, a local economy is less susceptible to the risk of economic downturns and business cycles. Local employers are also more willing to accept lower marginal profit levels than larger firms who have options to relocate to new areas.

**Local Spending**. A final critical concern is that profits earned by smaller firms are most likely returned to the wealth of the area, while those of larger companies often are consumed in the area housing the corporate headquarters, or by shareholders located around the nation.

In addition to its favorable record of new job creation, and other economic benefits, a small firm approach is favored by today's current business conditions by four primary factors.[9] First, the deregulation of industry in the late 1970s and 1980s has allowed smaller firms access to markets once monopolized by corporate monoliths. Second, the shake-down of middle management by larger firms during this era produced a pool of skilled managers capable of initiating start-up businesses. Further, the trend for today's business graduates is towards the "gold-collar" worker described in R. Kelly's book of the same name as an intelligent worker who creates new opportunities. This is a departure from William Whyte's well-known 1960s characterization of the "organization man" who looked to climb the corporate latter of large existing firms. Third, the gravitation towards a service sector economy stimulates new business because they require lower start-up costs than do manufacturing companies. Finally, a

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[9]Luke et al. (1988). p. 75.

trend has developed in both the public and private sector to contract out specific jobs rather than perform the tasks all in one large firm. This may be due to advances in communication which foster business linkages, and advents in transportation which have made long-distance business more viable.

To capitalize on the current climate, and reap the benefits of small businesses, municipalities must understand how small businesses begin, and what conditions they need for growth. Research on business start-ups has shown that there are three stages in new business development. The first is the personal conceptualization of the idea (known as the personal dimension); the second stage is the formation of the business venture (known as the organizational dimension); the third stage is when the business seeks out resources and responds to its environment (known as the ecological dimension).[10] State and local economic development efforts are most easily aimed at the third dimension. Having reviewed seventeen publications on these environmental variables, researchers identified twelve basic environmental traits which influence the creation of new ventures. They are venture capital availability, presence of experienced entrepreneurs, technically skilled work force, accessibility of suppliers, accessibility of customers or new markets, general government influences, proximity to universities, availability of land or facilities, accessibility of transportation, attitude of area population, availability of supporting services, quality of life.[11] To achieve these factors and begin on the road to small business creation, communities must strategically plan for development. This is the second outcome of the shift in economic development thought, that is, a city must begin with a process of analyzing its strengths and weaknesses before implementing a program designed for any given industry.

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[10]A.H. Van de Ven et al., "Designing New Business Start-ups: Entrepreneurial, Organizational, and Ecological Considerations", (1984) in Luke et al. (1988). p. 78.
[11]A.V. Bruno et al., "The Environment for Entrepreneurship", (1982), in Luke et al. (1988). p. 78.

### 4.3 Creation of a Development Strategy

The prevailing logic in economic development thought today is to take a strategic approach to planning much like private firms do for their businesses. This process certainly has important implications for development of the urban industrial sites addressed in this thesis. The reuse of these TOADS should complement the findings of strategic analysis surveys. However, a distinction must be made between the current model in strategic planning, and the lesson of this thesis. Namely, if the essence of economic development is the idea that businesses should come to population centers, as opposed to the reverse, this argument is predicated on the proposition that this population center offers a real distinctive benefit to make this economically justifiable transaction. Tax incentives, regulatory relief, subsidized labor rates, discounted space leases etc... are nominal providers. In fact, in attempts to utilize combinations of these variables to attract businesses into distressed areas, namely the Enterprise Zone concept, these incentives have been shown to have little effect in the firms locational decision.[12] These advantages are offset by higher economic costs like insurance, transportation and others which are called for upon locating in the center. Instead, classical factors such as proximity to markets and raw materials, and non-traditional factors like amenities weigh much more in the firm's location decision.

Thus, it is the city's real elements, the physical determinants which led to the city's original founding: its locational attributes and natural features - as well as those characteristics that it developed over time - a skilled and educated work force - which deserve attention. Too often planners have attempted to change the character of an area, by introducing a new industry. Rather, if a place-based strategy towards economic development is to be successful, the city's character must be identified, and used as an asset. Thus, the first step in identifying the scheme for a site comes from determining the city's position in the national economy vis á vis these factors. Metropolitan areas differ markedly in their histories, present compositions and future potentials.

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[12]Dabney, D. Y. (1991). "Do Enterprise Zone Incentives Affect Business Location Decisions?" *Economic Development Quarterly* 5 (4), pp. 325-334.

Generally, an overview of the city's largest industries by employment, income and revenues will give the investigator a sense of the city's character. This may be further refined by a number of economic tools. Shift-share analysis and export based studies pinpoint a city's strengths by industrial classifications. However, these methods can limit thinking. When a program is designed too specifically to one industry, it is risky. Originally, Building 114 in the BMIP had been intended for the Boston garment trade, but when this group retracted, a flexible strategy allowed Boston planners to change horses in the middle of the stream. Thus, more general industrial classifications of cities are preferable to specifically keying in on any one industry.

In light of the sweeping economic transformation of the national economy, researchers have classified major metropolitan areas into three groups based on the composition of their economy. The first category, *Diversified Service Centers*, are cities which, while undergoing major restructuring of their local economies,[13] "are also doing considerable rebuilding through growth in corporate offices, producer services firms, wholesaling, transport, communications and somewhat more selectively, universities, hospitals and public sector services." The second category, *Specialized Service Centers*, have more difficultly in adjusting to the service economy because of a past heavy reliance on manufacturing. The final group of cities are production centers. These areas, once hosts to traditional, low paying assembly jobs have had difficulty competing with overseas challengers. Below is a partial listing of these groups:[14]

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[13]T.J. Noyelle, "The Service Era: Focusing Public Policy on People and Places", (1982) as cited in Luke et al. (1988), p. 78.

[14]T.J. Noyelle, "The Service Era: Focusing Public Policy on People and Places", (1982) in Luke et al. (1988). p. 79.

**Table 4.2**

Select U.S. Metropolitan Areas Classified by Major Types and Subtypes

| **Diversified Service Centers** | **Specialized Service Centers** | **Production Centers** |
|---|---|---|
| *National* | *Functional/ Nodal* | *Manufacturing* |
| New York | Detroit | Buffalo |
| Los Angeles | Pittsburg | Providence |
| Chicago | Newark, NJ | Worcester |
| San Francisco | Milwaukee | York |
| *Regional* | Hartford | Reading |
| Philadelphia | Rochester | Evansville |
| Boston | Greensboro | Erie |
| Dallas | Allentown | *Industrial Military* |
| St. Louis | Akron | San Diego |
| Baltimore | Paterson | Norfolk |
| Atlanta | Wilmington | El Paso |
| Miami | *Government and Education* | Charleston, SC |
| *Subregional* | Washington | Lexington |
| Memphis | Sacremento | Huntsville |
| Salt Lake City | New Haven | Charleston, W.V. |

Source: Luke et al. (1988)

Strategies for each group will vary. Since the case studies in this thesis happened in *diversified service centers*, the discussion which follows is most readily applicable to cities under this classification. That is not to say, with certain modifications pursuant to the customized needs of a city's character, a program cannot be designed for these other cities.

The service sector, contrary to what the name implies, requires produced goods to function. Aside from the human consumption needs of its workers, this type of economy demands goods both as inputs and through-puts in its own performance processes. For example, while the communications industry is considered a service, television production, a large component of this sector in New York City, is supported by a number of small goods-producing firms. Television studio sets need to be designed and constructed, likewise electrical and mechanical systems etc., in order for the show to go on. Corporate law offices demand goods to do their business -- custom-made furniture to fill board rooms, hand-crafted wooden partitions to build out space in offices, and personally-tailored shirts and suits for high profile lawyers to wear for business. Restaurants and hotels need specially printed matchbook covers, embroidered towels, custom-designed circular stairways, etc. Although the only evidence of a final product in the majority of these "service-sector" firms is a piece of paper - a

legal opinion, a consultant report, a hospital bill, a restaurant receipt - they consume many goods to get to this end. Likewise, the goods for these firms must be quickly delivered according to client specifications. The productivity of the service sector economy ultimately rests on the efficiency of the goods producing, distributing and servicing industries which support it. These firms by the nature of their mission must be small. They need established relationships with their clients, a knowledge of each customer's particular needs and an ability to mobilize quickly to fulfill orders. Thus, the reasons for insuring an environment for small businesses is further bolstered. Since there is strong evidence that the diversified service center cities above will continue to grow, the market for these accompanying *customized service goods* [15] will continue to grow as well. This implies a new bearing on the importance of location.

As discussed earlier in this thesis, the changes in industrial space needs (e.g., the increased flexibility of transport, and shift towards horizontal production) have dramatically impacted industrial location patterns. Almost all classes of industrial space have located in suburban or urban edge sites with good access and low land rents. This is not likely to change; economics dictates that large industries (e.g., food processing, textile manufacture, pharmaceutical production etc.) should produce in these locations. However, this thesis suggests that the shift towards a service sector economy, with its incipient rise in demand for *customized service goods*, creates a new industrial market who values proximity to the center city. Composed of small, specialized firms, this sector needs to be close to the large service industries located in downtown CBDs (e.g. FIRE). Since these companies supply the inputs in this service economy, the overall functioning of the city, whose dominant economic character is a clustering of these global services, depends very much on its environment for small firms. The emergence of large tracts of centrally-positioned urban land, such as military bases and marine heavy manufacturing sites, is an excellent space to locate these activities. Not only does the lower land rent, caused by surrounding noxious uses or features of dereliction, favor this market over higher land uses like office, retail and housing, but this

[15]Customized service goods is a concept created by the author.

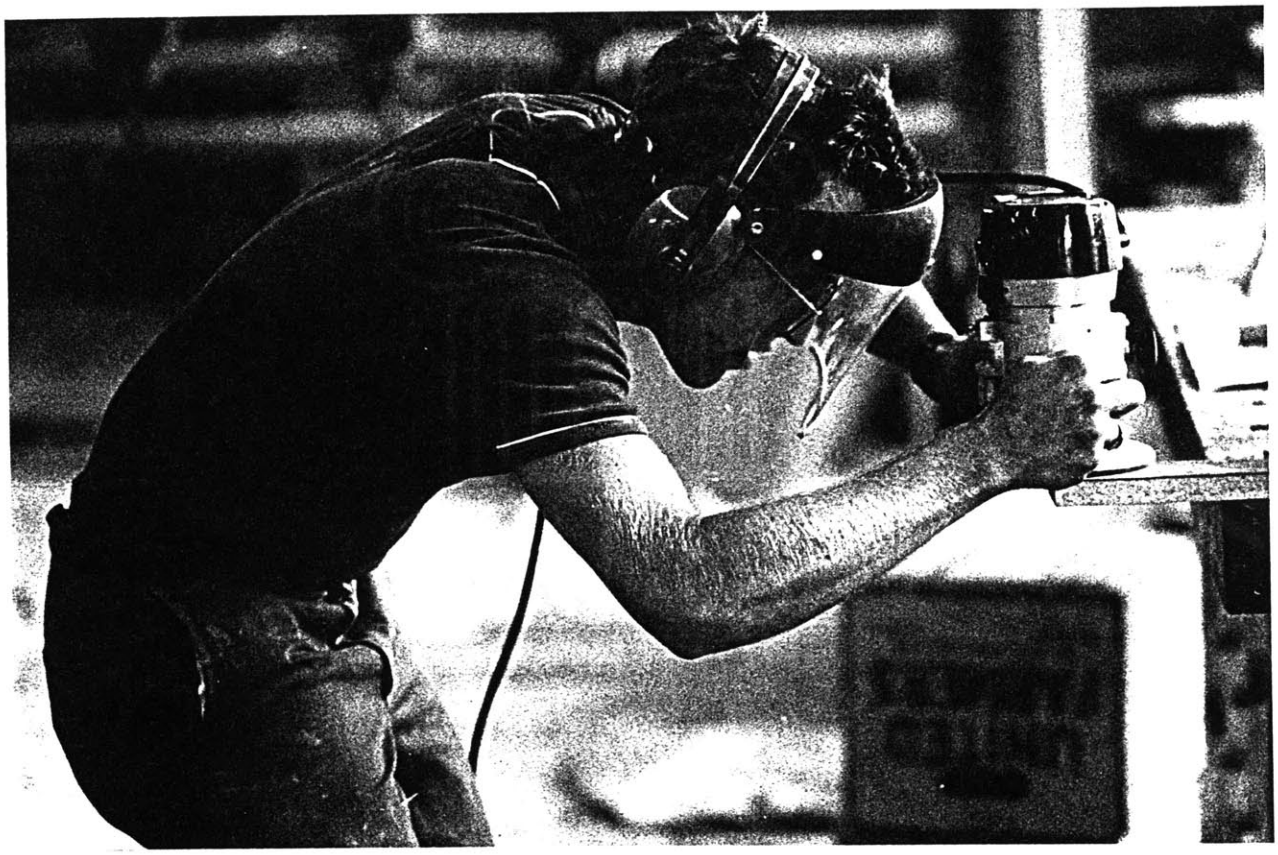

Figure 4.2 Sign maker at work in the BMIP -- a typical *Customized Service Good* enterprise. (photo courtesy of BMIP)

smaller user market has a higher willingness-to-pay than the aforementioned traditional manufactures.

The service sector economy also requires distribution companies and business servicers. A cross-section of the BMIP tenants demonstrates these types of firms: Emery Worldwide (overnight package delivery); Purolator Courier Corporation (overnight package delivery); the John J. Daly Company (distributor of business forms to banks and insurance companies); and Subaru Distributors who supply cars to the New England area. As well, franchised operations like fast food restaurants need to locate their production and distribution facilities near downtowns. The BMIP's is home to the Au Bon Pain (French-style café) central bakery. These service sector orientated firms coexist with traditional water-dependent users. The BMIP's largest tenants in this category include: General Ship (ship repair); Coastal Cement Co (cement); PX Engineering Company, Inc. (ship boiler makers) and; McDonald Steel (custom-made steel fabricators).

Similarly the BNY tenants reflect a mix of customized service goods producers and providers as well as traditional marine industries. Its largest tenants include the Cumberland Packing Corp. - maker of *Sweet'n Low*. This business was founded by the man who first thought to package sugar in custom printed packets and sell them to New York restaurants. This is now a standard practice across the globe. He later expanded to packaging saccharin (*Sweet'n Low* ). The company moved into the yard in 1981 when it outgrew its former Brooklyn location. The BNY is also home to Brinks, Inc. (Armored Car Service); Norval Inc. (cement company); and New York Modular ( modular home building company) among nearly 200 others. This last company was attracted to the yard because the high ceiling clearances of former ship barns, and their existing crane service was ideal for its use. Thus, a random sampling of BNY tenants displays the variance of potential firms these new developments are suitable to accommodating. The table below classifies BNY tenants by industries:

TABLE

*Brooklyn Navy Yard Industrial Coalition - Areas of Specialization*

Art Work
Architecture and Engineering
Building Construction and Management
Business Services
Carpentry, Cabinetmaking and Woodwork
Computer Hardware and Software Services
Clothing Manufacture and Distribution
Communications and High Tech Electronics
Construction Materials Suppliers
Electronic Equipment Supplies and Installers
Electric Generation Transmission and Distribution
Engraving and Sign Making
Equipment Remanufacture, Supply and Leasing
Food Processing, Packing and Distribution
Furniture, Fixtures and Floor Covering
Health and Safety
Heating Ventilation and Air Conditioning
Heavy Construction, Excavating and Demolition
Hospital Surgical and Supply
Import/Export
Insurance and Real Estate
Jewelry and Tableware
Knitting and Sewing
Marketing and Sales
Metal Work and Fabrication
Model Making and Design

Paper and Plastic
Printing and Publishing
Project Management
Research and Development
Salvage
Shipbuilding and Ship Repair
Shipping
Structural Steelwork
Transportation

source: The Brooklyn Navy Yard Development Corporation.

In summary, by catering to the markets of customized service goods, business servicers, distributors as well as water-dependent users, the development company may create a new agglomeration of business activity in a former TOAD. The concept which follows details the process by which a given site, by virtue of a place-driven strategy, can be transformed into a *customized products and service center.*[16]

### 4.4 Conceptualizing the Customized Products and Service Center

The essence of this development scheme is radically different from the traditional development process in two fundamental ways. The first, is that the strategy is place-driven. Unlike where a developer searches for a site with a particular use in mind, in these cases the site presents itself. Most times this will be the announcement of a base closing or the freeing-up of a large industrial parcel because of business failure. A shipyard closure, the shutting-down of a steel plant or the recent vacancy of a port facility are all typical examples. Secondly, there is no readily identifiable market for the space. Instead, this must be cultivated by new techniques in economic development discussed earlier.

Both these differences distinguish this process from the well-known method of developing a typical industrial park. Traditionally, industrial park development has been steered by a market-driven approach; a given class of industrial users is targeted, market demand is formalized and space is developed accordingly. This process is well-understood and has

[16]Customized products and service center is a concept created by the author.

been formalized in literature.[17] Rather, the following process is a derivative product of this traditional scenario.

For one, this concept is markedly different in thinking about project return. Marketplace developers seek a positive project net present value in private venture. Here, the goal of development is that its benefits outweigh costs. While the terms associated with the development costs are easily definable by market prices, a weighing of external public benefits, such as: a bolstering of the city-wide economy; the relief from potential dereliction; the efficiency of restoring industrial land to industrial use; and the creation of pro-venture environment must be included to reflect the true benefits of such an undertaking. Nonetheless, as its benefits in real monetary terms do outweigh its costs, this process is self-supporting and capable of sustaining itself long-term - an important quality given the political unpopularity of government intervention in private affairs. Furthermore, by the virtue of employing space which the private sector considered to be unusable, this process exhibits a wealth of non-traditional approaches which may be thought of in four categories of developmental considerations: physical, marketing, financial and managerial. Understanding these, as well as the important intersectoral relationships among them, will determine the detail needed to apply this customized products and service center (CPSC) concept to any given site.

### 4.5 Physical Considerations

In both the BMIP and BNY cases, the redevelopment teams came on to 180-acre plus sites which had been under military control for 50 and 150 years respectively. During these periods, little or no civilian monitoring (i.e. fire, building, and environmental code inspections) of these facilities had been done. Thus, the sites to outsiders were virtual unknowns. This is typically the case. Fortunately, both the military and private industry tend to keep detailed records of site projects and building specifications. Thus, the first step of the physical process is to develop a history of the site, tracking its development from its first industrial stages until the day the

[17]The Urban Land Institute's *Business and Industrial Park Development Handbook* (Beynard, M. D. (ed.): ULI- The Urban Land Institute, Washington, 1988) provides an excellent review of traditional industrial park development strategy.

keys were surrendered. The best people to aid in this task are often under the developer's nose. That is, a sure fire way to get to know the site is to re-hire many of the facility overseers who worked for the divesting interest. Many of times, these people bring tens of years of experience, an intimate knowledge of every out-building, and even a sense of passion for the property. They know the irregular workings of given systems, particularly utilities, and may have knowledge of previous events which went intentionally undocumented (oil spills, locations of clandestine dumping sites). They will also be of great value in the early stages of site control. In short, this group can save the step of reading the owner's manual on the first day -- a much appreciated support when trying to find the fuse box.

As well, it behooves the developer to have a reverence for the site's past, especially given the nostalgia of shipyards, naval and army bases. Compiling a history has three advantages. First, specific buildings may be eligible for placement on the National Historic Register. The implications of this may constrain the ability to renovate a given structure. Second, the types of previous use indicate a great deal of the nature behind the facility's design. Although, this thesis does not attempt to classify the features and specifications of each type of site, there is much engineering and technically-based literature that does so. Realize though, that by gaining an understanding of how for instance a shipyard used to function, a creative mind may link future new uses to given buildings and parcels of the site, whereas, a person ignorant of the past functioning of the place, is much more likely to miss opportunities.

Finally, returning to the classification of TOADS in chapter 1, the new controlling interest should determine whether this site was once valued by the community, considered a LULU or some degree in between. A word of caution, as time elapses, the community may develop a nostalgia of the site (i.e. that their brothers and fathers worked there) easily forgetting the noise, smells and disruption that the facility caused during operation. This measure will serve as a barometer of community sentiment, crucial for when development hearings begin, and a fundamental understanding of politics is needed. For example, when the mayor of New York reorganized CLICK in 1980, the new board of directors changed their name the Brooklyn Navy Yard Development Corporation, hoping to symbolically associate themselves with a place known to all as the

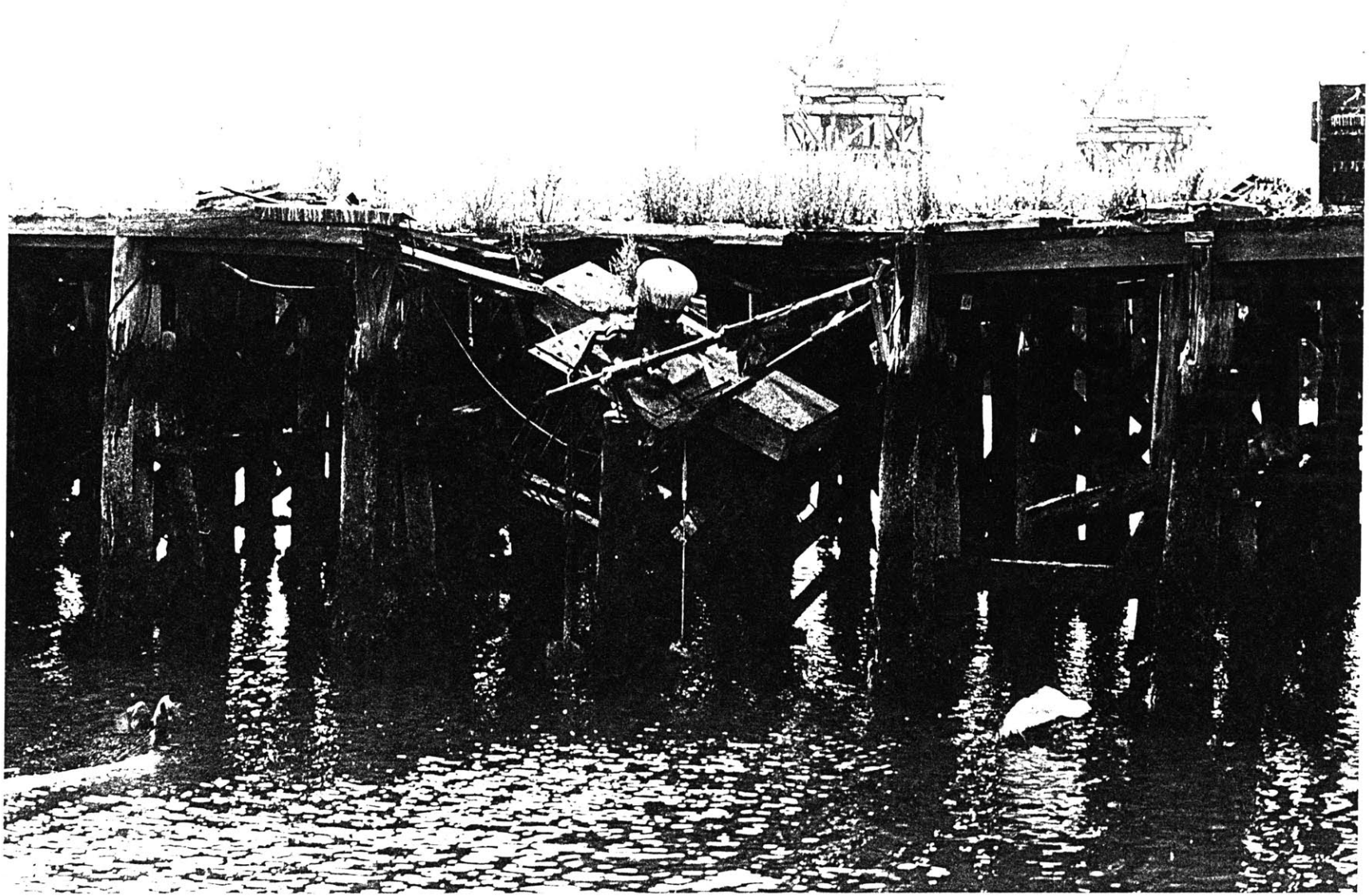

Figure 4.3 Rapidly decaying marine infrastructure, like these pilings at the BMIP, present a serious redevelopment challenge. (photo courtesy of BMIP)

"Can-Do shipyard." Having established the site's history, a detailed site analysis of the land and buildings should take place. This process is typical to any development and should include the requisite topographic survey, geologic report, land survey, soil analysis, etc. of site preparation. Several special considerations: buildings, utility delivery systems, environmental conditions, site situational characteristics warrant close attention.

### 4.5.1 Buildings

Inventorying the built structures on the property is a natural first step in the physical examination. The thorough records often kept by the previous owners should give all salient information concerning erection date, materials used, physical dimensions, floor loads, egress routes, column spacing etc.. A qualitative analysis should then be performed on the structures' current conditions. Roofs, windows, foundations etc should be examined for wear and tear and an engineering opinion be given on these findings. During this procedure, restraint should be exercised, as to making decisions about each building's further potential. Similar analysis performed in both the BMIP and BNY deemed that the majority of the built space be demolished. Engineers had made these recommendations based on their beliefs that the renovations would not be cost effective. These proved in hindsight to be a great waste of development potential. Judgement should be reserved for the marketing stage of the development program. The guiding thought during these studies should be to view buildings as assets, not as laundry list of liabilities ranked by their degree of obsolescence.

### 4.5.2 Utilities

Utility systems, the second consideration, is one of the most pivotal. Future industrial tenants will demand electricity, heat, steam, fresh water and waste systems. Most likely the sites which apply to this thesis will offer these in some form or another. In both cases studied, these systems fell into tremendous disrepair during the transition period in ownership. In fact, the military, hesitant to make capital expenditures owing to their eventual departure, may allow neglect to begin as much as ten years prior

Figure 4.4 The BNY teaches that buildings should be viewed as assets. Here, a bulldozer tears down a BMIP building.

to the site disposition date. Larger complexes often may have a generation station or power plant on site. Although, this may be currently unusable, it should be left standing. The private cogeneration industry has expressed great interest in such possibilities, and like the case of the BNY, this may present both a new use for the yard, as well as become a low cost provider of power to tenants. Further, analysis should be given to the delivery systems. Broken water mains and leaky steam pipes with only 50 percent delivery efficiencies almost put the BNYDC out of operation in its early stages. Immediate stop gap measures should be taken, and long-term repairs be planned from the outset. These investments particularly rely on the availability of public support. If monies exist, they should readily used. However, a huge infrastructure rebuilding program is cautioned against. If one is undertaken, and the debt service is not properly structured, that is back-loaded, this will cripple fledging development efforts. Rather, the approach to infrastructure should be to apply money where it is most needed, thus gradually revamping the complex.

### 4.5.3 Environmental Conditions

Environmental conditions, the third consideration, is potentially the most calamitous. While both cases and the majority of the applicable sites to thesis are deemed as "clean", the possibility of contamination is still reasonably high, and deserves due diligence. This is especially true if future plans call for some mixture of higher uses on the site, e.g. amenities like day care centers and restaurants. Almost without exception, asbestos removal and de-leading of pipes will need to be carried out. In addition, high risk areas like industrial process buildings and waste depots should be identified for more exact analysis. The sheer size of these 100-acre plus sites poses a risk because it is prohibitively expensive to environmentally test such large areas. Michael R. Greenberg of Rutgers University has suggested that a optimal sampling strategy in such cases depends on the availability of a priori knowledge.[18]

If such knowledge exists, when a given source of contamination is known, a grid-like approach to its surroundings suggest areas of higher conditional probability of contamination. On the other hand, if nothing is known, the probability of finding areas of contamination falls markedly. Fortunately in practice, the likelihood of finding these spots is much greater. The site's history, the results of vegetation studies, and sophisticated detection equipment allow investigators to better pinpoint danger areas. In both cases studied, the military was willing to cooperate with investigators in marking contaminated areas. In addition to finding these sources, the real concern is paying for clean-up. Environmental liability should be a non-issue during disposition talks. However, while the party may have agreed to pay, forcing them to do so in a realistic time period is another problem. Developers should recognize that they may ultimately have to pay for the clean-up themselves.

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[18]Greenberg M.R., "Containment: A Constraint on the Redevelopment of Industrial Properties" in Chatterji, M. (ed.) (1987). *Hazardous Materials Disposal*. Brookfield, USA. pp. 71-77.

### 4.5.4 Site Characteristics

The fourth major consideration are site characteristics: size, location and access. Probably the most daunting aspect to any first time visitor to either the BNY and the BMIP is the sheer expanse of the yard. The 260 acre and 190 acre sites, respectively, necessitate the use of vehicles simply to tour the grounds. Size can be viewed in one of two ways. On one hand, a developer may believe this acreage to be simply too large and unmanageable, instead preferring to think of it as several smaller sites. Accordingly, this leads to the belief that the initial acquisition price may be reduced by buying only a portion of the site. In both cases, the Navy demanded that the whole site be purchased. In fact, it is unlikely that the original divesting interest will be willing to break up the site into pieces for disposition. Rather on the other hand, this sheer size may be viewed as a tremendous asset. With the larger the size, the marginal cost of buying each additional acre should fall in a properly negotiated deal. The lesson from both cases is that while the site will not be fully employed in the early stages of development, extra space and the potential to expand is a strategic benefit. The increase in operating costs by managing a larger area are offset in the long run.

The toughest lesson to learn about these sites is to avoid thinking of them solely in terms of location. The reader may feel that the location of both the BNY and the BMIP made them a natural for development. To the contrary, when both projects were initiated cynics charged exactly the opposite. In fact, their locations were viewed as extreme hindrances. The rapid attrition of marine activity at the time, coupled with their existing industrial character, precluded the feasibility of development in most eyes. The developer of these sites must think differently. In a place-based strategy, location is an exogenously determined quality, unlike in the traditional development model where its endogeny is linked to its potential use. As explained earlier, the urban location of these sites is valued by the *customized service goods* sector. As well, adjacent industrial character is of little concern, excepting of course truly noxious nuisances like odors or smoke.

Closely linked with location, access is of major importance. These sites, by their past use, often contain a confluence of transportation modes --

the meeting of ground, rail and water traffic. The development concept advocated in this thesis makes extensive use of ground transport, and to a lesser degree marine. The majority of smaller businesses will depend on trucks for their transport needs. A first consideration is proximity to the highway network. While the BNY benefits from good linkage, this is more a problem in Boston. Disruption caused by truck traffic is a major community concern. Transportation planning should undertake to minimize this effect. However, rebuilding roads or new highway ramps is a tremendous undertaking. While these may be a long-term considerations, short-term efforts can lessen disruption by limiting access by times of day to different entrances of the site. Access within the site is also important. In both cases this was well-planned for by the Navy, yet engineering analysis should consider orderly internal movement. These routes must be made navigable early-on by repairing pot-holes and establishing traffic patterns and regulations. The negative features of road access are counterbalanced by other plusses. Off-street loading, ample parking and space for trailer storage are welcomed by potential users.

The extensive marine frontage and deep water access is also an excellent value to the development. Both navy yards had both excellent pier and berthing facilities. Like the infrastructure, these may be in some degree of decay upon initial control of the site. Efforts similar to those in both cases should be taken to minimize the rates of deterioration. However, an extensive one-time rebuilding of these structures is not recommended. For instance, revamping a dry-dock should be undertaking after marketing efforts have established some degree of interest in such a facility. The balancing act between marine-dependent uses and the land-based service-goods industries is a marketing decision. However, protection of marine facilities as a site amenity is a good long-term strategic goal. Finally, repair of the bulkheads which rim the water should be treated in a patchwork fashion until large infrastructure grants become available.

Two last access considerations are rail and air. Although both sites studied have excellent internal and external rail access, this attribute is little demanded by its present users. Internal rail systems should be protected in designated areas of the site, particularly near the water. Tracks which interfere with road access should be re-engineered. However, any program to tear-up tracks not deemed for use is wasteful.

Finally, both sites were enhanced by their proximity to international airports. While this is an unforeseeable circumstance, it can be a beneficial marketing attribute especially as small-firms attempt to build national and international linkages.

A final word of the physical planning of these sites. Neglect may be minimized and money saved in the long run if control of the site is taken as soon as possible. In the Boston case, the EDIC assumed policing and maintenance obligations from the General Services Administration, a year prior to disposition, when it became clear that the government was paying no mind to the site. Secondly, these sites cannot be transformed into aesthetically pleasurable places over night. Before any construction begins, a set of design guidelines which detail tenant responsibilities and rights according to site planning, architectural, landscaping and signing considerations must be formulated. As well, an economizing approach to public improvements must be taken. Landscaping is extremely costly, not demanded by tenants, and will never achieve the same degree of enjoyment as in a suburban industrial park context. The BNY, however, did mange several measures to make matters more bearable. Hauling out garbage and debris, painting strategic areas, and initiating community efforts like summer-time beautification projects undertaken by teen-agers, are low cost efforts with large marginal impacts. Eventually, as the development gains momentum, extra-money may be reinvested into site amenities. The BMIP's cooperation with the Boston Harborwalk Plan has resulted in pleasant working area. Look-outs on the water, visitor kiosks and sidewalks are all recent additions which lend the development a sense of place.

### 4.6 Marketing Considerations

Of the four considerations, marketing distinguishes the customized service goods center from the creation of the typical industrial park. Further, it ultimately decides whether a project succeeds or fails. Thus, this strategy must be both innovative in design and rigorously pursued. The process may be divided into four parts: identifying the intended types of users, designing space to fit their needs, developing an outreach program,

and offering the right package for a lease commitment. The long term goal of marketing is to give the development an industrial address.

### 4.6.1 Identification of Users

Given the site's physical assessment, the developer should look to two potential markets, water-dependent and land-based users. Initial efforts in both cases studies focused on the attraction of marine-oriented companies. This was despite the long-term decline in both the ship building and repair industries, and the abundance of marine space. The competitiveness of this property offering is largely determined by market labor rates; the locus of marine activity today is in the South, South-West and Pacific Northwest. However both projects, through the political dealings of the city, were initially hosts to several large marine tenants. After the failures of these concerns, the BNYDC adopted a new marketing emphasis on attracting indigenous, small water-users as opposed large national outfits. As detailed in the case, the strategy has paid off. These users, who are heavily space intensive, are given favorable lease rates which depend on the number of ships they service. Thus, the firms, whose business is by nature variant, are not unduly constrained by lease payments. In addition, since the Yard benefits when these companies receive contracts, the BNYDC uses its political clout to attract government commissions. The lesson is that the marine emphasis of the customized service center concept must be variable in character. Since this market is extremely uncertain, the center can not rely on this market too heavily. When the bankruptcy of Coastal Drydock threatened the BNY's very survival, actions to limit the size of any one tenant's rent roll share were taken. Thus, to find the proper mix between marine and land based uses, a diversified approach which focuses on small marine users is preferable to a windfall profit strategy which woos large and potentially transient industrial players.

The strategy to identify potential land-users is predicated on the composition of the diversified service economy. The character of the city (for example, New York as a communications/ financial services/ and corporate hub) implies the type of support industries needed. Rather than signaling out specific types of businesses, the developer should compile a potential tenant profile by space and utility needs. Initially, any interest

Figure 4.5 Marine facilities, like this drydock at the BNY, should be an integral parcel of the redevelopment strategy, and can generate revenue at the beginning of the process. (photo courtesy of BNY)

that has been expressed in the property should be pursued. This will generally come from existing local users who know of a site attribute (e.g. a drydock, a high-ceiling machine shop, a reinforced warehouse, etc) that could particularly benefit them. These companies should be accommodated on an at-will basis since they provide a easy source of start-up cash. Their presence will also aid in the attraction of other users based on word-of-mouth. Temporary users, like equipment storage and those interested in large open spaces for fabrication and assembly, are an additional source or early revenue.

### 4.6.2 Space Design

In the ten years since both cases started marketing space to small-users, this particular niche has become seemingly saturated. Industrial brokers, who once eschewed the marginal commissions of small space, now vigorously recruit this clientele. However, this should not discourage the developer of the center. A properly conceived development is what creates the user; that is, when the right space becomes available, firms literally move out of people's garages. In both cases, the EDIC and BNYDC believed in the small user. They speculatively sub-divided their first building and then began to look for tenants. Doug Herberich, project director of the BMIP, described this processes as "making a market by slowly testing the waters." The first cut at this idea was to take a roughly 100,000 square foot building and divide it into units ranging from 1,000 - 4,000 square feet. The process was slow going at first. Both the BNY's and BMIP's attempts were similar in taking about six months to a year to be fully occupied. Eventually, momentum built up with each new lease agreement. The agglomeration tendency of small businesses, coupled by increased publicity of the space offerings, created a snowballing effect of growth. However, the real driving force behind this success is an aggressive outreach program.

### 4.6.3 Outreach Efforts

Despite today's current recession and accompanying high industrial vacancy rate, both industrial parks studied maintain superior occupancy

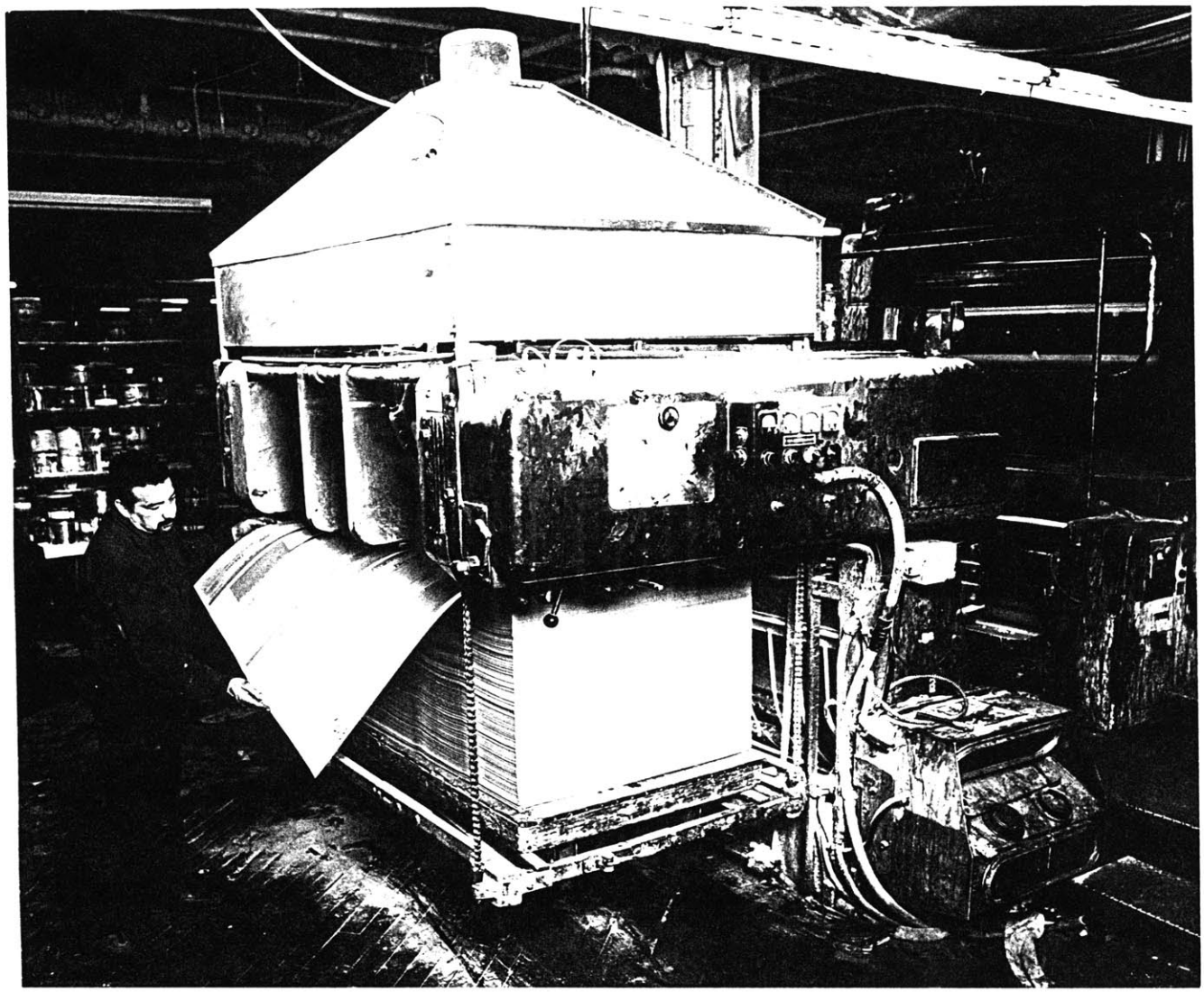

Figure 4.6 The CPSC concept can accommodate indigenous businesses, like this BNY printing company who can no longer afford high downtown space costs.

levels. This is especially beguiling when similar approaches (such as the publicly operated Brooklyn Army Terminal in New York and the privately-run Crushman Marine-Industrial Park in Boston) are suffering dramatic vacancy losses. With essentially equivalent space rents as their "competitors", both projects have achieved success through their stylized campaigning. When asked the secret behind his development's success, Richard Aneiro of the BNY responds, "We don't compete!" Instead, the tenants whom the BNY attracts only decide to lease because of the BNY's distinctive product. To them, the choice is not between two industrial parks, but either between the BNY and their current cramped quarters, or in the case of start-up companies between the BNY and nothing. The distinctive imaging that maintains these occupancy levels is created by three methods.

First, resourcefulness in knowing how to find new or expanding indigenous users is key. The BNYDC's use of utilities, local papers, business clubs, and personal contacts tapped resources previously ignored. Second, publicity and self-promotion are essential. The news of job creation in today's climate turns heads. The smallest triumph, say the addition of ten new employees to a existing ten-member center firm, should be trumpeted to the community. Positivism radiates through neighborhoods, sparks curiosity, and is often good free press. It also helps internally. The sharing in other's successes, particularly for small firms, helps breed success by lending encouragement to their own pursuits. The BNY has worked to this end by establishing a biweekly newsletter, with a growing readership of over 3,000. Third, the model of the center itself translates an image to outsiders. The returning to prosperity of a formerly derelict site, much like the restoration of any once valued item, symbolizes the values of hope, perseverance and creativity. This Thomas Edison inspiration/ perspiration work ethic exists in these case studies but is not felt in their systematically developed competitors.

### 4.6.4 Leasing

The creation of a "can-do" image alone is not enough for success; the proper leasing package must be assembled to entice the new tenant. The concept is to offer an affordable location for small-to-medium-size businesses in a pleasant, secure environment, which facilitates networking of tenants, thus creating a vibrant activity center in an abandoned industrial site. This is achieved by meeting the space demands of prospective tenants in terms of their financial limitations. The lease must be designed properly to achieve this requirement. First, rather than concentrating rehabilitation efforts solely on one building at a time, managers should strategically locate firms throughout the complex. While operating costs may be slightly increased, the total amount of space slated for rehabilitation will be lowered by matching. This process is helped by visiting prospective tenants in their current locations to determine the best possible fit according to each firms space specifications, as well as insuring that the new space will be an improvement over the old by realizing

formerly unfulfilled needs.[19] Further, since tenants will have to cohabit with one another, any potential interferences may be identified and planned for properly.

Next, rehabilitation costs may be mitigated by allowing tenants to build out their own space. Many of these smaller firms possess the skills to perform renovations to their space, but don't have the cash to pay higher rents which would reflect the amortization of these improvements. Provided they can work within both building codes and center design standards, tenants should make these customized improvements as a payment in lieu of early rents, with some further discount off of base rents. An example is the BNY's use of rent credits. For example a lease might be signed at $10 a square foot originally, with an allowance of $7 for the tenant work package. Thus, the development agency is spared the large initial and risky investment of building out space for fledging companies.

A second consideration is allowing growing firms the room to expand. This is accomplished through a "growth lease."[20] Here, a business pays base rent on its initial space requirement and pays the operating costs on the additional space it consumes as it grows. A schedule in the lease determines how much additional space a business is allotted, and when this area will be incorporated in the original base rent. Tenants reserve the right to forgo these additions. Ultimately this ensures for larger tenants, and less turn-over in the center by giving tenants flexibility in their space. The timing of the lease payments can also be adjusted according to the tenant. A back-loaded lease, or one where payments are stepped up progressively, is well suited to new ventures who would be overly constrained by heavy start-up costs. Finally, commons areas expenses (e.g. amortization of new elevators, loading docks) and general park operating expenses (e.g. maintenance, security) may be spread across tenants on a pro-rata basis or simply be treated net of gross rent.

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[19]Oleksuk, D. K. (1991). "Creative Solutions to the Rehabilitation of Old Industrial Buildings: The Case of Canal Place, Akron, Ohio." *Economic Development Review* . p. 49.

[20]Oleksuk, D. K. (1991). p. 49.

### 4.6.5 Special Offerings -- Amenities, Services and Linkages

A misconception of the customized products and service center concept, or in market lingo, the "Class C" industrial space market is that actual rents must be significantly discounted from prevailing industrial rent levels. Rent levels only differ relative to solely private parks because of favorable lease structures signed with the city-owner, which allow both the EDIC and BNY to discount their rents by roughly five percent. Aside from being on the low end of the rent gradient, the price is enticing to new tenants because of the offering of services and amenities not found elsewhere. The small user is most willing to pay for space where he is free to concentrate on his business activities and not be pre-occupied with the day-to-day concerns of the facility.

Security is one of these primary offerings. A start-up business or an indigenous firm has the option of locating within fragmentized spaces spread throughout the city or in the CPSC. With the former, they are exposed to vandalism, larceny and a host of similar safety concerns (e.g. crime in adjacent areas- muggings, truck hijackings). The latter virtually eliminates these risks by providing a secured compound in which to conduct business activities. This benefit is clearly seen in the BNY where the 260 acre site is bounded by a twelve foot stone wall rimmed with barbed wire -- a useful remnant from the Navy days. As well, the BNYDC operates its own police force of 60. Constant patrols, coupled with a community atmosphere where outsiders stand-out, have made this space virtually crime free. In fact, many firms have located for primarily this reason. On the morning of the author's site visit, an architectural firm was relocating into the yard. They had recently had their computers stolen from a SoHo loft work space, and were virtually crippled for two -months while members worked to restore the customized soft-ware that was lost in the theft. In addition, the center's proximity to downtown allows firms to combine both their office and production functions at the site. Thus, they avoid paying price downtown office rents to house tasks which more easily performed at a central location.

An additional marketing key is the emphasis of small business agglomeration. Noted as a important ingredient in the establishment of new ventures, the presence of successful entrepreneurs helps attract new

ones. The multi-user configured buildings foster informal contact as small business share floors and common facilities. In addition, management can encourage inter-firm contact by hosting group events. The BNYDC runs a highly successful biweekly tenant luncheon where all tenant heads are invited to attend. The Friday afternoon affair, welcomes a guest speaker of a particular interest to the functioning of small businesses. Recent visits were made by a Russian Trade delegation, the New York Lieutenant Governor, and a tax affairs specialist. These gatherings help keep tenants and management alike abreast of yard happenings, promote new business possibilities with outsiders and between members, and foster a sense of community in the development. The formation of the BNY Industrial Coalition has furthered this effort -- assuming outside marketing and coordination efforts that smaller businesses would be unable to undertake on their own. While both cases studied run programs to stimulate interaction and increase communication, experience has warned against interfering with tenant business activities.

Contrary to the business incubator model, where firms are partially financed by the development company, and are monitored a routine basis, the center concept is market driven and free from interference. Both cases boast that none of their companies were enticed with direct public money for locating in the center. Neither park offers tax abatement incentives or other public grants to draw firms. Rather, attraction relies on a competitively price space offering, coupled with a range of services, in an exclusively fostered atmosphere. Without the entanglement of scrutinizing the use of public leverage in private business, the development company functions with private sector efficiency. It can be less bureaucratic with operating funds, and have discretionary use of rather limited financial resources. Linkage efforts like management training courses and other educational programs in conjunction with local community colleges should only be initiated after enough interest has been demonstrated. Although the BMIP is home to the EDIC's Boston Technical Center which runs worker training programs, this function is in the park essentially because the EDIC's mission is greater than trying to "turn a profit" with the BMIP. This model suggests, instead, that the development corporation be essentially responsible only for the site, and be financially divorced from other city-wide economic development aims.

The BNY experience cautions against alliances with public sector job training programs. The development concept cannot function in private terms and support these public functions as well. These programs should only be accommodated if they wish to lease space like other companies. The same thinking applies to public day care facilities, drug treatment programs and the like. In spite of strong community pressures, many times from the development company's own board of directors, these projects should be attempted only when the corporation can sustain its operations, and a significant profit may be funnelled into new investment. The establishment of amenities prior to this point will severely hamper the ability to renovate further buildings for center growth, and expose the entire project to a set of risks with potentially dire consequences.

The political feasibility of these centers rests on their ability to function independently of public support. This requires a lean and mean, economizing, cost-cutting approach in all project spheres. Amenities must be viewed by their marginal benefit in attracting business and insuring for proper park functioning. Hence the developer must make a trade-off. On one hand, it is important to promote a work environment where people look forward to coming to each morning. The availability of services, like a copy center, travel service, barbershop, cafeteria, advertising agency, credit union, local athletic club, bar/restaurant, etc would be welcomed by tenants. Efforts to encourage private investment to make these offerings should be taken as the project grows. However, the developer must not acquiesce to public demands to financially support "public goods" investment programs, since these jeopardize the market viability upon which the concept rests. This mandate is determined by the capital structure of the project.

### 4.7 Financial Considerations

Along with proper physical planning and marketing strategies, the realization of a successfully created customized products and service center rests on its financing. This phase involves several considerations. First, a general account of the types of real costs involved in the redevelopment effort should be formulated. Second, a measure of the project return must be qualified. Third, a balance between private and public sector resources

should be made based on the availabilities of each. Finally, a long-term financial operating structure which allows development to proceed autonomously and to sustain its operations must be constructed. The insistence on long term market viability, the disappearance of public monies in recent years, and the unique nature of this development concept all add to the difficulty of this stage.

### 4.7.1 Project Costs

Financing is sought to meet the capital requirements involved in the redevelopment process. Since these vary in magnitude by the situational determinants explained earlier, only a general attempt to qualify the explicit costs involved in the case studies will be made. As well, the relative importance of each type of cost in the overall feasibility of this type of project will be noted. The types of costs are in three forms. With a placed-based strategy, the initial and many times exogenously determined outlay is the site acquisition cost. In both cases, the cities received these sites when the federal government's policy towards surplus property disposition bordered on charitable giving. Chapter one explained that in light of the government deficit, this policy has been revisited by Congress, and many similar properties may be priced in the future at prohibitively high prices. In the typical fashion of economics, this thesis assumes away this particularly annoying empirical note. However, a case will be made later that since this development concept hinges on this cost, and that may of its previously mentioned benefits (job creation, reuse of derelict land, economic development etc.) are publicly oriented, the federal government should lower its prices in order for the local municipality to buy the property. In turn, the favorable leasing conditions which allow this land to be redeveloped, may be made.

Reviewing from the case studies, the City of New York purchased the BNY in 1970 from the Federal Government for the sum of $24 million. This represented a transfer of sorts, as the City accepted the site in lieu of other federally-owed disbursements. In 1980, the BNYDC signed a 99-year lease on the yard with the City stipulating the BNYDC pay one tenth of its gross rent roll to the city annually. Furthermore, the navy yard, as city-owned land, is not subject to property tax. Thus, the development company

essentially utilizes any revenues above its expenses to fund improvements in the yard. For instance, given a $10 per sqft. lease with the $7 allowance for tenant improvements, this obligates the BNYDC to pay the city $1 per sqft., when it is receiving $3 for the space. After meeting operating expenses, the BNYDC then reinvests any free-and-clear income into yard renovation projects.

The Boston case is similar. In 1976, the City of Boston purchased the naval annex portion of the BMIP for $5 million. In 1983, they bought the adjacent army terminal property for $3.5 million. The quasi- public EDIC then assumed control of these properties and the obligation to meet their interest only financing terms. Likewise, since the BMIP is city property, the EDIC is spared from property taxes. Again, the EDIC funnels park profits into new renovation projects. Thus, in both cases, the recovery of acquisition cost is not an immediate concern. Rather, the quasi-public development company provides means for the property to pay for its own improvements. More generally, as in the case of private facility reuse, the new development corporation will obviously benefit if the divesting company severely discounts the acquisition price of the cast-off property. These bargain properties allow for a greater "project return".

Both the BMIP and the BNY demonstrate the importance of favorable lease terms between the city and the new controlling interest. If the development company has too great a debt service burden, it will expense the majority of its revenues on rent instead of financing renovation projects to add new leasable space. The BNY, in spite of its leasing terms, experienced this dilemma. In 1989, the City was demanding its rent money at a time when potential tenants were expressing great interest in space not yet renovated. Eventually, the conflict was resolved when the City allowed rents payable to accrue on the BNYDC's books, and the money be rather spent on renovations, until occupancy growth leveled off. The lesson is that like the small businesses it houses, the center must have its debt service properly structured in a back-loaded fashion. Otherwise, these municipal rent payments will both choke cash flows and limit the money to fund renovations for new leasable space. Thus, the city should structure these lease terms to allow initial payments to be deferred until a latter date.

The second major expense involved is site preparation and construction costs. These break down into two categories: general

infrastructure investments - which are generally financed by government grants - and building renovation costs - which are financed by the development company. By far, the former is the larger in magnitude. Depending on the physical conditions of the particular site, sizable expenditures may have to be made. Even with an economizing and incremental approach to expenses, pressing repairs, like those to roads, waterlines, electrical systems, etc, must be made at the outset of the project. This requires municipal and government grant assistance.

Building renovation costs are incurred to make space suitable for leasing, and are paid for by the developer. Renovations are made on the basis of being market viable, i.e. being able to pay for themselves. Thus, a building is restored and sub-divided when the company has generated enough profit to substantially fund the project and when management is confident that sufficient demand exists to lease up the building. Here, work is financed with either short-term construction loans (accompanied with the development company's take-out commitment ) or equity income from retained earnings. By constraining new space renovations though allowing only as much improvement to be done as the development company may afford, the fledgling park avoids over-extending itself. The cases of the BMIP and the BNY vary slightly by the magnitude and methods used to finance infrastructure and building rehabilitation expenditures.

The majority of BMIP funding to repair infrastructure came from public source, while a mixture of public and private money was used to renovate space. In fact, Doug Herberich of EDIC stated that without some degree of federal assistance, the infrastructure problems could not have been remedied. Herberich estimates that, in aggregate, some $35 million of public grant money as well as park generated profit has been spent during the BMIP's 17 years on infrastructure, parking improvements and building renovations. This translates into roughly $11.55 per square foot investment (excluding land costs) to make the BMIP's little over 3 million square feet of space leasable. This is a serious discount from the market range of $70-80 square foot investment needed to construct similar new space.

The BNY by contrast funded the greater part of its infrastructure repair and the entire sum of space renovation costs with its own park generated profits. President and CEO Richard Aneiro claims that this self-reliance was crucial to the yard's success. Instead of utilizing public

money, the corporation adopted a "feet in the fire" strategy. Pressed to make payroll and pay bills, the BNYDC makes investments only where and when they are most needed. This demands that other management functions, namely marketing, work aggressively simply to sustain the development entity as a going concern. Thus, the lack of government support is in Aneiro's words, "both a weakness and a strength, since (the park) develops a resiliency it would not have if dependent on public grants." In terms of infrastructure repair expenses, the yard's early focus on repairing energy systems benefited from a $5 million capital expenditure grant from the city. Further, repairs to streets and water were undertaken by the city. Other associated expenses, like meter installation and steam delivery were repair with BNYDC money. Building renovation costs are almost entirely funded by the BNYDC. However, the Yard does make occasional use of Federal grants if available. For instance a project to renovate 300,000 square feet of space required a $3 million Department of Commerce grant.[21] On average, to restore and subdivide space for leasing the BNY makes roughly a $10 per square foot investment (excluding land costs). This expenditure is limited by the tenant improvement rent credits explained earlier.

The third division of costs are general building maintenance, management and administrative expenses, all of which are supported entirely by rent revenues. In both cases, the primary functions of site development and management are carried out in house. Duties include engineering and planning, financial, legal, marketing, facilities maintenance, security, purchasing, tenant management and other administrative(secretarial, purchasing, etc.). Further, the development company is responsible for insuring utility delivery to tenants. If properly engineered, this function may produce excess revenues as the company makes a marginal profit by buying and then reselling utility services to its tenants. In the early stages, this third division of costs may need to be offset slightly by the municipality. However, early matching of tenants with existing facilities will produce immediate revenue to pay for these functions

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[21]Carpenter, C. (1990). "Navy Yard's Bustling with Small Businesses." New York Post (Tuesday, May 1), reprint.

### 4.7.2 Project Return

Having qualified the types and relative sizes of the costs involved in this development concept, the next issue is to determine a level of return. Unlike private projects, public sector economic development aims do not readily translate into rates of return. Rather, the goals of job creation and economic enhancement are more easily measured by target numbers. The benefit of public money, that spent on site acquisition and infrastructure, is measured by meeting targets of a given number of new jobs or businesses created by a specified date. Both projects analyzed established this type of performance criteria at the onset of their development efforts. However, the mandate of a market-viable and sustaining development implies that the variable expenses, e.g. building renovation and operational costs, be met solely by the development's revenue. Thus, if both conditions are achieved, the development may be considered a success.

### 4.7.3 Public Sources of Finance

While the two cases studied relied on public money to much different extents, the need for some minimal level of support is more likely than not for future projects. The availability of public monies to finance development is of concern. Federal dollars come in a myriad of forms from various sources. However, the amount of money has recently been dramatically diminished. EDIC's Doug Herberich, who attributed a large share of the BMIP's success to the availability of government aid, qualified the prospects for similar developments today, on the basis of the current paucity of funding. For instance, the total budget for the Department of Commerce's Economic Development Agency in 1992 is roughly the size of that allotted to Massachusetts alone in 1986. Thus, severe budget cuts limit at present the real world application of the ensuing discussion. The following list names the primary means of public finance available and the extent to which they were employed in either project.

**Urban Development Action Grant (UDAG).** Funded through the Department of Housing and Urban Development (HUD), these funds are allotted on a competitive basis from among a pool of cities large and small.

They can be used for any project which requires a certain number of public dollars to stimulate investment. They are restricted by the condition, that development could not take place in their absence, and that the amount of private funds to match the public investment be maximized. $3.6 million of UDAG grant was used in the BMIP to fund the infrastructure repair of the Building 114 project.

**Community Development Block Grant (CDBG).** Similar to the UDAG, this HUD offering is directed at improving economic conditions for the poor. They can be applied towards many development investments including land acquisition, relocation, new construction, public works projects and business financing. A CBDG on the order of $1 million was used in the Building 114 project.

**Economic Development Administration (EDA) Title II and Title IX Programs.** The former offering is a bundle of business development loans and loan guarantees for industrial investment in plant, property and equipment offered to non-profit companies. The Title IX Special Economic Development and Adjustment Assistance Program is aimed at the large scale economic disruptions like industrial plant and military base closures, as well as programs aimed to mitigate the affects of long-term industry migrations. The former source was used by specific firms who located in each project, while the latter was employed in amounts of a couple hundred thousand dollars in both the in the early stages of the BMIP and during CLICK's tenure at the BNY. Other base redevelopment efforts, like Michigan's Chippewa County Air/Industrial Park have employed Title IX grants totaling $4.6 million[22].

**U.S. Department of Defense Economic Adjustment Grant (OEA).** Provided by the Pentagon's Office of Economic Adjustment, these funds are generally granted upon the announcement of a base closure. They are ear-marked for planning, engineering, marketing and community impact studies that are preformed at in the initial stages of base conversions. Both cases

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[22]Beynard, M. D. (1987). "When the Military Leaves Town." *Urban Land* (June). p. 9.

received grants upwards of $100,000 which were for initial planning and engineering studies. Today, these grants range around $300,000.

**Industrial Development Bonds (IDB) or Industrial Revenue Bonds (IRB).** A wide-spread economic development tool employed predominantly in the 1970s and mid 1980s, these tax-exempt issues allowed private firms to raise capital at vary low costs. This concept has come under much public scrutiny for distorting the allocation of capital between public and private sectors, and for have little affect on economic development[23]. Simply put, they subsidized firms for growth that would have taken place anyway. Accordingly, their use was curtailed by the 1986 tax changes.[24] While they are currently out of favor, they represented an integral source of funds in the Building 114 development. Here, the EDIC raised $6 million from the sale of the bonds, and established a $1.2 million reserve fund to meet interest payments until the building could do so.

**Others.** The range of other sources of funding varies by city and state. General Obligation Bond issues were employed in the BMIP case. These are often limited by cap levels to municipalities and are restricted from use for private purposes. As well, many states and city have their own economic development grant programs.

Thus, while the list of available sources is long, their potential to grant needed funds today is quite limited. To pursue this public capital, the redevelopment agency must be properly structured[25]. In both cases studied, the development body was a not-for-profit corporation. This framework employees a publicly chartered but privately incorporated body who acts independently of local government. Thus, they are allowed the freedom to operate without the political and bureaucratic pressures of government, and still receive public support to some degree. As well, their

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[23]Marlin, M.R. (1991) "The Effectiveness of Economic Development Subsides", *Economic Development Quarterly*, p.21.

[24]For an brief summary of the implications of the Tax Reform Act of 1986 as they apply to real estate see Beynard, M. D. (1988). (ed.) *Business and Industrial Park Development Handbook*. ULI- The Urban Land Institute, Washington.pp. 66-7.

[25]For an extensive examination of organizational considerations, see Luke et al. (1988), Chapter 4.

quasi-public nature grants them the fiat to circumvent red-tape and "speed-along" development. Noticeably the most important element of this combination to the ultimate success of center development is their private corporation likeness.[26] The emphasis on self-sustainability dramatically reduces waste and inefficiency, allowing the fluid operation of day-to-day activity. For example, the corporation is free to hire and fire at will. Secondly, these entities do not have to answer to the myriad attempts to interface with other public agencies. Finally, they are removed from the public scrutiny of the planning process, thus avoiding the pitfalls of stagnation and negative development pressures which cripple fledging redevelopment efforts. The unfortunate experience of real life planning is that even the best intentioned and well-conceived plans may ultimately fail, and produce disastrous results when subjected to the whims of political compromise.

### 4.8 Management Considerations

The previous discussions on physical, marketing and financial considerations are strategically linked by an underlying management philosophy. This set of considerations may be thought of as an array. Each element is important to a varying degree, yet it is the mix of all them which ultimately determines the project's success. Three crucial qualities are timing, flexibility and leadership.

Timing includes not only when steps are taken, but more broadly the project's time horizon, and the pace at which changed is effected. Again, this will vary for each case, as timing is a function of several situational characteristics. First, the planner must realize that this project has a rather long cost recovery period. The long term targets of job growth and economic development took a minimum of ten years to become noticeable in both cases. In the meantime, the development company must persevere with its efforts despite nay-sayers and general discouragement. The

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[26]There are several cases of successfully redeveloped dinosaur sights undertaken completely by the private sector. To the Author's knowledge, the most illuminating is the case of Canal Place in Akron, Ohio. A former BF Goodrich plant, this 38-acre facility was converted into a vibrant industrial park. For an excellent discussion, see Oleksuk, D. K. (1991). p. 48-51.

process is akin to starting an apple orchard. For the first five years or so the trees do not produce any fruit. Eventually with proper care and maintenance, they produce an abundance which can be brought to market and sold to recoup the original planting costs. During the early years, the planter (planner) must be content with the fact that trees now stand in a once fallow field. Timing must also be thought of in incremental terms. The development proceeds in stages. One building should be renovated at a time, and after it is filled, excess revenues may be applied towards renovating the next. Development should not be attempted in one fell swoop. This results in a glut of space on the market, and a rapidly mounting debt service. Rather, the economizing approach described earlier should keep the corporation on "hand-to-mouth" basis. Initial infrastructure repairs should be made to those areas of most need, and less immediate repairs should wait until capital becomes available.

Flexibility in project design is a second necessary characteristic. The model above is not a concrete strategy, but one that depends on the ability to adapt to changes. If the intended market for the property falls through, such as a large portion of Boston's dispossessed garment industry did in the EDIC case, the project must transform to suit new users. Finding the right project orientation may take several tries. Failure is part of experimentation. Early mistakes should be analyzed, modified and tried again. This demands an increased assertiveness in the physical planning, marketing, financial responsibilities detailed earlier, as well as, an understanding of new forces constantly re-shaping the local economy. Sometimes adjustment might simply require altering the average unit size from 5,000 to 2,000 square feet. However, by taking the incremental approach, the magnitude of any one set back is limited. When an idea is found successful, like sub-dividing the space for small-users in the BNY, the development should continue to build on this success. After a strategy has fully played out, the directors should begin to look for linkages to foster cohesion among its users, such as the BNY's Industrial Coalition. Resiliency is also fostered by properly diversifying the tenant mix. Finding the balance between water dependent and land-based uses counter acts the risk of each. Thus, a shock to the ship repair industry will not be felt as strongly by the center because of its contingent of small land businesses.

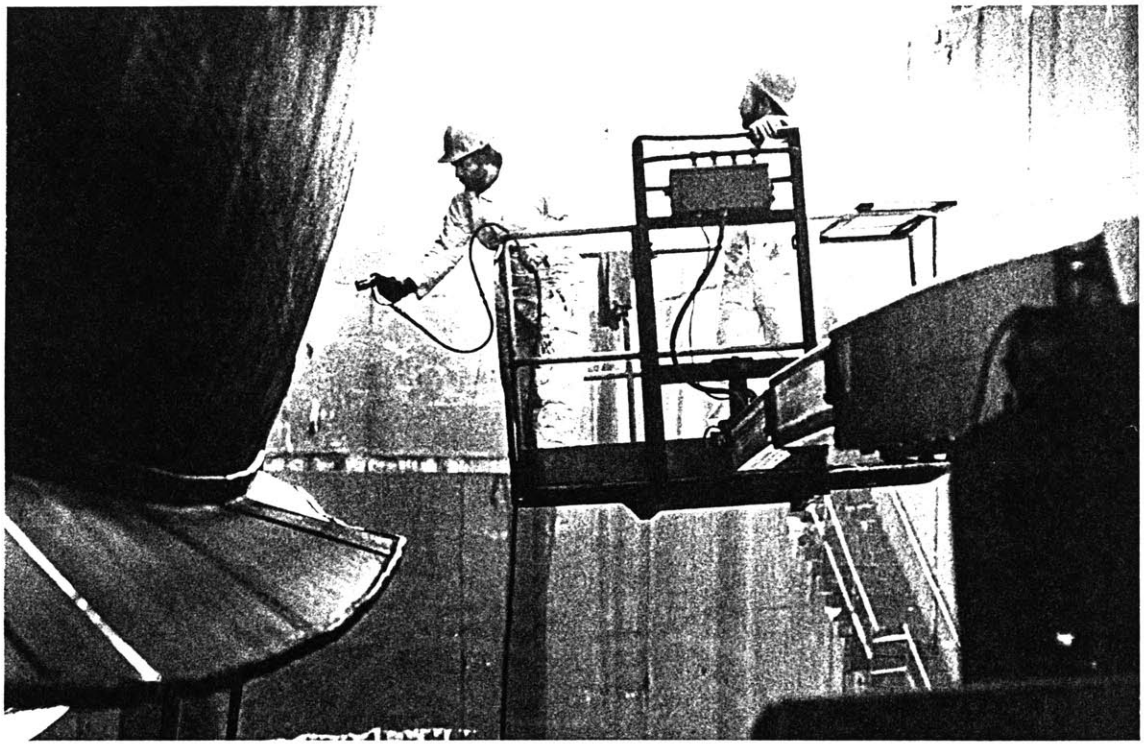

Figure 4.7 Sites should not loose their marine focus. Painters at work in the BMIP. (photo courtesy of BMIP)

Leadership is a final quality whose importance must be underscored. The development company leader must be charismatic and catalyze efforts by being able to work all audiences: community interests, private business managers, local government officials, and foreign parties. This requires intensive interpersonal skills. Secondly, the developer should solve problems analytically and possess some degree of technical experience (e.g. a background in industrial engineering, facilities planning, etc.) coupled with the management expertise of an MBA. Third, the manager must be an innovator. The message of both case studies is that the market is "created by testing the waters". This requires some ingenuity in formatting new approaches, as well as some degree of daring; in both cases, there was no small-user market when the first speculative space division took place. The successful outcome came only because these visionaries went forward despite the objections of the more risk-adverse. Finally, an outgoing personally makes the prevailing optimistic spirit which pervades these sites possible. Thus, the project director must be a statesman, a showman and a salesman.

# CONCLUSION:

## Why Government?

**Conclusion - Why Government?**

The essence of this thesis is to suggest that the many large derelict industrial sites which line the shores of U.S. cities today possess a value obscured from marketplace developers. As a result, these lands remain underutilized and constitute an inefficient use of scarce resources - in economic terms, a social waste. The foregoing discussion rests on the assertion that government should recognize the potential value of these sites and take action. However, the critical piece of establishing *why government should involve itself in this activity* may not as yet be clear. The answer to this query is two part: first, that the nature of the problem automatically implies government and second, that government is best equipped to solve this externality.

The word *derelict* as defined in the introduction implies something cast way by its owner which becomes the rightful property of whoever desires it first. This thesis examines properties cast off by industry or the U.S. military. However, the private sector fails to express interest in them. Thus, the local municipality automatically becomes the owner of these sites. More generally, private interest is dissuaded by several factors. First and foremost is the threat of environmental contamination. By virtue of their former uses, these sites are riddled with development risk owing to the uncertain presence of chemical despoliation which would prohibit a multitude of redevelopment scenarios. The private sector would only assume this risk if granted both a high expected return to redevelop the property, and a low acquisition price to purchase it. Neither of these are possibilities. Chapter 1 explained that while the site context of a typical property implies its industrial reuse, the corresponding demand for industrial space suggests little or no profit may be made in redeveloping these sites. Further, in the case of military surplus, the disposition of these sites takes place at prices set arbitrarily high by the federal government. Thus, the private sector balks and local government comes to inherit the property.

Second, while government is necessarily part of the problem, there are certain virtues to its involvement, both local and federal, in the solution. That is, these sites constitute wasting social assets with important efficiencies that only government can realize. The federal government is

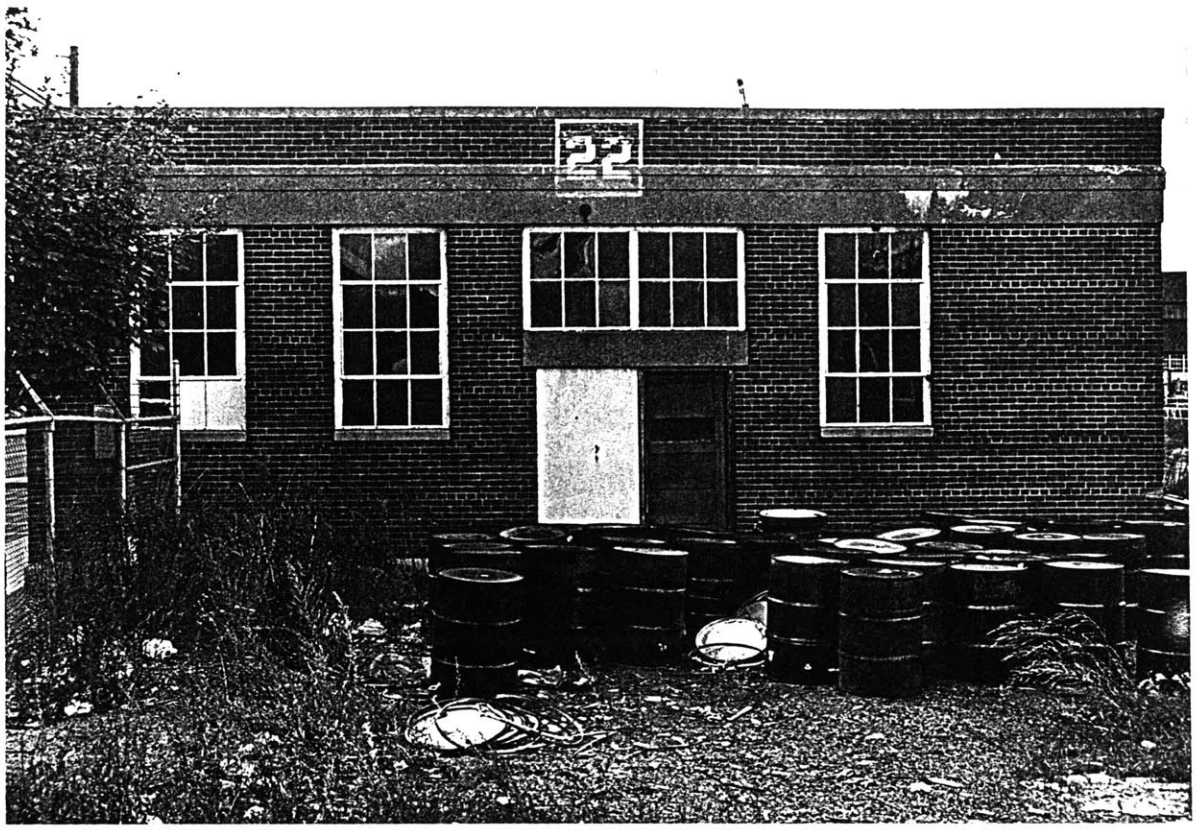


Figure C.1 Environmental liability is the foremost threat in the redevelopment of these sites. The BMIP's Building 22 circa. 1979. (photo courtesy of BMIP)

best equipped to aid in several dimensions of the development process.

**Environmental Liability.** The risk which diverts private sector interest results from damage inflicted during past use - either by the U.S. military or some corporate interest. As the new site owner, local government must assume this environmental liability. Rather, the federal government by its sheer size, is best positioned to indemnify new users against harms resulting from previous despoliation. This measure would encourage private reuse development of these sites.

**Long-Term Perspective.** The nature of the development concept described herein provides distant benefits, sometimes no earlier than ten years. However, given the initial outlay of capital, private sector research indicates a negative net present value for this type of undertaking. Rather, this development scenario requires the low discount rate that the federal government is capable of providing.

**Political Feasibility.** The Federal government is able to grant its military installations to municipalities at favorable prices absent of the political complications which would accompany low price dispositions to the private sector.

Local municipalities as are also well suited to be part of the solution. These aspects are viewed both in economic efficiency and distributional terms.

**City-wide Economic Growth.** The location of these sites in relation to downtown areas provides for the spatial accommodation of customized service goods producers and servicers - crucial to functioning of the larger service-based economy. Their agglomeration in space, given this particular location, can greatly enhance the competitiveness of the city's major service industries. These firms, unable to pay downtown rents, possess a willingness-to-pay compatible with the prevailing land rent gradient. Further, their space costs are not subsidized by government ownership. Rather the lack of private interest in these sites, demonstrates that government ownership imposes little opportunity cost on the private sector.

**Distributional Welfare Considerations**. The distribution of these sites in space in space provides for an important economic stimulus to deprived areas. These developments furnish thousands of new jobs in distressed communities, enhancing the local economic well-being. As well, synergistic linkages with other government programs (e.g., job training, vocational education etc.) increase the effectiveness of complementary government efforts.

**New Venture Creation** The availability of large amounts of vacant industrial space, which can be relatively cheaply rehabilitated, makes possible new venture creation. The removal of traditional barriers to entry like high space costs encourage small firms to develop and also provides a seed bed for new business growth. Simply put, the vacant buildings provide inexpensive shelter for small enterprises who could not otherwise afford to be in business. Further, as demostrated by this thesis, renovation to make this space usablable is cost-effective.

**Flexibility to Act.** Local government control through a quasi-public corporation provides a more efficient means than does direct government intervention. Here, both the federal and local governments' current tendency towards paralysis is stymied by using a private framework to accomplish public goals. Similar to tax increment financing (TIF) or payment in lieu of taxes (PILOT) programs, the non profit development company scenario is a method to reinvest the profit from increased property value back into site improvements. This is achieved absent of government interference ,and without subsidizing private enterprise with public money.

Thus, while government was, is and always will be inextricably involved with derelict sites, this predicament presents government with a tremendous opportunity. This work both establishes the nature of derelict industrial sites, and proposes a reuse solution, capable of being implemented in today's world.

As suggested throughout this thesis, the interest converting vacant facilities into productively functioning *Customized Products and Service Centers* will mushroom in upcoming years. Both the BMIP and the BNY are, today, deluged with visiting task forces, while the coordinators of these projects are besieged with speaking requests. The intention of each of these inquires is indubitably to discover each park's "secret of success." The author's upmost hope is that by now this process has been demystified, and is as simply comprehended as its delightful simplicity allows. However, understanding what has been shown to be a pragmatic solution, does not guarantee the success of its transferability to other sites.

Throughout this work, the sensible minded reader has perhaps looked for hard and fast numbers, ratios, or guidelines in order to make back-of-the-envelop calculations for a similar project. However, few were given. This is some ways a reflection of the projects themselves. Both were successes because they went forward despite discouraging numbers or the lack of quotable comparables needed to justify taking the project's risk. As well, if one were to run a sensitivity analysis of the cases to each of the four considerations above (physical, market, financial and managerial), no clear result would ever be discerned. Each component is linked to the other; thus, a tremendous strength in one can seriously outweigh a

deficiency in another, while the reverse may equally be true. The lesson is only actual experience will tell the outcome. Planners may bemoan the lack of federal funding, yet the BNY's autonomous approach proved that the necessity of public money is not entirely clear. Others might claim that physical limitations and locational attributes preclude success; the BMIP showed otherwise. What is known is that no redevelopment effort will be simple, or likely to succeed instantaneously. Rather, Thomas Edison's epigram on creative effort rings true.

The above words of confidence should not be interpreted as some fiat for federal government's continued disintegration in urban affairs. As before, if the national government does not wish to be part of the solution, it will necessarily be part of the problem. The states and municipalities who will have to undertake these projects require support. In order for them to grant the favorable leases needed for developers to begin on these centers, they must obtain the derelict sites at reasonable costs. This mandates that the federal government re-establish its former favorable disposition strategy toward military bases and other elements of the industrial complex rather than attempt to retire an infinitesimal amount of the deficit at the expense of those least able to pay. In addition, money must be appropriated to fund technical assistance, so that the minds most capable of understanding the complex web of issues in these cases, will be inclined to do so. Finally, a recognition of the importance of our cities to America's future prosperity must be made, a long-term commitment to urban problems be given, and a vision for tomorrow's well-being be imagined. Only then will today's regressive economic tide be reversed

# REFERENCES

## References


Aneiro, R. J. (1991). "Brooklyn Navy Yard: Small Businesses Opportunities Abound." *Brooklyn Progress* (October), reprint.

Aneiro, R. J. (1991). "For Small Business in the City, Smaller Could be Better." *Crain's New York Business* (June 17), reprint.

Aneiro, R. J. (1992). President and Chief Executive Officer, The Brooklyn Navy Yard Development Corporation (New York), Personal Interview (March 10).

Beynard, M. D. (1987). "When the Military Leaves Town." *Urban Land* (June), 6-10.

Beynard, M. D. (1988). (ed.) *Business and Industrial Park Development Handbook*. ULI- The Urban Land Institute, Washington.

BNYDC (1982). *1982 Annual Report of the Board of Directors May 1982.* The Brooklyn Navy Yard Development Corporation.

BNYDC (1990). *Brooklyn Navy Yard: Report of the Brooklyn Navy Yard Development Corporation May 1990*, Brooklyn Navy Yard Development Corporation, New York.

BNYDC (1991). *Brooklyn Navy Yard: Report of the Brooklyn Navy Yard Development Corporation June 1991*, Brooklyn Navy Yard Development Corporation, New York.

BNYIC (1992). *The Brooklyn Navy Yard Industrial Coalition* (Pamphlet). Brooklyn Navy Yard Development Corporation, New York.

Bradshaw, A.D. and Chadwick, M.J. (1980). *The Restoration of Land:The Ecology and Reclamation of Derelict and Degraded Land.* Blackwell Scientific Publications, Oxford, England.

Breznick, A. (1991). "Navy Yard Sailing on Despite Recession." *Crain's New York Business* (August 19), reprint.

Bridges, E.M. (1987). *Surveying Derelict Land.* Clarendon Press, Oxford.

Brooklyn Union Gas (1983). *The New Brooklyn Navy Yard: A New York Success Story* . (pamphlet) Brooklyn Union Gas, New York.

Buss, T. F. and Vaughan, R.J. (1987). "Revitalizing the Mahoning Valley" *Environment and Planning C: Government and Policy* 5, 433-446.

Butler, Michael (1991). "Brooklyn's Battling Navy Yard." *Portfolio- A Quarterly Review of Trade and Transportation* (Summer 1991), reprint.

Carpenter, C. (1990). "Brooklyn Navy Yard Rebounds." New York Post (Monday, March 5), reprint.

Carpenter, C. (1990). "Navy Yard's Bustling with Small Businesses." New York Post (Tuesday, May 1), reprint.

Chatterji, M. (ed.) (1987). *Hazardous Materials Disposal.* Brookfield, USA.

Church, A. (1988). "Urban Regeneration in London Docklands: A Five-Year Policy Review" *Environment and Planning C: Government and Policy 6,* 187-208.

City of Boston-- Mayor's Office (1981). "Port of Boston Restoration." *City Record* (December 14), 938.

City of Boston-- Mayor's Office (1982). "EDIC To Develop Army Base." *City Record* (May 17), 318.

City of Boston-- Mayor's Office (1983). "BMIP Boasts Five New Tenants." *City Record* (March 7), 147.

City of Boston-- Mayor's Office (1983) "EDIC Dedicates New Industrial Center." *City Record* (October 17), 712.

Clairney, T. (1987). *Reclaiming Contaminated Land.* Blackie, Glasgow, England.

Council of Europe (1985) *Urban Regeneration in European Regions of Old Industry.* Urban Renaissance in Europe Study Series #23. Council of Europe, Strasbourg.

Dabney, D. Y. (1991). "Do Enterprise Zone Incentives Affect Business Location Decisions?" *Economic Development Quarterly* 5 (4), 325-334.

Deterouzos, M., Lester, R.K. and Solow, R.M. (1989). *Made in America: Regaining the Productive Edge.* MIT Press, Cambridge, MA.

Economic and Development Corporation of Boston (1975), *Economic Development Plan for the Boston Marine Industrial Park (Draft November 1975)* City of Boston, MA.

EDIC/ Boston (1990) *Growth in the Nineties: Perspectives for Strategic Economic Development in Boston.* EDIC, Boston.

Garbarine, R. (1991). "Navy Yard A Haven for Small Users." The New York Times, Real Estate Section (Wednesday, July 3), reprint.

Grove, P. B. (ed.) (1966). *Webster's Third New International Dictionary of the English Language Unabridged.* G and C Merrian Company: Springfield, MA , p. 607.

Greenberg, M. R., Popper, F. J. and West, B. M. (1990). "The Toads: A New American Urban Epidemic." *Urban Affairs Quarterly* 25 (3), 435-454.

Guskind, R. (1990). "Picking Up the Pieces." *Planning* (June), 12-16.

Halverson, J. (1991). "Planning and Developing A Speculative Industrial Building." *Economic Development Review* (Fall), 31-34.

Henderson, J. Vernon (1991). "Optimal Regulation of Land Development through Price and Fiscal Controls." *Journal of Urban Economics* 30, 64-82.

Herberich, D. (1992). Project Director -- Boston Marine Industrial Park, Economic Development and Industrial Corporation (Boston), Personal Interview (March 4).

Hill, C., Deitrick, S., and Markusen, A. (1991). "Converting the Military Industrial Economy: The Experience at Six Facilities." *Journal of Planning Education and Research* 11, 19-36.

Hill, I. (1992). Planner, New York City Department of Planning -Brooklyn Office, Personal Interview (March 9).

Hopkins, S. E. and Rupp, L. (1991). "Reclaiming Vacant Industrial Space: The Case of Franklin Square, Syracuse, New York" *Economic Development Review* (Fall), 52-55.

Kennedy, J. P. (1990). "From Military Surplus to Municipal Gold Mine" *American City and County* (June), p. 28-30.

Landauer Associates, Inc. (1989). "The Industrial Property Market" *Urban Land* (April), 28-29.

Lavender, S. J. (1981) *New Land for Old: the Environmental Renaissance of the Lower Swansea Valley.* Adam Hilger Ltd., Bristol, England.

Luke, J. S., Ventriss, C., Reed, B. J., and Reed, C. M. (1988). *Managing Economic Development: A guide to State and Local Leadership Strategies.* Jossey-Bass, San Francisco, CA.

Marlin, M.R. (1991) "The Effectiveness of Economic Development Subsides", *Economic Development Quarterly*, 4 (1), 15-22.

Miller, M. (1988) "Boston's Design Center." The Boston Globe (July 8), 21.

Minter, N. (1989). "Creating A Business Incubator." *Urban Land* (January), 38-39.

Moore, T. S. and Laramore, A. (1990). "Industrial Change and Urban Joblessness: An Assessment of the Mismatch Hypothesis." *Urban Affairs Quarterly* 25 (4), 640-658.

Morley, S., (1989) *Industrial and Business Space Development: Implementation and Urban Renewal.* E. & F.N. Spon, New York.

Oleksuk, D. K. (1991). "Creative Solutions to the Rehabilitation of Old Industrial Buildings: The Case of Canal Place, Akron, Ohio." *Economic Development Review* (Fall), 48-51.

Oser, A. S. (1990). "The Navy Yard Hosts a Housing Factory." The New York Times (Sunday, October 14), reprint.

Reisdorph, D. H. (1991). "Industrial Parks As an Economic Asset." *Economic Development Review* (Fall), 29-30.

Seaton, C. (1990) "Navy Yard Gets Landlegs and Biz." *The Daily News* (Sunday, April 1), reprint.

Sheridan, R. (1990). "Turning Old Factories into New -Style Industrial Buildings." *Urban Land* (February), 2-5.

Skelly, R. (1992). "BNY Shoots for Ship Repair Contracts." *Water Ways - New York's Waterfront News* (February), reprint.

Smith, M. A. (1985). *Contaminated Land: Reclamation and Treatment.* Plenum Press, New York, New York.

Spink, F. H. (1986). "Building 114: Boston, Massachusetts." *Urban Land Institute Project Reference File* 16 (No. 18, October-December), 1-4.

Stein, C. (1989). "Mass and Texas Square Off Today on Control of South Boston Center." The Boston Globe (September 11), reprint.

Thompson, M.V. and Wood, C. (1984). *The Implementation of the Derelict Land Reclamation Programme*. Occasional Paper #11, Department of Town and Country Planning, The University of Manchester.

Tippetts-Abbett-McCarthy-Stratton: Engineers and Architects with The City of New York, Planning Office (1970) *The Brooklyn Navy Yard, A Redevelopment Plan*, Fordam University - Center for Urban Affairs, New York.

Turner, M. E. (1991). "Improving an Area's Competitiveness: The Creation of Broome Corporate Park." *Economic Development Review* (Fall), 44-47.

University of Leeds (1969). *Proceedings of the Derelict Land Symposium*. Illifffe Science and Technology Publications, Surrey, England.

University of Liverpool Environmental Advisory Unit (1987). *Transforming our Waste Land: The Way Forward*. Her Majesty's Stationary Office, London, England.

Urban Land Institute (1988). "Brooklyn Army Terminal Redevelopment Expansion" *Urban Land* (November), 29.

VIA (1990) "A Cause for Optimism." *VIA* - Port of New York-New Jersey (August), reprint.

Wallwork, K. L. (1972). *Derelict Land: Origins of a Land Use Problem*. David & Charles, Newton Abbot, England.

Wolf, M. A. (1990). "Enterprise Zones: A Decade of Diversity." *Economic Development Quarterly* 4 (1), 3-14.

Yudis, A. J. (1984) "Design Center Gets $21m Loan." *The Boston Globe* (Friday, September 14), 31.

Yutkowitz, E. (1991) "Back to the Future for Small Business." in *Brooklyn* (pamphlet). Brooklyn Union Gas, 8-9.