

AN ANALYSIS OF ADAPTIVE REUSE HOUSING DEVELOPMENTS

by

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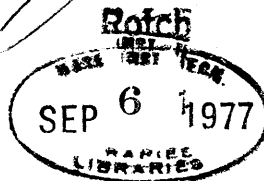
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**AN ANALYSIS OF
ADAPTIVE REUSE
HOUSING DEVELOPMENT**

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abstract

Adaptive reuse represents a new track in housing development. Within the last few years there has been an upsurge in the volume of recycle efforts attempted. However this momentum has been slow in accumulating due to the hesitancy of the construction industry. Although the perception of risk has diminished somewhat, there are still notes of uncertainty associated with conversion development. Recycle development maintains an air somewhat different than the traditional avenues of new construction, rehab, or historical renovation.

The primary thrust of the thesis is to introduce the reader to the characteristics that define adaptive reuse housing development as a process. This is accomplished on three levels within the study: a survey of reuse activity through programs, sponsors, and projects; a case study analysis of the developmental process through the characteristics that influence it; and a comparison of similar and dissimilar reuse attributes with traditional forms of housing production.

Several case studies are reviewed in an attempt to focus upon specific issues which were important to the reuse development process. Information generated came primarily from development team members closely associated with the projects analyzed. Discussion of the process revolves around the development categories of Actor Involvement, Community Response, Regulatory Controls, Construction/Costs, and Marketing. Each actor reflected upon elements of the case as it progressed over time and their interaction with the development categories.

Through understanding of the problems and pitfalls involved in the reuse process, one may better perceive its significance as a tool for housing. It is hoped that the information generated through the cases will provide insight into the roles of actors involved and the impact of recycling upon their role execution. Also the fundamental differences which separate recycling from conventional housing is looked upon as a critical element for measuring the perception of risk associated with adaptive reuse development.

Thesis Supervisor: Langley C. Keyes, Professor, Dept. Head, DUSP.

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PREFACE

Adaptive reuse represents a new track in housing development. Within the last few years there has been an upsurge in the volume of recycle efforts attempted. However this momentum has been slow in accumulating due to the hesitancy of the construction industry. Although the perception of risk has diminished somewhat, there are still notes of uncertainty associated with conversion development. Recycle development maintains an air somewhat different than the traditional avenues of new construction, rehab, or historical renovation.

purpose & goals

It is the purpose of this paper to provide an introduction into the adaptive reuse field and the characteristics that define it. As more and more people begin to view recycled development as a tool for the production of housing, it is necessary to understand the benefits and risks that are attached to such a process. Therefore the intention here is to expose those attributes which separate conversion development from the usual housing techniques.

The primary goal of this thesis will be to surface those problems of procedure, construction, and marketing which are a product of reuse development and to thereby identify the separation between adaptive reuse and conventional developments. Attention will focus on the production of recycled residential developments as compared to traditional forms of housing. These comparisons will be established through a discussion of the risks and pitfalls involved in producing a conversion project. Members of the housing industry and actors directly involved in recycling will be utilized to reflect upon the inherent differences in putting together such a package as they affect each actor.

methodology

The key to analyzing the elements of risk in an adaptive reuse program lies with the actors involved in such a production. It is their view that defines the values

associated with risk in real estate. Through the viewpoint of each member of the development process, we can begin to get at the issues which shape their perception of risk and in turn the differences which exist between recycling and traditional housing.

Three cases are presented in this paper which offer several examples of recycled housing developments. The basic approach in discussing the study cases and overview is through the broad development categories of Actor Involvement, Community Response, Regulatory Controls, Construction/Costs, and Marketing. The five categories outline a broad base for analyzing the development process of recycled projects. Individual steps taken by actors as well as problems which surface during the process are attributed to and discussed within the context of each category. The framework provided by the topical areas serve as the foundation for discussion in Sections 3.0-Case Studies, and 4.0-Overview. Contents of the five development components are outlined below.

Actor Involvement looks at the role of the development team and any change in involvement which may occur due to the reuse procedure. Development team members (developer, designer, and builder), were asked to reflect upon their execution of duties and note any deviation from traditional association

with housing development. This was approached in two ways. First by analyzing the managerial/supervisory role of the individual in charge. Secondly through reviewing the workload assumed by the 'company' or staff members. For the architect the 'company' refers to the in-house design staff or draftsmen; for the builder it is the non-supervisory construction crew and administration personnel; for the developer it is the administrative personnel. The supervisory/company view gives a greater perspective in reviewing the functions of individual team members.

The actors were also asked to discuss the elements of the conversion process within the framework of the four other topical categories. Their perception of what were the most important aspects in each category and what problems did exist shaped the presentation of material.

Community Response observes the roles of public involvement in the recycling process. Two levels of public input are focused upon; a) city government and b) neighborhood/community representation.

Regulatory Controls are discussed in terms of Building Codes and Zoning. The impact of such regulations upon reuse construction and the problems which are generated from the requirements are analyzed.

Construction/Costs reviews the elements of the actual construction process. Discussion revolves around the cost implications of reconstruction in terms of time and finances. Elements of estimation, demolition, structural/mechanical implants, and project duration are analyzed within the context of reuse construction.

Marketing looks at the tenant attractability of recycled settings in terms of locational qualities and physical attributes offered by the structure. This category helps to surface those qualities of conversion which are important to tenants such as image, amenities, size, etc.

case
studies

Using the framework assembled above, an analysis of specific case studies can provide in-depth view of those characteristics which shape the reuse development. As noted, actor perception of key aspects during construction was the basis for material. Through their close association with individual cases, critical information could be extracted from key actors not found elsewhere. Cases selected provide a representative sample of conversion efforts within the context of housing. By scrutinizing the elements of the development team within this small selection, we can begin to establish some common themes characteristic of recycling.

overview

A general overview of the reuse program is presented aside from the detailed case studies. This general appraisal of the recycle process acts as a discussion of those elements of the cases which can be attributed as characteristic of the reuse field. Therefore, the information surfaced within the cases can be compared with the overall perception of the entire reuse industry. The overview looks at the impact of the adaptive reuse field upon housing development and its expected direction in terms of conformance with traditional forms of housing production.

methodology
critique

The methodology used in this paper requires a dependency upon information given by individuals personally involved in the cases analyzed. Therefore it can be

assumed that the response of actors and the information given out may be subjective to a degree.

The "expostfacto" analysis does not allow the reporter to observe the developmental process as it progresses. It is then necessary to collect that documented information which exists as well as rely upon the memories of individuals closely associated with the project. Records of past events are not always kept by development members and thus necessitates dependence upon information generated through dialogue. Such information may at times be conflicting and thus distillation of comments may be necessary by the author.

Because the study cases are few, it is difficult to gain a representative study group which can reflect the qualities of the whole. The use of a diverse set of projects at such a small scale can only begin to define the relationship of varied building types within the reuse industry. Further evaluation of cases is necessary in order to gain a better perspective of the impact of reuse activity upon the development process.

1.0

AN INTRODUCTION TO ADAPTIVE REUSE

recycling: a definition

The first step in any discussion of adaptive reuse should begin with a definition of scope. It is generally thought of, and rightly so, that the term reuse as it is used within the construction industry is a form of rehabilitation. However the rehabilitation or reconstruction industry encompasses a variety of more explicit avenues each describing a particular building process. Such elements as restoration, renovation, rehabilitation, remodeling, and adaptive reuse make up the broader category commonly referred to as the rehabilitation field.

The characteristics of each construction technique are quite different, although not necessarily mutually exclusive or easily defineable. However with respect to recycling, the exact definition is not often clear. In order to help define the construction process and the characteristics which set it apart from other forms of reconstruction, we need to look at the qualities of each. Therefore prior to a definition of reuse, let us first look at what adaptive reuse is not. That is to say, a short description of the variety of methods which make up the preservation and rehabilitation arena.

RESTORATION is the art of returning the structure to its original historical role. This process requires thorough knowledge of the historical elements present at the time of construction. A true restoration would duplicate the architectural quality and atmosphere surrounding the initial structure as history dictated.

The basic concept of a RENOVATION is very similar to that of restoration. That is, the renovation is returning the existing structure to an earlier level of architectural quality. Of course this assumes that change has occurred over time either through degradation of property or through general remodeling practices. The renovation does not necessarily return to the original historical condition at time of construction as the restoration does.

Although often considered as an all encompassing categorical term, REHABILITATION is the specific procedure of upgrading a sub-standard structure. Rehab is generally noted as reinstating a degraded edifice up to all present building and safety code requirements. The improvement program does not necessarily exclude elements of historical rejuvenation.

Possibly the most common of all reconstruction methods through both association and volume, is the REMODEL process. Remodeling, by definition, is to remake or to model again. This procedure can occur many times, and usually does, over the lifetime of a well used building. As the individual tenants or owners change, they may each alter the existing edifice to a degree to suit taste or functional needs.

The change in functional use is the key element which divorces ADAPTIVE REUSE from all other forms of reconstruction techniques. It is the method by which the previous function of a structure is adapted to fit a completely new activity. Some examples of such change in building lifestyle are the CONVERSION of abandoned school buildings, parking garages, mills and factories, offices, and religious facilities into various forms of housing. It is not necessary that housing be the end product in order to fulfill the definition. However, this thesis will be concerned only with recycled residential facilities. Specific examples of such RECYCLING ventures will be viewed in Section 2.0. It should be noted that Adaptive Reuse, Reuse, Recycling, and Conversion are all labels describing the same construction technique.

The unique quality of change in use creates a myriad of problems not encountered in the conventional rehab methods. Although the recycling procedure may incorporate certain aspects of other reconstruction processes, it is set apart from all others due to the atypical activity for which it is intended. The adaptive reuse project not only requires general rehabilitation construction, but also needs spacial reorganization

which may be contrary to the structure's initially intended function. Further complications are encountered when viewing the change in activity as conflicting with present day building codes which are peculiar to use. For example, a mill built in 1890 for industrial purposes must somehow be manipulated to conform to 1976 code and safety requirements for multi-story apartments.

It is the transformation of building use which generates uncertainty around adaptive reuse development. Real estate characteristics normally attributable to residential development are askew to a degree as a result of the change in functional use. The probability of difficulty with construction estimation, conflict with regulatory controls, and uncertain public response has historically given fuel to the reluctance of the lending agencies to view adaptive reuse in the same frame of mind as conventional rehab. The reuse project does not conform to the traditional molds of the construction industry. Thus the role of recycled development maintains an air separate from the other members of the reconstruction field.

significance

Despite problematic characteristics, there has been a dramatic rise in reuse activity within the last decade. The growth in volume is due to an inviting atmosphere

within the housing sector created through economic pressures. In recent years common goals of the preservation field have crossed paths with the interests of the building industry. Mutual benefits to both interests have provided a strong foundation for recycle development.

Diametrically opposed motives have historically separated the two around economic issues. Business interests could not justify renovation of a building based solely upon its architectural significance. The decision factor was always predicated upon its economic return. On the other hand, preservationists saw great value in the historical representation projected by a building. However, with the emergence of recycling as an economic and conservation solution, the evolution of each stream has converged onto a common ground not previously possible. The once separate currents of the preservation movement and the business community are at least for the moment, united.¹

The roots of adaptive reuse are implanted in the efforts of historic preservation as well as a response to the economic climate in construction. For many years,

¹It should be noted that there are 'hard core' preservationists who think it hypocritical to preserve a building by changing its historical function. That is to say that a strict restoration is the only acceptable approach to preservation.

preservationists sought out many avenues in trying to repress the destructive effects of modernization. However, the realism of economics always seemed to penetrate the historic significance attached to a structure. It was necessary to provide a sound investment proposal and perhaps overcome the value of the property relative to its opportunity costs in order to save an historical building. Space utilization of buildings constructed for a specific purpose in another era were difficult to apply to today's standards. For this reason, many buildings were abandoned in favor of more recent architectural solutions.

The American cityscape holds a great wealth of neglected building stock. A slow accumulation of 'unuseable' structures grew into the urban fabric as modernization became the slogan for abandonment. Among the numerous structures laying idle were noted architecturally and historically significant buildings. A major resource was totally unnoticed and continually decaying with little recourse to reverse the trend. Only preservationists saw value in safeguarding such unproductive real estate.

Unfortunately the mind set of public and private industry set the stage for mass demolition of our architectural heritage. Changes in the economy and in the tastes of consumerism produced these functional misfits in society. Through total aban-

donment, gradual degradation, and inefficient usefulness there sprouted an unproductive and seemingly detrimental architectural sea. The response of course was to replace these uneconomic shells with fashionable and presumably more marketable real estate holdings.

First attempts at preserving architectural remnants were dependent upon locating a sponsor willing to bear the costly maintenance and unprofitable position that went with it. The poor investment attractiveness inevitably turned toward museums and strict preservation as historical artifacts. However only a limited number of such uses could be absorbed by a community prior to saturation.

Other means were actively sought as an alternative to the strict preservation avenue. Recycling emerged as a seemingly feasible approach within the constraints provided by a business oriented society. The technique of recycling an old building has recently grown into the most consequential tool of the preservation force. Although the concept of reusing a structure for a completely alien function is not a newly conceived notion, it has only been within the last ten years that it has proven itself as a confident force in the marketplace.

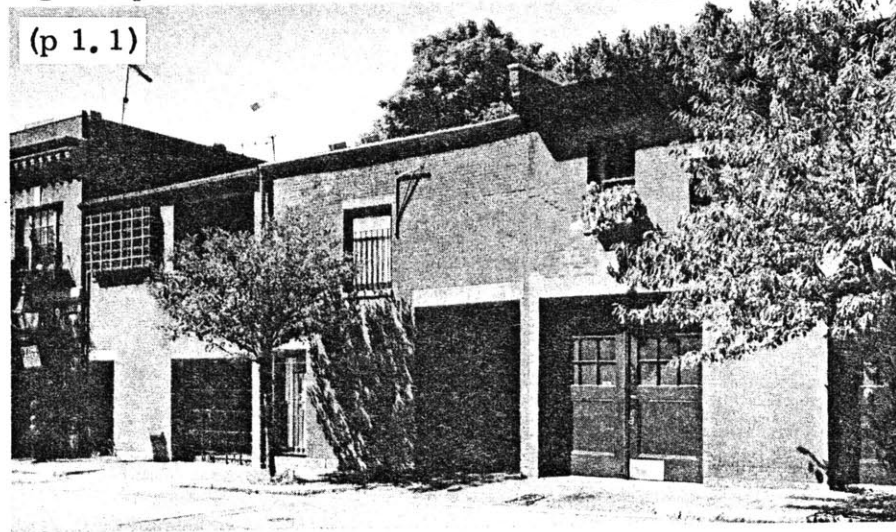
The building industry has gradually moved toward adaptive reuse via quite a

different route. Pressures due to inflationary costs at all levels have made new construction a difficult process. The move closer to rehab has been occurring over some time. However the concept of reuse has only recently been focused upon as suitable urban building sites for housing become scarce.

There are several qualities which make reuse an alluring alternative to new construction. First, a conversion project potentially offers the benefits of proximal location to desired amenities at a reasonable price. Costly utility requirements as well as an existing integration into an established community or neighborhood are already provided for. Secondly, relative to housing, an abandoned non-residential facility would offer less problems with speculation than would an existing residential shell. This is reflected in the low acquisition costs which have been typically obtained. For example, an abandoned or ill-utilized warehouse, factory, or school, would be less costly to acquire if the seller's anticipation for similar future use were reduced due to low market demand. Lastly, a reuse development has a much greater potential for aesthetic architectural diversity which is a highly marketable commodity in today's apartment cliché. A converted building can stand out in facade, an image reflector; in unusual room configuration; and in larger apartment units than typically

found on the market. Beneficial characteristics such as these have proven effective in directing some segments of the housing industry to view reuse as an attractive investment.

It is the fusion of preservation interests with the current economic situation that has created an atmosphere conducive to adaptive reuse. The two tracks are at a crossroads which provide a strong incentive for pursuing recycle development. Reuse construction reaps many of the benefits related to straight rehab such as tax incentives, generally lower construction costs, and a variety of programs for financing through preservation. But the non-residential structure's key role is prime location without high acquisition costs.



Reaching back to take a look at past conversions, the Boston area offers some prime examples. Although Boston is by no means the only area to provide a stage for recycling, it must certainly be

considered a major center for such activity. At the turn of the century, the Beacon Hill carriage houses were refitted to accomodate housing needs (p 1.1). Such reuse of the carriage houses reflect the value of location even in the early 1900's.² No doubt there have been a number of unrecorded small scale conversions over the years as the city has grown.

However, not until the last ten years has there been any noticeable increase in conversion attempts. One of the earlier recycled projects in the Boston area was the Prince Spagetti Factory. The conversion of the waterfront factory into condominiums was accomplished by Anderson Notter Associates acting as developer and architects (1965-69). Since that time the momentum has slowly gathered for housing conversions in the Boston area. Section 2.0 looks at the diversity of projects completed. One of the latest of such residential reuse developments is Franklin Square House, a former hotel in Boston's South End which is analyzed later in this study. Although recycling into housing is a predominant development activity, there are numerous other conversions which make up the recycling scene.

²Boston Redevelopment Authority, Recycled Boston, 1976. p. 3.

2.0

A BRIEF SURVEY OF THE REUSE FIELD

The survey presented here is a brief exposure of the reuse industry in the Boston area. Discussion of sponsors and projects provide a perspective on the scope of work being pursued in the region. It is designed not as a comprehensive search, rather a definition of its current limits. Funding programs which are outlined, cover a broad spectrum of federal, state, and private sources. These are presented only as an illustration of the potential for conversions of non-residential structures to utilize existing federal assistance mechanisms.

2.1 programs

In reviewing the spectrum of public funding sources available at all levels of government, it is apparent that none are designed "specifically" for reuse. The term "adaptive reuse" occupies no singularly unique position which can be viewed separately as a funding recipient. However the conversion process can qualify under two major public funded categories. The categories of historic preservation and housing rehabilitation offer a wide variety of funding sources for planning assistance and property development. With this in mind, a discussion of accessible federal, state, and private programs for potential use in reuse housing developments are outlined here.

federal

The federal government provides numerous aids in assistance programs for reconstruction.² As noted before, the term 'reuse' is not directly eligible as a recip-

²For a comprehensive survey of federal programs of both direct and indirect association with historic preservation, consult: 1) National Trust for Historic Preservation, A Guide to Federal Programs, Washington D. C., Preservation Press, 1974. 2) National Trust for Historic Preservation, A Guide to Federal Programs, 1976 Supplement, Washington D. C., Preservation Press, 1976.

ient but rather indirectly through the broader categories of preservation and housing rehabilitation. Although mention is now made of adaptive reuse and is recognized by sponsoring agencies in their funding proclamations, recycling is not called out separately for financial support. The same can be said of technical and planning assistance grants also administered through federal agencies.

Existing federal grants and programs can be broken down into two main areas of focus. The first concentrates on the provision of financial assistance for specific project reconstruction. Such money is available for property acquisition and actual reconstruction of a specific property or district. Primary attention focuses on those properties which have obtained landmark status within the framework of the National Register of Historic Places. However this is not a necessary prerequisite for obtaining federal money. There are also programs designed to cater to the reconstruction of individual properties which may be historically significant without being listed in the Federal Register.

The second avenue focused upon by administering agencies deals with the provision of financial and technical assistance for professional planning and research. Money gained through these sources can be used to obtain professional consultant

services or for costs incurred during in-house studies on preservation issues. Such money is designed to support research, formulation of masterplans, and technical services for preservation efforts.

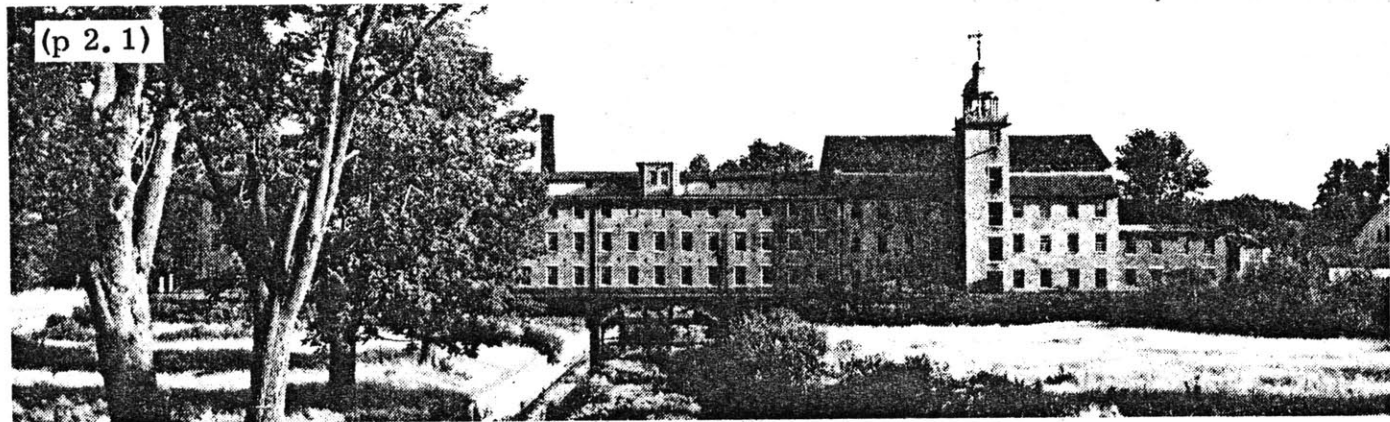
Both forms of grant-in-aid programs help to stimulate the preservation effort and are easily accessible to reuse developments. Because recycling begins with an old structure, it is recognized as building preservation. The change in use of historic structures does not cloud the reasoning behind the conservation effort. The programs listed within this section have been used in the past for reuse projects and offer an opportunity for further utilization through recycling.

NATIONAL PARK SERVICE

The National Historic Preservation Act of 1966 was created by Congress to acknowledge the involvement of the federal government in the preservation of historic properties. The major force of this act provided for matching grant-in-aid monies for properties listed on the National Register of Historic Places. National administrative supervision of these grants is the responsibility of the Office of Archaeology and Historic Preservation within the National Park Service. Grant structure is a 50%

matching grant program which is administered in Massachusetts by the State Historical Commission.

This program encompasses all aspects of the preservation process; including financial aid for planning, acquisition, and development of landmark properties. Planning money is primarily designed for state agency utilization for survey and nomination expenses. Acquisition sources allow for a much broader use. Justification for this is tied to the NPS requirement that the public interest be protected for a number of years if ownership is with a private organization or individual. Aid for development of a national register site is closely supervised through on site inspection as well as drawing and specification submissions. Although construction money is designed for strict preservation use, this can be circumvented through the use of grant money for exterior renovation work only. In this way interior conversion can be accomplished separate of NPS money applied to the facade. Therefore an owner of a landmark structure could convert the building to a new use and still acquire NPS funds if exterior reconstruction does not alter the facade to any great degree. The Crown and Eagle Mill in North Uxbridge (p 2, 1) received some \$23, 600 in NPS funds for restoration purposes. The mill was slated for conversion to elderly housing, however it fell



victim to arsonists as construction began,³

Also within the realm of NPS is the transfer of surplus federal properties to state and local governments for preservation. The Surplus Property Act of 1944 and the Federal Property and Administrative Services Act of 1949 enables the transfer of designated surplus properties without charge for the purpose of insured historic preservation. An important amendment in 1972 gives the state and local recipients an opportunity to utilize such properties for income generating purposes. Hence the opportunity exists for a possible lease of the structure for housing purposes.

³Healy, Healy, Brown, Architects. Framingham, Mass.; Carelton Knight, "State Agency Finances Rehab, Reuse," Preservation News, No. 8, (Aug. 1975) p. 11.

DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

HUD monies provide the major source of federal aid when discussing any aspect of housing development, whether it be reuse or conventional. The main staple of the conversion process has historically been the Section 236 subsidy program of the National Housing Act. This program was designed to accomodate low and moderate income groups in rehabilitated housing. However the National Housing Act of 1974 created Section 8 which provides a deeper subsidy and is already replacing the 236 program in the recycling arena. These federal subsidies coupled with MHFA financing provide the greatest source of reuse capital in Massachusetts.

Other sources of reuse funding can be provided through technical assistance monies from the HUD 701 Planning Assistance Program. "The Office of Local Assistance (OLA) of the Massachusetts Department of Community Affairs under the HUD 701 Planning Assistance Program helped to prepare the school reuse plan for the Stephen Palmer School in Needham. The professional staff of the OLA worked closely with the local School Study Commitee. Important to the success of the reuse plan was the initial commitment of the OLA to 'encourage and convince local citizens not to tear down a sound and potentially usable' building.⁴

Title 1 of the Housing and Community Development Act of 1974 enables funds from the community block grants to be utilized for preservation purposes. The use of such funds are at the discretion of the recipient community. However the preservation money need not be used for National Register sites only. The block grant funds may be used as matching money for other federal grants. The Boston Redevelopment Authority (BRA) views this program as having the greatest potential for recycling ventures in the future.

DEPARTMENT OF TRANSPORTATION

Although transportation money is focused at transportation facilities only, such aid can be used for reviewing the feasibility of conversion of those structures. Planning funds are available for transit structures as a result of amendments made to the Amtrak Act of 1974.

NATIONAL ENDOWMENT FOR THE ARTS

The Architecture and Environmental Arts program of the NEA provides a 50% matching grant for professional studies. The financial aid can be used to sponsor

⁴Judith N. Getzel, Recycling Public Buildings, ASPO Planning Advisory Service, Report No. 319, 1976.

research, feasibility studies, and design studies of unusual or atypical design problems. This is an all encompassing grant which could be used for unique housing studies.

HISTORIC STRUCTURES TAX ACT

Possibly one of the greatest impacts upon the preservation effort will come in the form of Senate Bill S. 667. At present there exist no tax incentives to preserve an existing structure. Although the bill is aimed at landmark sites only, it is an important step in creating a reverse incentive for the owner. The Historic Structures Tax Act of 1975 denies the landmark owner of tax write-off for the cost of demolition of a landmark building as well as the undepreciated value of the structure. Also, any new building which would occupy a former landmark property would be limited to a straight line depreciation schedule.

SURPLUS SCHOOL CONSERVATION ACT

John H. Heinz (R-Pa.), is introducing an important bill in the House of Representatives (HR 13575) which would provide federal grants for local governments to renovate closed school buildings for productive purposes. Also the School Con-

servation Act (HR 12628) would enable anyone buying an unused school, an accelerated tax write off.

URBAN RENEWAL

One of the greatest tools for conversion in the Boston region has come from the urban renewal program. The Boston area has attracted federal funds under the label of urban renewal. Because of these monies, the BRA has been able to pay high acquisition costs of selected properties and either sell or lease the properties to private developers at reduced rates. Adaptive reuse in the City of Boston has benefited greatly due to such property transfers.

Through the re-sale of urban renewal properties, the BRA can help shape the form of development upon a specific parcel. Costs to the developer are generally much less than market conditions dictate. This enables private development of designated sites in otherwise unapproachable conditions. The Sear Crescent Building at Government Center was assembled in this way. Also, there has been increased reuse activity in the Waterfront area due to renewal funds.

The long term lease is very similar to the resale format. Individual properties are leased to private interests for a specific use. The long lease enables private

financing to be used in recycling the structure. Among the projects utilizing this process was the Old Boston City Hall.

state

State funding sources for historic preservation in the form of grants and incentives are limited in resources and scope.⁵ Most individual states do not have a valid preservation program other than that which is funded at the federal level. National Register grant programs form the main body for state administered aid.

However, there are several types of state programs which supplement the primary legislation provided at the national level. Three basic aids are the State Grant Program, the tax incentive at the state level, and financial assistance through the State Housing Agencies.

STATE GRANT·IN·AID

The grant·in·aid at state levels are few. Presently only approximately ten states have a budget for historic preservation; and the money available is limited or

⁵For a comprehensive survey of state programs of both direct and indirect association with historic preservation, consult: National Trust for Historic Preservation, A Guide to State Historic Preservation Programs, Washington DC, Preservation Press, 1976.

not a perpetual source. In Massachusetts, approximately \$600,000 was set aside for historic preservation through the budget of the Bicentennial Commission. However the limits placed on maximum appropriation per individual project are extremely low. The probability of using such limited funds for recycle ventures are small, given the ceiling established and the initial intent behind the program.

TAX INCENTIVES

State incentives through tax reductions or in lieu of payments are very scarce. The impact of such programs for landmark structures is almost non-existent. Although such tax breaks exist on the books in several states, they have not been used effectively.

In contrast to this, the State of Massachusetts offers a tax incentive through Chapter 121A of the Massachusetts General Law. This program is an all encompassing statute catering to both new and rehab development. 121A creates an opportunity for a selected limited dividend corporation to develop "blighted" property. The agreement calls for a percentage of gross revenue in lieu of traditional property taxes. The escalating property tax rate is thereby circumvented. This is a most popular tool in recycling projects in and around the Boston area.

local

Municipal involvement in historic preservation is supported almost exclusively by federal and state funds. Their role is defined only as administrators of non-municipal monies for building conservation. As an example, in the City of Boston, the BRA manages federal urban renewal funds for use in private development.

private

There are many private foundations offering assistance in the preservation of various aspects of our architectural background. Most of these organizations are geared toward a specific type of structure and are limited in resources. However there are a few major private groups which derive funding from outside sources and are thus enabled to provide greater assistance.

NATIONAL TRUST FOR HISTORIC PRESERVATION

The NTHP is a private non-profit organization chartered by Congress in 1949. Their interest in reuse has grown immensely over the last few years. The trust offers two programs of use to conversion programs. The Consultant Service Grant Program provides a 50% matching grant for costs of obtaining professional services

for historic preservation. However these consultant grants are primarily for member non-profit organizations.

The National Historic Preservation Fund is a revolving fund again designed for member non-profit groups. Trust involvement is through 3-4% low interest loans for preservation purposes. It is anticipated that this seed money will act as a catalyst for developing local funds.

EDUCATIONAL FACILITIES LABORATORIES

EFL is a non-profit corporation established in 1958. Primary services are to the education industry as consultants in space utilization of buildings. Recently the EFL has become deeply involved in adaptive uses of existing facilities both in conversion "into" and "out-of" educational facilities. EFL offers technical assistance and research into the area of adaptive reuse and is a useful source of information.

ARCHITECTURAL HERITAGE FOUNDATION

Architectural Heritage in Boston will be administering a revolving fund supplied by the State of Massachusetts. The foundation is currently surveying a wide variety of possible sources of funding "specifically for reuse." The study is expected to be completed during the latter part of 1977.

The programs outlined here describe a range in opportunities which exist for use in conversion studies and developments. Some are more ideally suited for public or non-profit developers, however the potential for private development still remains. Again, the list provided here helps to define those sources which are applicable for adaptive reuse housing developments.

2.2 sponsors

Adaptive reuse developments have begun to flourish in the Boston area within the last decade. Financial assistance for recycling has come primarily from the efforts of MHFA in helping to provide mortgage money for such construction. In the face of extremely limited support by private lenders for reuse, the state agency has taken an active role in establishing conversion developments as a viable housing technique. In contrast, private lenders have been shy in dealing with adaptive reuse for other than condominium development.

public

The greatest force behind the growth of conversion development in the State of Massachusetts has come as a consequence of the assistance provided by MHFA. In 1968 the State Legislature created MHFA as a semi-autonomous extension of state government. The purpose of the agency is to provide the opportunity for low and moderate income housing within a mixed income setting. This is done through low interest loans given to non-profit and limited dividend developers.

The agency acts as a bank in investment outlays and limits developers to a 6% ceiling on returns. In return for this, long term loans are provided at about 6% interest. Fees for services must be paid by the developers to MHFA, in this way the agency acts as a self supporting mechanism for construction lending. All mortgage money is supplied through the sale of tax exempt bonds which are secured by the mortgages and revenues generated from the properties.⁶

MHFA involvement in adaptive reuse has been strong as can be seen in figure 2.1. The number of housing units either completed or in the process to date is

⁶MHFA, Eighth Annual Report, Sept. 1976, Boston, Mass. 1976.

YEAR	PROJECT	INITIAL USE	LOCATION	UNITS	UNIT TYPE	MORT. AMT*
1974	Piano Craft Guild	Factory	South End	174	Artist	3.5
1975	Chauncy House	Office	Chinatown	87	M. Income	2.0
1975	Upton Inn	Inn	Upton	34	M. Income	.89
1975	The Tannery	Mill	Peabody	284	Elderly	6.0
1975	Masonic Bldg.	Hall	E. Boston	54	M. Income	
1975	Central Grammer	School	Gloucester	80	Elderly	1.8
1975	Assumption School	School	E. Boston	96	M. Income	2.1
1976	Franklin Sq. House	Hotel	South End	193	Elderly	4.9
1976	Leeds Village Apts.	Mill	Northampton	19	Elderly	.47
1976	Gardner Apts.	Comm.	Roxbury	49	M. Income	1.4
1976	Mercantile Bldg.	Comm.	Waterfront	122	M. Income	5.1
1976	Academy Knoll	School	Marlboro	109	Elderly	2.5
1977	The Close Bldg.	Warehouse	Cambridge	61	M. Income	1.5
1977	Cotton Mill Apts.	Mill	Northbridge	55	Elderly	1.6
1977	Francis Gatehouse	Mill	Lowell	90	Elderly	2.8
1978	Kings Beach Tower	Factory	Lynn	183	Elderly	5.3
1978	Bowdoin School	School	West End	35	Elderly	1.1
				1786		45.6

*In millions of dollars

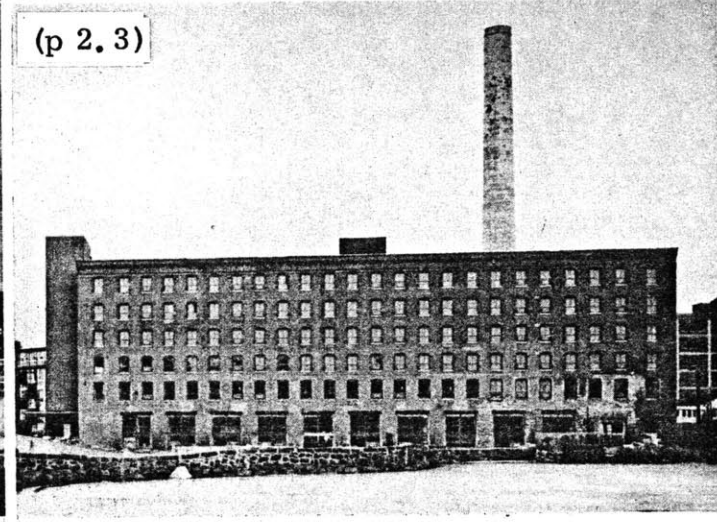
figure 2.1 MHFA SPONSORED REUSE PROJECTS

approximately 1786 units. This commitment to recycling reflects an investment of 45.5 million dollars in seventeen individual projects. Although the number is not significant when compared to the total MHFA commitment of 3.16 billion, it still represents a valuable source for financing. Rehabilitation has played an important role in providing housing at a reduced cost. An agency representative noted, "Rehabilitation loans (at MHFA) have taken about 10 percent of the dollars, but 15 percent of the units. . . ."⁷

Gut rehab is required of all reconstruction developments financed through the agency. In this way the degree of uncertainty is reduced when viewing the qualities of an old structure. By tightly controlling the rehab process through gut construction, the agency as lender is more assured of the longevity of the of the project over the 40 year life of the mortgage. This control mechanism certainly drives up the cost of construction in a reuse package.

Some of the proclaimed reuse projects financed through MHFA are the Piano Craft Guild in the South End (p 2.1), the Tannery in Peabody (p 2.2), and the

⁷Carleton Knight, "State Agency Finances Rehab, Reuse", Preservation News, No. 8, (Aug. 1975), p.1.



Mercantile Buidling on the Waterfront. Each are unique in their settings, history, and present use.

private

Private lenders have been reluctant to provide mortgage money for reuse developments to date. Unlike some of their counterparts in New York City where several private lenders have taken an active pursuit of reuse development, the Boston area remains cautious. This is especially true of the rental market which has failed to attract the banks. On the other hand, condominiums have been able to seek private money for conversion into ownership. Resident ownership has obviously presented a picture of a greater stability than long term rental property.

Thus most privately financed adaptive reuse projects in the Boston area are condominiums.

There are no private lenders which appear to have a mortgage portfolio of significance in adaptive reuse construction. Although there are banks which hold several small scale (under 25 units) projects, no single lender has shown a major interest in reuse development. One of the initial banks to enter the reuse arena was the Boston Five, who provided financing for the Old City Hall developed by Architectural Heritage Inc. of Boston in 1970. Since then, the Boston Five has only lightly approached housing conversions. The Charlestown Savings Bank has focused some of its attention into the reuse sector. They have had numerous small dealings in housing within the North End and Waterfront areas of Boston. However the character of its involvement has again been limited in overall investments.

2.3 projects

Boston reflects an atmosphere of major activity in reuse construction. The area holds many individual and unique projects of varied scale and character. Ties

to the past are well instituted in this region, and the reuse of once prominent structures helps to maintain this strong relationship.

A large number of recycling developments have been produced in the Boston area since their initial growth in the late sixties (figure 2. 2). Both housing and office space have flourished in their respective markets offering unique architectural and locational amenities. The source of building stock has come primarily from mills and factories no longer needed for their initial purpose; from schools left vacant due to the changing population patterns; from offices unable to compete in the market; from warehouses, fire stations, and religious facilities all of which have given up their former lifestyle to accommodate a new demand for space.

Following are a number of adaptive reuse housing developments in and around Boston. They are representative of a variety of building types. In an attempt to expose a more diversified spectrum, the projects presented here are those not commonly exposed through articles and accounts of the recycling scene in the Boston Region.⁸

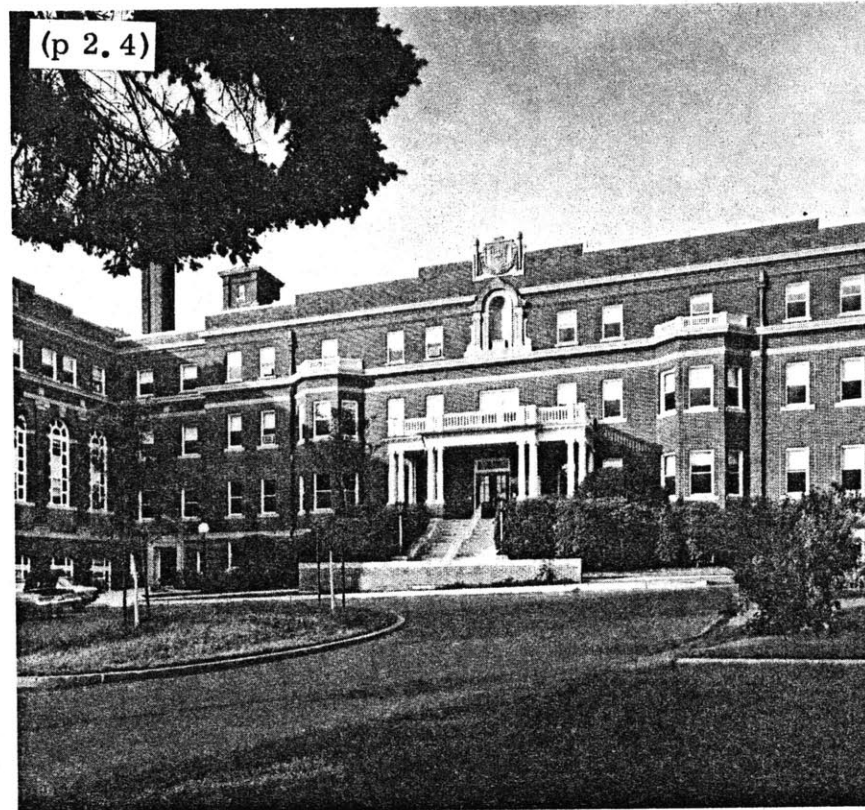
⁸For a more comprehensive inventory of recycled structures in the Massachusetts area refer to Gene Bunnell, Built to Last, National Trust for Historic Preservation, to be published in the Summer of 1977. Also; Boston Redevelopment Authority, Recycled Boston, 1976.

YEAR	PROJECT	INITIAL USE	LOCATION	UNITS	UNIT TYPE	FINANCE
65-69	Lewis Wharf	Comm.	Waterfront	90	Condos	Private
65-69	Prince Spagetti	Factory	Waterfront	46	Condos	Private
68-69	Comm. Wharf Bldg.	Comm.	Waterfront	53	Market	Private
1970	Stoneholm St. Apts.	Garage	Fenway	120	Market	Private
71-72	Piano Factory	Factory	South End	174	Artist/Low	MHFA
70-73	Amory St. Apts.	Factory	Jam. Plain	233	Elderly	BHA/Turnkey
73-74	Chauncy House	Office	Chinatown	87	M. Income	MHFA
73-74	Somerset Apts.	Hotel	Back Bay	192	Market	Private
71-75	The Vendome	Hotel	Back Bay	110	Condos	Private
1975	Masonic Bldg.	Hall	E. Boston	54	M. Income	MHFA
1975	Berkeley Center	Hall	South End	33	Market	Private
1975	Assumption House	School	E. Boston	96	M. Income	MHFA
1976	Gardner Apts.	Comm.	Roxbury	49	M. Income	MHFA
75-76	Franklin Square	Hotel	South End	193	Elderly	MHFA
75-76	Mercantile Wharf	Comm.	Waterfront	121	M. Income	MHFA

figure 2.2 REUSE PROJECTS IN THE CITY OF BOSTON

YEAR	PROJECT	INITIAL USE	LOCATION	UNITS	UNIT TYPE	FINANCE
1962	Continental Hotel	Hotel	Harvard Sq.	79	Married Student Housing	Univ.
1975	The Convent	Convent	Central Sq.	39	Elderly	Private
1977	The Close Bldg.	Ware- house	Cambridge	61	M. Income	MHFA

figure 2.3 REUSE PROJECTS IN THE CITY OF CAMBRIDGE



There exist a variety of building types often used for recycling into housing. One of the most noticeable resources most often tapped are vacant schools. The Educational Facilities Laboratories notes that more schools have been converted into other uses than any other building type. Shown here are St. Ann's Academy (p 2.4) in Marlboro, converted into elderly housing of 190 units. (Arch.: Anderson-Notter Assoc.) Also shown is Assumption House originally constructed in 1890. It was recycled in 1975 into mixed income housing. The former school is located in East Boston (Arch.: Childs, Bertman, Tseckares Assoc.). Both schools were financed through MHFA.

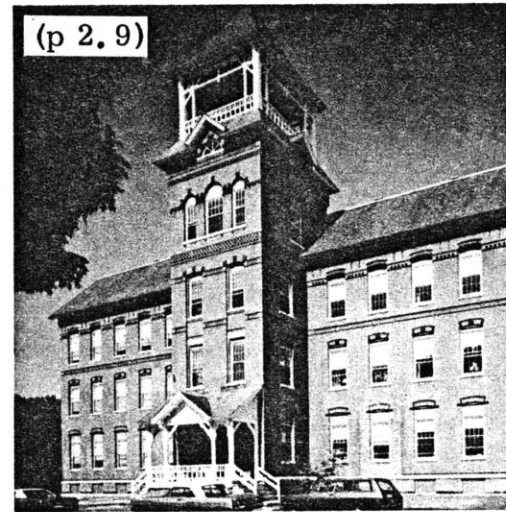


The use of hotels for residential use has been a popular tool for quite some time as exemplified by the conversion of the Continental Hotel (p 2. 6) in 1962 into married student housing. The structure was recycled by Harvard University and is located near Harvard Sq. The Somerset Hotel (p 2. 7) lies in Boston's Back Bay on Commonwealth Ave. Originally built in 1897, the hotel was converted to apartments in 1974. (Arch.: Childs, Bertman, Tseckares, Assoc.)

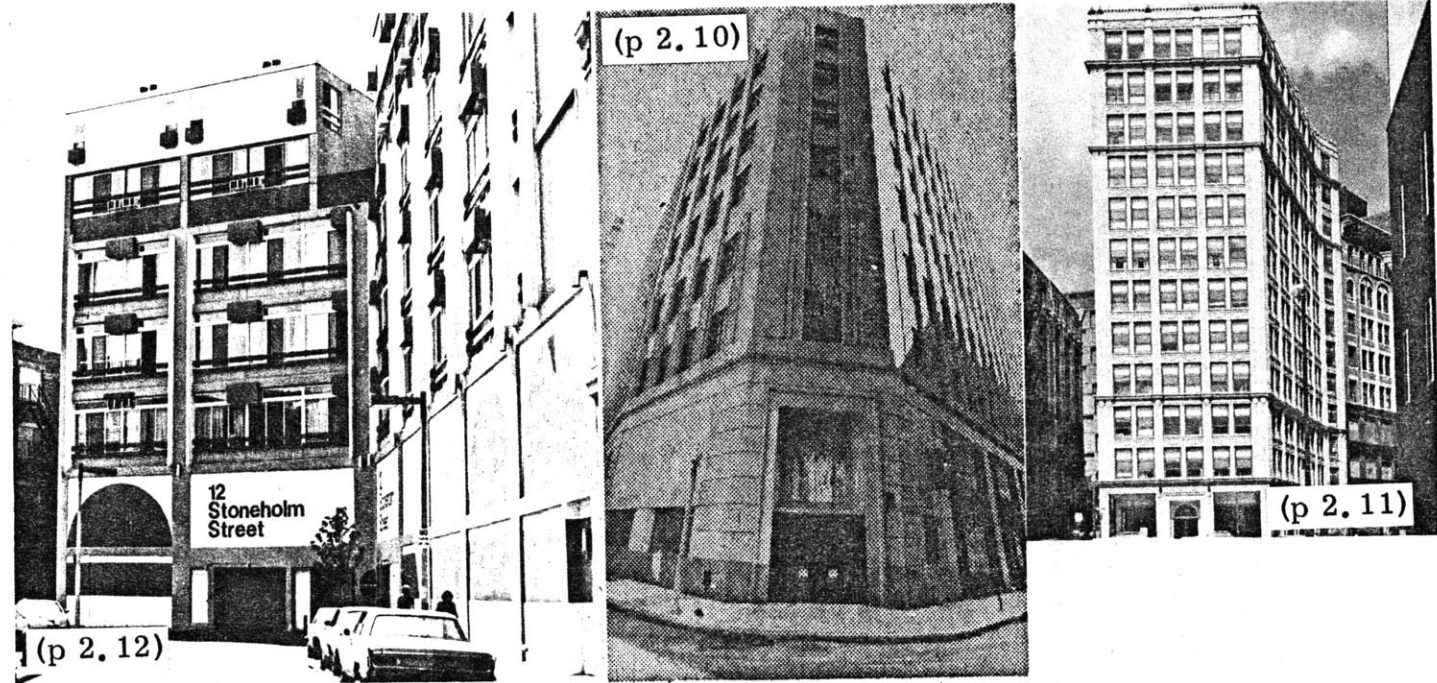
(p 2.8)



(p 2.9)



Factories and mills offer a great potential for adaptive reuse. In Cambridge the Close Building is currently undergoing adaption to elderly housing (p 2.8). The former Will Scientific Instruments Co. is due for completion in 1977. (Arch.: Gelardin/Bruner/Cott, Inc.) Also the Leeds Village textile mill in Northampton (p 2.9) was completed in 1976. The mill was recycled into elderly housing utilizing MHFA financing. (Arch.: Douglas Herring)



The attraction of downtown living has created an opportunity for conversion of office structures. One of the latest of such proposals is the reuse of the Herald-Traveler Building located off the Boston Common (p 2. 10). Plans show the structure housing 119 elderly units under MHFA financing. (Arch.: Boston Architectural Team) In contrast to the latest, the first office conversion in Boston was carried out by the same developer, of the Herald-Traveler Building, State Street Development Co. Chauncy House (p 2. 11) located in the Chinatown area, was adapted in 1974 to mixed income housing. It is an MHFA project. (Arch.: Boston Architectural Team/ Archplan Inc.) The urban environment has also spawned another source of housing conversions. 12 Stoneholm St. in the Fenway area was a parking garage which was adapted for housing in 1970 (p 2. 12). (Arch.: Anderson-Notter Assoc.)

3.0

CASE STUDIES

The qualities of a reuse project are often singularly unique. It becomes difficult to compare conversion attempts of schools, factories, and hotels each with their own physical limitations and each within their own specific setting. The confrontations which do exist are a product of that particular mixture of development experiences, social climate, and physical characteristics. Nonetheless there are some common elements of the development process which are important in analyzing the reuse program.

Discussion of the recycled development process in the case studies revolves around the five topical components of actor involvement, community response, regulatory controls, construction/costs, and marketing, as outlined in the Preface. Actor Involvement relates the activities of the development team members to reuse construction duties and reviews any deviation from traditional roles. Community Response looks at the interaction of city and neighborhood groups with respect to recycled housing proposals. Regulatory Controls discusses the impact of code requirements upon design and costs. Construction/Costs reviews the techniques and problems associated with actual building construction and their relative cost implications. Finally, Marketing examines the consumer value produced in light of amenities provided to tenants through recycling.

Review of specific projects was considered important in analyzing the role of adaptive reuse housing developments within the construction industry. Therefore three case studies have been developed. To make comparisons possible, each case study revolves around a similar set of components outlined above. By scrutinizing the various elements of the development process it is possible to surface specific

problems encountered relative to each case. It is hoped that the qualities reflected by each project have some representative value for the broad category of recycled housing.

Selection of the cases was dependant upon two criteria; their relative exposure, and specific development characteristics. It has been a fundamental approach in this report to review and expose those conversion projects not widely known. Therefore the conversion developments selected were those not commonly published or reviewed. More importantly, the characteristics of the development team, the type of financing used, and the character of the building itself, helped to determine the value of the case study. The contrasts in experience, development process, and client relationship, helped to provide a broader base for discussion.

3.1 franklin square

Selection of Franklin Square House was based primarily upon the interaction between the complexities of the building itself and the development team formed around the project. The team has thorough knowledge and experience in both rehab

and reuse activity. Their expertise lends itself as a good case study in terms of analyzing their approach and perception of the reuse industry. Also the unique architectural qualities of the old hotel and the structural characteristics within it complement the building types of the other cases reviewed. In an attempt to review a diversity in financial structuring with the study cases, and in turn a different approach toward construction, each offers a separate lending mechanism. Franklin Square (FSQ) is an MHFA financed elderly housing complex utilizing a Section 8 subsidy.

(p 3. 1)



The Franklin Square House began its career as the St. James Hotel in 1868. It was originally designed by John R. Hall, as a luxurious hotel accommodating up to

500 guests. The site was located on part of the old South Burying Ground which necessitated removal of 7000 bodies prior to construction. The hotel closed in 1882 due to changing neighborhood patterns which left the South End site undesirable for such a hotel. That same year the New England Conservatory of Music took over the facility as its new headquarters. It provided housing for 550 students. The building functioned as a school for some thirty years when growth of the Conservatory forced a move to a larger site. In 1902, the Conservatory was converted into the Franklin Square House for business women. Necessary expansion required the removal of yet another 800 bodies from the burial grounds. The addition began in 1914 under architect O. Henri Desmond. Franklin Square functioned as a home for business women for fifty-six years.¹⁰

3.1.1 profile

location

Franklin Square House is located at 27 E. Newton St. in Boston's South End.

It is attractive to elderly residents because of its proximity to public transportation

¹⁰State Street Development Co., Franklin Square House, 1976.

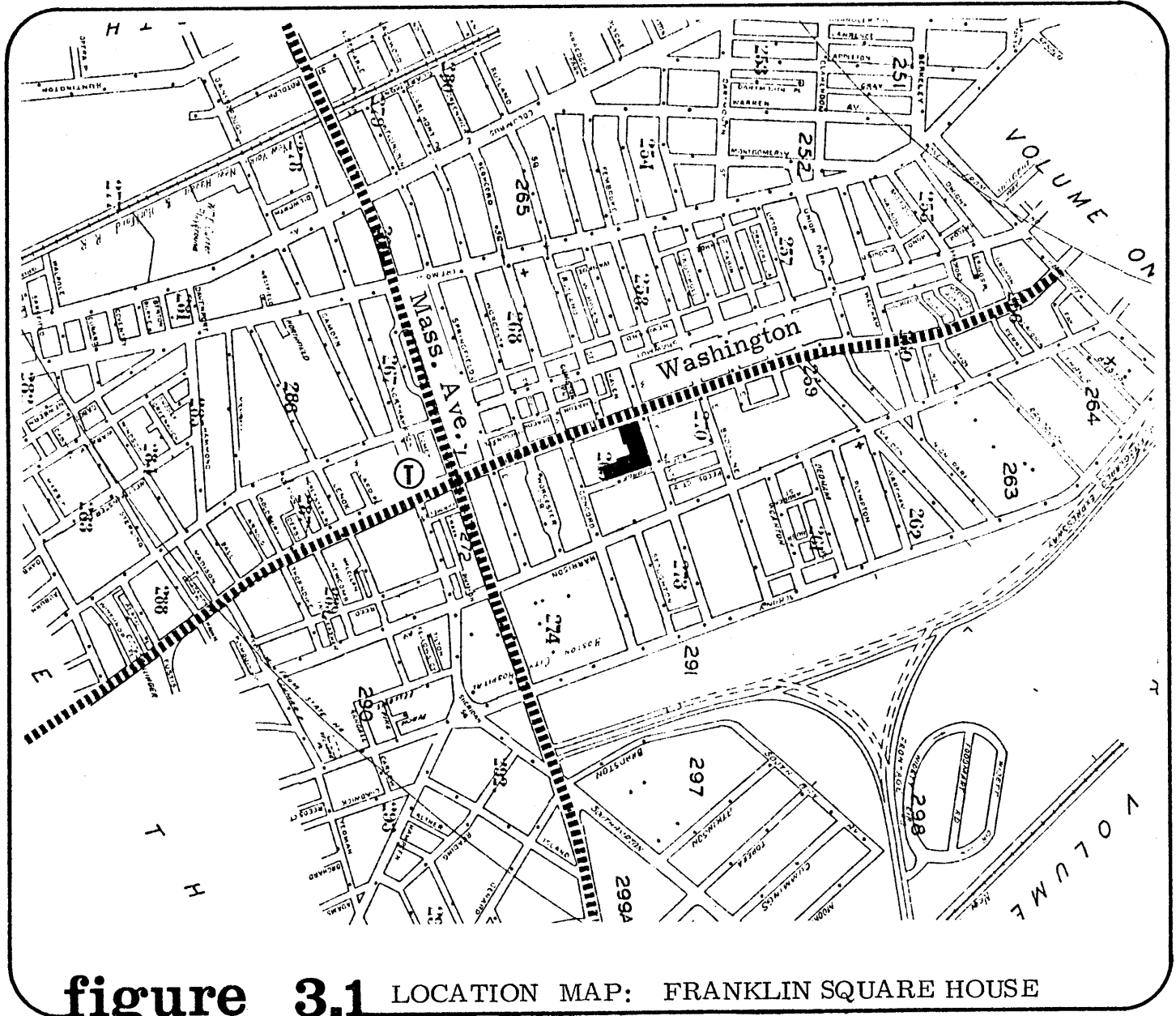
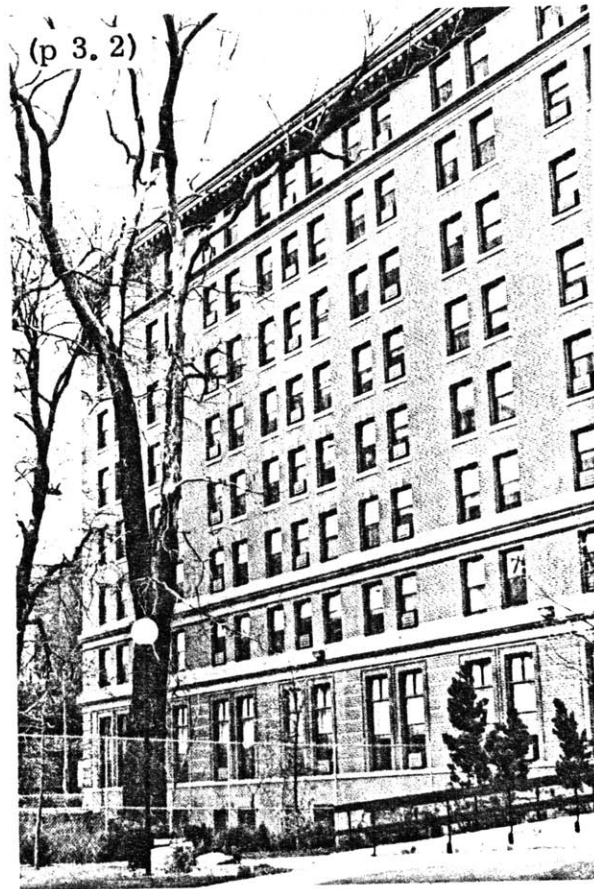


figure 3.1 LOCATION MAP: FRANKLIN SQUARE HOUSE

and public parks. The Northampton MBTA station is located only several blocks away which provides easy access to the entire Boston area through both subway and bus lines (fig. 3.1). Adjacent to the property are Franklin Square and Blackstone Park. Although the South End is in a stage of gradual revitalization, the residential character of the area is still in a depressed state.

project



The recycled edifice is a six story wood frame structure with a brick facade of French Second Empire design (p 3.2). The exterior skin was preserved as much as possible to retain its earlier flavor. Franklin Square contains 193 elderly housing units with a population of 214 (fig. 3.2). The structure has approximately 178,000 gross square feet of space (fig. 3.3) including community facilities within the basement and at ground level.

Project: FRANKLIN SQUARE HOUSE

Location: BOSTON'S SOUTH END

27 E. Newton St.

Tenant Profile: Elderly 100% Pop: 214

Number of Units: Total 193 Studio 51 1 121 2 21 3 -- 4 --

Market Units: -- Subsidized Units: 193 Subsidy: Sec. 8

Commercial or Other Uses: 10,000 s.f. Community Space,

Medical Facilities

Gross Square Footage: 178,000 Avg. / Unit: 900

Acquisition Costs: \$380,000 Unit: \$1,970.

Construction Costs: \$4,000,000 Unit: \$20,700

Total Project Cost: \$5,470,000 \$28,342

Acquisition Date: 1973 Construction Start: May 1975 Finish: Oct. 1976

figure 3.2

PROJECT PROFILE

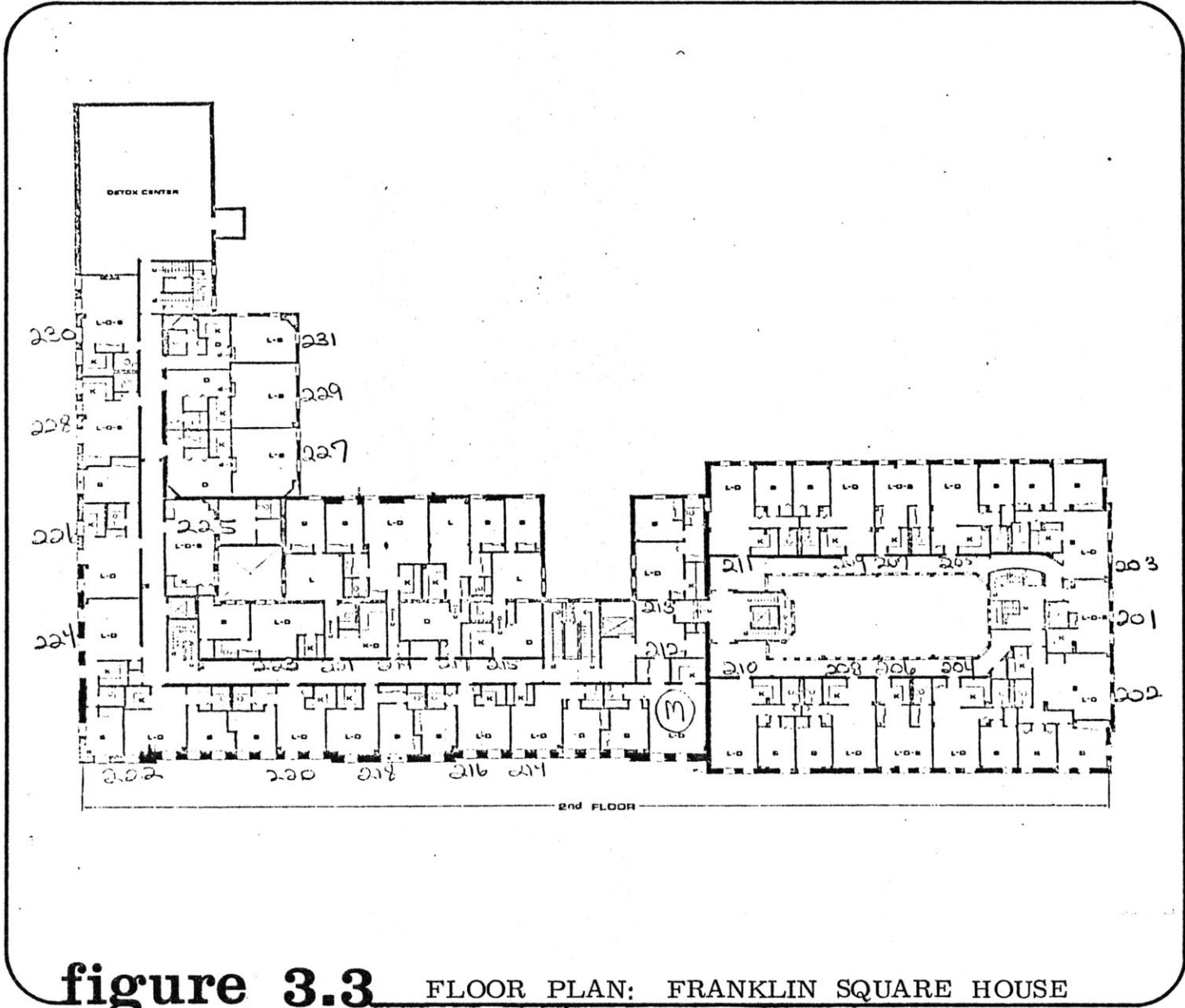


figure 3.3 FLOOR PLAN: FRANKLIN SQUARE HOUSE

actors

Franklin Square is one in a series of projects developed by State Street Development Co. John Gallagher, a representative of SSD, emphasizes the "critical" need to assemble the right team of individuals to work on conversion projects. He argues that it is the personnel that helps to overcome the problems of uncertainty contained within a recycling process. The expertise of each member of the team is utilized to provide a stable foundation for the "risky" investment (fig. 3.4).

The Massachusetts Housing and Finance Agency was the lending agency for the project. As mentioned previously, MHFA is a major sponsor of reuse construction in the Massachusetts area.

Ownership of the property is held by the St. James Company, an extension of SSD. Management of the project is accomplished through State Street Development Management Corporation.

3.1.2 development calendar

In 1970, the City of Boston purchased Franklin Square House explicitly as housing for nurses at the Boston City Hospital. However, a change in plans caused

developer	Developers for Franklin Square House is State Street Development Co. SSD has participated in a number of conversion projects in and around Boston. Among these were Chauncy House in the Chinatown area. At present they are involved in two recycling projects, the Bowdoin School on Beacon Hill and the former Herald American building located downtown.
architect	The Boston Architectural Team has been notably involved in reuse and rehab and are architectural consultants for Franklin Square. Approximately 50% of the firm's present design and supervision work is derived from recycling exclusively. New construction makes up only a small segment of the total design load. BAT works closely with State Street Development in a large number of their reconstruction projects including those mentioned above.
builder	Continental Wingate Corp. Builders were general contractors for Franklin Square. Their expertise in reconstruction is well recognized in the Boston area with approximately 30 years in rehab. Again CWC works closely with State Street in many of their conversion ventures.

figure 3.4 ACTOR PROFILE: FRANKLIN SQUARE HOUSE

the house to remain vacant for several years. Because of rapid degradation of the building, the Dept. of Public Facilities of the City of Boston began to seek alternatives for utilization of the edifice.

Interim use of FSQ helped to shape its future role as elderly housing and community space. Vacant space in the large structure was used by members of the South End community for a variety of activities. Among these uses, several of which still remain today, were an alcoholic detoxification center and the South End Little City Hall. Also housed were a number of senior citizen support activities including a health clinic for nearby residents. This usefulness to the community provided a significant image of Franklin Square as a public asset. Thus the interim use began to define a strong link to the South End. Elderly residents played a significant role in determining the future development of the site. Such activity focused upon design review of proposals, and programming input during preconstruction.

As the Dept. of Public Facilities (DPF) began to review proposals for private development of the building, community members began to take an active voice in determining its future. State Street Development Co. became involved in the pro-

ject early in 1973. SSD along with design consultants Archplan Inc. submitted preliminary development schemes to the City of Boston for conversion of the Franklin Square House into elderly housing. In competition with other private development submittals, the SSD/Archplan proposal was selected by BRA and DPF agencies with direction from community residents during open meetings. Throughout the summer a number of meetings with neighborhood residents were held to define program requirements for the conversion.

A wide range of input was provided from city agencies and community members creating a complex framework for approval. A myriad of constraints such as definition of elderly facilities and minimal design review were imposed by community residents and representatives of prospective elderly tenants through the Council of Elders. Those represented by the South End Historical Commission brought forth public interest in the transformation of the edifice. State Street acquired the Franklin Square site at a reduced purchase price of \$380,000 coupled with a 121-A status, thus ensuing local control through the DPF and the BRA. Aside from local jurisdiction, subsidy allowances for the project impose further requirements through MHFA and HUD agencies. There existed a great many con-

straints provided through both local government and neighborhood involvement in determining the parameters for development. This phase of the predesign segment required a substantial time input from the developer to set the stage for design and construction.

Boston Architectural Team entered the Square project as design and construction supervisors in the summer of 1973. At that time both BAT and CWC Builders began to analyze the structural systems closely. Cataloguing of the building was made extremely difficult due to the many alterations that had occurred over the years. The architect notes that "layer upon layer" of plaster, wallpaper, and paint over the entire wall system made it impossible to assess all the structural deficiencies which were later exposed. However the poor condition of the wood frame construction was easily seen through the undulating corridors which had settled over the years. A previous solution to the uneven wood floor had been to fill the depression with concrete at each level further burdening the sagging structure. However, this problem area later became the location for an elevator thus avoiding the structural inadequacies. There were many individual remodeling "techniques" of this type found in the project.

With preliminary working drawings and cost estimates in hand, the development team began the long approval and funding process with MHFA. Initial submittals began in late 1973, however review practices and delays in available funds through the bonding authority at MHFA delayed mortgage money in 1974. Accepted plans and specifications were ready for construction pending available money. Construction was slated to begin in spring of 1975.

As demolition began, many hidden problems began to plague the project. Because of the badly eroded character of the building, demo work was a costly element of the building process. Unanticipated structural problems surfaced which necessitated work stoppage. A major wooden truss spanning the lobby was unusable and presented a dangerous working environment for the construction workers. Also, a critical bearing wall at grade was found to be off-center from the vertical load it was supposed to support. Hence, five floors were supported upon only floor joists at the first level. These conditions required the workers to vacate the building until corrective measures were taken. Corrective measures meant total shoreing of all floors within the interior. The tenuous working environment generated through the demo process brought forth great pressures from Occupational Safety and Health Administration (OSHA) inspectors.

Despite the many unanticipated difficulties which grew out of the construction process, the project was completed only slightly over initial time estimates. Completion date was October 1976, a full eighteen months after Franklin Square began. Although time schedules were met, cost overruns were encountered. The many unplanned structural deficiencies absorbed the small contingency budgeted for the job. As a counter measure, an additional eleven units were added to the total project and financed separately from the primary agreement. In this way cost problems were allocated to the new units which carried a greater mortgage figure.

With completion in October 1976, rent up began in early November. Response to the recycled structure was exemplified by the quick rent out. Even allowing for processing of applications and the referral through the Council of Elders, the units were considerably full by January 1977. Managers of the building attributed the elegant qualities of the lobby (p 3. 3) and architectural image of the facade as being a significant selling point to prospective tenants. Configuration and uniqueness of individual units appeared to play a secondary role for most tenants. However, the unique apartments were occupied immediately.



3.1.3 discussion

actor involvement

As John Gallagher mentioned, it is the team of individuals that counteracts the uncertainty of the reuse process. It is the team that reduces the perceived risk through application of their expertise and knowledge of older structures. The individual members cope with the conversion process in varied ways. However all

seem to be predominantly concerned with maintaining relatively controlled cost and time schedules. Their involvement centered around an on the spot decision making process. This helped to expedite problems at the site and thus reduce time which can reduce costs associated with the project duration.

architect

Supervision by individual members of BAT was intensive in the FSQ project. The pre-construction phase required heavy involvement during evaluation of the existing site. Interaction with engineers/builder/developer in assessing and cataloging the building was costly to the design firm. Every effort was made to minimize site design¹¹ through the use of field generated 'as-built' drawings. Documentation of the existing site prior to construction was approached in a less than comprehensive way due to the costliness of reproducing a complete set of building plans,¹²

The most intensive supervisory role was during the actual construction phases. Supervising architects had to "live at the job" to keep up with constant detail changes. Representatives at BAT noted they spent two years of their life literally visiting the

¹¹The term "site design" will be used in this report as being the on-site decision making process relative to architectural or engineering solutions.

¹²Luke Cohen, BAT, Architects, Boston, Mass.

site each and every morning and afternoon. This is in contrast to the normally accepted route of heavy involvement in the pre-construction design phase.

In-house staff involvement in Franklin Square was small in comparison to the active role of the supervisor. Because of the need to reduce production costs, time commitments for drawings were kept marginal. This attitude encompassed both the inventory of the existing structure and the working drawings. The cataloguing process was prepared with only the "critical" elements defined in any detail. The definition of what was deemed "critical" proved to be less than adequate. Several problems surfaced later which should have been avoided. Among these, a misplaced bearing wall. After the initial phases of inventory and preliminary working design documents were completed, the staff commitment was very limited. In-house work revolved primarily around constant revision of the working drawings. BAT noted there was no final design generated from the office, rather the documents were forced to follow the site design.

The architect's perception of fees for reuse design services are that they should be above that of new construction. Necessary supervisory involvement on the part of the architect and engineer generate greater labor costs in contrast to production

costs. However there are two counterbalances which restrict the higher fees for services. The first is a general public notion that because a shell exists, "you don't have to do as much." This connotation of services for reconstruction inhibits the potential for greater fees even if justified. More importantly, the designer must be competitive for commissions in the marketplace.¹³ This dictates a ceiling on expected fees as an incentive for employment. Also, an extension of this same line of reasoning, the designer cannot raise the costs of design fees too high or it will effect the financial setup of the project. With this ceiling superimposed upon the designer, the professional must seek a route to compensate for the added supervisory commitment. Therefore the approach is to limit involvement in contractual drawings as an answer to high supervisory costs. The production process is watered down in order to maintain a balance in in-house costs versus revenue (design fees). Although BAT did feel higher fees were justified, they have managed to do a large number of recycling projects under the same or similar system. Therefore the numbers seem to work out for the firm.

¹³Luke Cohen, BAT, Boston, Mass.

builder

The builder for Franklin Square played a much more involved role in the pre-construction and even pre-design phases of the project than would be found in new construction. The expertise of the constructors were called upon to help in the building evaluation process. In such a capacity, the builder acted as a consultant in definition of potential cost and erection problems. This activity complemented the role as the architect/engineer in evaluation the structure. Because of the initial involvement, extra fees were required by the "consultant" general contractor. Also, this preconstruction involvement necessitated a negotiated contract rather than a bid process. CWC Builders provided information not only on cost impacts of design decisions, but also on an alternative method than that given by the engineer for a mechanical system which would be more easily installed. It was later installed as the builder asked. This heavy supervisory commitment carried over into the construction phase as well.

The roles of the on-site building superintendent and the project supervisor were more intense with a reuse development.¹⁴ Because of the many decisions which were necessary throughout the construction phase, both individuals were required to

¹⁴Ben Pollechuk, CWC, Boston, Mass.

assess and prescribe alternate methods of construction. Interaction with architects and engineers were carried out daily. Although the building superintendent is traditionally tied to the site, at Franklin Square the superintendent's activities were intensified. There was no cost differential for his performance. However the project supervisor was obligated to spend much more time on cost control of the project and therefore supervisory labor charges increased.¹⁵

CWC argues that the company effort in recycling is not altered from the general rehab process. Although the construction techniques are more difficult due to the structural changes and complete alterations in interiors, this is compensated for through the close design supervision both previous to and during the rebuilding. Hence it is the supervisor who must eradicate any problems prior to assigning the workforce. Initial estimates of costs and labor requirements shape the number and qualifications of the people to be involved. Therefore, tradesmen other than the supervisor, are not affected any differently by reuse construction techniques.

¹⁵It should be noted that all rehab/reuse projects are given a fixed price by the general contractor. The job must then be performed at the price quoted. However the possibilities for "going bust" on a project are not as large as it would seem. This is due to the vested interests of both owner and lender in seeing the project through to completion. For this reason, cost contingencies are provided for to act as a safety mechanism for all parties involved should a problem occur.

developer

State Street Development's interaction with the many individual concerns associated with Franklin Square provided a heavy time commitment. Their interaction with the city and community was a necessary prerequisite for developing an existing public building. SSD argues that although new construction requires heavy front end involvement as well, the process is more significant with an existing building being converted to a new use. Straight rehab¹⁶ offers no new impact upon the region as does new construction, it acts as a continuation of what exists. Recycling,¹ on the other hand, stirs public interest and generates ideas for possible solutions. This necessitates dealing with many separate interests and accommodating or compromising on the activities expected by each.¹⁷ General development costs were high on the FSQ job. However the impact of community response in the reuse process was not viewed as being "significantly" different in terms of costs incurred to the development.

Primary concern with the construction process was to oversee the actions being taken by the architect and builder. In this way SSD acted in the capacity of auditor to monitor the progress of construction. The duration of the construction was noted as

¹⁶For definitions of reconstruction terms, refer to Section 1.1.

¹⁷John Gallagher, State Street Development Co., Boston, Mass.

the most critical element. There was certainly great concern over the structural issues and their impact upon costs at Franklin Square, but the effect of project duration upon costs was seemingly more important. The close supervision by SSD did not alter their traditional project management practices.

community response

As discussed in the calendar of events in Section 3.1.2, there was active involvement by many separate representatives of both city and community. The vigor of the citizen input actually dictated the type of common public facilities which would be entertained at Franklin Square. Close public scrutiny of this type helped to expedite the approval process on the one hand, and delay the preliminary design phase on the other.

community

In general, community supervision over the decision process for activities to be introduced into an existing building such as FSQ eliminate the hazard of neighborhood resentment toward new development. Such resentment can create delays in seeking approvals for construction. However with favorable public sentiment, the reverse is true. At the same time, it is difficult to work with the many individual concerns who are represented at community meetings. Agreement upon design issues and specifics

of proposed facilities are difficult to ascertain. Perceptions about how the building should respond to the surrounding community are always varied. Incongruities of this type prolong the programming phase and delay initial design schemes. Delays, of course, increase internal costs for both developer and architect who are trying to expedite the process.

At Franklin Square, interaction with nearby residents and tenants generated a number of open public facilities which are housed at FSQ. Although the complex is privately managed by an affiliate of State Street, costs and personnel are provided for through outside sources. Elderly health care facilities and general office space have been provided at the first floor and basement levels. Total space allocated for such use is equal to approximately 10,000 square feet. In addition, the main lobby and sitting areas at the entrance level are supposedly open to the elderly community. However, the security system makes entrance difficult.

city

Since the takeover of Franklin Square by the City of Boston, the Department of Public Facilities has been anxious to reinstate the structure on the city tax rolls. City response can be viewed in light of the concessions made to the developer. The response has been expectably favorable since it was on city initiative to solicit develop-

ment proposals for the site. Also it was under their control, with neighborhood input, to select the desired development scheme. As added incentive for the project to go through, SSD was given recognition as a 121-A corporation allowing an agreed tax payment. Also, a reduced payment for property acquisition helped the project. These actions reflect the openness of the local agencies toward the Franklin Square development.

regulatory controls

Unlike many other recycled projects, regulatory controls proved to be no obstacle for the Franklin Square development. Reasons for this can be attributed toward the close association of the neighborhood and the massive reconstruction of the building. Residents of the area shed their approval on the conversion through the active role in the discussion process and thus did not question the zone change. Building code constraints were not a major force on the construction due to the heavy percentage of new materials and replacement of interior wall systems. Such a large replacement produced "almost a new building."

zoning

The relationship of the Square to zoning changes was relatively uneventful. Because of the residential character of the area and the previous role of the hotel, the

new activity presented no problems in integrating into the existing neighborhood. Functions of the old hotel/conservatory were not much unlike the present housing activity. Hence the change in lifestyle was not a drastic transformation so as to disrupt the residential environment. Added incentive for approval was provided by the willingness of the community to return the predominantly vacant structure to a useful and productive role. Their control over programming guidelines provided an open avenue for the approval process.

codes

Conflicts with current codes were not a major problem because of the great reconstruction of the interior of the building. The many structural deficiencies which plagued the construction at the start required a comprehensive build up of the wall systems. This replacement of the wood frame interior was eventually accomplished by completely stripping the finishes and exposing the structure itself. In this way, the volume of new materials brought into the job was so great that it acted as a new interior.

A potentially paralyzing problem with the codes was averted through collaboration with the sponsoring city agencies. On January 1, 1975 a new state fire code was to go into effect. The restrictions contained within the new code would have been too

costly for Franklin Square to comply with. However, city anticipation of the project allowed an 'official' date for the construction permit as December 1974, thereby avoiding compliance with the new code.

Code problems which did arise were manageable. Current requirements necessitating additional elevators, increased costs dramatically. Accessibility through stairwell location and size, as well as elevator location and capability, usually create difficult problems for conversion projects. However, stair locations were in relatively good location for use within existing codes. Another facet of conflict normally characteristic of conversion from older buildings lay with sprinkler requirements. Compliance costs were minimized due to the reuse of an existing sprinkler piping system. The many remodeling attempts had previously produced a sprinkler system for fire control which served as the basis for present code upgrading.

The most severe confrontation with regulatory controls came from OSHA. Initial stages of the construction process acted as a breeding ground for dissonance with inspectors. The structural safety hazards coupled with the massive demolition conditions generated a list of approximately 350 separate infractions. An uncertain atmosphere

prevailed as the development team interacted with OSHA officials to subdue the "hazardous working conditions." However the willingness of the team to rectify many of the problems enabled the job to remain open.

constr/ costs

As noted before, the evaluation and the estimation process was not 100% effective. The problems created by the overlooked defective structural members were costly. Even with the qualifications held by both the architect and builder, miscalculations occurred.

The demolition phase at FSQ proved to be a major undertaking. Because it was a selective removal rather than a true demo, labor costs were extremely high. Mechanical demo was almost non-existent. With the many layers of wall and floor coverings, the volume in such a large structure as the 178,000 square feet was overpowering. The architect refers to it as an "archaeological dig." Although the cost for demolition reached \$200,000, the large amounts of marble, fine woods, and pipe, generated \$120,000 in salvage value.

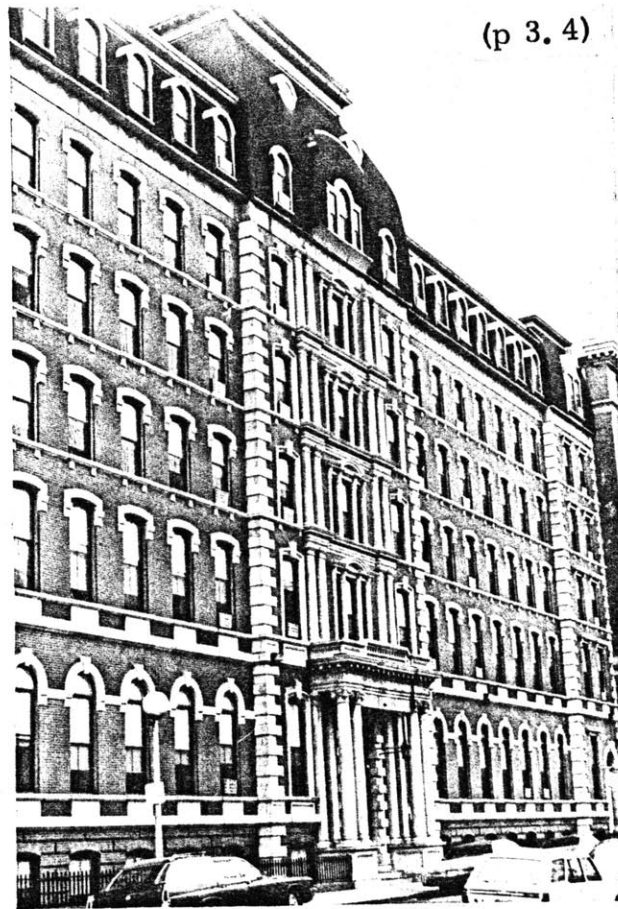
CWC notes the first priority in working with an old structure is to establish a water-tight roof. It was important to protect the already degenerating building. This

was especially true of FSQ where the whole of the interior was wood construction. The most costly element on the construction job lay with mechanical systems. However in reuse it is more costly due to the problems of coping with existing non-conformities of the building. Installation of new mechanical units is again a labor intensive item.

Project duration was reasonably controlled, as were construction costs. An eighteen month construction program produced units at approximately \$21,000 or \$21.00/square feet including acquisition. Both time commitment and costs reflect a much better process than that of current new construction which produce costs of between \$30.00 to \$38.00/square feet and takes up to six months longer to produce.

Of the operating expenses, only tax and insurance costs reflect any noticeable change from traditional figures. Real Estate taxes through the 121-A status reflect an approximate cost of 11% of net income. Insurance costs are somewhat high for Franklin Square development. This is believed to be a product of both the predominantly wood frame interior coupled with the locational characteristics inherent of the South End.

marketing



(p 3. 4)

73

Response by the elderly community has been favorable. The short rent-out period is a reflection of the desirability of the converted hotel as a place to live. Primary attraction for the structure has come from its architectural character as an old established building. The elegance of the exterior facade, (p 3.4), in contrast to most factory conversions, played an important role in marketing. However the diversity of the apartment units is moderate. Because the configuration of the building adapted easily to residential activity, there was no pressure to try to "fit" living areas into compromising situations. Thus the only area having this quality comes from the original ballroom which was divided into several floors of apartments with high ceilings and arched windows reminiscent of the previous use. Also provided is an atrium extending the full height of the building in this area due to the inability to cope with the large interior dimension. Of the 193 units, most

are found to be of traditional configuration, although large. Managers noted that a number of units are rented to former residents of the Franklin Square House when in use as a residence for business women.

State Street Management stresses security as a prime amenity. The strong focus upon tight security control emanates from a management perception of what the immediate area's crime tendency is as well as their view of the elderly as being security conscious. There exist many separate safety systems designed to insure the prospective tenant of their well being. Also, as noted before, there are several comfortable lounges and open public facilities including a large meeting space in the basement.

conclusion

There were several major characteristics which shaped the developmental growth of FSQ. These were defined by the qualities of the building and the people involved in the process. The many partitions and volume of mechanical systems contained within the structure created difficulties for the evaluation of the existing edifice. Many hidden structural problems of the building had a great impact upon increased supervisory involvement and costs of construction. Also, the extensive interior re-

construction necessary was a product of the poor quality of the building's structural system.

The many intricacies of the building itself, spawned the high involvement of the development team. Boston Architectural Team had restructured their design process in order to work with the demands created by the reuse process. Also, CWC Builders maintained a high pre-construction involvement through a consultancy role.

Important to the overall developmental program was the high degree of community response and input into preliminary design proposals. This concern around the building was partially ignited due to the previous public uses housed within the structure. Therefore there existed some tie to the neighborhood as a resource for the community.

3.2 amory st

Selection of Amory St. Apartments was due in part to its unique interaction of actors from both the development team and the community at large. Also, the physical attributes of the finished product offers one extreme design approach through

conversion of a factory structure. In contrast to Franklin Square, Amory St. represents a development team composed of individuals with limited experience in rehab and no previous reuse background. The focal point of the team revolved around its knowledge of the Turnkey program. Strong interaction of city and neighborhood interests in the industrial conversion offers the case study useful examples of such forces upon the development process. Also, the structural qualities of the factory, as opposed to the FSQ hotel, reflects quite a different set of constraints upon design and construction. Amory St. is a BHA Turnkey project, housing approximately 233 residents.



The factory was constructed in 1914 for the Holtzer-Cabot Machine Company (p 3. 5). Architect for the original building was Funk and Wilcox. "Holtzer -Cabot, established in the 1880's had been in the plant since 1914. During the Korean War it made heavy artillery weapons and built a two story building on the rear grounds for classified research. But in two decades, manufacturing in the city ran its course and the firm moved to Attleboro"¹⁸

Since that time the building suffered physically. Its gradual degradation was noted as an element of concern to local residents. "Deserted, with a face of broken windows, the complex was an invitation to vandals - - and a threat to the neighborhood."¹⁹ The vacant structure further perpetuated the growth of blight in the Amory St. area. Hence, members of the Model City sub-area were anxious to remove the destructive effects created by the vacant edifice. When Amory Associates proposed a way out of these conditions, the community was actively behind the venture.

¹⁸Robert F. Hannan, "Blighted Factory to Units for Aged," Sunday Herald traveler. Aug. 20, 1972.

¹⁹Wendell Phillips Associates, "Amory St. Housing for the Elderly," unpublished.

3.2.1 profile

location

Amory St. Apartments are located at 125 Amory St. in the Jamaica Plain section of Boston (fig. 3.5). The area in which it sits is a Model Cities program neighborhood consisting primarily of residential use. The project site is on the fringe of the Southwest Corridor just off Columbus Ave. Locational qualities in relation to elderly housing were initially not favorable due to the limited access to transportation. The closest MBTA line is located approximately a quarter of a mile from the site. However, recently bus service has been provided directly to the complex.

project

The former Holtzer-Cabot building houses 233 elderly units (fig. 3.6). Gross square footage in the structure is approximately 180,000 square feet (s.f.). At six stories it stands as one of the tallest buildings in the area, and certainly one of the most visible. The large 6.1 acre site provides space for a variety of neighborhood uses as well as housing for the elderly (fig. 3.7). Layout of the units reflect a tightly controlled system by the developer to adopt an efficient use of space through long double-loaded corridors.

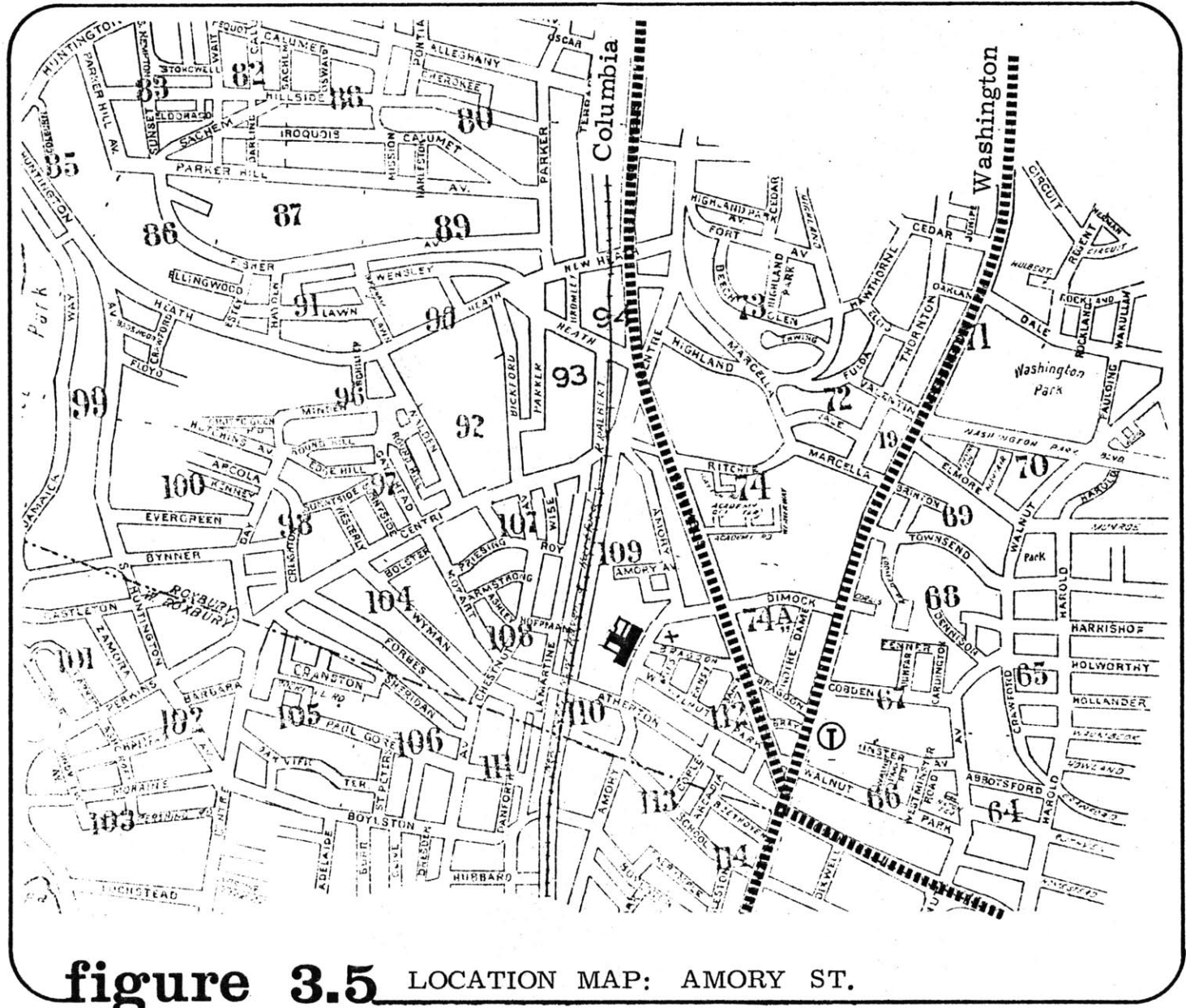


figure 3.5 LOCATION MAP: AMORY ST.

Project: AMORY APARTMENTS

Location: BOSTON: JAMAICA PLAIN

125 Amory St.

Tenant Profile: Elderly Pop: 335

Number of Units: Total 233 Studio 133 1 88 2 12 3 -- 4 --

Market Units: -- Subsidized Units: 233 Subsidy: ---

Commercial or Other Uses: Cooperative Market/ Community Building/
Neighborhood Medical Facilities

Gross Square Footage: 180,000 Avg. /Unit: 900

Acquisition Costs: \$753,000 Unit: \$3,200

Construction Costs: \$3,537,000 Unit: \$15,800

Total Project Cost: \$4,750,000 \$20,386

Acquisition Date: Spring 1971 Construction Start: Sum. 1972 Finish: Mar. 1974

figure 3.6

PROJECT PROFILE

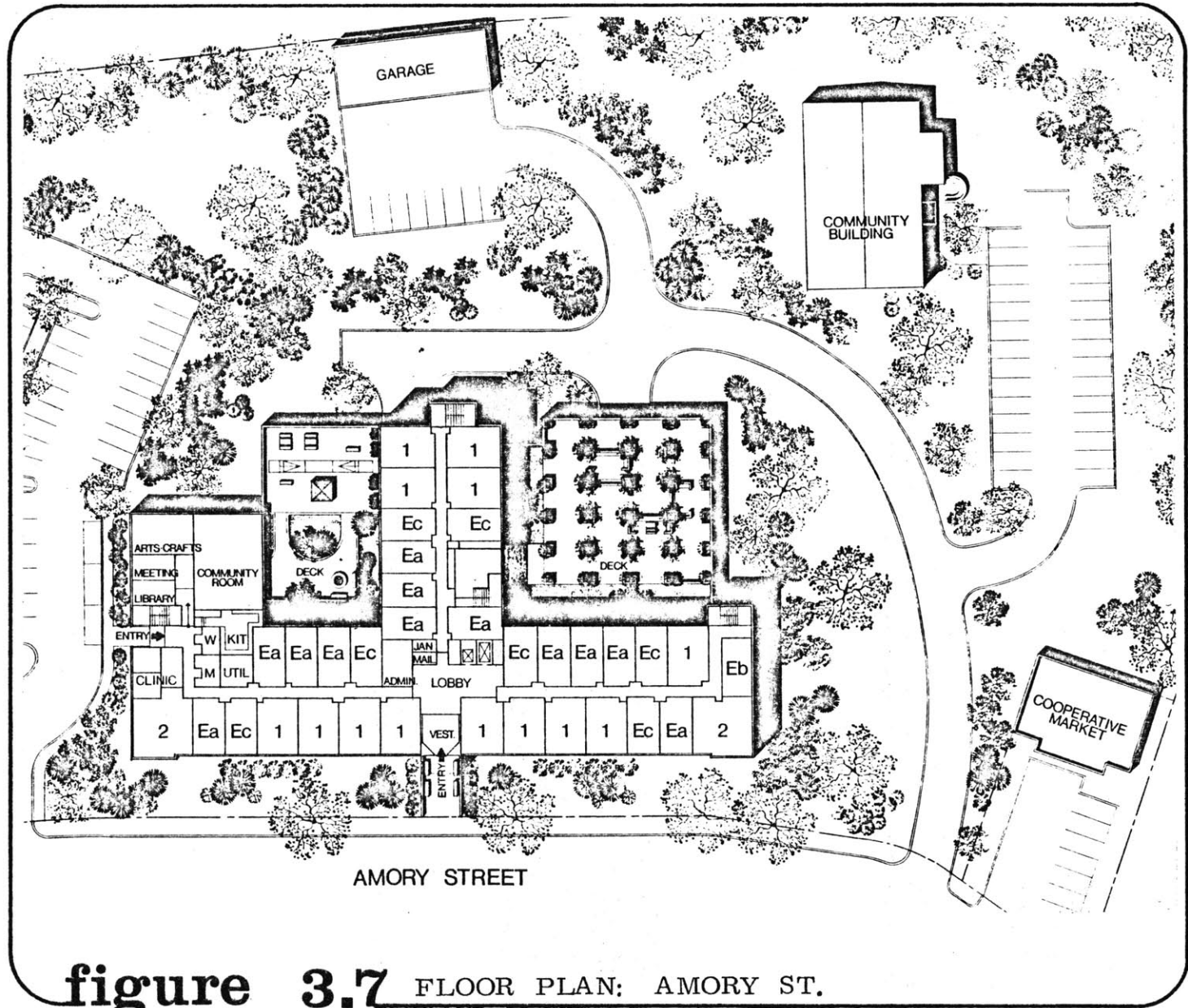


figure 3.7 FLOOR PLAN: AMORY ST.

actors

All members of the development team had limited experience in previous rehab construction. Except for the sponsoring developers, none had any association with the conversion process (fig. 3.8). The team evolved not from a background in reuse, rather from prior knowledge of the Turnkey program. Amory St. is owned and operated by the Boston Housing Authority. Although the development was well received by the agency, it is still the only reuse building under it's control.

development calendar

Initial introduction of the development team into the Amory St. project was somewhat different than the usual process taken by Turnkey development. In 1969 the Housing Act provided for an attractive depreciation schedule for rehab construction. Under the provisions set forth, an owner could depreciate the entire cost of the development over a five year period using a straight line method. This tax advantage could reap 20% of the total cost per year making such an investment a very attractive program. It was this line of economic reasoning that enticed Dan Prigmoore and William Poorvo into assembling a rehab package which they could utilize effectively. The idea of using a Turnkey Lease²⁰ program seemed healthy.

developer	Developers for Amory St. are Dan Prigmoore, William Poorvo, and Stan Sydney. Mr. Prigmoore and Mr. Poorvo have past experience in office reuse and renovation.
architect	Wendell R. Phillips Assoc., has been the architect for Sydney Construction on other Turnkey projects. Amory was the first recycle effort by Mr. Phillips. However he has since designed several other reuse projects in New England.
builder	Sydney Construction was general contractor and is owned by the third member of the development team, Stan Sydney. The contractor has previous experience in Turnkey construction and background in rehab efforts.

figure 3.8 ACTOR PROFILE: AMORY ST.

The developers immediately began looking for a non-residential vacant structure which would fit the rehab requirements set forth. Because the developer had previous experience in commercial reuse, they realized the potential of getting a lower acquisition price for a non-residential structure. Also the overall project costs were perceived to be lower if they found a structurally sound building.²¹ The team looked for a building within a residential neighborhood in close reach of certain amenities such as shopping and transportation. More important to the developer was the adaptability of the floorplan to housing apartment design. This meant an easy transition toward traditional space layouts such as double-loaded corridors. There was a conscious effort to locate a recycleable site which would be considered easy to transform into housing.

After reviewing several factory locations, the Amory St. building was judged to be a suitable structure in which to invest. Although the locational characteristics

²⁰Through the Turnkey Lease program, an owner of a building can lease the structure to an appropriate tenant, in this instance the BHA, for their own management. The owner of the edifice would then still be allowed traditional tax benefits as well as income generated through the lease agreement.

²¹Dan Prigmoore, Amory Associates, Developers. Boston, Mass.

relative to shopping and distance to transportation were not optimal, the residential neighborhood was close at hand. Prigmoore speculated on the ability to negotiate with the public agencies to compromise on these needed amenities for elderly housing. Banking upon the outcome of that negotiation, the developer obtained an option to purchase the vacant 125 Amory St. contingent upon preliminary reviews by the BHA.

The initial search having been completed, Poorvo and Prigmoore approached BHA with the possibility of developing a Turnkey Lease program. The benefits of the lease program lay totally with tax advantages for owners in order to shelter earned income. Unfortunately the lease program was without funding at that point in time and therefore negated any construction possibilities. However, Steve Giddens at BHA offered the possibility of Turnkey Sale.²² Although the sale program does not yield the tax advantages offered by the lease agreement, there is good opportunity for a direct profit from construction. Also, financing is easy to obtain because it is a contractual sell at completion.

²²Turnkey Sale is a complete transfer of property from a builder/developer to the sponsoring agency (BHA) at completion. There is an agreed upon price for the end product, established prior to construction. Although the project is defined by plans and specifications, any deviation from the original price can mean added profits or added costs to the developer depending upon whether he comes in lower or higher than projected cost.

In order to strengthen the development team, Stan Sydney was asked to become the third member of the operation. Sydney's experience in previous Turnkey housing projects made him an asset to the overall planning and execution stages of the program. His knowledge in construction costs were banked upon to seek a realistic financial statement for Turnkey construction since the typically elongated red tape requirement would draw out carrying costs of the job. Hence it was Sydney's Turnkey knowledge that was valued by the developer rather than his rehab or reuse track record.

The Jamaica Plain residents welcomed the recycle effort with great enthusiasm.²³ Conversion of the unoccupied factory into elderly housing was a substantial improvement over the existing abandoned site. However, a well unified neighborhood coalition desired controls over the proposed development. Community interaction at this level dealt with general layout of the structure. The control over this initial design phase was exemplified by the fact that there were weekly meetings to review decisions and progress. This close relationship continued throughout the programming phase as well as final design. The developer began looking at the input by the represented community

²³Robert F. Hannan, "Blighted Factory to Units for Aged," Sunday Hearld Traveler, Aug. 20, 1972.

as a political force for maneuvering the BHA and city. It was this consciousness of participatory results that helped to gain momentum in fighting the legal battles that ensued later in the process. The developer and the local community worked together rather than in opposition and in this way avoided the usual pitfalls of developer-neighborhood controversy.

In March of 1971, the Amory St. project was approved by BHA and HUD agencies. Prigmoore's next step was to obtain a conditional use permit. The application for the permit was not approved by the zoning board, an event which set back the momentum gained to this point. An appeal was sought which was also turned down by the city.

The question was taken to court and the legal process tied up the project for approximately one year. Busloads of Jamaica Plain residents were taken to court each day to show the interest in the project. They presented affidavits from seventeen separate organizations and over 300 people to Suffolk Superior Court. Setting a precedent within the state courts, the board's decision was set aside. In May 1972, the zoning board was ordered to issue a conditional use permit to the Amory project.

Architect Wendell Phillips was integrated into the Amory St. project because of his previous work with Turnkey housing and with contractor Sydney Construction.

The late date at which he was brought in was due to the legal problems encountered and the resultant uncertainty of the project.

Input into the design segment was focused upon through many channels. The developer, contractor, BHA, and community all had varying influence upon design decisions. The developer and contractor dealt primarily with the technics involved in constructing the building. BHA applied strict standards through HUD minimum requirements which were designed for conventional construction. The adapted space proved to be a barrier when dealing with agency officials since they tended to adhere to old measures. Community involvement revolved around meetings which were set up to insure some control over design decisions. The design input by the community group was directed primarily at room layout and considerations for the handicapped.²⁴ An interesting point to be noted is that none of the representatives were prospective tenants of the building.

Construction began in January 1973. (p 3.6). Initial demolition was not extensive due to the open interior of the building. However, removal of the roof and exterior glazing revealed a number of critical deficiencies in the concrete skeleton. Although

²⁴Wendell Phillips, Wendell Phillips Associates, Boston, Mass.

resurfacing of the concrete was previously anticipated, the extent to which it was necessary was not foreseen. Structural steel imbedded in the existing concrete was also badly damaged. These unexpected problems created heavy cost increases in terms of material and labor.

There were many time delays which constantly slowed the project down. Initially it was the attention needed for the exterior rebuilding. Material shortages generated problems with timing of sub-contractors. There existed voids in construction time due to these scheduling problems. With Amory St. behind schedule, the developer literally opened an on-site office for the duration of the construction period.²⁵ This close supervision at the job was costly to the owner in both time and carrying costs.

Although Amory Assoc. tried desperately to expedite the construction duration through shortcuts toward final BHA approval, agency inspectors were very conservative. Final acceptance, and thus turnover of the project, was dependant upon the building meeting all criteria initially set up with absolutely no variations. The "punch list" derived by BHA inspectors required several months to complete on the already delay ridden project. Official turnover was expected in March of 1974.

²⁵Dan Prigmoore, Amory Assoc., Boston, Mass.

With ownership and management being carried out by BHA, the rent-up period was very short. BHA central offices in Boston, maintain a waiting list for elderly housing units. Thus there existed an immediate total market for the units. Amory Apartments currently houses approximately 335 residents within the 233 units. The project provides a very traditional size and layout for public housing even in the face of conversion.

3.2.3 discussion

actor involvement

The involvement of the actors within the Amory St. process was vastly different than that found within Franklin Square. The differences lay primarily with the open factory plan versus the dense interior of the hotel, each serving to shape the development process in a different way. The contrast in sites created different needs and thus a distinctive association with its particular ailments.

architect

Wendell R. Phillips Associates maintained a less significant relationship with Amory St. than did BAT at Franklin Square. It was the physical characteristics of the open factory interior which lessened the pre-construction workload of the designer.

The open plan revealed the structural and mechanical systems in greater detail, leaving less to the imagination. This openness expedited the analysis phase through reducing the evaluation and cataloguing requirements.

Because the building was more predictable in a structural sense, the need for close construction supervision was also reduced. After initial inventory of the structure was complete, designs could proceed more smoothly. The fear of hidden defective connections or materials was not as apparent as had been at Franklin Square and this aspect loosened up the supervisory role of the designer. The architect noted site supervision was comparable to other forms of construction. The complete installation of the interior and facade provided in every sense of the word, a new building. It was new construction on an existing structural frame. Although the structural qualities of the concrete were worse than had been anticipated, this was the only real problem which was uncovered.

The architect viewed the Amory St. process as "not different." His personal association as well as that of the design firm followed a traditional role. Working drawings could be pursued more definitely without constant change. Site design was almost non-existent. Due to the traditional role executed by the design office, fees and workload followed the same pattern as for straight rehab.

The design approach by the architect toward the factory building revolved around a concern for technical achievement. In discussions with the architect, his most enthusiastic remembrances were of mechanical assembly details. Sense of aesthetic involvement with the building, was subdued partially due to the constraints imposed by HUD requirements and the developer.²⁶ The personality of the designer played an important part in shaping the role of the building as an architectural statement.

builder

As mentioned before, Sydney Construction was invited into the Amory St. development not because of their previous experience in rehab work, but rather their knowledge of the Turnkey process. In this sense, the Turnkey method was thought of as a more critical issue to contend with than the conversion construction.

Supervisory involvement with the job was greater than initially budgeted for. However this was a product of scheduling errors with materials and sub-contractors, not reuse construction. Evaluation of the building prior to cost estimation was not difficult due to the repetitive nature of the plan at each floor. Lack of existing interior partitions as well as exposed mechanical systems made identification of problems

²⁶Wendell Phillips, Wendell Phillips Assoc., Architects, Boston, Mass.

convenient. Pre-construction involvement was not comprehensive for the builder. However his services were still entertained for construction methods and as cost consultant prior to construction.

The construction phase saw many problems with trade scheduling. The disjointed activities slowed the project immensely and created on-site confusion. Part of the problems which did arise were due to shortages in materials specified by the contract drawings. However BHA inspectors were unwilling to change to other than specified equipment. Issues such as these generated management problems within the project. Amory St. as a "conversion process" did not contribute to the scheduling errors and material problems, it was solely the responsibility of construction management.

The building process was perceived by the contractor as being more complex than traditional rehab. The structural qualities of the old factory made construction techniques more difficult due to massive quantity of masonry, steel, and concrete used.²⁷ Selective demo work was much more difficult than rehab in light of the volume of material used to support the munitions factory. This point was reflected

²⁷Bob Finly, Stan Sydney Construction Co., Newton, Mass.

by the use of ten inch reinforced concrete slabs at each level. However the additional labor for such work was anticipated. The entire reuse process did not alter the role of the contractor to any great degree. Although many problems did surface, they were not as a result of the conversion²⁸ but rather in-house management.

developer

Amory Assoc. suffered high costs through both personal time commitment and carrying costs created by construction delays. Community interaction, legal confrontations, and project supervision were primary sources for the personal time involvement. Each of the three elements necessitated a major obligation for the developer. Although the project duration was hoped to be cut with the aid of both a designer and builder familiar with Turnkey construction, the unforeseen events which took place only increased the overall schedule.

Initially there was heavy contact with Jamaica Plain residents in constructing a development proposal beneficial to all concerned. Such pre-construction phase required a large amount of personal contact and was thus a costly front end commitment. Also, the unforeseen legal problems with the zoning board greatly increased general

²⁸Bob Finly, Sydney Construction, Newton, Mass.

development costs. The third item stemmed from the necessity of Dan Prigmoore to oversee production at the job site. Costs incurred for such supervision were high and cut deeply into contingencies established for the project.

Although Amory Assoc. was met with several financial setbacks during the process, they were all attributed to unique circumstances not necessarily related to the reuse of the factory. However, the developer perceived the interest in both neighborhood involvement and the zoning confrontation as being greater than would be found in other developments due to the reuse of the Holtzer-Cabot structure.

community response

The community response represents an important element of the Amory St. process. Representatives of the Jamaica Plain community played a very vocal role in determining the shape of the development. Aside from the input on spacial layout and desired facilities within the structure itself, the community also leveraged their support for attracting separate public facilities. They provided a favorable response to the proposal, but also pressured the developer and BHA into accommodating community needs. A community meeting area and daycare center as well as a cooperative market were born from neighborhood pursuit. Both are separate buildings which were existing on the site (refer to fig. 3.7).

On quite another level, the Jamaica Plain residents provided a strong base in pursuing the conditional use permit. The value of the project for the area provided incentive for supporting the issue in county court. Among the represented organizations were the Model Cities Board, Model Neighborhood Board, Ecumenical Social Action Council, Jamaica Plain Community Action Program, and elderly and church groups. The diversification of the advocates helped to overturn the zoning board's decision. Thus the adoption of the project by the Jamaica Plain residents proved to be an answer to city imposed zoning restrictions.

city

The actions of the zoning board in its decision to refuse a conditional use permit for the Amory site defined the early relationship of the city to the project. After first attempts failed, the Zoning Board of Appeals further solidified the position of the local authorities through denial. The potential of the manufacturing site as possibly a greater tax generator, prevented the acceptance of the housing alternative. Because the structure had lain vacant only one year when approached by Amory Assoc., it had not proven itself to the city as a useless commercial property. In this instance the city was acting as a speculator in determining the potential use of the site. Recycling the building into subsidized housing limited the anticipated municipal income through a donezone procedure.

BHA

The Boston Housing Authority played an important role in extracting certain benefits from the large scale property. Because the site was so enormous, and not completely useful to the developer, Amory Assoc. was able to offer space to both the community and BHA.

The large storage space located within the basement area of the factory was ill-suited for living units. At the same time, BHA maintenance crew was in need of storage facilities for materials and equipment. Therefore, they took over the "site" as an agency property. Since the site was no longer part of the housing complex in a technical sense, a separate contract was established for landscape construction of property. This agreement was quite separate from the neighborhood facilities provided.

regulatory controls

Building code compliance did not prove to be a burdensome constraint upon the Amory project primarily because of the literally new building produced. The open interior provided a free hand in defining wall partitions and all new material selection. Only the structural skeleton was utilized, and concrete slab floors, which provided for a more than adequate safety code adherence. The structure had once held cannon

storage and assembly on the fourth floor and certainly met structural requirements for dwelling units.

Stair location and size presented the only problems in adapting the factory. Those existing in the structure were not adequate to meet current fire code regulations. This was a costly element to provide in the six story structure primarily because two separate exit stairs needed to be introduced outside the then existing envelope. Also, elevator capacity needed to be increased to accommodate the population entertained in the building. Thus fire restrictions necessitated a more efficient egress than existed.

zoning

Obviously the zoning question played a critical role in the Amory process. The zoning board denial for conditional use prompted legal action by Amory Assoc. The manufacturing designation for the parcel held some significance to the city who attempted to maintain its use as an industrial property. Therefore, there existed a major conflict between neighborhood and municipal perceptions about what the property should and could become. However the strong vocal support given the developers by area residents and organizations no doubt helped to satisfy the court of its beneficial qualities to the nearby community.

The impact upon the economics of the project was understandably great. The judicial process is traditionally slow due to backlogs in cases, and in this instance it stopped the development for approximately one year.

constr costs

The evaluation phase did not prove as critical at Amory St. as had occurred at Franklin Square. As noted earlier, the open interior did not hide many elements of the building. Analysis of both mechanical and structural systems were carried through without great apprehension of what may have existed beneath. The evaluation was much more definite and reduced the uncertainty revolving around the construction. Cost estimations were felt to be relatively stable. Nonetheless, contingencies applied to the project were increased to twice that used for new construction.

Demolition was not a costly or major component of the construction process. The relatively partition free building created a minimal need for actual demo other than mechanical equipment and exterior skin. The large quantity of wire, steel, and brass returned approximately 80% of demo costs incurred. All materials were removed leaving only the structural concrete frame. Unfortunately the frame badly needed refacing. It had decomposed over the years exposing the structural steel.

This required costly form work not reflected in the initial cost estimate.

With only the frame to contend with, new material installation was not complicated. Only two elements hampered construction. These were the application of the new brick facade and the ten inch structural floor slabs. Exterior masonry required much more labor attention than had been allocated. Thus cost estimates were "way too low" for the envelope. This also delayed the project at its initial stages. Another problem revolved around the massive thickness of the concrete floors. Penetration of the ten inch concrete for elevators and mechanical systems was difficult, but did not generate any major costs.

The principal construction conflict was generated through the scheduling problems discussed previously. Nevertheless in spite of the delays, the 233 units were sold to the BHA for around \$21,000/unit. However the cost reflects no figure for site work on the immense property. Landscape costs were under a separate contract due to BHA use of the site for equipment storage and field office as noted earlier. New construction costs for comparable units were estimated at around \$28,000 - \$35,000 for the same period. The Amory project saved 20% in costs over that of new.²⁹

²⁹Bill Poorvo, Amory Associates, Boston, Mass.

marketing

Due to the rental system employed by BHA, it is difficult to measure the attraction of Amory St. in terms of rent-up. Because a waiting list existed for elderly housing, the units were occupied relatively quickly. Units provided are typical HUD minimum standard layout and do not reflect a building transformation. Amenities for residents include approximately 10,000 s.f. of patio space located on the roof of the BHA storage facilities. There are several small lounges located on alternate floors complementing the large meeting room on the main level. Also, there is a co-op library and health care facilities within the building. Transportation has been provided by a new bus loop which incorporates Amory Apartments as a stop.

(p 3. 7)



One of the nice qualities entertained by most reuse structures is their architectural attraction. The conversion of an old building often produces an image which is marketable through its design characteristics, which deter from the traditional mod-

ern housing units. However with Amory Apartments, the reverse is true. The building reflects an institutional appearance and is not at times even perceived as a residential environment (p 3.7). Managers noted comments of the building as a hospital, or public housing. Many tenants did not know the building was recycled from anything else.

The physical qualities of the building do not offer any unique living environment, rather an appearance common to modern public housing. This aspect reveals the potential of a non-residential structure, such as a factory which is free of architectural ornamentation, to generate a very traditional unit. Amory St. creates the very atmosphere most conversion attempts to escape. This is a reflection of not only the physical character of a faceless industrial facility, but of the actors who defined its image through reconstruction.

conclusion

There are several elements which are important in reviewing Amory St. as a conversion process. The physical character of the building played a significant part in shaping the activities which related to the project. The qualities of the open plan factory helped to reduce the uncertainty of the evaluation and construction. In this

way actor involvement followed a more traditional approach within the development program. On another level, the physical layout of the structure produced an institutional image and typical apartment units. This is in contrast to the normally accepted role of conversion developments.

Important in the approach taken toward the construction process, was the issue of the development team being assembled due to Turnkey experience. Amory was the first reuse effort for both the architect and builder. Their assessment of individual duties were not altered significantly.

Conversion of the Holtzer-Cabot site functioned as a focal point for community involvement at both city and neighborhood scale. The action of transforming a largely visible structure provided the incentive for concentrated involvement by various formal and informal groups. Its economic relationship with the city hampered zoning requests for conditional use of the industrial facility.

3.3 millhaus

The old Card Tap and Dye Mill offers a complimentary role as an adaptive reuse facility in relation to Franklin Square and Amory St. In contrast to the subsidized elderly housing cases, Millhaus at Mansfield, as it is now called, is a privately financed luxury development. All are market rentals and cater to a very diversified tenant structure reflective of the broad rent range. Its locational characteristics as well as its early construction were determinants for selection as were the qualities of the mill construction. Development team members are unique in their previous non-housing role of developer/builder.

(p 3. 8)



The main building of the Card Tap and Dye Mill was constructed around 1820 (p 3. 8). However since that time it has undergone many additions as space requirements grew. Each succeeding addition was built of

different materials for internal structure but managed to maintain some degree of uniformity in its facade. The mill functioned as an industrial facility until the early 1960's. Since approximately 1961, the building has remained vacant, slowly succumbing to the elements of decay.

3.3.1 profile

location

Millhaus is located on the extreme edge of a residential area. The mill defines the boundary between small scale wholesale activities and single family residences. It is located at 150 Rumsford Ave. just off Route 106 and approximately one mile from the Route 95 and Route 495 intersection (fig. 3.9). It lies thirty minutes from downtown Boston and twenty minutes from Providence, Rhode Island. There are no public transit facilities other than commuter rail service to Boston. Most tenants rely on automobiles for transportation.

project

The building was constructed initially as a mill, and retains much of that exterior flavor today (p 3.9). It holds some 120,000 s.f. (fig. 3.9) of converted space and sits four stories at its highest point. The structure is a series of additions onto

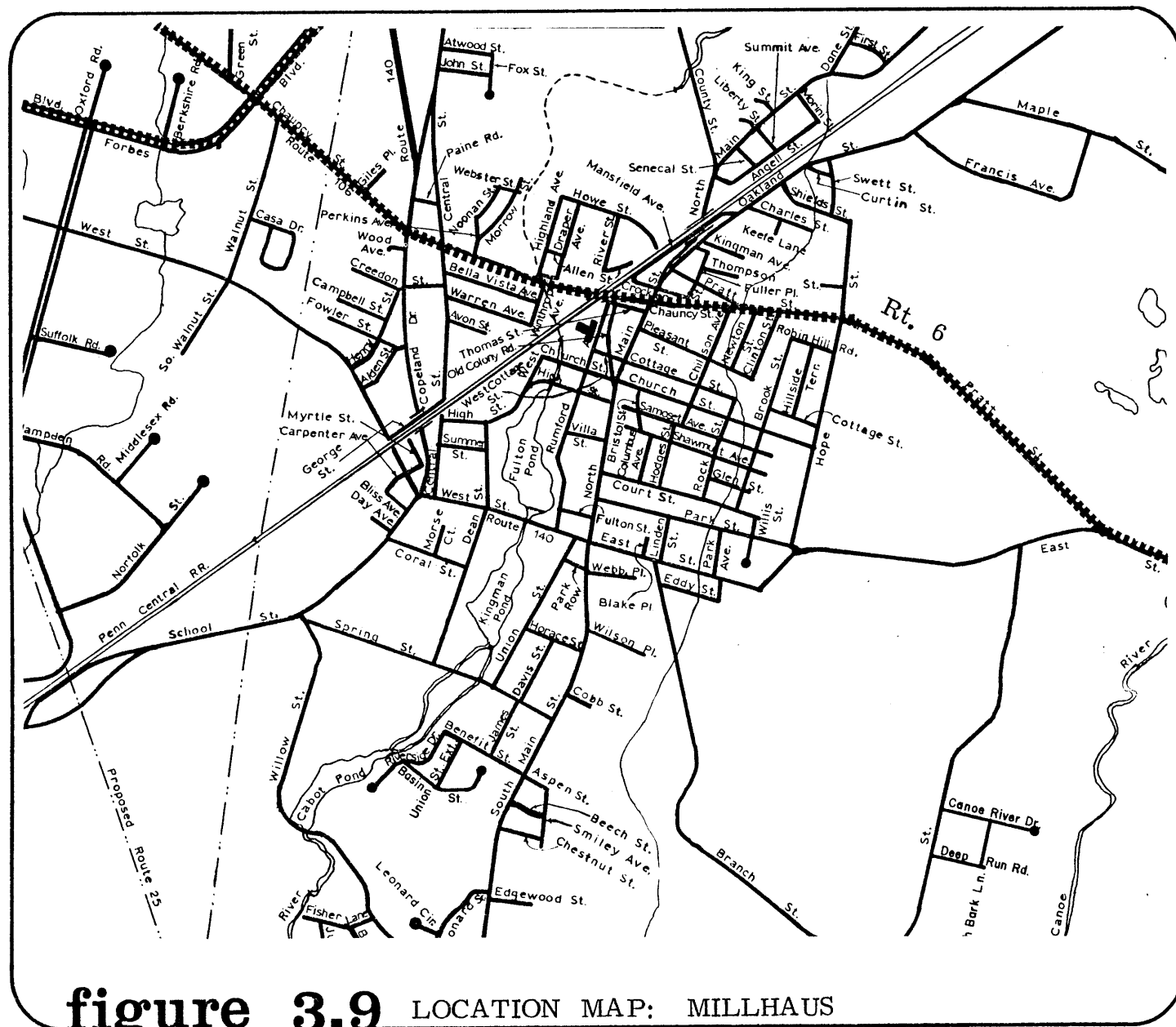


figure 3.9 LOCATION MAP: MILLHAUS

Project: MILLHAUS AT MANSFIELD

Location: MANSFIELD, MASSACHUSETTS

150 Rumsford Ave.

Tenant Profile: Diversity Pop: _____

Number of Units: Total 111 Studio 10 1 69 2 31 3 1 4 --

Market Units: 111 Subsidized Units: -- Subsidy: --

Commercial or Other Uses: None

Gross Square Footage: 120,000 Avg. /Unit: 1:1400 2:1700

Acquisition Costs: * Unit: _____

Construction Costs: \$1,310,000 Unit: \$11,800

Total Project Cost: \$1,454,000 \$13,000

Acquisition Date: 1967 Construction Start: Spr.1971 Finish Sept.1972

*Purchased initially for manufacturing purposes.

figure 3.10

PROJECT PROFILE

(p 3. 9)



the main industrial shop.

This provides both concrete and wooden interior construction with a brick facade.

Original power plant and

boiler stacks were removed

from the site to accommodate the swimming pool and tennis courts now located on the premise.

actors

Millhaus was the first venture as a team for developer Sydney Covitch and Healy, Healy & Brown, architects, (fig 3. 11). They are now involved in a number of joint ownership developments entitled the 'Millhaus Program' designed to convert old New England mills into housing. Builder for the project was Doren Realty Trust which is owned by Covitch. Initial financing came from New England Merchants National Bank for the construction loan, permanent mortgage later came from Freedom Federal Savings, Watertown. Management is under the direction of Sydney Covitch.

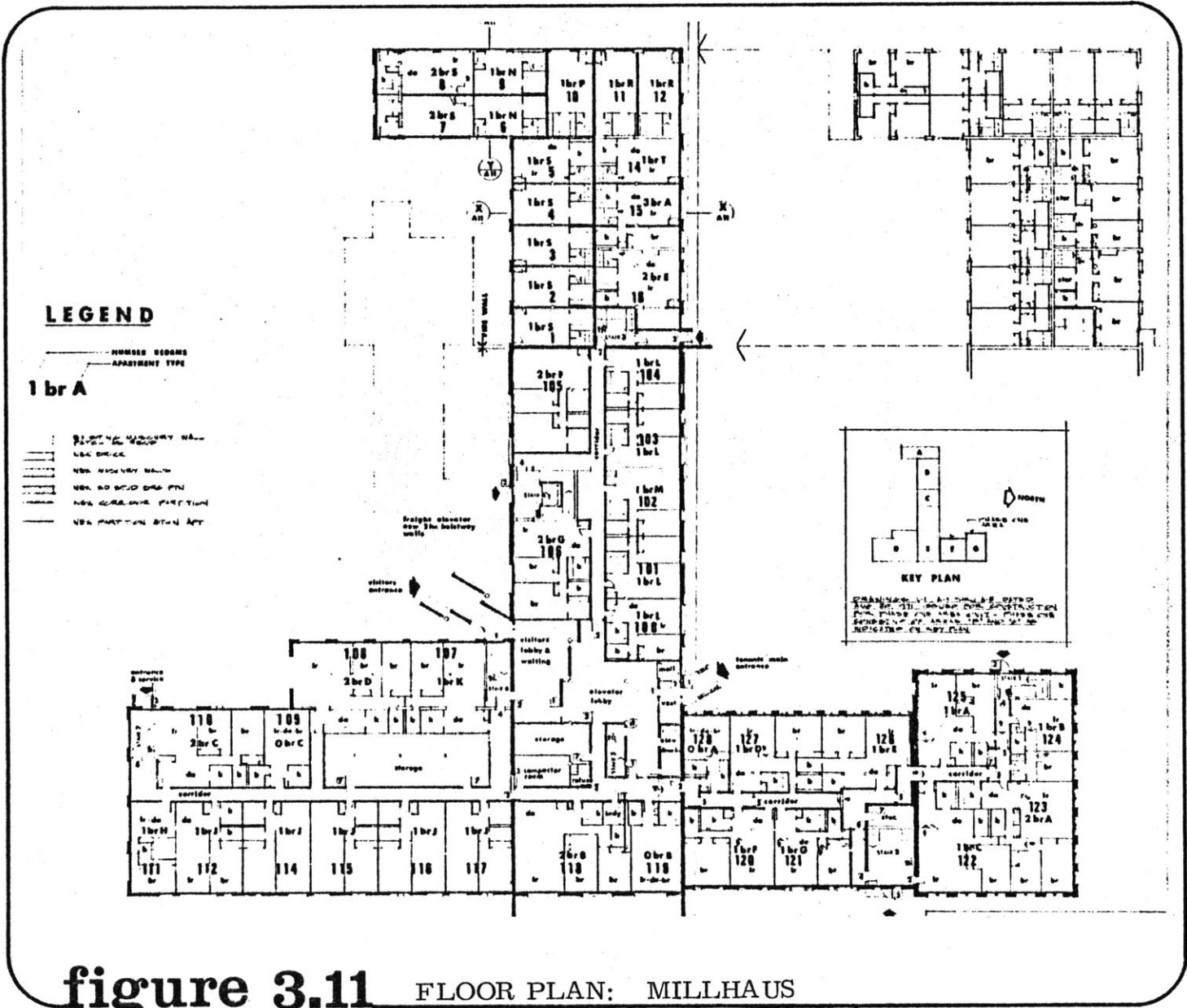


figure 3.11 FLOOR PLAN: MILLHAUS

developer	Developer for Millhaus was Sydney Covitch. He is primarily involved in commercial and industrial real estate and has produced a number of industrial rehab projects. This is the first housing attempt by the developer. However he is currently pursuing an elderly conversion of the Conrad/Chandler Building in Boston.
architect	Healy, Healy & Brown were architects for the conversion. They have worked previously with Covitch on new construction projects only. Their experience was primarily in new housing construction with limited rehab experience. This was the first conversion project for the architects. Since that time they have pursued several mill reuse projects for luxury housing under what is called the "Millhaus Program." They are part owners with Covitch in these ventures.
builder	Builder for the project was Doren Realty Trust which is owned by Covitch as well. They have worked with the developer in producing industrial rehab projects under his control. They had no previous experience in recycling construction.

figure 3.12 ACTOR PROFILE: MILLHAUS

3.3.2 development calendar

The Millhaus conversion represents a unique set of events over its development life. Its uncharacteristic beginning started in 1966 when industrial real estate developer, Sydney Covitch, purchased the vacant structure. The old Card Tap and Dye Mill had lay idle for over five years acting only as an "eyesore" to the surrounding community. The new owner's original intentions were to relocate an existing manufacturing use in Waltham to the vacant facility in Mansfield. However the need to move evaporated and as a result Covitch now had 120,000 s.f. of 19th century mill space in an unmarketable location.

Over the course of the next five years, repeated attempts to sell or lease the seemingly "white elephant" failed. In 1970, Horst Koenig (Contractor/Builder) came up with the idea of transforming the mill into housing. Koenig had then recently overseen the reuse of a parking structure at 12 Stoneholm St. (refer to Section 2.3) in Boston (Anderson-Notter Assoc., Architects). Only as a last resort did Covitch agree to approach housing. This was due primarily to his lack of experience in

housing, and his apprehension over housing ownership. However it offered the potential of "filling the building."³⁰ Anderson-Notter was asked to provide a preliminary layout for the structure, to provide a base for feasibility and cost estimates.

The experience of both Covitch and Koenig in industrial rehab enabled them to perform a quick evaluation of the structure in an attempt to define the weaknesses of the building for a change in use. This analysis included not only a structural/mechanical evaluation, but a determination of the market possibilities for Mansfield. Although no market existed, two proposed industrial parks offered some potential for future housing needs.

After initial determination was made that the project was feasible, Covitch pursued financing as well as a zoning variance. He approached a friend at New England Merchants Bank in hopes of finding a lender willing to invest in the conversion attempt. Although Covitch had not previously done housing, he had worked many times before with the bank in industrial rehabilitation. His experience as a developer had helped to obtain the funds for the adaption of the mill. Therefore Bob Swane at New England Merchants Bank approved a construction loan based upon preliminary costs and plans with the opportunity for a permanent mortgage later.

³⁰Sydney Covitch, Developer, Boston, Mass.

Pursuit of the zoning variance began in 1970 also. Initial public exposure came when the application process for the variance was filed. Neighborhood sentiment perceived the intent of the developer to produce "public housing " Therefore immediate community response revolved around the goal to limit such use in the area. Public zoning meetings were required of the developer in order for a variance approval. However from the beginning, the mill was slated for market rentals. Covitch used these meetings to portray an image of a quality luxury apartment complex catering primarily to working couples. With this point clearly stated, approval was acknowledged by the community and in turn by the zoning board. This initial review defined the extent of community participation at Millhaus.

Banking upon the experience held by both Covitch and his builder in industrial rehab, they attempted to obtain a building permit, and proceed with construction with only the preliminary plans outlined by Anderson-Notter Assoc. However local code officials would not acknowledge the limited set of drawings and the vagueness of code compliance even with a qualified construction supervisor. Late in 1970, Healy, Healy & Brown was asked to come on the development team as designer for the mill. Although a quick evaluation had been carried out previously, a more in depth

analysis was executed with the design consultants. A systematic approach was taken by the new members in cataloguing and reallocating space requirements within the structure. Design attitude toward the open interior, high ceilings, and irregular column location, was viewed as an opportunity for creating large, airy interiors within the proposed apartments.

Construction began in the spring of 1971. The entire construction process saw little unexpected problems surface. The open/exposed qualities of the industrial facility enabled a relatively good evaluation of the structural and mechanical systems. The building was in good physical condition. However due to the various additions which had occurred over the years, there were several types of construction to deal with. Three separate major wing additions produced three separate building systems. Hence, a different construction technology was required to work with the wood, concrete, and steel sections.

Milhaus was completed in approximately eighteen months, in September 1972. The building offered a large variety of unit types in both scale and layout. At time completion, the locational characteristics of the apartment complex was a burden on the marketing of the units. There existed no population of the type necessary to

fill the project. However as the industrial park developments began to take shape in the area, a greater work force entered Mansfield. The building could not fill all units until spring of 1975, a full two and a half years later. Since that time, it has remained completely full with a large waiting list for future openings.

As the units were completed, permanent mortgaging was sought for the development. Covitch went through a friend at Freedom Federal Savings. Because the units were completed, and with costs very competitive in the housing market, the long term loan was easily obtained. Of course the experience and extensive holdings of the developer provided a stable base for the loan agreement.

3.3.3 discussion

actor involvement

The roles played by members of the development team were quite different than that viewed in the other cases. This was primarily due to the unique beginnings of the project and the non-housing developer/builder actors.

architect

Healy, Healy & Brown argue that mill/factory conversions are the least difficult of the reuse building types. This is true of both the pre-construction and construction supervision by the design team. The level of input necessary for evaluation

and inventory of structural elements is reduced over that of other types of adaptive reuse. This aspect was reflected at Millhaus where the supervisory input, although greater than that found in either rehab or new, was lesser than in their approach to other conversions.³¹ During evaluation, the key was in not documenting the existing structure in too detailed a manner. It was important to outline the parameters or critical constraints of the mill to reduce costs in pre-design input. However it was not possible to anticipate all elements which need be catalogued in order to avoid construction problems, therefore a trade-off existed in terms of pre-design time versus construction supervision time.

The characteristics of the three construction zones found at Millhaus created an intense involvement in design and supervision. Although the interior was predominantly open, the additions over the years generated three separate techniques each requiring a separate design solution. - and each producing individual problems. Therefore, the architect had to assume more contact with the edifice in order to control the "three separate jobs."

Design services need be streamlined in recycling in order to fit the price tag indicated by a project. Because supervision is increased, the production services

³¹Ed Healy, Healy, Healy & Brown, Architects, Framingham, Mass.

need be reduced. Therefore, aside from the inventory drawings, working drawings are not pursued as strongly as would be under "normal" conditions. Emphasis is placed upon "site decisions" of the supervising architect.

developer/
builder

The Millhaus project was under control by Covitch who was not only the developer, but also the builder in the sense that he owns Doren Realty Trust. He holds tight reins over all businesses under his control as was reflected in the supervision of construction activities at the mill.

Previous experience in industrial rehab had given the developer/builder a strong understanding of the traits contained in an old factory type structure. It was this extensive ability to analyze the physical condition and in turn the requirements for structural rehabilitation that eased the construction uncertainty at Millhaus. However the act of implanting a residential use into such a structure was not a tool of the developer or building firm.

The construction process was not perceived to be irregular to any significant degree over previous industrial rehab. However site supervision in all facets of construction was dramatically increased. The relatively smooth erection phase was a result of close scrutiny by all development team members over the construction

details. Thus the main work force did not feel any ill-effects from the recycle construction because of the close association and decision making role carried out by the supervisory staff at the site.

Comparisons of developer activities between reuse and traditional housing cannot be made because of the strict industrial and commercial background of Covitch. As noted previously, this was the first housing attempt by the developer.

community response

The involvement of both neighborhood and city representation was very limited in the Millhaus process. There were no constraints imposed over the development proposal through either channels. Design review was confined to the zoning hearings established for the purpose of discussion of the variance. After it was acknowledged that the intent of the project was to generate luxury housing, no further involvement was pursued.

Also the old Card Mill had been vacant approximately five years prior to purchase by Syd Covitch, and another five years under his control. Therefore the property produced no tax revenue to the city for at least ten years and offered no signs of rejuvenation as an industrial facility. Aside from the tax effects, the vacant

mill harbored a potential threat to neighborhood children and real estate values. Its continued presence only offered a detrimental impact upon the immediate area. In this sense, city and community forces could not act against the transformation of the structure into a functioning housing complex.

regulatory controls

Conflicts with building codes at Millhaus were minimal. This was partially due to the quality of heavy construction found throughout the mill. Existing fire walls and the sound structural qualities helped to reduce potential problems of change of use. Also, the open interior free of existing hallways and partitions enabled a free hand in defining space requirements of units, corridors, and other facilities as dictated.

Problems with stair locations and size were the only significant and costly code infractions. Two stair wells were added on to the existing structure in accordance with egress demands. Ed Healy argues that the old buildings could not possibly be expected to comply with current code mandates. The requirements for riser and tread sizes, width of corridor, and location would be incorrect in the face of new standards. Hence he makes the assumption that all stairs must be reworked or

relocated in every reuse situation. This has a dramatic impact upon reconstruction costs.

zoning

Zoning had a key role in the Millhaus process only because of its use by area residents as a tool for reviewing the design proposal. The variance desired by the developer was monitored by the neighborhood in their goal to stop public housing. The zoning board viewed the transition from industrial zoning to residential use favorably in light of its vacancy for over ten years and the residential character of the surrounding area.

**constr/
costs**

Evaluation of the mill structure was not an overly complicated task. It was expedited through two elements. First, the experience in industrial facilities of both the owner and builder provided a strong foundation for analyzing the building's characteristics. Also, the mill had exposed interior utilities and no "nooks and crannies" which create problems in both cataloguing and construction. Thus the evaluation was simplified due to the open plan.³²

Demolition was restricted primarily to site facilities not needed such as the power

³²Ed Healy, Healy, Healy & Brown, Architects, Framingham, Mass.

plant and boiler stacks. Interior demo work was relatively light because of open interior and limited amounts of non-useable mechanical equipment such as pipe and wire.



(p 3. 10)

Construction of the building met with little interruption. The structural system was sound and required no unanticipated re-conditioning. The high floor to floor height enabled mechanical systems to be laid on the

concrete slab and covered with a raised floor creating 'sunken' spaces in almost all apartments. Window openings were too large for residential use and were cut back to a more standard opening (p 3. 10).

Duration of the construction phase was approximately sixteen months. Costs for the building were at \$12. 00/s. f. including acquisition. The spacious apartments thus reflected a construction cost of \$11, 800/unit and a project cost of \$13, 000/units. Such costs were low even by 1972 standards.

Taxes on the complex were established with the Town of Mansfield at a fixed rate per unit as was common practice for the area. The reuse of the mill had no effect on the agreement.³³ Insurance costs were low due to the quality of construction producing a higher rated class III type structure, uncommon in the housing market. Therefore a better value was produced through the conversion of a sound mill building.³⁴

marketing

As discussed earlier the location of the completed mill did not attract the population necessary for it to function properly. Primary tenants were commuters to other employment centers because of the lack of such a resource in Mansfield itself. Millhaus operated at only approximately 50% capacity until 1975. Presently the complex is at full occupancy with very few moves out of the building.

The major attraction provided by the complex comes from the large and unique apartments created. The facade was not noted as an element of significance to residents. Tenants range from young couples to elderly and pay a substantial latitude in

³³Sydney Covitch, Developer, Boston, Mass.

³⁴Ed Healy, Healy, Healy & Brown, Architects, Framingham, Mass.

rent prices depending upon size of apartment. The units are very spacious, one bedrooms contain 1400 s. f. and two bedrooms 1700 s. f. Each room is unique and tenants enjoy the uncommon qualities of old columns within the units at rather irregular locations. Because of the different atmosphere provided by each unit, some residents have moved from apartment to apartment within the building. Rents are determined on a per square feet cost with only a fee charged on the basis of "unique" setting or spacial quality.



include outdoor pool and tennis courts on the site. Also provided are service facilities, a game room, and lounge area.

There are a number of two story duplex units located on the uppermost floor of each section and townhouses along the two story addition in the rear of the building (p 3. 11) each with separate entrance. Of the 111 units, 69 are one bedrooms and 10 studio. Amenities to residents

4.0

OVERVIEW

The overview is a re-evaluation of information generated within the case studies. It defines the relationship of the individual cases to the broader category of recycled housing. In this way, it qualifies the results against a base determined by members of the housing industry involved in reuse. The analysis of case information is a comparative approach with the other cases reviewed. Also paralleled are the similar and dissimilar qualities of reuse versus traditional forms of rehab and new construction.

Discussion is structured around the five development categories established in the Preface. Actor Involvement, Community Response, Regulatory Controls, Construction/Costs, and Marketing all define the development process and the association of individuals to that process.

4.1 actor involvement

The effect of adaptive reuse construction upon the individual actors is somewhat varied with each case. Although conclusions about the impact can be made, it must be remembered that the characteristics of each specific process will affect the role playing of actors in different ways.

In looking at the interaction of team members with their respective projects, the individual personalities played an important role in shaping the developmental program. That is to say, the methodological approach taken by the team was defined not only by the building itself, but the mannerisms of the individuals.

The procedural differences taken in reconstruction of Franklin Square versus that of Amory could be attributed to perceptions of the problem being interpreted

differently by the teams. Design concepts of BAT and Wendell Phillips differed at a fundamental level. The approach executed at BAT was one of meticulous concern for retaining the aged qualities of the structure both inside and out. Many interior details such as column capitals, marble fire places, intricate wood carvings, etc., were protected and rebuilt in order to maintain a tie to the past. This concern was reflected in the firm's strong commitment toward architectural imagery and aesthetic presence. In contrast, Wendell Phillips Assoc. sought out the technological challenge of erection and fabrication. As discussed earlier, it was the significance of mechanical assembly and achievement of such refinement that excited the architect.

Also the distinct backgrounds of the two builders set the stage for different reconstruction techniques utilized. At FSQ the selective demo process and underlying goals of saving as much as possible reflected the personality associated with having been able to cope with the structural confusion. On the other hand, the primary new construction background of Sydney Construction may have been the force for erasing everything but the frame--in a sense, starting anew.

The bias of individuals thus had an effect upon the final product achieved. Designer attitudes and builder methods enabled the buildings to follow courses in opposite

directions. This argues that the characteristics of a building may not be the only determinant for defining its potential outcome.

architect

Of the development team members, architectural involvement is impacted the most. The designer's structuring of duties is affected in response to the particular needs created by the recycling technique. Those needs are perceived to be a much greater on-site supervisory involvement over traditional housing services. Such change in professional services can be illustrated through the basic components of of the designers role.

Three primary steps outline architectural services in reconstruction; the evaluation or inventory phase; the design phase; and construction supervision. Each phase has been altered due to the complexities inherent in certain recycle developments. First, the evaluation of the existing site is more complex a procedure than that found in rehab.³⁵ The change in use requires an acute awareness of the structural elements and spacial organization in order to manipulate the building into a different kind of functionalism. Therefore close attention must be paid by the archi-

³⁵Boston Architectural Team/Healy, Healy & Brown.

tect to the building systems contained within the structure which are foreign to residential use.

The evaluation process at Franklin Square proved to be an extensive time commitment due to the many hidden elements contained within the hotel. Cataloguing of mechanical systems, structural conditions, and materials located throughout the structure was a tedious and costly pre-design activity. At Millhaus, Healy noted the various additions generated problems in inventory and design. In contrast to this, the Amory St. open plan provided easy access to building systems and thus reduced pre-design commitment. This points to the fact that time commitments for evaluation services are a function of the accessibility of the building systems contained within the various building types.

The traditional design phase is changed significantly through the need to rely less upon working drawings. Greater emphasis is placed upon the site design in lieu of the complete design prior to construction. This comes from the anticipated constant changes which occur over the duration of the project as well as the need to reduce production costs by the designer.

The reasoning behind the desired cost reductions in production services is based solely upon the high personal commitment, of supervisory architects. The close

relationship maintained with the site is irregular in juxtaposition with the roles of rehab and new construction. Therefore costs incurred for project management increases over other forms of construction. Although the increased costs for site supervision may be justifiable, there is a need to keep design fees in line with traditional practices to better compete in the architectural marketplace.³⁶

All such design process adjustments lead to a new distribution of duties within the firm. Although reliance upon drawings is reduced, the supervisory commitment is increased. Design quality and in turn the building produced does not suffer from the redistribution of architectural service.

builder

The builder is not readily affected by the reuse process in terms of evaluation of construction duties. The traditional tools of rehab construction are easily transferable to the reuse site. However, supervision over the process was noted in the cases as being more intense than that of rehab. This was due to the many construction decisions which surfaced over the duration of the projects.

³⁶Boston Architectural Team/Healy, Healy & Brown.

Pre-design by the builder was a prerequisite in every study case. The evaluation of the building required the representation of the contractor to consult the development team on costs and construction techniques. This pre-design involvement is not common for straight rehab projects.

developer

The role of developer is not altered from traditional housing avenues to any noticeable degree with the reuse process. There is perhaps more concern with on-site decisions and problems which are anticipated, however the appreciable difference is minimal.

Time commitments necessary for regulatory agencies and community approval are not affected to any significant degree as a result of reuse activity. The effects of community response are discussed in the following section. The developer views the reuse process as being risky, however it does not affect his particular role.

4.2 community response

Involvement of local communities in the reuse of existing facilities is difficult to address as a common characteristic of recycling as a whole. The level of com-

munity awareness is unique with every situation. Response to development activity is a product of individual factors peculiar to a specific site: elements of location of the building in relation to residential uses; the type of building and the threat a vacant structure may pose to surrounding areas; the significance it holds to the neighborhood; and the cohesion of the community as a political force, all shape the setting for local interest and involvement.

Community efforts created quite different constraints upon developers in the case studies. Both FSQ and Amory had to yield to direct public scrutiny by area residents. This included specific benefits for area residents as well as design control. The most involved neighborhood commitment was exemplified at Amory St. Actual design review as well as control over public facilities to be included in the total development package were monitored. City response was intense solely by virtue of the zoning confrontation which existed. There were no other constraints or supervision by local agencies other than the zoning board. Community response at Franklin Square was limited to providing in-house space and services for neighborhood elderly. However at Millhaus, the primary concern stemmed from blocking any potential public housing which might have been proposed by the developer. This



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(Page 124)

was controlled via zoning hearings rather than direct confrontation with developers. Other than zoning approval for a non-public housing use, community in-put was non-existent.

However the adaptive reuse of large, visible structures into housing does not manage to stir activity. This is especially true of publically owned buildings such as schools, and town halls, as well as those buildings which which have some significance to the neighborhood.³⁷ This is due in part to the impact of the new use. Straight rehab offers less resistance since it is merely a continuation of housing. However both new construction and recycling produces some "new" impact to the area. Therefore local residents are inclined to review the development activity. Again the level of response is a product of each unique setting and is therefore difficult to compare with other forms of construction. As more and more people become aware of the potential contained in reusing old structures, it becomes more difficult to work with such buildings. This is due in part to the many "solutions" provided by the community for a reuse. Having to contend with the varied alternatives, the housing developer must placate the needs of the area in order to proceed.³⁸

³⁷Boston Architectural Team, Architects, Boston, Mass.

³⁸Ibid.

As the confidence of public involvement in private business continues, future control over reuse proposals can only grow with it. Therefore developers anticipating future involvement in recycling must expect the 'tough' citizen constraints to be part of the reuse process.³⁹

4.3 regulatory controls

Building codes have proven to be a major threat to the reuse process. The fact that the building was non-residential implies a conflict with safety and fire codes designed specifically for residential use. The problems have arisen not because compliance was physically impossible, but rather too costly. Costly in a financial sense because major changes that were required were time consuming and labor intensive due to the need to interface with the existing building.⁴⁰ It was also costly in an aesthetic sense. When major changes had to be accommodated, such as additional stairwells or seismic reinforcement, the architectural integrity of the building could be damaged (p 5.1). These two issues often put code officials and designers at odds.⁴¹

³⁹State Street Development Co., Boston, Mass.

⁴⁰C. W. C. Builders, Boston, Mass.

⁴¹National Trust for Historic Preservation, Building Codes and Preservation, Washington D. C. : Preservation Press, May 1974.

(p 4. 1)



However future confrontations with other buildings may be minimized due to active support of both code officials and designers in changing current code mandates. This action is being pursued at both national and state levels. Examples of both BOCA and UBA revisions are shown (fig. 4. 1). Such acknowledgement as written is an important step in eliminating the conflicts, however it is far from adequate in solving the deficiencies which exist. The Mass. State Building Code is presently reviewing a proposed amendment

to the code to accommodate the needs of historic structures. Article 23 proposes a flexible approach in solving code requirements for historic buildings, buildings complying with codes prior to the 1975 revision and change in use structures.⁴²

⁴²Tom Sullivan, State Building Code Commission.

UNIFORM BUILDING CODE OF THE INTERNATIONAL
CONFERENCE OF BUILDING OFFICIALS

Section 203 (j) Historic Buildings

Repairs, alterations and additions necessary for the preservation, restoration, rehabilitation or continued use of a building or structure may be made without conformance to all of the requirements of this Code, when authorized by the Building Official provided:

1. The building or structure has been designated by official action of the legislative body as having special historical or architectural significance.
2. Any unsafe conditions as described in Section 203, will be corrected in accordance with approved plans.
3. Any substandard conditions will be corrected in accordance with approved plans.
4. The restored building or structure will be less hazardous, based on life and fire risk, than the existing building.

BASIC BUILDING CODE OF THE BUILDING OFFICIALS
AND CODE ADMINISTRATORS, INTERNATIONAL

Section 318.0 Special Historic Buildings and Districts

The provisions of this code, relating to the construction, repair, alteration, enlargement, restoration and moving of buildings or structures shall not be mandatory for existing buildings or structures identified and classified by the building official as Historic Buildings subject to the approval of the Board of Appeals when such buildings are judged by the building official to be safe and in the public's interest of health, safety and welfare regarding any proposed construction, alteration, repair, enlargement, relocation, and location within fire districts. All such approvals must be based on the applicant's complete submission of professional architectural and engineering plans and specifications bearing the professional seal of the designer.

figure 4.1

UBC & BOCA CODE

Code revisions emphasize greater flexibility in meeting established safety requirements. In this way alternatives may exist for code compliance rather than a hard line single answer. An example of this may be the use of increased fire rating construction versus a normally specified sprinkler system.⁴³ The availability of a variety of avenues reduces the potential for future conflict of reuse construction with residential safety requirements. Therefore the years to come may see a relieved pressure on the costly code conflicts making reuse construction comparable to other forms of housing production.

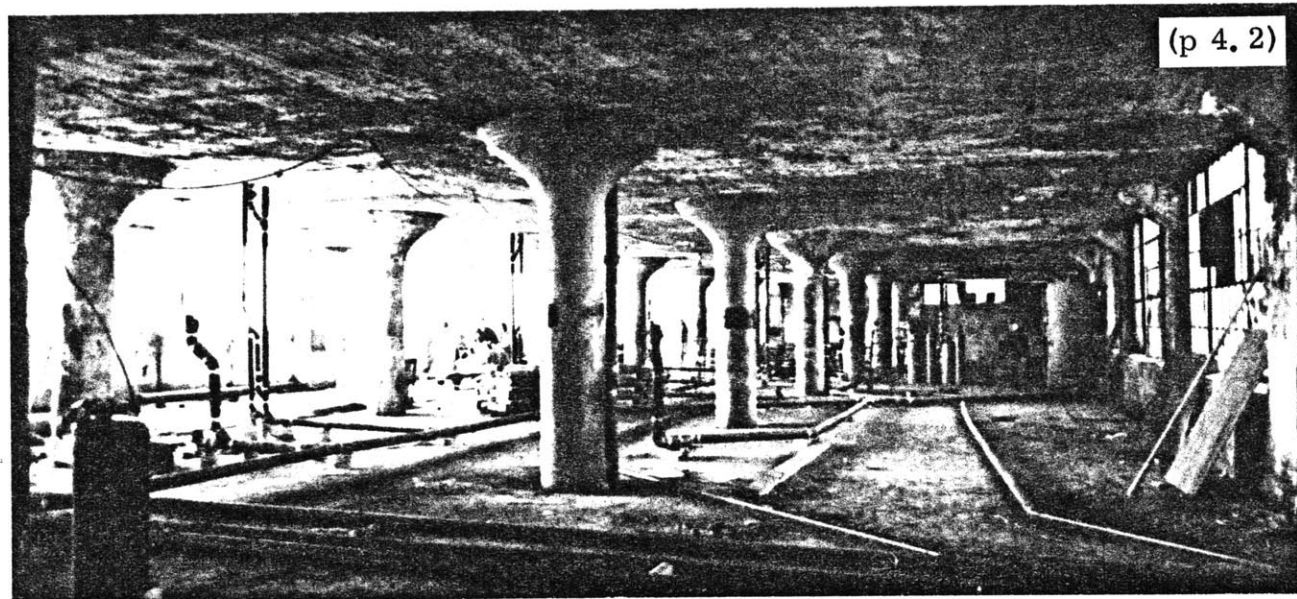
4.4 construction

As noted earlier, the acquisition cost is a vital element in shaping the economic solvency of a housing project. Most recycling developments have been successful due to the ability of the sponsor to acquire a sound structure at low cost. However, the popularity of reuse has created an increase in the market costs for older (including vacant) structures. Present owners see an opportunity for greater value in what was

⁴³Anderson-Notter Associates, Architects, Boston, Mass.

once considered a useless holding. Therefore, not only are prices rising, but existing owners see a potential for they themselves to play the role of developer in reusing unproductive non-residential property. Thus, increased awareness will generate increased competition for the finite resources of older buildings.

Preliminary analysis of a building is still one of the most critical tasks in approaching conversion of a non-residential structure. It is much more complex a procedure in buildings where there are many partitions and a multitude of hidden structural members than that of straight rehab. However the open interiors of both the Amory and Millhaus industrial facilities did not pose the same problems (p 4.2).



The evaluation process is the foundation for future decisions. The competency of the analysis defines the parameters for actor involvement and the uncertainty associated with actual construction. Since each building type of varying periods contain their own respective construction characteristics, they must be viewed in a separate frame of mind. As experience is gained in understanding the idiosyncracies of older schools, factories, etc., then that uncertainty will diminish. Only experience can serve as the answer toward reduced risk.

As noted previously, the construction costs for reuse are so varied that it is difficult to make a valid comparison against that of new or rehab. The specific qualities of acquisition costs, structural soundness of the building, salvageable material, and construction duration, make each project unique. The price range covers a spectrum from that of approximately 30% below new construction rates to costs equal to new. However the case studies reveal a savings in their projects which are, I believe, indicative of conversion. Franklin Square which was completed only eight months ago in October 1976, yielded units at \$20,700. Amory St., completed in 1974, had a construction cost of \$15,200 per unit. Millhaus, completed in 1972, came in at only \$12,000 per unit. Each project was considerably lower than comparable new

units being produced at that time. Comparables are usually defined by size of units and basic amenities provided. However, if one were to consider the quality of construction inherent in a large facility, the comparisons would reflect an even greater value in reuse units produced.⁴⁴ Although specific instances such as Franklin Square, Amory St., and Millhaus produced units below market comparables, the MHFA mortgage figures shown in (fig. 4.2) illustrate the diversity of recycling costs. Therefore it cannot be steadfastly said that recycling older buildings is necessarily more economical than that of new and rehab construction.

4.5 marketing

Marketing attractiveness in housing is still primarily influenced by location. The rental problems that plagued Millhaus stemmed from its poor location relative to employment even though the units offered were very large and unique. The locational qualities of schools, religious facilities, fire stations, etc., have a close tie in many instances with established residential areas and thus offer an attractive potential for housing. Facilities such as mills, factories, warehouses, offices, and more marginally

⁴⁴Ed Healy, Healy, Healy & Brown, Architects, Framingham, Mass.

located in relation to existing housing.⁴⁵ "As EFL (Educational Facilities Lab), President Alan Green points out, school buildings usually have the advantage of central locations, and, unlike industrial buildings, are designed for public occupancy. As a result, most schools fulfill emergency code requirements and have adequate storage, plumbing, electrical and other utilities."⁴⁶ However with expansion of residential areas, often times unrelated uses such as manufacturing become engulfed and thereby find themselves in a desirable site. However, location is just the foundation for other elements which shape the housing characteristics desirable to tenants.

The attractiveness of recycled housing was based upon different criteria in each study case. The architectural character of the facade at FSQ was an appealing element for tenants. However the factory facades could not provide the same quality of detailing and ornamentation. Franklin Square had the opportunity to provide a number of more unique apartments as well. The spectrum of opportunities for the type of unit produced through recycling is great. The units generated from Amory St. were quite different in size and architectural quality than those found at Millhaus.

⁴⁵Greater Boston Community Development, Boston, Mass.

⁴⁶Andrea O. Dean, "Surplus School Buildings: New Opportunities for Adaptive Use," AIA Journal, April 1977, p. 59.

YEAR	PROJECT	MORT. AMT/* UNIT	YEAR	PROJECT	MORT. AMT/ UNIT
1974	Piano Craft Guild	20.1	1976	Gardner Apts.	28.6
1975	Chauncy House	23.0	1976	Mercantile Bldg.	41.8
1975	Upton Inn	26.1	1976	Academy Knoll	22.9
1975	The Tannery	21.1	1977	The Close Bldg.	24.6
1975	Masonic Bldg.		1977	Cotton Mill Apts.	29.0
1975	Central Grammer	22.5	1977	Francis Gatehouse	31.1
1975	Assumption School	21.9	1978	Kings Beach Tower	28.9
1976	Franklin Sq. House	25.4	1978	Bowdoin School	31.4
1976	Leeds Village Apts.	24.7			

*In Thousands of Dollars

figure 4.2

MHFA UNIT COSTS

Although both were industrial buildings initially, the location of columns and floor-to-floor heights differed. This provided the incentive for creating a contrasting approach to apartment layout in spite of the tenant differences. The regimented columns at Amory allowed a uniform pattern for standard units. However the irregular pattern at Millhaus due to the many building additions over the years, subjected the units to a wide variety of floorplans each reacting to their specific location within the mill. Even with an industrial setting, there was generated this diversity in unit type. As noted in the case studies, tenant reaction toward the units was understandably responsive to the uniqueness at both Franklin Square and Millhaus.

Every project has its own value in terms of market response. This is a combination of location, architectural image, apartment size and quality, and amenities provided. However the distinct building types each within their own setting produces a whole range of possibilities. One cannot expect a stereotype unit from a conversion.

The time span necessary for rent up is of great importance to the owners of newly recycled housing for it defines the income to be generated. However it can also act as an indicator of market demand. Aside from Millhaus, the rent out as noted in the cases was relatively quick. Vacancy rates are non-existent in each of

the three projects which boast waiting lists for openings. This is a trait common to the recycled buildings which offer a unique setting at reasonable cost.⁴⁷ The rent up period has been very quick in the past for all MHFA financed projects. An extreme example is Chauncy House in downtown Boston operated by State Street Development. The converted office building of 87 units was fully leased in six weeks.⁴⁸ It can be seen by the response that has been given reuse that it has a definite value to prospective tenants who desire an atypical apartment unit. The previously non-residential structure offers a creative alternative within the housing market.

A large percentage of recycled developments now being assembled are for elderly housing. This is due primarily to two qualities of the housing market which are not directly related to conversion. Certainly the location of many vacant structures may provide an opportunity for housing. However the specific choice of elderly tenants is based upon other criteria not contained within the building itself. The first is the attractive opportunity of subsidized housing under current tax legislation. Although

⁴⁷MHFA, Boston, Mass.

⁴⁸William E. Dorman, "Housing from offices: Carter checking how Boston does it," Boston Sunday Globe.

the 1976 tax reform act cut off many available shelters, subsidized rehab still maintains its five year accelerated depreciation.⁴⁹ This continuity has increased investor interest for both developer and equity participants within the last year. Privately funded market units are difficult to assemble in todays economic climate.⁵⁰ Secondly, within the context of subsidy housing, elderly tenants are better received by existing neighborhoods. That is to say the elderly do not carry the negative side effects often associated with subsidized family housing. A more receptive attitude by area residents translates into shorter duration without community confrontation over increased school populations, etc. Thus the utilization of vacant non-residential facilities for elderly housing is not a result of the building being ideally suited for such conversion. Instead it is a product of non-controversial use and tax advantages allowed by Congress.

In 1978 the five year amortization period will be increased by one year each year until the depreciation period is equal to ten years.

⁵⁰Anthony J. Yudis, "A Tax Shelter That Finances People Shelter," Boston Sunday Globe, May 15, 1977, p. B-1.

5.0

CONCLUSION

Characteristics of adaptive reuse cannot be identified in a generalizable way across the entire industry. There exist many incongruities among the reuse alternatives. This disjointed quality is based upon three primary aspects. First, the physical qualities of the various building types differ, thus segmenting the reuse field into categories of previous use. Secondly, the environment in which it sits defines a distinct relationship with a specific set of social and economic factors peculiar to that area. Therefore, response over an individual project varies significantly from

site to site. Lately, the set of actors who are a part of the reuse development, approach each project in a unique way; offering the potential for the development process of even similar building types to take a different shape.

The comparison of reuse development with that of rehab or new can best be made through individual juxtaposition of projects. Surfacing of problems and the techniques used to compensate those problems in adaptive reuse help to qualify recycling as a useful process for housing production. The cases provided a sense of definition for the reuse process in terms of their respective roles as a developmental program.

Key comparisons can be made about observations generated through the analysis of the recycling process. Although all comments cannot apply to each situation, the generalizations are relevant nonetheless.

Actor Involvement - The effects of reuse created a need for a heavy site supervision and decision making staff composed of representatives of the designer and builder. This created some shifts in procedural methods for the actors from that traditionally followed for rehab, and certainly new construction.

Community Response - Public Response of both city and neighborhood coalitions is noticeably active in the pre-design and preliminary proposal phases.

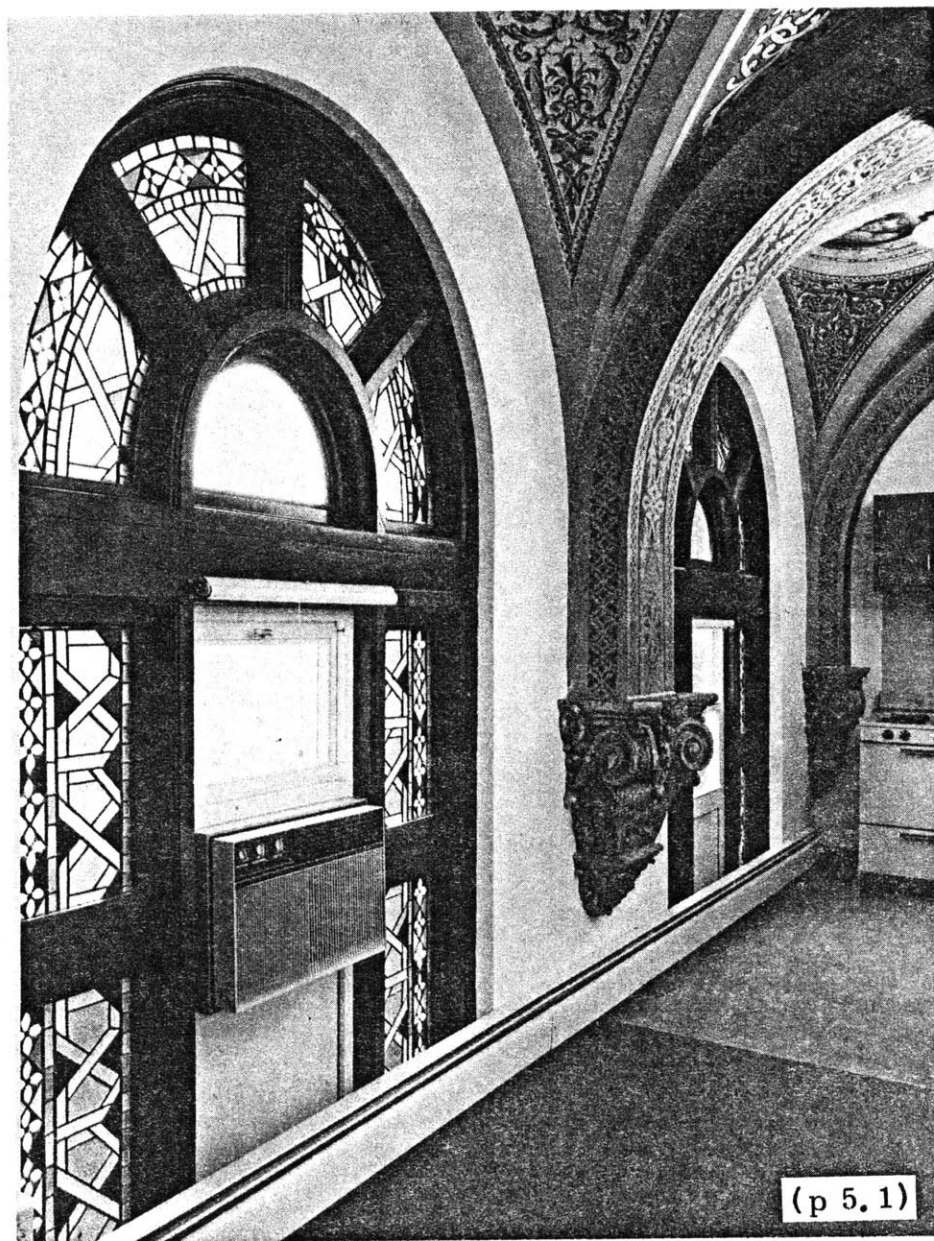
However, its variation from involvement of new construction is difficult to assess. What one can say about the community input is that it is almost always favorable.

Regulatory Controls - The past nemesis of design and construction in recycling non-residential structures has been the costliness of code compliance. However the goals of public safety and efficient conversion are slowly finding a consonance through current code revisions -- without sacrificing the purpose of each. Therefore code conflicts inherent in reuse will no doubt disappear to a large extent in the next few years.

Construction/Costs - Difficulties of construction found in adaption of old buildings stem primarily from the age of the structure and the type of construction utilized at time of erection. The aspect of reconstruction is comparable with that of rehab work experienced by most such contractors. Cost levels vary to such a degree that comparison to other forms of construction cannot effectively be accomplished.

Marketing - The adaptive reuse project has proven itself valuable to housing consumers. The units created through adaptation of non-residential structures destroys the image set by conventional development. Recycled residential environments offer large and often times very unique interiors through irregular space allocation and architectural detailing (p 5. 3).

The product generated through the recycling of non-residential facilities offers a valuable alternative for housing production. It cannot be said that all abandoned buildings should be pin-pointed as targets for reuse. The traditional approach of assessing



location, market potential, soundness of building, etc. should still dictate the selection process. Reutilization of old abandoned buildings not only offer the benefits of architectural preservation, but more importantly offer the consumer a valuable commodity on several levels of architectural appearance, cost value, and construction quality.

The use of recycling as a tool is important as a complementary role to rehab and new construction, and should be pursued actively as a major

thrust for reuse of old buildings as well as rejuvenation of the cityscape.

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