Walter Baker Chocolate Factory: An Adaptive Reuse Exploration
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Abstract:

Walter Baker Chocolate Factory:
An Exploration of Adaptive Reuse
by Fernando D. Castro
Submitted to the Department of Architecture on
March 10, 1981, in partial fulfillment of the
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This thesis explores the processes of building evolution and the
methods in which old buildings are recycled for continued use. Reuse is
the process in which a building's life is extended through a preservation
or alteration of its existing morphology. It is a process in which
memories are both extended and interpreted; designers try to renovate
outdated structures into rich and diverse environments in which people
can once again live and work.

This thesis is a case study in reuse, in which I study the process of
recycling several old industrial buildings. The Walter Baker Chocolate
Factory sits on the boundary line between the Massachusetts towns of
Milton and Dorchester, straddling the Neponset River. I discuss the
morphology of the existing buildings, and I explore their conversion into
an artists' colony. Reuse makes sense economically and environmentally,
and also helps us preserve a connection to our ancestry, our cultural
heritage, and our collective memory.

In Working Places: the Adaptive Use of Industrial Buildings, Walter
C. Kidney says:
America, at least in its attitude toward material wealth, may be undergoing a major psychological change. In the recent past, anything made the day before yesterday, whether it was a building, a car or a saucepan, was liable to be scrapped. 1

Today, this trend is beginning to reverse, and architects are looking to explore the potential for reuse of outdated buildings. As a guide for my exploration, I have selected the program that the architectural team of Gelardin, Bruner, and Cott used to create the "Piano Craft Guild", an artists' colony in the South End of Boston. I have, however, taken the freedom to tailor the program to fit the specific conditions extant at the east complex of the Walter Baker Chocolate Factory.

Thesis Supervisor: Barry Zevin
Title: Assistant Professor of Architecture
Acknowledgments

To the Memory of My Father

I would like to extend my thanks to Professor Barry Zevin, whose patience and dedication made this thesis possible. His insights and criticism were extremely valuable throughout the duration of the thesis. Professors Imre Halasz and Edward B. Allen were of the utmost help as well.

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Preface

PREFACE: ADAPTIVE REUSE AND CURRENT ISSUES IN ARCHITECTURE

In her book, Buildings Reborn: New Uses, Old Places, Barbaralee Diamonstein quotes urban designer Johnathan Barnett:

Adaptive re-use of old buildings is also a form of architectural criticism: people reject many of the new buildings they see, preferring what they have to what they expect to get instead. In the same vein, one rarely hears any more of a "remodeled" apartment or house. Why? Because the word connotes the junking of the old. More and more, people seem to prefer what the past had to offer in the way of handcrafts, custom design of hardware and moldings, attention to details (newness still prevails, though, when it comes to choosing appliances). Ornamentation, decreed a crime by modernists, is no longer taboo but desirable, a relief from the glass-and-steel grid that epitomizes modernism. If you doubt the significance of this trend, if you question whether people really do feel this need for embellishment in their surroundings, talk to a rental agent. They tell me that the reference to a "landmark building" in an ad is the ultimate lure.

The failure of modern architecture to satisfy these personal desires has caused a crisis amongst architects. Some have reacted by re-enacting the traditions of 19th century eclecticism and have begun to reproduce historical styles. The Getty Museum in California, for example, is an exact replica of the Villa at Papiri. In England, Raymond Erith and Quinlan Terry have produced some recent recreations of Georgian prototypes.

Other designers, such as Robert Venturi, a master at caricaturing the cultural trends that shape the modern environment, have tried to take advantage of the crisis to advance their personal conceptions of modern
Charles Jencks, the New York critic and author of *The Language of Post Modernism* endorses Venturi's views while emphasizing semiotics as a discipline to help designers evaluate the aesthetics of buildings,

"...to speak the common language of the culture first".

The designer should logically start with an investigation of the semiotic group and always keep in his mind the varying views of the good life as seen by the people involved since architecture ultimately signified a way of life - something not entirely understood by the Modern Movement.  

Broadly speaking, these groups are classified in socio-economic terms by sociologists and market researchers, even though there is a lot of overlap and borrowing between groups, and there are other forces at work.

Both Venturi and Jencks accuse the Modern Movement of lacking a contextual foundation. I feel that their criticism is accurate but misguided: their interpretation of contextualism is near-sighted and shallow.
Both men feel that buildings are objects/monuments. Objects/monuments are appropriate only to celebrate or to commemorate people or events from history. When monuments are used as containers for daily human activity, however, the living environment becomes fragmented and incomplete.

Equivocacy, ambiguity, and cliche are not recent inventions. These problems, which abound in modern architecture, can also occur in adaptive reuse. Calvin Trillin addressed this issue in an article for the New Yorker.

When old warehouses and abandoned factories all over the country started being scrubbed up into boutiques several years ago, we travelling people accepted them more or less the way we had accepted the advent of Holiday Inns - at first marvelling at their presence, and then grumbling that they all looked alike. The brick exposed in Ghirardelli Square in San Francisco tended to look like the brick exposed in Pioneer Square in Seattle, which had some similarity to the brick exposed in Old Town, Chicago, or Underground Atlanta or the River Quay in Kansas City or Larimer Square in Denver or Gas Light Square in St. Louis. 5

Trillin clearly summarizes the problem with much of today's adaptive reuse. "Some of the historic renovations are chic and some are tacky."6

Meaningful - not "tacky" - architecture is both relevant to its context and truthful in its use of materials. The designer must pay attention to the existing vocabulary of form as well as to its geneology, and must look at both the building and its natural surroundings for clues for the new design work. Without this sensitivity, the meaning of an existing building can be easily lost or destroyed. Meaningful architecture and quality construction have always been worth saving, but this
attitude has only recently resurfaced in America. Consumerism, the over-
whelming American creed, has turned buildings into objects; after a number
of years of use they are to be discarded. Buildings, however, are essen-
tial parts of our lives as well as of the lives of those who came before
us and those who will follow. As pieces of our collective heritage, they
deserve to be respected and treated with a sensitivity towards their
past history, their present use, and their future potential. Happily,
this consumerist attitude appears to on the wane.

In the near future, then, we may see an America that
has relearned frugality. Should this be so, a
region, understood as a delicate ecological mecha-
nism, will be developed cautiously according to
a comprehensive plan - and its scenery will benefit
greatly. In the towns, vacant lots will be built
upon, and abandoned buildings rehabilitated or
 gotten rid of if too far gone: land, even as in
the Netherlands, will be too precious to squander.
Existing construction, of whatever sort, will be
examined to see what further use can be gotten
out of it. Building materials, including decorative
work, will be salvaged, not broken up or burned.7

The Walter Baker Factory has a distinguished history. Although it
is presently abandoned - the victim of consumerism - it is structurally
sound and its materials are in good shape. It has enormous potential
for reuse. Whether that potential is achieved depends on the designer's
sensitivity to history, his understanding of structure and materials,
and his awareness of the building's context.

The factory can be seen as an ecological entity. At present, the
facades of the buildings flanking Adams Street and Pierce Square are
painted a uniform white - as if a coat of paint can unite the complex.
In fact, these buildings not only date back to different periods, but
they also have completely dissimilar styles.

The Baker Company expanded rapidly, and because land was scarce and the topography awkward, buildings were haphazardly scattered around the site and randomly connected by bridges. Despite its heterogeneous development, however, this complex of buildings has an order to it. What appears to be a disorderly intrusion of buildings upon the river banks is actually also a richly layered architectural environment.

In order to understand the potential of such an entity, I outlined the hierarchial order under which the buildings currently exist and used these observations as a foundation for my design work. The first part of this thesis evaluates the observations that I made while preparing for re-design. The second part contains the actual design work and presents a personal expression of adaptive reuse.

So that the reader will fully understand the background I brought into the observation process, I have first included a brief discussion of the prevalent forms of contemporary adaptive reuse.
Jencks' Semiotic Groupings

1 Suburban

2 Movie Star Estate

3 Building in Nature

"If one wants to change a culture's taste and behaviour, or at least influence these aspects, as modern architects have expressed a desire to do, then one has to speak the common language of the culture first. If the language and message are changed at the same time, then both will be systematically misunderstood and reinterpreted to fit the conventional categories, the habitual patterns of life. This is precisely what has happened with modern housing estates, Pruitt-Igoe and Pessac are the two most celebrated examples". (Charles Jencks, "The Language of Post-Modern Architecture", p. 130).
Architecture as Decorated Shed

1. Rural Architecture School by François Cointeraux
2. Variations on the decorated shed. 

Venturi uses his architecture as a critical comment on contemporary culture. The "shed decorated at a monumental scale" is meant to portray modern architecture laughing at itself. Humor aside, however, society looks for more substance in its buildings and is generally left empty-handed.
Introduction

FORMS OF ADAPTIVE REUSE

There are three prevalent forms of adaptive reuse: preservation, recycling, and transformation. Although specific examples of reuse are seldom pure, and the methods usually overlap, each form possesses some distinct characteristics.

1. Preservation

The preservationist attempts to bring a building back to its original state of existence. Care is taken to recreate the original construction, detailing, and ornamentation. However, liberties are sometimes taken when construction methods are no longer available for

At Quincy Market, special attention was given to restoring buildings to their original state. In many instances, the renovations left the Market more opulent than its initial design had ever been.
use. Preservation generally implies a continuation or restoration of the building's original use. Quincy Market is a good example of the preservationist approach to reuse.

2. Pragmatic Recycling

Building renovation usually attempts to accommodate a new use within an old building, using contemporary means of construction for any changes. Architects generally try to keep design intervention to a minimum and attempt to use the existing qualities and elements of the building as much as possible. Reuse through recycling usually preserves the building's parti: its diagrammatic organization, and physical articulation.

In the introduction I quoted from Trillin's remarks on the tendency - he calls it "cliche in adaptive reuse" - to expose the masonry and beams which were part of the original building construction. Because modern construction no longer relies on individual craftsmanship, quite often it cannot match the quality of the older methods. Creating new structures and materials to match the qualities of the old would be far too expensive and labor intensive for economically successful reuse projects.

Recycling, however, does not do away with ornament. It is very much a part of our architectural culture and manufacturers have found that there is always a market for second-rate imitations of classical proto-
types. In fact, some of the most mundane works of modern architecture rely almost entirely on second-rate plastic replicas and cheap imitation classicism.

The 60's witnessed a movement away from this trend and a revival of workmanship and quality. The attitude developed that "plastic" was analogous to "cheap": mass produced articles were felt to be without quality. People once again became concerned with the propriety of a material for its task and the propriety of ornament to its material. This concern became a central issue in adaptive reuse projects.

David Pye, author of The Nature and Art of Workmanship, deals with the equivocacy of materials and construction, a problem which has begun to trouble architects.

...every material has, as a matter of objective fact, a specific nature, a fixed set of inherent properties which can be expressed or suppressed when it is used: rather as though it were a child being brought up. They are both essentially concerned with design, and insist that the material shall not be shaped or treated so as to suppress the set of inherent properties which constitute its nature.1

A good example of this minimilist approach to renovation can be found in the Piano Craft Guild where the original structure and walls were exposed and new construction was only added to create partitions between different use spaces.

3. Transformation

Art historians write about representative examples from different periods of architecture. They comment on the evolution of form with the passing of time, and not that each generation invents its own
vocabulary based on assumptions established by previous generations. Transformation, in the terms of art historians, deals with the evolution of form through the invention and juxtaposition of architectural vocabularies.

Rudolph Wittkower, in his book *Architectural Principals in the Age of Humanism*, cites the transformation of church architecture as one of the greatest achievements of the Renaissance. Alberti, Wittkower claims, transformed the basilica, a prototype much used during the Middle Ages, from "Wall Architecture" to an architecture which used a more expressive definition of its function as the house of God. Somewhat later, Palladio added the final touches to Alberti's work. Neither architect, however, used new forms; they merely juxtaposed vocabularies which had been used for other purposes - triumphal arches and pagan temples. The disassociation of these juxtaposed vocabularies from their previous meanings created the transformation.

Were we to extend some of these concepts into adaptive reuse, we would be dealing with recyclable buildings as a series or architectural elements which are combined according to the rules of a specific vocabulary (wall architecture, for instance). Following the concepts of transformation, architects can intervene with different degrees of intensity. Some go as far as to use only the foundations of the original building and add new construction to the old structure. Unlike renovation, transformation, by definition, alters the building's parti.

In my thesis, the need for an adequate circulation system, definition of public areas and privacies, and the need for light forced
me to make significant changes to the existing buildings. Since I was both adding and subtracting, I had to use an architectural vocabulary suitable to sustain these changes. I created such a vocabulary after examining meaningful reference examples of both adaptive reuse and new construction.
Section 1
The Context
I. Landscape as Form-Generator

The eastern complex of the Walter Baker Chocolate Factory has a strong morphological association with the water, rocks, and escarpments which form the essential elements of its natural environment. In fact, the factory owes its very existence to the rapids: were it not for its abundant water power, the site would never have been developed. Even as one stops on the bridge to look at the turbulent waters one can see the evolution of the mill begin to come alive. The heavy masonry walls which echo the forms of the steep escarpments anchor the building solidly to the ground and provide a safe haven from which to watch the rushing river. It is as if the waters - like the flames in a fireplace - have been successfully harnessed, and one feels the same thrill in watching the rapids as in watching a fire. The analogy can be taken further when one realizes that both the river and the fire serve a purpose in keeping men alive. In fact, the BRA has recently passed a proposal to begin to use the river to supply Dorchester with "home grown" hydro-electric power.

Anchorage and bridging are recurrent themes within the complex. Building 4 projects clear out over the water, standing on steel columns which are bolted into the river bed. Other buildings are interconnected by numerous bridges as if each structure was a ship on the bay with only a thin gangplank connecting it to other ships and the land.
After studying a contour map and then viewing the actual landscape one can understand the analogy between the buildings and their site. The heavy masonry walls form a "footprint" for the buildings, providing a solid anchoring base from which the lighter structure springs. On either side of the river, massive escarpments spring up from the water, rising high into the air before they climax with a topping of trees and bushes. These escarpments form exquisitely chisled natural sculpture, witness to an age-old evolutionary process. Any attempt to add to this context must be made only with a sensitivity to and regard for the existing natural beauties.
II. Neighborhood Morphology

II. NEIGHBORHOOD MORPHOLOGY AND ITS ORIGINS

In his book, Streetcar Suburb: The Process of Growth in Boston (1870-1900), Sam Bass Warner, Jr. traces the urbanization process that took place in Boston after the Civil War. During those thirty years, Boston evolved into the metropolis that it is today. And, although Warner focuses his attention primarily on the city proper, many of the patterns he develops apply equally well to the area around Lower Mills. He coins the term "romantic capitalism" to label the trends of upward mobility in the late 19th century society of immigrants who rose from the ranks of the impoverished workers to the upper classes. In a society of intense economic growth and confusion, people idealized village life and rural surroundings centered about the family and the community. This idealization marked, says Warner, "...the attempt by a mass of people each with but one small house and lot to achieve what previously had been the pattern of life of a few rich families with two large houses and ample land." He concludes:

The grid plan of the suburbs did not concern itself with public life. It was an economically efficient geometry which divided large parcels of land as they came on the market. The arrangement of the blocks of the grid depended largely upon when farm or estate came on the market at what time. The result was not integrated communities arranged about common centers, but a historical and accidental traffic pattern. Where a railroad station and arterial streets came together, stores, churches, and sometimes schools were built to serve some of the needs of
the residents of the area. In Dorchester, for example, there were historic village clusters that grew with the increase of population around them: Meeting House Hill, Harrison Square, Codman Square, Lower Mills. Other clusters—such as Fields Corner, Grove Hall, and Columbia Square—were largely the work of the new streetcar transportation network. Most characteristic of the new suburban order was the commercial strip which followed the main transportation lines and had no center at all. Washington Street, Dorchester, from Codman Square to Grove Hall lacked any historic center. It was simply a long row of little stores which served those passing by and those living in the houses behind.

Company officials situated the chocolate factory at an intersection of several major transportation routes. The location also offered the highly desirable advantages of free hydro-electric power; in addition, the river provided navigable water transit from the rapids to the ocean.

The area around the mill did not develop into a crowded urban network. Rather, Lower Mills represented the idea of a rural community, very similar, on a smaller scale, to the town of Lowell. As Warner points out, however, there was little direct planning involved in the growth of Lower Mills. Facilities sprang up and became outdated. Companies found it easier to relocate and construct new facilities than to renovate or reuse existing ones. Nor did they usually bother to destroy the old buildings, but chose instead to simply abandon them.
City Context
Neighborhood Character

1. & 2: Building 30-31 wrap around Adams Street like a small city fortification.
3. Milton, to the south, is an affluent middle-class community.
4. A small parking area, used as service area to the complex on Building 34.
5. The Dorchester section of Lower Mills.
III. Orientation

III. ORIENTATION OF BUILDINGS

The first buildings in the Walter Baker complex date back to 1868 and were positioned to take advantage of the power supplied by the river. Later buildings were positioned wherever they could fit on the crowded site. As a result of initial positioning, later additions, and subsequent urbanization of the surrounding locale, the Walter Baker Chocolate Factory currently presents several major orientations and directions. One can interpret these directions in a variety of ways, and I have included graphics to help illustrate the major factors.

The site can be interpreted as a hand where the Pierce Mill forms the palm with fingers extending from it: the fingers are the Ware Mill, the Preston Mill, and Buildings 20, 21, and 22 with the Adams Street Mill forming the index finger. These fingers are bounded by or buried in the protruding escarpments of the river.

Four major axes are generated in this organization. The primary access is Adams Street, and as one walks from the MBTA one is immediately attracted by the gate which forms a visible landmark and point of reference. A second direction is created as Adams Street wraps around Buildings 30 and 31. Another passageway begins at the gateway, perpendicular to Adams Street, and ends at a rock escarpment creating a third direction. Beginning as an alley, this space becomes a rather charming courtyard although at the moment it is isolated from the rest of the com-
plex. The footbridge creates a fourth axis. For the purposes of this thesis I have included Building 38 (the Ware Mill) and Building 39 (the Ware Storehouse) which are located on this axis.

The factory buildings themselves are directional, in keeping with the topography, the river, and the street. Industrial buildings, they were designed to be straight-forward and efficient: long and thin to admit lots of daylight and to facilitate the transmission of power via long belts and axles.

Both slides capture the key clues to the nature of site in its urban context: aloof, fortification-like.
Orientation of Buildings

MAP OF PROPERTY

Insurance map depicting numbering system, date of construction, and defining area of study for the purpose of this thesis.

MAJOR AXES OF BUILDINGS
IV. Character of Existing Buildings

IV. CHARACTER OF EXISTING BUILDINGS

In 1966, students working on architectural preservation with Professor Seckler of Harvard, analyzed a building across the street from the chocolate factory. For the purposes of this thesis, their observations on that structure are considered to hold true for the Walter Baker buildings.

'The prosaic designation "Mill No. 4, Buildings A-B" seems somehow appropriate for this sturdy but stolid example of nineteenth century industrial architecture - impressive more for its durability and continuing utility than its style. At the time of its construction, the Baker Chocolate Company was rapidly expanding and improving its production facilities on both banks of the Neponset River at Milton's Adams Street Bridge. Today the Baker Company has followed the migratory path of other New England industries southward in search of cheaper labor, but Mill No. 4 is partly rented and, with little difficulty, is being renovated for new industrial uses.' Construction is described in this manner:

'On the interior, timber floors lie upon a grill of iron and wood girders. The iron girders run from front (Adams Street) to rear, resting between cast iron columns; the wood beams are suspended from the iron by metal brackets and traverse the building from side to side. In Building B, however, the floor above the basement is of brick and is supported by masonry vaulting filled to floor level between iron girders. Most of the heaviest loading appears to have occurred on this surface.'

'In dramatic contrast to the techniques employed at the Baker site, the Menier Chocolate Works of Jules Saulnier had already pioneered skeletal construction ten years earlier at Noisel-sur-Marne. The anonymous industrial buildings of the St. Louis waterfront, rising between 1850 and 1880,
had demonstrated with their iron and glass facades how utilitarian structures could be more amply lit and shed their masonry heaviness. And the years following the completion of Mill No. 4 (1883), William Le Baron Jenney's Home Insurance Building rose to punctuate the Chicago skyline."

'About the architecture of the Walter Baker Chocolate Factory: In fixing the mill's architectonic treatment, its designers appear to have borrowed with partial success from contemporary masters while also unconsciously retaining much that was of value in a century of anonymous American architecture. The plane, undisguised brick surfaces, cleanly penetrated by doors and windows - such as exhibited by all the buildings in the Baker complex - had long been a part of this native tradition.'

The complex at Walter Baker is an example of an industrial prototype. The idea is to give an image to the company rather than to emphasize the manufacturing process. Buildings as such are sturdy structure witnesses to the prosperity of the firm.
Existing Buildings

VIEW EAST FROM BRIDGE
Existing Buildings

ADAMS STREET FaÇADE
Artists face a work space crunch

The struggling artist, working space in a garage, is a cliche that now exists in far too many garrets throughout the city. As artists become less and less able to afford the rent for garrets and studios, they face an ever-increasing struggle to obtain affordable work space. But the critical problem facing artists is not the lack of affordable space alone, but the need to work in a space that is conducive to their profession. Many artists need space, light, and access to a community of like-minded individuals.

In recent years, industrial and commercial buildings have been converted into lofts, which have become attractive to artists due to their affordability. However, many of these lofts are located in areas that are not conducive to an artist's lifestyle. For example, the South End, which was once a thriving arts community, is now being gentrified.

Artists such as Marlena Pineda have worked to create a sense of community in the arts world. Pineda, who lives with her husband, sculptor Harold Tovitz, in a loft near the Back Bay, has worked to bring together artists from all over the city. She has organized a number of events to help artists connect, such as the Artists' Union meetings.

The Boston Globe, July 1980

V. SELECTING THE BUILDING PROGRAM

Included in this section is a copy of an article from the Boston Globe which describes the space crunch that artists are currently experiencing. Speculative housing is taking away the precious loft space that people in the arts need. And, although I have centered my thesis around an artists' colony, I have taken a larger group of users into consideration, attempting to think in terms of a person who needs not only a living space but also a space in which to work. There is a growing trend towards integrating home life and work life, and writers such as Alvin Toffler and Lewis Mumford have predicted scenarios in which people would rather work at home than subject themselves to a nine-to-five routine. (In one of my original thesis proposals I developed the concept of a self-supporting facility similar to the communes of the 60's, the urban housing cooperative of the 70's, and the...
utopian communities from the 19th century. Due to the lack of an ade-
quate program incorporating a real client, however, the proposed
exploration proved unworkable.)

The Walter Baker industrial buildings would not only be an ideal
artists' colony, but it is also worthy of renovation as a magnificent exam-
ple of our architectural heritage. In addition, the community surrounding
the complex would benefit by creating these cultural facilities. I
have adopted the following program from the Piano Craft Guild to be used
as a guideline for this design project:

- Apartment units ranging from 400 to 1600 sq. feet
- 30,000 sq. feet for gallery, lobby, restaurant, and small
  business enterprises.
- Theater with seating for 200 people, and a small reception area
- Space for workshops and a small performing company
- Service utilities

Economics did not play a major role in making design decisions.
As a design exploration, this thesis is intended to be an academic
exercise in form-making; a more disciplined financial focus could easily
form an entire thesis in itself. Michael B. Johnson's thesis deals with
the renovation of the Close Factory in East Cambridge and provides
a scenario which is not dissimilar to my own proposal.

It is assumed that the renovation process will be
initiated by a base or "seed" corporation. (A
tenant's association would be the deal base
corporation.) The base corporation would purchase
the building and property from the Redevelopment
Authority. Many municipalities, eager to sti-
mulate development in decaying areas, will sell old buildings to prospective developers at bargain prices.

Thus, it is conceivable that a tenant's group or other private entity might be encouraged to undertake development of an existing building. Once the building and property are acquired, the corporation will obtain financing, either from a private agency, or from HUD under Section 312 for the actual renovation (up to $17,500 per unit).
Section 2
The Explorations
I. Program and Parti

I. PROGRAM AND PARTI

I spent a large part of the semester developing a circulation system adequate for mixed use development. Throughout this period I focused on defining and differentiating public and private areas. I used the patterns of movement in pedestrian networks as references and I studied the patterns that currently exist in such mixed use areas as the North End.

At Lower Mills, a public path begins at the gateway on Adams Street, penetrates Building 20 and crosses over the small bridge between Buildings 28 and 39 and then leads back either to Adams Street or the MBTA. The private areas begin between Buildings 33 and 21 and between Buildings 21 and 25. The North End provided a good reference for the public pathway: lesser streets are screened from the busiest part of town, and while they are still public spaces, they have special personal qualities. The pedestrian, who at first might overlook the side streets, is pleasantly surprised when he finds them.

The resolution of the existing directional axes (which was described earlier) served as the organizing element for the circulation system. The notion of the link and the joint form an analogy to the circulation system and its open spaces. The link is the linear circulation route and the joint is the point where two or more links meet. In this particular study, the topography and the buildings create a
circulation system similar to ones found in Mediterranean villages.

I have penetrated through Building 20 making a gateway to the other side of the river, and I have created a joint or open space on either side of the gate. The joint between Buildings 30, 33, and 20 serves as a transition to a smaller joint at the entrance of Buildings 30, 31 and 32. Because they were much too awkward for housing, Buildings 30, 31, and 32 have been zoned for commercial and office space.

The joint around these buildings also serves as a transition to the private housing area which is further defined by a gate between Buildings 20 and 33. The space between Buildings 30 and 34 and Buildings 19 and 23 is sufficient to allow vehicular access on special occasions. (This alleyway currently handles a considerable amount of traffic: it can easily accommodate an occasional truck or emergency vehicle.) In addition, deliveries can be made at the lot next to buildings 33 and 34.

I have placed a gallery in Buildings 20 and 21 where artists can exhibit their work and share their ideas. The gallery is also a transition to the theater lobby which is buried between Buildings 33 and 34 and Buildings 20 to 23. Though it could be an expensive piece of construction, the theater imparts a necessary vitality to the entire artists' complex.

I have moved the elevator from the end of Building 21 over to the space next to the gallery in order to allow a more efficient circulation to the upper level units and to create a means of vertical access adjacent
to the main gateway. The shed north of Building 20B has been removed to create a sunny space. Part of this space serves as an outdoor spill-over for the restaurant and gallery. The space also serves as a transition between Buildings 21 and 25 beyond the gate. I have also demolished Shed 20 C and created a deck for the restaurant which can also serve as a point where people can simply relax and look at the landscape.

Buildings 21 and 22 are so high that they block the sun from the spaces between Buildings 30, 33, and 34. The lack of southern exposure would render these existing open spaces uninhabitable throughout much of the year. In addition, the existing axes through these buildings terminates in the sheer walls of the escarpments. So, for purposes of light, open space, and circulation, I have cut through Buildings 22 and 27 and formed the remaining buildings into a conclusive "spine". The open space formed by this cut is oriented in the direction of the river and also contains a level change which gives it additional richness. From either of these spaces one can follow a set of stairs in the northern terrace to the back of the spine, or one can go through a passageway into another open space. This open space is to be landscaped like the terraces in the hill towns to suggest a place where people might want to retreat and rest.

The point between Buildings 20, 19, and 25 also serves as a transition to the bridge, which can be repaired and converted into a charming thoroughfare. Because the bridge is wide enough for truck passage, it could also be used for some emergency vehicles and for special deliveries.

Buildings 28 and 39 lack the enclosure and privacy found in other
buildings. Therefore, I have designated these structures as office space. The storehouses in Buildings 37 and 38 can be maintained as they currently exist or these buildings can be converted for use as an open-air marketplace on weekends.

Due to the proximity of the complex to the MBTA trolley and bus services, on-site parking can be kept to a minimum of 1.5 spaces per dwelling unit. With 40 dwellings on the site, this requires 60 parking spaces. Because of the lack of land on the eastern complex, one might put some of the parking on grounds across the street. A tenants cooperative could manage and maintain the open spaces and parking areas.

The Red Line subway tracks will eventually be converted into recreational facilities as part of the plans to create the Heritage Park. Until then, the front lot of Building 38 and the space on the northern side can remain as a green walkway with some provisions for parking.
Heritage Park

Walking, Jogging, and Biking

The Neponset Riverfront offers a continuous opportunity for bicyclists, walkers, joggers, and is served at several points by the Red Line trolley extension. Pathways should be created in accordance with the recommendations of the recent City report on Boston's Urban Wilds, which identifies key acquisitions or easements. The pathways themselves should be constructed with sensitivity to the area's fragile environmental features by remaining off the wetlands and by taking advantage of bridges and archways already in place.

Between Butler Street and Cedar Grove, the Red Line trolley curves northward, leaving a pair of former Old Colony freight tracks running along the marsh edge. This spur is used minimally, and if an alternative means of serving its users can be found, the lengthy process of track abandonment should be attempted. This would allow eventual public acquisition of the right-of-way, and its conversion to part of the linear park system. In the interim, an easement on the dry-land side of the tracks should be sought.

Boating and Picnicking

Just east of the Heritage Park at the Mills, the opportunity exists to create attractive boating and picnic areas on both sides of the River. In the past, the mills which line between the Ventura Street playground and the River was owned in part by DMC and in part by a private property holder. It should become the site of both a public boat dock and the Park's major picnic area. This is the picnic grove to which the eastern riverfront walkways of the Mills will lead, and the view upriver into the gorge is dramatic. This area is within walking distance of private ownership and development of the riverbank have screened off this potential recreational resource from the people who should enjoy it: the residents of Dorchester, Mattapan, and Milton.

The Heritage Park at the Mills emphasizes concentrated, active, largely educational activities in facilities that are built, while the Heritage Park along the Neponset emphasizes diffuse, passive, more generic recreational activities in an environment that is natural.

Pages 46 and 47 reproduced from the study "Dorchester Lower Mills" from the BRA regarding Heritage Park which bypasses the Walter Baker Chocolate Factory. Plans by the BRA are at the moment vague. Rather than following their proposals, I have made the assumption that in regards to my specific site, such recreation would only take place on the southern part of the river since most development on the northern side is already private and the topography much too steep to be of any use. On the left hand side the soon-to-be-obsolete T track can, as the text explains, be used efficiently.
Midterm plans show original programmatic concerns. Nevertheless, problems with building, light and orientation remain to be solved. The open-ended buildings make one believe that there is an ongoing network. However, beyond lies only a small patch of landscape and then steep escarpments and water. For this reason I have filled the space between buildings 23 and 27 to give the project a sense of completion. On the following page one can see how a new joint has been created with a path in the direction of the water and this built area eliminated.
EXISTING BUILDINGS•• VEHICULAR ACCESS

Existing Buildings -- Vehicular Access. Drawing shows existing buildings before transformation. Existing organization relates solely to vehicular service access. Future Heritage Park development will take place on southern bank of river.

TRANSFORMATION DIAGRAM

Concept Diagram of Transformation. The new public and semi/private paths related to a sequential order given to the new use. Vehicular access is still possible in new scheme as on the other drawing at the left.
Finished Drawings

Finished Drawings

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FIRST FLOOR PLAN WITH CONTEXT
WALTER BAKER CHOCOLATE FACTORY ADAPTIVE REUSE EXPLORATION
FERNANDO D. CASTRO
MASTERS THESIS
MASSACHUSETTS INSTITUTE OF TECHNOLOGY FALL 1980
ADAMS STREET FAÇADES (EXISTING)
WALTER BAKER CHOCOLATE FACTORY □□□ ADAPTIVE REUSE EXPLORATION
FERNANDO D. CASTRO
MASTER'S THESIS
MASSACHUSETTS INSTITUTE OF TECHNOLOGY □□□ FALL 1980
SOUTH ELEVATION  BLDGS. 19, 20, 21, 22, 23
WALTER BAKER CHOCOLATE FACTORY ADAPTIVE REUSE EXPLORATION
FERNANDO D. CASTRO
MASTER'S THESIS
MASSACHUSETTS INSTITUTE OF TECHNOLOGY FALL 1988
NORTH ELEVATION BLDGS. 19, 24, 25, 26, 27

WALTER BAKER CHOCOLATE FACTORY ADAPTIVE REUSE EXPLORATION
FERNANDO D. CASTRO
MASTER'S THESIS
MASSACHUSETTS INSTITUTE OF TECHNOLOGY FALL 1980
SOUTH ELEVATION  BLDGS. 19, 24, 25, 26, 27

WALTER BAKER CHOCOLATE FACTORY ADAPTIVE REUSE EXPLORATION

FERNANDO D. CASTRO
MASTER'S THESIS
MASSACHUSETTS INSTITUTE OF TECHNOLOGY  FALL 1988
SECTION A-A (looking west)

WALTER BAKER CHOCOLATE FACTORY ADAPTIVE REUSE EXPLORATION

FERNANDO D. CASTRO
MASTER'S THESIS
MASSACHUSETTS INSTITUTE OF TECHNOLOGY FALL 1980
SECTION B-B (looking east)

WALTER BAKER CHOCOLATE FACTORY ADAPTIVE REUSE EXPLORATION

FERNANDO D. CASTRO
MASTER'S THESIS
MASSACHUSETTS INSTITUTE OF TECHNOLOGY FALL 1990
SECTION C-C (looking east)

WALTER BAKER CHOCOLATE FACTORY ADAPTIVE REUSE EXPLORATION

FERNANDO D. CASTRO
MASTER'S THESIS
MASSACHUSETTS INSTITUTE OF TECHNOLOGY FALL 1980
SECTION D-D (looking north)

WALTER BAKER CHOCOLATE FACTORY ADAPTIVE REUSE EXPLORATION

FERNANDO D. CASTRO
MASTER'S THESIS
MASSACHUSETTS INSTITUTE OF TECHNOLOGY FALL 1988
II. References of Transformation

II. REFERENCES OF TRANSFORMATION

I have used three projects as references for a building vocabulary at Walter Baker. The Housing for the Medical Students at Louraine in Belgium, by Belgian architect Lucien Kroll; Wurster, Bernasi, and Emmons' Ghiradelli Square in San Francisco; and Joseph Esherick's Cannery, also in San Francisco. Kroll's project is entirely new construction, while the latter two projects are examples of adaptive reuse through transformation.

Of the three references, Ghiradelli Square bears the closest resemblance to the Walter Baker Chocolate Factory. Each complex consists of buildings from different architectural styles and periods. In each case, a new circulation system gives the renovated complex new unity and identity. In Ghiradelli, the addition of two new buildings near the corner facing the Bay and the emphasis on the open spaces between created the transformation. The buildings now become a container for the interior spaces as well as terraces, which have been articulated through the use of screens, gates and other furnishings such as fountains and seating areas. New construction is subdued high enough only to define the spaces it creates.

I have taken a similar approach to redesigning the Chocolate Factory. The physical and visual hierarchy of spaces is intended to locate these spaces within their social context. There are, however, some important

Ghiradelli Square

At Ghiradelli, an existing morphological entity has been transformed through the realization of the original parti brought about by the completion of the city block and the division, via screens, of the large central volume into smaller, more manageable spaces.

Compare with diagram on page 43.
differences between Ghiradelli and Walter Baker. Unlike Ghiradelli, at Lower Mills, one must deal with the landscape: the riverfront. While Walter Baker is somewhat isolated from Dorchester, Ghiradelli is a shopping center, a public space, located right in the heart of an urban context. Therefore, the direct application of specific references from Ghiradelli to Walter Baker is not as effective or reasonable as an indirect connection to the inherent qualities of the references.
The Cannery by Joseph Esherick is also in San Francisco and serves as a contrast to both Ghiradelli and Walter Baker. The buildings at the Cannery are more monolithic, with thicker walls and larger openings. Esherick uses the repetitive arches to create an exquisite variety of uses: gates, galleries, windows. The rich and heavy textures, however, are still true to the structure and its materials. The clarity of the structural elements and their contrast with Esherick's glass additions provide beneficial examples for the project at Lower Mills.

Although it is new construction, La Maison Medicale by Lucien Kroll is also a useful reference for Walter Baker because it possesses a physical relation to its landscape and its neighborhood. At La Maison Medicale, Kroll displays a major effort to deal with the spaces in between buildings. At the project, which is for a variety of users, he attempts to simulate the idea of the village: a self-contained entity which allows and stimulates personal interaction. Kroll's physical articulation of the buildings makes references to growing organisms: there is a concern
for overall structure but there is also a concern for detail with many localized decisions.

The footings of the buildings at the Maison Medicale, which refer to Gaudi's buildings, are literally feet. Made from rusticated stone, they are outgrowths of the rocks and the ground itself. Brick masonry grows from the rustication to make walls and piers: the limbs of the organism. The large glazing areas become the skin of the body which shingled areas and greenhouses create an analogy to a head.

This three-part articulation is readily applicable at the chocolate factory. The footprints of the building are, in fact, extensions of the rock ledges. Like Kroll, one can extend local vocabulary into the new construction as well as the areas that have disassembled and now require new facades. In the main structure, masonry walls and piers can establish the link between new and old, and the old elements of metal flashing and shingles can be repeated in new roof construction. Finally, as a means of breaking the similarity between the two projects, and to establish contrasts between new and old, glazing can be added to the factory buildings to diminish the severity of the original construction and to lighten the intensity of the new additions.
References

1. Professor Halasz's sketches regarding the use of masonry. Center left of sketch, Palazzo Farnese begun by Raphael, completed later by Michaelangelo. Higher ratio of wall vs. window. Center right of sketch, later perceiving of the palazzo prototype where the ratio becomes 50%-50%. At lower right:
   A. Higher percentage of wall vs. openings.
   B. The frame. C. Section of open vs. wall.
   D. Same as A. but illustrating the masonry arch and erosion of wall.

2. Lucien Kroll's Maison Dominican at Froydam Belgium; Maison Medicale at Louvian. Kroll's work displays a calculated effort to generate form from the landscape and the vennacular. It's building vocabulary reveals an anthropomorphic order and a return to the origins of architectural order which the moderns seem to have forgotten in their high-brow vision of architecture as art. Kroll's vocabulary derives from how elements are put together and how they are generated by a common mainstream. As shown by these illustrations, it is the smaller elements that generate the larger order.
References

SOUTH ELEVATION

ELEVATION STUDIES BLDGS. 19, 24, 25, 26, 27

Reference - direct and indirect – to Le Moulin Médicisile (as shown in the pictures on this page) can be found in the Walter Baker Chocolate Factory. The masonry has been used to generate a continuity from landscape to building, and the larger buildings, in turn, “erode” to support the smaller, transparent additions and outgrowths. Compare studies above and at end of this section with finished sections drawings in the previous chapter.

NORTH ELEVATION STUDIES BLDGS. 19, 20, 21, 22, 23
What follows is a graphic presentation of my adaptation of the Walter Baker Chocolate Factory, and, as can be seen, the new building vocabulary reflects the influence of the three primary references. Compare these studies with final drawings at the end of Chapter I, Program and Parti.

Elevation Studies

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SOUTH ELEVATION

NORTH ELEVATION

ELEVATION STUDIES BLDGS. 19, 24, 25, 26, 27
SECTION A-A (WEST)

SECTION B-B (EAST)
SECTION C-C (EAST)
Conclusion

Adaptive reuse is a new endeavor in the United States. As such, formal research in this area is scanty. The only existing publications tend to be pictorial surveys of the most noticeable projects of recent times. This design thesis has been an exploration of only the most rudimentary of the design issues involving the buildings at the Walter Baker Chocolate Factory. Rather than being an intensive survey of adaptive reuse, it is merely a case study of one direction that reuse and the contextual approach can follow.

Many times during the duration of the thesis, I felt that certain issues could have become entire thesis topics in themselves. I still feel somewhat puzzled by the issues in the last chapter which deal with the notion of an architectural vocabulary and its construction. The concept of an anthropomorphic vocabulary that was raised by Lucien Kroll's work could use further study. A vocabulary and a building method appropriate to the vocabulary are both subjects which merit continued exploration.

More than anything else, however, this thesis has been a rewarding educational experience, and I learned a great deal through my efforts to develop a sensitivity while enhancing the richness of these old buildings. Although my efforts aren't nearly up to the standards the buildings truly deserve, the opportunity to work with them has been extremely beneficial, and will undoubtedly have some effect on my future
Architectural is currently in a state of confusion. Part of the problem, I believe, stems from the recent misinterpretations of our role as architects. Is architecture only an art form: a vehicle for expressing the concerns and perceptions of a particular culture? People also have to live in buildings, and as an environment for supporting and fostering human activities, architecture must have more than purely symbolic qualities. In recent times, many architects have seen themselves as aesthetic siblings of modern artists. Their attitudes—architecture is primarily a three-dimensional art form—have led to social estrangement and environmental impoverishment.

Adaptive reuse presents a way out of this dilemma. It is a pragmatic solution to an architectural problem—what to do with buildings that no longer "work"—and rebels at the notion that architecture is merely glorified art. It is essential that architects once again begin to develop more than their aesthetic sensibilities. They must be sensitive to the social and environmental ramifications of their work. Adaptive reuse presents a chance to develop these sensitivities. My thesis is a small effort in this direction.
Footnotes

FOOTNOTES


Bibliography


Architecture d'Aujourd'hui, Joe Esherick's The Cannery, V. 4, #157, August, September 1971.


BRA, a report by Harrington, Keefe & Schork Planners and Skidmore, Owings & Merrill, Architects. Dorchester, Lower Mills, Boston, Massachusetts, August 1979.

BRA, Dorchester, Fields Corner, Neighborhood Profile, Boston 1979.


Venturi, Robert, Architecture d'Aujourd'hui, June 1978.
