Architecture as an application of Bionics and Prosthetics.

A Methodology Towards Urban Renewal
CORY DANIEL MILLER

SUTURING THE CITY

ARCHITECTURE AS AN APPLICATION OF BIONICS AND PROSTHETICS.

A METHODOLOGY TOWARDS URBAN RENEWAL

5 MAY 1997
CORY DANIEL MILLER

SUTURING THE CITY

ARCHITECTURE AS AN APPLICATION OF BIONICS AND PROSTHETICS.
A METHODOLOGY TOWARDS URBAN RENEWAL

BACHELOR OF ARCHITECTURE DEGREE PROGRAM
THESIS DESIGN

THESIS DESIGN COMMITTEE

ANDY SEAGAR - PROFESSOR OF ARCHITECTURE - THESIS STUDIO CRITIC

FIONA ALDOUS - ASSOCIATE PROFESSOR OF ARCHITECTURE - THESIS CRITIC

COPYRIGHT 1997
CORY DANIEL MILLER
Acknowledgments

This book is dedicated to everyone that has supported me and my dreams through this process of architectural education, lifelong learning, and goal realization. In particular, I would like to give special thanks to my mother and father, Kathy and Mark Miller, for their support and love through these trying years. Without them (well, I obviously wouldn’t be here) I couldn’t have made it through this program and I don’t know if I would have even tried. To my brothers Matt and Tyler I would like to give thanks for their availability for a good fight – a great way to let out aggressions. Really, your support has been well appreciated, Thank you.

I would especially like to thank Brooke Newcomb for her love and understanding of my schedule and lifestyle through these years, and the Newcomb Family for their inclusion of me into their warm and caring family. To Doug (Gumby) and Joyce Jarrett for being the local representative of my parents -- their support, love, and Pepsi supplies were a key to my success -- Thank you. To my grandparents Fuhrman and Audra Miller and Bill and Phyllis Hutker -- each and every one for the love and care I have received over this five year process -- Thank you. To the entire extended family I have (too large to mention everyone), the Hutker clan and the Millers, thank you from my heart.

I would also like to thank my college roommates for providing me the support throughout and the fun times (which I don’t know how we had enough time for!??) Without the help of you guys this education would have been a totally different experience. In particular, I would like to point out Jason Bransteter, Jason Jordan, and Joel Moorman as key reasons this college experience as been so positive. Thank you and I hope to keep in contact throughout our lives. I’ll miss you guys.

For my practical experiences, I want to thank everyone at Morrison Kattman Menze, Inc. and Mark Hutker and Associates Architects. They were experiences that kept me interested in architecture and will for life.

Not to be redundant, but thank you to everyone. If I failed to mention some people in particular, I am sorry, but you know who you are, and thank you.
This book is the summary of the architectural thesis project of Cory D. Miller. It is to fulfill partial requirements of the Bachelor of Architecture program at Ball State University, Muncie, Indiana. This book is a summary of the design process through the final semester of study at the aforementioned school.

It began as a study of bionics and prosthetics as a basis for architecture within the context of a thriving city, but on an abandoned and yet crucial site within that city. This study led to looking at theories of what the city is, such studies by theorists and architects alike. Rem Koolhaas, Colin Rowe, and Lebbeus Woods are three of the noted writers that a large portion of the theories and application techniques were derived from. The thought of architecture as an application of bionics and prosthetics became not a practice of application, but a point of departure used to arrive at an architectural piece.

A large portion of the site analysis and historical precedents works can be heavily credited to the Boston Society of Architects and their “Architectural Guide to Boston.” Most of the photos and a large portion of the historical references to the individual buildings are credited to them. The author visited the site and took some contextual photos, but not of individual buildings. All due credit for the strength of that section is theirs.

The project, as it progressed, became a compilation of a number of application driven design theories, much in the focus of the collage city theory by Colin Rowe. It is the understanding of the approach taken by the author and designer that must be acknowledged, and this is done by exposing you, the reader, to the process and the decisions made through it.
# Table of Contents

- **Introduction**
- **Organization**
- **Historical Precedents and Context**
- **Site Analysis and Schematic Design**
- **Mid-Year Review**
- **Design Development**
- **Final Design Solution**
- **Appendices**

---

**City**
INTRODUCTION

This section gives a background to the philosophies of the project in Bionics and Prosthetics in all regards of approaches. Finally, a synergism of the theories into what can be done on the site.

ORGANIZATION

The clients and their agendas are introduced as well as the functions and types of spaces they wish to have in the facility.

HISTORICAL PRECEDENTS AND CONTEXT

The study of the neighboring buildings and neighborhoods of the site. This section goes into detail about individual buildings, styles, and importances of each.

SITE ANALYSIS AND SCHEMATIC DESIGN

The site provides a large portion of design parameters to the architect; its analysis is vitally important in both context and natural environments. The schematic design is a series of models that attempt to capture the essence of the sites needs aesthetically.

MID TERM REVIEW

The midterm review occurred at approximately 75% through the timeline of the project. With this intact, it was the point at which the project's needs, successes and failures became apparent.

DESIGN DEVELOPMENT

The design developed into a more detailed solution through more design modeling. An exploration of a couple of models ensues and captures the points of interest of why and how the project progressed.

FINAL DESIGN SOLUTION

The final design incorporated all of the process and reasoning from the semester. It is a pictorial and literal explanation of why things are the way they ended.

APPENDICES

Includes a Bibliography, Acknowledgments, and Related Thesis Work that had not been used graphically. In particular, more photographs of the final solution that were deemed unnecessary for the explanation of the project, but are valuable in seeing the design's thoroughness and completeness.
BREAKDOWN OF INTRODUCTION

SUTURING THE CITY

INTRODUCTION TO PHILOSOPHIES AND METHODOLOGIES

BIONICS
PROSTHETICS AS REPLACEMENT
PROSTHETICS AS IMPROVEMENT
PROSTHETICS AS PARASITE

SYNERGY OF THEORY

Boston Skyline form near Commercial Wharf
Project Introduction

The City of Boston was torn from its access to the waterfront by the implementation of the Interstate Highway Commission’s I-93, or the J.F. Fitzgerald Expressway, which was an elevated expressway that became a border or barrier to be crossed. Recently, the city of Boston has been in the construction phase of “burying” the expressway, leaving the air rights and the buildings to be placed there in the hands of the Boston Redevelopment Authority. With this tunnel in place, an opportunity arises to extend, or reextend, the city to the waterfront.

To Suture the City.

The notion of Bionics applies to this type of project in that it requires an in-depth study into existing urban extensions, a study of the parts that make the entity successful, and the implementation of the newly derived solution — a living solution. Prosthetics finds its way into the project through the thought of renewing the city’s capability to function along this site. It is a part with in the whole — not a focus — but an extension of the city. It is the intervention and application of architecture of the city to heal a wound of immeasurable damage. The architectural portion of the project will occur between Northern and Congress Avenues along the Fort Point Channel and over the expressway tunnel. It will serve the city as a multifaceted entity which attracts all citizens and visitors to engage the site. It will serve as both the physical connection of the city to the channel and the channel to the city. It will serve its purpose of a prosthetic device by improving the function of the city in this area of desolation. The site will draw its being from the neighboring areas of the Waterfront and the Financial District and their common building uses. It will take what the city needs, what the economy determines and what the architect wants to implement to derive a solution. The methodologies towards the design are studies of cities and their respective collection of buildings — the collage of the city. It is the multiplicity of functions in the city that leads towards the mixed use development of the Fort Point Channel site. Theoretically, the project will serve the purpose of being a simple part in the created whole, a portion of the city, an extension of the body of the city. It will be the prosthetic device that yields all it has from its owner — it is a parasite of sorts, feeding off of the life and vitality of the city for its purpose and energy. Contextually, the site is surrounded by high rise development in both the Financial District and the Waterfront. It is, however, on an empty site waiting to be explored or exploited. A desolate zone of urban tragedy — a scar of the past mistakes with potential derived from the possible connection of the city and the channel. Culturally, the site has none. It is surrounded by primarily business districts—the land of commuters and travelers.
INTRODUCTION TO PHILOSOPHIES

The application of Bionics and Prosthetics to architecture can be interpreted in many different ways when used in a methodology in urban renewal. It is the differences in philosophies that must be explained and then determined as to which approach will be taken. Theories as to what a prosthetic device does vary from a simple extension to the improvement of a function to a parasiticidal entity. Bionics, I believe, is applicable to any project in that it requires a study, and production according to the findings of the study.
Bionics

"The science of designing, constructing, evaluating, and maintaining artificial systems that imitate living systems. Analyzing the structural and functional aspects and principles of organ systems in living things and then using those principles to build artificial systems and machines."

The application of Bionics would follow a process of (1) determining an existing natural systems that operates efficiently and successfully as in looking at exceptionally vital parts of existing cities to see how they function, or merely maintain their own existence, within the scheme of the city, with types of spatial characteristics. (2) Analyzing the relationship between the parts of the system as in finding those vital locations in a city and determining what those "parts" are that allow it to function so successfully. What functions are offered or made available in this area that make it so active? (3) Finally fashioning a bionic, living apparatus to replace the defective natural or existing system. This would be to apply these newly learned characteristics of a vital neighborhood to a redevelopment of a "lost" site. The defective system may not have been originally defective, but has since then been.

Other thoughts on Bionics

Reactions in living cells occur at the surfaces and at their interfaces or common boundaries--between different materials. This would tend to suggest that however successful a development would be, the true measure of its overall success in the theory of Bionics would and could be measured by its relationship to the boundaries--where the old meets new, etc.

Polyphase structure...a close intermingling of different types of materials to form a complex much stronger or more durable than any of its singular components. This suggests to me that an addition to the city would not only be an extension of the city, but an entity in which life could function independently. It would call for a mixed-use development that would create a neighborhood of sorts. In this multiuse facility the plethora of functions would hold together better than any singular function on the site.

Operators use their own control systems to regulate the movements of the machines. To do this successfully, they must receive from the machines the same kind of information and feedback that they would from the original. This would lead me into an approach that suggests regardless of the autonomous characteristics of the development, it must function as a true part of the city. It becomes that studied application in the city...
The bionic neighborhood...
The replacement part...
The prosthetic device.
PROSTHETICS AS REPLACEMENT

"an artificial substitute for a missing part of the body."

"a replacement, an extension of the original"

"a section to replace . . ."

"to restore function and appearance . . ."

These theoretical type statements would lead me to an architectural solution that would restore the aesthetics and function of the original buildings that were there—warehouses. It would lead to an aesthetic choice that would not emphasize the suturing portion of the program.

It would be to attach the lost part of the city. It is an extension of the city, and a possibility of the city, and interaction of the city, the neighborhood, and the historical aspect of the site.

New York's Fifth Ave.
Prosthetics as Improvement

"devices that do not replace the body part but improve its function"

"to repair deformed or injured tissue that does not function properly... with sutures"

"high individual strength, physical compatibility"

The intervention would then be not necessarily an artificial limb, but instead an extensionary portion of the body of the city. An improvement upon the body by which new abilities, or renewed abilities are possible through.

To make an architectural statement that serves these purposes in the overall scheme of the city. Suturing the city, altering features, and repairing injured tissue that does not function with its original and potential purpose.

To question the aesthetic issue of the project, would this architectural statement serve as a re-creation, an intervention, or a new architecture? Referring to the notion of collage city, it is the variance and mix of forms and buildings that create a tight city and its intensity of life.

The redevelopment would be more or less an extension of the urban fabric, functionally and socially, but not necessarily aesthetically. It is a replacement of a lost limb...

Prosthetics as Parasite

"In our era, we understand the existence of a thing through other means than the thing itself... The idea of building eventually will only exist in idea (on TV) and in part (as in Prosthesis)."

"Robocop is a hybrid of sorts, his goal is not one of singular definition, he occupies a state that is in between other things. The notion of the in between is antithetical to the notion of the parti. In our age, this parti is rendered as insignificant as an original."

Architecture as a collection of parts and not the parti. A developmental strategy as additive and subtractive parts, a form of prosthesis. It is simply an additive notion in respect to prosthesis or does it encompass a parasitic aspect to the host site -- a lost urban entity in the city.

The element of site could and does itself be the solution -- the placement of the virus/parasite/prosthetic device will give to the interpretation of the notion or approach to architecture and prosthesis.

![Image of the New South Station Extension](image1.jpg)

![Image of the "new" Trailways bus terminal](image2.jpg)
Street Scape along site on Prospect Ave.

City scape of Boston from Mass. Ave. Bridge
Synergy of Theories

To solve the solution of adding on to the city, one must take in implications of all aspects of who the design effects, to location, etc. I believe that in this situation, the solution calls for a living organism that acts as an extension of the city, improving upon the function of the city in that location, and using the life of the city to receive life in the development. Taking these aspects, I believe, and creating a language in the architecture that creates all these is what needs done. The only way to accomplish this many aspects, though, is to create a mixed use development that utilizes all aspects of the city from form to density, to vertical living. Most importantly, though, is the aspect of people, the life of the city. The development must have people present, whether it is self generated population through housing, or externally generated through retail and services. People must use this place.
Organization

Clients and Agendas

Space Types and Functions

Space Relations #1

Space Relations #2

Historic Precedents and Studies of Context

Boston Waterfront
Fort Point Channel
Circle Centre Mall

Figure Ground Study B
The City of Boston, the Boston Redevelopment Authority, the Boston Society of Architects, and a private developer came together when the developer bought the property between Congress and Northern Avenues and the air rights over the expressway in that location also, and the city, BRA, and BSA new the potential of the site as a sign of the future of Boston. With these outside interests, plus a few unknown to the architect, the developer organized the Augerbine Wharf Commission to handle this property's design and function. It is the Augerbine Wharf Commission that approached the architect about the project.

The city of Boston wanted a piece of the site for an expression of the city's role in burying the expressway and making this site available for the great thing that it will be. They would also like some spaces for a few offices, but outside of the image, the city doesn't want to invest too much into the site. The Boston Redevelopment Authority had control of the site from the city prior to it being bought by the developer. During the purchase, the BRA wrote in to the contract that they were to own 1/16 of the property and they would locate their new headquarters on this noteworthy site.

The Boston Society of Architects noted the availability of the site when it was first on the market, but then passed it up on the basis of the price. However, they have since then thought it over and have a similar agreement with the developer as the BRA, in that they will own a small portion of the development in order to place their headquarters there, have a museum or showcase of work there, and to once again prove that they are the most active, and maybe the only proactive chapter of the AIA.

The developer, for obvious reasons, wants to develop this site for maximum money-making potential. His scheme includes residential, retail spaces, and services such as restaurants, bars, and clubs.
LIFE GIVING SPACES

The life giving portions of the development would be mainly the residential portion of the building. The entities that would be included in this category would be residences, retail spaces, and service spaces like restaurants, clubs, and cafes.

The residences would include single apartments or condos that would serve the individual professional or the couple. Double apartments and condos would be available for roommates, or small families or couples. The triple apartments and condos would be available for families or roommates also. These spaces would give the development a life and population that would keep it going. By providing the facility with its own population, sustainment is most probable in the sense that it could maintain itself.

The Retail Spaces would involve simple vanilla spaces that would be open to small vendors to chains. The spaces would provide a reason for people to occupy and visit the space. It would serve the function of a small urban mall on the Eastern side of the city.

The services aspect of the design would provide the facility with a night life -- a life beyond "8 to 5," which is currently how the surrounding areas function. These types of spaces would service all who would feel like coming to the site for any reasons like a cup of Joe to a classy night on the town.
**Corporate Spaces**

The Boston Redevelopment Authority is one of the predetermined occupants of the building. They want a space that would represent what they have done with the area, a display area for further proposals and displays, and a "room with a view." The Boston Society of Architects wanted their headquarters in the facilities in order to claim public exposure and have an advantageous position in the development of South Boston. This facility would also include a museum, display center for the BSA to have that public accessibility and notoriety.

The Developer would of course have his corporate headquarters occupy some space in the office section of the development as this is his masterpiece of development (he even has architects advocating what he is doing!) The development corporation will need publicly accessible spaces as well, along with the peripheral spaces and services they will provide.

**Civic (Parasiticidal) Spaces**

The development will include a series of spaces that utilize the activity of the city only -- virtually no self providing spaces. Spaces that can only function, and function only as a result of the city and what it offers as the host to the development.

The key space in the development will be a cultural exchange center that serves both as a learning center as well as a museum of art, architecture, Boston and Massachusetts. This space would be occupied by moving displays, permanent displays, and spaces dedicated to the BRA and the BSA. It is also in this space that the corporate entities outside of the aforementioned would and could sponsor artists and artworks, travelling exhibits, etc. and have their name broadcasted with the display in a way of marketing -- paying for an art exhibit and occupying the same complex -- better marketing strategies for the corporation.
HISTORICAL PRECEDENTS AND CONTEXTUAL STUDY
Boston Waterfront

"Too often the American city has turned its back on the waterfront, leaving it to industrial and warehouse uses. This was the case with the Boston waterfront, too, until the 1960’s, when several architects began renovating the wharf buildings as apartments. The rebirth was further advanced by the Government Center and Faneuil Hall Marketplace projects, which strengthened links to the harbor. The current design is based on the plan of Kevin Lynch and John Myer that rerouted Atlantic Avenue to accommodate a waterfront park. Today Boston has the most accessible, visible waterfront of any American city. Cities from San Francisco to New York could benefit from the model." After decades of planning the diversified activities that occur along the length of the, Boston can once again lay claim to its harbor and the life it gives. Despite massive buildings along the waterfront, one can constantly get a view of the water due to the orientation of the buildings -- perpendicular to the views. The only thing left that holds people back from the water is the expressway overhead forming somewhat of a psychological barrier.

Some important buildings along the waterfront are as follows:

Pilot House
1-10 Atlantic Avenue

This small brick wharf building with arched windows was built by the Eastern Railroad during the Civil War. It has been renovated as apartments and a restaurant.
**One Lewis Wharf**
*off Atlantic Avenue*
*SOM*

This office building is oriented to the harbor with primarily glass facades on the south and east. Cantilevered sunscreens permit solar gain in the winter but shade the offices from the summer sun, while providing visual interest on otherwise solid mass. A brick screen wall with tinted precast-concrete bands faces the street. Corner offices of the three partners of the law firm that owns the building have views of the harbor and Lewis Wharf and open out onto the third floor deck.

**Lewis Wharf**
*28-32 Atlantic Avenue*

Lewis Wharf, one of the first wharf buildings to be renovated for residential use, is constructed of Quincy granite and heavy timber. The original gabled roof has been greatly altered and now accommodates two floors of apartments. Until about 1868 the building extended as far as the site of today's brick flower shop, formerly a Sunoco station. In the eighteenth century, John Hancock's warehouses were located on Hancock wharf on the north side of Lewis Wharf. Opposite the head of the wharf was the North End Coffee House until 1783. Edgar Allen Poe's macabre tale "The Fall of the House of Usher" is said to be based upon actual events that took place on the site of Lewis Wharf in the eighteenth century.

Side Note: Two lovers, a sailor and the young wife of an elderly man, were trapped in their trusting place by the avenging old husband. Years Later, when the old usher house was torn down in 1800, it has been said that two embracing skeletons were found at the foot of some steps behind a rusty iron gate.
Prince Building
45-69 Atlantic Avenue

Originally the Price Macaroni factory, this structure was one of Boston’s first conversions of industrial space into apartments. The simple reinforced-concrete structural system is clearly expressed on the exterior with new recessed window balconies defined by white fins. A variety of unit types has been worked into the irregular building plan.

Commercial Wharf
84 Atlantic Avenue

Isaiah Rogers, a leader in the design of monolithic granite buildings, had worked for Solomon Willard, another influential designer in granite. This fin wharf building uses Quincy granite both decoratively and structurally. Window and door lintels and jambs and a string course above the first floor are of smooth cut granite, while the walls are rough with more massive blocks on the first floor. The building is now in two parts, one on each side of Atlantic Avenue, which cut through its middle about 1868. The mansard roof on the eastern section was added at that time. A dignified classical entrance with an inset clock above it is centered on the narrow end of the western half of the building. The two floors flanking the entrance have simple carved lintels with stylized pediments cut into them \(^1\). These are now unfortunately obscured by signs and window alterations. The eastern portion of the building has been renovated into privately owned condominiums with a high price tag due to their great location on the Christopher Columbus Waterfront Park and the view of both the skyline and down the Charles River.
Christopher Columbus Waterfront Park
on Atlantic Avenue

When Atlantic Avenue was rerouted from the water’s edge, space was created for a 4 1/2 acre park, designed to complete the “walk to the sea” that commences at the City Hall Plaza. The focus of the park is a cobblestone plaza at the water’s edge, extending form the rebuilt sea wall to the waterfront promenade. A 340-foot long arched trellis of wood defines the main space and connects the sub-areas of the park, including a grove of honey locust trees and a children’s play area with a timber play structure resembling a ship. Materials were chosen to reflect the waterfront character of the area -- brick, granite, cobblestones, and wood. The furniture continues the nautical theme with bollards linked by anchor chain, lighting resembling ship’s lanterns, and sturdy wood benches. The park is intensely used by neighborhood residences of all ages, as well as by tourists and workers in the area.

Long Wharf
202 Atlantic Avenue

Long Wharf originally extended form near the old State House along what is now State Street into the harbor. At the wharf’s head was the Bunch of Grapes Tavern, on the site of the old Boston Stock Exchange. Long Wharf was the focus of Boston’s Great Harbor and was constructed beginning in 1710 by captain Oliver Noyes. Early maps show it running far into the harbor, by far the longest wharf, lined with warehouses and ships. Nineteenth century land-filling projects, however, cut its length in half, and the construction of the central artery in the 1950’s dealt another blow.
Custom House Block on Long Wharf

As in his earlier Commercial Wharf Building, Isaiah Rogers designed the Custom House Block primarily of granite. The forceful ground level is constructed of massive posts and lintels of single chunks of stone. A central block with pyramidal roof rises one story above the four story building to define the arched center entrance. The brick rear facade is of utterly different character, with several gabled windows.

Chart House Restaurant on Long Wharf

Long Wharf was originally built up with Colonial style brick warehouses similar to this one, the only remaining building. The simple but solid structure has a slate roof and six over six paned windows with shutters and granite lintels and sills.

Long Wharf Marriot Hotel
Atlantic Avenue at 296 State Street

The linear form of the Long Wharf Marriot Hotel relates to the thrust of the original wharf, and its simple massing and use of brick vaguely recall the early warehouse buildings. The stepped form rises in height that vary from 49 to 104 feet, relating in scale to its neighbors, the smaller Chart House and the larger Custom House Block. It is set back on south and east sides to open views to the Chart House from Waterfront Park and Atlantic Avenue. The lower floors of the building contain function rooms and a 225-car garage. On the main floor, three five-story spaces serve as lobbies, lounges, and public function areas. The building rests on about 500 precast, prestressed concrete piles, fourteen inches square and with an average length of ninety feet, that bear on bedrock. Its bolted frame is designed for earthquake loads.
New England Aquarium and Central Wharf
250 Atlantic Avenue

Charles Bulfinch designed the original Central Wharf buildings, completed in 1817, a row of four-story brick structures nearly thirteen hundred feet long. A small fragment of this handsome wharf survives on the other side of the expressway. Today the Aquarium occupies part of the site. The core of the Aquarium complex is a discreetly sculpted concrete box housing a dramatic three-story, forty-foot-diameter tank surrounded by a ramp that rises through the four story central space.

Harbor Towers
off Atlantic Avenue

One of the most ambitious projects on the country at that time, India Wharf included more than one half mile of wharves warehouses, and store running form India Wharf along India Street to State Street. Bullfinch’s fine 1807 India Wharf buildings stood here until the last section was razed in 1962 to make way for the Harbor Towers. In contrast to the historic long low forms of brick, granite, and timber extending like fingers into the harbor, Pei’s towers introduced a new form and scale to the Boston waterfront. Apartments in the forty story towers of cast in place concrete are organized pin wheel fashion around the core and offer dramatic views of the city on one side and the harbor on the other. Concrete balconies stack up to create a zipper like sculptural relief against the flat grid of the facade.
Central Artery
Fitzgerald Expressway

This was one of the first urban expressways to be built under the federal highway program in the 1950’s and nearly every mistake possible was made in its design. The Central artery mercilessly cut through the historic core of Boston separating the north end and the waterfront from the rest of the city. No attempt was made to mitigate the intrusive structure through design. Now there is a plan to correct some of the problems. The Central Artery project may be the beginning of a new national direction if Conservation Law Foundation of New England is successful in convincing or coercing the Federal Highway Administration to mandate public transit as a part of any new highway construction in the country. The idea would be to expand and improve regional public transit in conjunction with the construction of the larger new underground highway through downtown Boston. Ideally most of the public transit improvements would be in place before the completion of the new Central Artery around the year 2000. Planning and urban design leadership is increasingly leaving the hands of responsible local governments, with activist citizens and public interest groups taking their viewpoints to the courts.

If the Central Artery Project is realized, the forty acres of new land on top of the highway system will offer an opportunity for urban design comparable to the major achievements of the past.
Rowe's Wharf
Atlantic Avenue near Harbor Towers

The success of Rowe's Wharf is due in part to the strict and site-specific design rules developed by the city before the 1982 competition for the site. The rules included a fifteen story height limitation, the preservation of various views, continuous public pedestrian frontage along the water, and public water shuttle and commuter boat facilities in a prominent part of the site. Such juxtapositions and requirements are rare in most American cities; luxury hotels generally would not consider giving up their prime water frontage to public facilities serving people who are not using the hotel, but the requirements work beautifully in Boston. Water taxis from here reach the airport in seven minutes, and commuter and regional boats connect with other points along the coast.

The development accommodates a hotel, condominiums, and offices in a vaguely traditional red brick complex of three eight story stepped structures resembling finger piers, a massive arched gateway building symbolizing the water traveler's arrival in Boston, and connect midrise office towers. The arch recalls on a grand scale that of Bulfinch's 1807 India Wharf. An octagonal domed glass pavilion serves as an elegant waiting room for the water shuttle. The promenade along the water on two levels links water commuters to financial district destinations and to the continuous pedestrian waterfront walk.

Commercial Block
126-144 Commercial Street

A dignifies granite facade rises from a simple trabeated first floor. Rusticated pilasterlike verticals strengthen the corners, while string courses and a bracketed cornice organize the facade horizontally. Architectural historians have praised Boston's granite warehouses. Sigfried Geidion felt the Commercial Block in particular was an important influence on H.H. Richardson.
Union Wharf  
323 Commercial Street

The somber dignity of Boston's granite warehouses is nowhere better expressed than in Union Wharf. Its rough granite is utterly straight forward and without artifice. The building's masonry wills with iron shuttered windows speak for themselves and its name is boldly set in granite in the pediment. The stone blocks of the ground floor are of a larger scale than in the upper floors. Unfortunately, brick dormers were added when the building was still a warehouse seriously compromising the original form. A string of new brick row houses has been added to the wharf by the same architect who did the renovation.

Lincoln Wharf Condominiums  
120 Fulton Street

This former MTBA power plant has been converted to low- and moderate-income housing. Units are organized around an interior atrium.

McLauithlin Building  
120 Fulton Street

The first Cast-iron-facade building in New England, the McLauithlin building is reminiscent of the work of James Bogardus in New York. Besides being fire resistant and easily fabricated, cast-iron facades made possible large windows for interior lighting. The facade is divided into six bays, and on the second through fourth floors each bay holds two arched windows with fan lights. Pilasters and small columns alternate across the facade. Each floor is defined by a projecting string course. The fifth floor is topped by a cornice, and the sixth floor is awkwardly squeezed into a mansard roof. Until recently the building was occupied by its original owner, the McLauithlin Elevator Company. It is now condominiums.
Fort Point Channel

One Financial Place
Dew Square

Offices, Shops, Restaurants, Cinemas, and parking space are combined in this forty-six-story six-sided tower at the juncture of the financial district and the Fort Point Channel area. A ninety-foot-high atrium open onto Dewy Square and serves as the major space and entrance into the building. The base of the building is granite, relating to South Station, while the upper floors are of cast stone and lass. It is the only structure in Boston clad with a pre-cast concrete rainscreen system – uses pressure equalization principles to minimize water penetration.

Federal Reserve Bank of Boston
600 Atlantic Avenue

Boston’s Federal Reserve Bank is a structure tour de force. The long-span floors of the tower are supported on two and slender end pylons, which in turn straddle a low U-shaped mass housing public areas and high-security banking operations. The top of the low-rise block contains recreation and employee facilities, which have access to a landscaped roof garden. The aluminum skin was selected in part to reduce solar heat gain. The projecting aluminum spandrels of the tower both serve as sunshades and help reduce the downdraft problem characteristic of tall buildings, thus making the ground level more comfortable for pedestrians. The entrance area features a “water court” with a pool and an 18 foot high 140 foot long waterfall running along the gallery exhibition area. The bank sponsors fine art exhibitions and concerts that are open to the public without charge.
South Station
Atlantic Avenue and Summer Street

South Station stands on the site of the Bull Inn, built as a private frame house in 1668 but converted to an inn in 1689. South Station has been a landmark and the focus of Dewey Square since its construction. Its curved facade of Classical aspirations nicely joins Summer Street and Atlantic Avenue. Above the two-story entry arches rise three-story Ionic columns topped by a balustrade and entablature with center pediment. The eagle and clock provide a final flourish.

On of the most significant civic accomplishments of the 1980's was the renewal of South Station. With the advent of mass air and auto travel, the station declined, becoming one of the most decrepit transit stations in the Northeast. That has all changed, and today the station is a celebration of public transit, providing convenient connections between rail, subway, and bus in a pleasant public setting that is within walking distance of Boston's historic core. The old structure was restored on the outside and completely renovated on the inside, and a new west wing was added in the style of the original building, even incorporating pink granite form the same quarry in Connecticut that had been used ninety years ago. The spacious and high-ceilinged concourse is entirely new, replacing the old squat space that was too deteriorated to restore.

The new food court, with shops and express food stands, has the sophistication and excitement bustling train stations must have had before airlines and cars became the primary modes of travel. It is a solution for the big old empty train station, because it brings people in form the surrounding office buildings into the station to reinforce and support the transportation function. Having lunch while watching trains arrive and depart just outside the expansive glass wall and listening to the train announcements can prompt diners to try a train journey.
South Postal Annex
Summer Street at 15 Dorchester Avenue

Facing Boston Harbor, the metal-clad South Postal Annex recalls in appearance the streamlined ocean liners of the 1920’s. Until 1980 this 1934 general mail facility was faced with brick. Refaced in insulating metal panels, it now is energy efficient and relates to the adjacent postal-service building built in the 1960’s. A new covered pedestrian walkway provides passage to South Station. The 560,000 square foot interior has been reorganized to provide an efficient work environment.

Summer Street Warehouses.

Now in the process of becoming Boston’s Soho, the substantial, richly formed turn of the century warehouses of this district, including nearby Congress Street, are largely the work of M.D. Safford. Particularly appealing is the curving Melcher Street, which dips down one full level to cross under Summer Street at A Street leaving its imprint on the wonderful curved forms of 253-259 Summer Street.

Circle Centre Mall
Indianapolis, IN

Circle Centre Mall is a historic precedent as a result of it being a prosthetic extension of the city. It was implemented into the city grid and facades and currently appears as it may have been there for a long time. The Mall brought people back to downtown in a city infected with urban sprawl and commuters. It brought back a vitality to that area of downtown by providing something that is known to attract people - a mall. It also created a link from the circle to Union Station and the Omni Hotel.
SITE ANALYSIS AND SCHEMATIC DESIGN.

The Site Analysis followed the contextual analysis and studies in order to realize what the site needed physically by using the environment, both natural and man-made. The methodology was to at first: look at what the environment may command in building form and orientation, then to use the existing cityscape to sculpt a form of a building on the site. Many aspects of the theories of Bionics and Prosthetics found their way into these studies by looking at the extension of the city in one way or another. The important aspects of this suturing are the relationship to the neighboring buildings, the water, the streets, and the multiplex of buildings within the design. The notion of the collage city also came into being within this portion of the thesis.

The extension of the city to the water is one of prosthetic appendage. It is taking what the city has -- energy, vitality, density -- and applying that throughout the design so as to confront the water with this “tissue.” How to connect the two entities becomes an issue of Bionics. Having the two connected is one of simplicity, but bringing people to the site and creating an active waterfront and city interaction is one that has to use the elements of the city in a new way to create, or recreate the essence of this urban edge. Methods of proceeding are to explore the urban caverns or streets and extending those, using the diversity of the city to create an energetic building, and using methods of attracting people or housing people in order to create this energy.

In essence, what the series of studies renders for us is the essential massing and sculptural ideas behind these philosophies. They are done at a minute scale in order to take the detail out of the question at hand. It is the larger scale ideas of suturing that come into play here, with detail and realizable scales to be arrived at later.
Understanding how the site currently worked was a key to understanding how it could function in the future. Knowing that nearly no one ventures around the site currently because of both the desolate nature of its condition and the location of the Expressway, it called out for building, for activity, for anything but what it has now. The site borders the financial district of downtown Boston and the warehouse district of the Fort Point Channel and South Boston. Culturally, the site is bordering the historic landmark of the Boston Tea Party and the Children's Museum of Boston across the channel.

The site needs to incorporate all of the existing and potentially past elements of the city. Infill type building, corridor recreation or reinterpretation, and massing of the city are of utmost importance at this stage of the project. The elements of the city in a collage of energy was the sculptural approach to design while incorporating the overall ideas.
**Schematic Ideas**

The Gateway approach utilizes the boulevard that will be in place following the burial of the expressway. This boulevard consists of Atlantic and Prospect Avenues and will comprise the surface-level artery in and out of the city. In essence it will replace the Expressway in this manner but in a more aesthetic method. It will use the “intersections” of the secondary street and the boulevards to symbolize the entry/exit. Using these areas, the site can attract people to the idea of what the city is about. The transition into the city will comprise of the growth of the scale from wharf size buildings to the urban cavern between towers at this intersection.

The Surface modes of travel are vitally important in the success of this building. To recognize the fact that cars on the boulevard will be passing at speeds in excess of 30 miles per hour makes is to note that the building must function on a flash level so as to make people take notice. On the pedestrian level (the continuation of the off streets as pedestrian ways), the architecture must relate to the pace of a walker. It must be slowed to a level at which the detail can be not only noticed but celebrated. It is along these pedways that the suturing will take place. Attracting people to the site, through the site, and in the site. Building functions, then, will play a heavy role in this arena.

Using the existing buildings for developing a scheme is a rule of design about using context and environment to one’s advantage. Using the lines that exist in only plan (currently) is a way of developing an approach. Using edges to signify important points is another. This graphic shows both. Utilizing edges as barriers or borders and other edges as open doors in order to control the experience of the site is of vital importance. Providing a “goal” or “anchor” to the site out in the water is another method of bringing people through the site.
The goals of this design were to create a gateway into and out of the city on the Atlantic and prospect avenues. I used the city’s massing to create a scale of the buildings on the city. The secondary streets were left for pedestrians and circulation at the street level. The common characteristics of the towers in the initial sketch were the trapezoidal form and the relation to the views from the upper floors. Functionally, as in the rest of the models, the corridor has been declared a “mall” type space, offering café’s, shops, and the like to the subway travelers, residences, and visitors.

A Nautical feel was incorporated into the final form of the first design because of its grace and beauty along with the fact that the anchor of the site has to interact with the water in one way or another. By method of form was the path chosen for this model to take. The massing of the towers was to breakdown the heavy feeling of the city. The mass was not to read as a mass at all, but a collection of masses so as to reinforce the collage of the city. Dwarfing the adjacent buildings was not the target, but one of the results of this sculptural building. Regardless of this, however, I feel it led the design in a direction of exploration of form, meaning, and scale. This model posed questions of:

How should it deal with the water? The scale of the city and neighboring buildings? The context of post modern and modern buildings?
Schematic Design #2

The Second design was an extension of the nautical idea while exploring the readability of one mass with varying masses breaking from of it. This single scale mass that extends along the pedway reads as a single building on the South side, but is broken up on the North side by the “sails” of the ship. These sails could function as curtain wall type structures in order to embrace the views of the north and west -- downtown Boston, Logan Airport, Cambridge, the Navy Yard, and so on. Other than the towers, the rest of the site could function on a lower level — the Pedestrian level.

A reoccuring theme in this design is the extension of the streets along their original paths. The masses of the towers serve the function of “stepping down” to the water from the vertically oriented city. To try to bring down the scale to that of the neighboring buildings and the waterfront atmosphere. An overpowering structure on the water may be offensive to the eye and abrasive to the experience of the visitor. The “boardwalk” along the channel must be recognized as being just as important as the pedways through the site.

How successful is the tower layout in the grand scheme of things? Where does the pedestrian experience the site? Is it in an alleyway? Incomplete attempt to tie the towers together, let alone the city.
This study broke the towers back into three elements. The city's tower within the boulevard, the middle and transitional tower, and the final exclamation point to the site. This exclamation point is the anchor to the site, the sculpture of the architecture, and the epitome of the building development. Its purpose is to serve as all of those from a distance, and from the adjacent sidewalk.

The streetscape is broken into fragments of buildings where the masses intersect, take over one another, and layer behind one another. The development has been manipulated into a plethora of buildings instead of a few that work together. The only buildings that work together in this scheme are the towers from a distance. On the street, it appears as multiple buildings at multiple scales. It is the collage of the city. It is a mini-city. The bionic arm of the city that functions on its own and in its own interests.

The street is continued along its axis again, using the axis as a strong piece in the connection of this prosthetic. Alternative routes are also used on the periphery of the mass for further circulation reasons.

How does it work, both aesthetically and functionally, to have a tower on the end? How does it then work with the water? Will the axis of the side street serve as a strong enough connection, or does it need "jazzed up?" What can be done to emphasize this pedway?
Schematic Design #4

The collage of the city is in full embodiment in this design. It is almost a mini-city in all aspects. It is a small skyline, a multitude of layers and surfaces along the streetscape, and the myriad of colors, forms, scales, and the like. This design is a combination of some of the first few. It steps down to the water in order to reduce the scale, making that connection of the city to the water a transition as opposed to a blatant smack in the face. It used the existing building towers to develop where its towers will grow from, and it respects the relative scale of the water by breaking its facade down into understandable and readable parts. It forces the pedestrian and the motorist to look and become curious about the buildings and what goes on there. By becoming a mixture of new and old scales, materials, and forms, this building is much like a true prosthetic.

The axis in this design has been turned in order to call more attention to the pedway. By shifting its direction, there arrives a feeling of curiosity and intrigue to the viewer. At the terminus of this newly shifted axis there must be some sort of anchor, something that will attract people to proceed the entire way through the site. This shift of the pedway axis serves a functional purpose also. The previous solutions used the back of the existing building for the other side of the pedway, which considering its current condition, would be an easy space. Now, the pedway can pass through two new buildings, and have retail spaces maximized by creating a double loaded "corridor" instead of a singly loaded one. In this solution also, the waterfront is much more interactive. It creates a sense of activity while remaining stationary. This will enhance its attraction along the boardwalk and hopefully succeed in bringing the waterfront walk to the site and down the channel.
Design Five

Suturing the
Schematic Design #5

This design is a second rendition of the collage city. It features larger building masses that do not necessarily relate to one another except in overall feeling or form. The multiple towers again form their own skyline and likewise on the ground creating its own streetscape of medieval times -- multiple levels, materials, layers, heights, etc. The buildings again go through a transition of the tall slender tower of the city to the lower, more appropriate sized tower against the water. This transition of city to water and vice versa is seen more readily by the viewer from afar. On the street level, it is much like a collage of old buildings have been added on to, attached to, and partially removed in order for the new and improved buildings to make their mark.

The axis remained turned for this design, but became curved. This curve now inhibits viewing of the ultimate goal of reaching the end of the journey by making you venture around the curve to see what exactly it is. This also adds an element of design that could create a more interactive street pedway -- the concave and convex curves on the pedestrian level. Also new to this curve, is the function of the slender building bordering the south side of the pedway. Instead of being an independent building, it becomes a prosthetic device to the adjacent building. It connects and extends the functions of the building into the curved pedway. It allows the residents, workers, and visitors to that building to interact with the pedway mall of the new development.
Circulation Studies

These studies were done in order to see how the forms of the building would work with the circulation of the people that are to be interacting with it. These led to a better understanding of how entries, exits, and public ways could influence where people enter, want to enter, and know how to enter. How building could be used to develop a dialog of sorts with the pedestrian on what is in this building. Is this space a corporate space (one “centrally located” entry) or rental spaces for retail (many small entrances).

Understanding how the circulation works is key in the success of the building - for without knowing how people will move through the space, you can keep people from experiencing what is important to your building. By doing this, you can keep people from the site, and thus fail the suturing. Without people, the life blood of the city, the prosthesis is a failure.

Also important is the nodes of activity. In order to serve as an extension, there must be node in which there is high levels of interaction within the building design. The keys here then, are to see the connections between these three elements: Circulation, Mass, and Nodes. The successful use of these three elements of design will create success in the project.
ELEVATION STUDIES

The purpose of these elevation studies was to experiment with the way a facade or multiple facades work together to create a collage of buildings even when they are in fact one building. The pushing and pulling of surfaces to create a layering effect will help in breaking what could be a superblock facade up into a plethora of medieval facades (readable as such to the observer).

Another purpose of this exercise is to figure out how to cap the towers. Creating a termination of a tower is quite a design problem. What it led me to was referencing the models in the schematic phases. Drawing a tower's capital is a feat beyond me.
At the beginning of the project, I began making a three dimensional computer model in order to use the computer as a design tool. As it ended up, I did not make a three dimensional computer model of my solution, but using the computer to do the adjacent region of downtown Boston led to greater understanding of how things worked.
Mid-Term Review

The Mid-Term review was scheduled as a checkpoint on your progress mid way through the project. I used it for a slightly different purpose. I chose to use it as a time to lay down something more concrete, at a realizable scale, and with scaled drawings so I could see where I was at. What I needed to do for the final was the purpose behind building a large model and doing hard-lined drawings.
Mid-Term Review
First Floor -- Street Level

On the Street level, the city must thrive. This is the most important part of the project...how it interacts with the street. The buildings must be approachable and pedestrian scaled (detailing, size, doorways, etc.). The materials would be that of historical wharf buildings on the facades, like limestone, granite, and the like. The contextual nature of the lower levels is vital in the building’s success.

The massing design was based on two parameters. The first was that in order for this building to fit within the context of the city, it must utilize every square inch of the site for some purpose. Open space was not a programmatic element. The second parameter was that the building should somehow show an overall design understanding -- regardless of the diverse use of material and layers. These were accomplished by using the edges of the sites to determining the edges of the building. The only places where the building does not border the limit of the site is where park or open space is planned. These open spaces, then, are created using the dominant design angles of the towers: 60 degrees off of North.

View of Pedway entrance and axis.
The complex at dusk. The play of forms and the use of light.
Mid-Term Review

Fifth Floor - First Private Level

The Fifth floor serves the function of the service floor and marketing floor for the complex. On the floor are the administrative services for the tenant spaces, service spaces for the apartments, and club spaces for the apartments. It is here that the public and private sectors of the development meet, converge and depart. The buildings at this point begin to reference themselves as opposed to the street as a result of the street having little or no sense of scale to what goes on in those upper levels. It is above this level that the development becomes self centered and obsolete to the street.

It is at this level though, that one can see the beginnings of the interaction of masses of buildings. By looking from above, one can see that the street level development that pushes and pulls in order to give a sense of diversity begins to stop at the fifth floor as a result of the scale issue. The play of forms is fairly absent from this model, but its intent was to bring an object of diversity to the streetscape in an era of steel and glass curtain walls and solid stone facades.

On this level, office spaces rule the majority of square footage and the residences take up the slack. The structural system is understood and usable. The water is met with a series of steps that fall like a river into the water. The corridor pedway is slick, sleek, and modern -- not a success.
View of towers and complex at dusk. The melting and transforming of forms towards the water...
Mid-Term Review

Section/Elevation - The Pedway

This study is all about the relationship of the building to the street along the corridor or pedway. I used the drawing to understand the scale better and the model to try to replicate it. In the model, you can see the relationship of the towers was thought out. What about the relationship to the ground. This is where I found I was lacking. Even though I had wanted to focus on bringing people through the site using pedestrian keys, I failed to study what happens on the pedestrian level at this point in the project. The pedway, then, can be considered a failure at midterm.

The towers step down from the density of the city to the low level of the water while changing in reference to form from a modern "box" to a couple nautical type towers. These towers are meant to soften the language of the city as well as provide a sculptural piece of architecture on the water. Using the scale of 1/32" = 1'-0", I found that I had no idea of what was a reasonable scale for the street level. The relationship of tower to street level building was lacking to say the least and the connections were nonexistent. The original argument was who cares(?), the people on the street don't need to be overpowered by the height of a tower. The rebuttal is justified in that without the tower, the experience of the collage of the city would all be for naught.
Long house layout (type #2)

Townhouse Layout (type #1)
Mid-Term Review
Apartment Layouts

The apartments are organized so that there is a three level system that takes advantage of view each direction with respect to both circulation and private views from within the apartments. The type #1 apartments are two story townhouses that utilize the corridor on the exterior wall for entry, with a bulkhead to separate public and private space. The bedrooms would lie above the hallway and the living spaces and have floor to ceiling windows with view like non other.

The type #2 long houses use one exterior wall for circulation and the entire width of the building for the length of the apartment.
After the mid term review, I knew that my task was to focus on the pedestrian level, the level at which the true suturing will occur. For the most part, this was an omitted point by the midterm, and thus a failure in the midterm model and design. It was after the midterm that I began exploring the pedestrian level through the pedway and on the waterfront in respect to the activity, suturing, and collage city.

This section will provide insight to the methodology of applying the designs with regard to the theories of bionics and prosthetics into the project along with an analysis to how or why choices were made about the design. Within this exploration series, I will use the same models from different perspectives in order to emphasis the multiple dimensions that the pedway, waterfront, and building massing have and convey.
Midterm Model -- North edge of Pedway.

Design Development Scheme #1 -- North edge of Pedway

Final Scheme -- North edge of Pedway

SUTURING THE
Pedway Exploration

This portion of the design exploration involved looking at the pedway and breaking down the scale to a personable size while maintaining the "tissue" of the city. The key to success in this portion is to break the monotony of the modern building and use successful examples within other parts of the city to translate the environment into that of an active street. The example used would be that of the "North End" in Boston -- tight streets, diversity of facades, building types, and functions within those buildings.

The pedway needed something to tie it together other than the building edges. The festive atmosphere provided by Quincy Market would be the target, but at the same time, the environment would be slightly "richer" and more diverse. This passage to the water should be the passage from the modern city to its roots which can be found at the water. The passage should then provide a physical connection of the two by way of suggestions -- repetitive. Then the water should be celebrated, but that will be talked about later.

As the midterm model would suggest, I wanted to eliminate the experience of standing next to a skyscraper by providing a "base" for them to sit on that would be built on more of a pedestrian scale and material. However, this does not go along with extending the modern city -- just the old city. To tie into the modern city, I must use its tissue also. The solutions, then, were modification of the layout of the towers, where they would contact the ground, and the use of multiple planes and "outbuildings" to break up the facade and create the collage of a city within the pedway.
Midterm: Arial of building mass -- North side of Pedway.

DD #1: Arial of building mass -- North side of Pedway.

Final: Arial of building mass -- North side of Pedway.

SUTURING THE
Collage City Exploration

In this series of perspectives, I want to exemplify the function of the massing and pedway design in order to emphasize the collage city aspect of the design. The entire design focus was to provide this stimulating and attractive environment so that since I "built it, people will come..." The towers were to touch the ground with all of their stature so that the experience of standing next to a tower in the modern city is present. At the same time, though, I wanted to break up the facades and masses on the street level so as to provide the diversity that a city has. The Antichrists for me in this design methodology, that which I wanted to stay away from, was the creation of another "New York, New York" in Las Vegas, and the creation of another superblock atmosphere. In essence, then, it was a fine lie to walk, but one which was fun and stimulating the entire way through.

Beginning with the mid term model, you can see that I did not do much to make the building interesting and interactive with the street. In fact, it was much like that which I wanted to avoid, a modern (or possibly post modern) superblock. It was here that "Collage City" provided its most important point of departure. What I can incorporate into the design to make it function as that important appendage to the city? I would then proceed to break up the facades, functions, and feeling of the pedway.

In the first Design Development (DD) model, I tried using simple surface manipulation to provide the type of experience I wanted to develop. This seemed to removed from the street experience, so I moved on to DD #2. In the DD #2 model, I used actual building masses and functions seemingly attached to the towers as appendages to provide the type of diverse experience on the street as I desired. This led to the final model which was the use of planes and masses along the pedway, along with a removed catwalk circulation way on the upper floors. The building materials were also changed for each "appendage" building so as to create that ever changing street mentality. Since this portion of the design is not influenced by the automobile, I had to create an active environment without the use of the high speed automobile. This was done by using festive flags an banners, along with heightened colors on surfaces.
Waterfront Exploration

From the perspective of Bostonites, the waterfront is virtually inaccessible; it is tied up behind private condominiums and businesses. The portions that are accessible are along some of the North End and from the Long Wharf Marriott to Rowe’s Wharf. After Rowe’s Wharf, the waterfront walk comes to an end. The purpose of using the waterfront along the channel is to provide currently a terminus to the walk and futuristically a point along the waterfront walk towards the Tea Party exhibit in the channel and the Children’s Museum. To do this successfully, I must provide an attraction to the site from the perspective of the waterfront along with create the connection to the existing waterfront walk and the Congress Street Bridge.

The midterm model stepped down to the water in a pretty uneventful fashion. It again read like the superblock it wasn’t supposed to be. The question was what to do with the waterfront so that it read like a collage, and bring that vitality of the city to the water’s edge. In DD #1, I tried to do this with color and planes that are pushed and pulled. In retrospect, this was done in a way that was just a manipulation of the vertical. The use of vertical pieces at the exit of the pedway were used to reemphasize the urban cavern. In DD #2, I did a similar thing as in the exploration of the pedway. I used building masses that read separately so as to give it the multi-building impression. I wanted the building to read a collection of buildings along the water. The function within the building would be service oriented so as to bring people through the site if coming form the city and to provide a good use for the view over the channel, through South Boston, and onto the horizon.

In the final solution, I again took on the role of applying different materials to these different masses to reinforce their being read as a plethora of buildings. Overall, I guess the street level architecture was to be that of a medieval street in Europe -- with cafes, shops and residences mixed together -- with the building reading as such.
This section will provide insight to what aspects of the design address existing conditions of the site, both positives and negative, what has been done new so as to improve the potential of the site and area, and some of the details to how this development might work. There are shortcomings to this project, there is no doubt. However, the intent again is to demonstrate how architecture can utilize the existing context, embrace it, use it, twist it, and create a better sense of being and space by utilizing what is known, what can be done, and what can be worked towards when developing such a site.

The design took the stance of becoming the parasitical architecture in that it used the existing building masses, forms, and context is its development. The design also became that improvement upon the city by providing housing on the water, a subway station in the building, retail and commercial development in the pedway, and office spaces on the city edge: at the suturing point. This mix of functions serves the purpose of becoming a living portion of the city -- the bionic extension.
The pedway looking out to the water

The corporate entry at the south end of the site.

First floor Plan. Note the corporate entries versus the openness of the pedway.
The ground level is the key among all of the design. Will it serve its function of tying the city to the site? The edges of the site and buildings are the most important portions of the ground level. How can I use the existing financial district and waterfront/channel district to the site's advantage?

Along the edge bordering the financial district, I created office lease space. The key to this determination is that centralized corporate entries are used. This will provide some sort of barrier for the pedestrian user -- it will make one take notice of the more personal characteristics in the design like the street side shops and the pedway and its pedestrian focus. The scale of the buildings are derived from the adjacent buildings which are all four to six stories with exception to the tower, which is where my tower extends the city visually by continuing the verticality of the city to the water.

The continuation of the urban corridor into the pedway stayed consistent throughout my design steps. It remains in the final design as the emphasis of the project. Using the methodology of trying to develop a synergy of forces between the urban desert of the modern city and the urban vitality of the old urban street and waterfront buildings, the pedway came to fruition in a final form. From the view into the pedway from the city, one can see how the urban street is still tight, but is less restricted due to the change in material at the left side of the entry of the corridor. The slickness of the right side of the pedway is a representation of the modern building, while the left is a broken mesh of building forms and styles, leading back to the collage city.

The pedway remained curved so as to add a little mystery into the design. As one walks through the mall type space, one eventually sees the small exclamation point at the end of the dock: the small sculptural shed that serves as the Harbormaster's Fort Point Channel location.

It is along this pedway on the street level that one best experiences the collage city aspect of the design. As one walks through the site, one will experience the sensation of walking by open air entries to shops and cafes, the awe-inspiring power of standing at the foot of a tower, the corporate and private entries to buildings, and the interaction with the form of the building and thus the city.
Fifth Floor Plan: Mostly office spaces at this level, along with administrative spaces. One can see the connections of the catwalk to the towers side of the mall.
Final Solution and Design
Mid-Levels. The Fifth Floor

The mid levels of the development are ones of interaction, dramatization, and pure extension in a prosthetic sense. The buildings bordering the water and the site are broken into, and extended by the development. The wharf building (Russia Wharf) is a building that is a solid/void relationship at the upper levels. The portion of the development bordering it not only coincides with the solid/void rhythm to let more natural light into the pedway but also connects to the building and extends its functions and circulation to include it in the development. This ensures many things for the future -- no development to the south of the site and preservation of the historical wharf building. Within these voids, as you can see in the upper left photo on this page, are circulation corridors that connect the taller portions of the building together, and also allow for lounge areas.

The collage city aspect of the design is focused on in the pedway corridor in the lower left photo on this page. You can see the interaction of the catwalk circulation space, the structure of the roof and the different buildings that are extruded from the towers, providing the multiple layered experience of the city. This can also be seen in the pedway catwalk photo on the previous page, where at that point there is the pedway below and to the right, the modern glazed building ahead, and the connection to the tower to the left.

Once above the third level on the water’s edge, the building begins to break down into a retreating pattern with exception to the tower. This will be discussed in more detail later, but as you can see in the upper left photo on the previous page, the building cascades down to the water so as to soften the edge and make it more pedestrian oriented.
Seventeenth Floor Plan: The overall scheme becomes apparent compositionally. The northern most tower is office leased space – open plan, and the two other towers are residential two and three bedroom apartments. Views from the apartments to the city, Cambridge, the Navy yard (which is being developed) and the harbor (inner and outer).
Final Solution and Design
The upper Floors
and
Overall Design

The final design and the towers are tied together immensely. As an obvious result of the fact that the towers are the most visible and understandable, they must work together compositionally. The overall design can be broken into the pieces that I have attempted to explain in detail... the water's edge, the city's edge, the pedestrian access and corridor, and the interaction with the existing sites and structures.

The upper floors are used for the most profitable areas of the development -- commercial and residential lease or purchase. The commercial tower is an open plan that is versatile in that it can be efficiently broken up into two or three spaces, dependant upon the lesser's needs. The residential towers are small to medium sized apartments that can be leased or purchased for a heavy cost per square foot. It could be feasible though, to put on office in the residential tower if need be, but it was not designed as such.

The towers are arranged so that views can be maximized to the East, North, and West. The South has very little views to offer (only in comparison of course), so none of the curtain walls are used there. As said in a similar way before, it is the towers that are the central and concrete portion of the design, while the street and lower level buildings grow out of or into the towers. The tower is as important to city life as any other building type, and should be explored in that view.
Looking back at development from end of pier.

View from across the channel.

View from the Congress Street Bridge (looking North).
The waterfront is a priority of the development that is potentially as important as the pedway and the parameters of that. The waterfront has to be the point of interest that gets people to experience the whole site. Therefore, the waterfront must be just as if not more exciting and interesting that anything in the development. For this reason, then, the waterfront building(s) become even more layered, pushed and pulled than anything else in the development. There are false facades, or screens, layers of heavy stone walls that present the front of the building, but are nothing more that a front and a balcony. It could be argued, then, that this becomes the true collage city design aspect of the project.

The base of the tower penetrates into the ground to the water, and is at the same time hidden behind the eight story wall/balcony. The building to the south of the site is cut away and pushed out all behind the screening wall that protects the interior of the site. The boardwalk moves with the building, it becomes part of the building. Lastly, the building cascades down to the water and exposes more of the tower and the buildings behind, creating levels of roof tip gardens and balconies for the restaurants above.
Acknowledgments

Andy Seagar
Fiona Aldous
Robert Barnstone
A.E. "Sonny" Palmer
J. Robert Taylor
Jason Bransteter


Appendix B
Related Photos

[Images of city photos]