BUILDING THE URBAN RIVER EDGE; Proposed Connections To The Water At The Foot Of Boston's Beacon Hill.

by

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Abstract

The core of this investigation is based on the design of built form at the public urban river edge. It proposes the transformation of a portion of public park edge into public built edge.

The Esplanade embankment at the foot of Boston's Beacon Hill forms the site for this thesis. The project area runs from the Longfellow Bridge at Charles Circle to the Arthur Fiedler Footbridge near the Hatch Shell. The thesis investigates built provisions for public inhabitation of the water's edge. At the size of the full project area the work explores built connections between the city and use of the river. At the building size design exploration focuses on extended public pavilion forms at the water's edge for a variety of uses.

Through design, analysis and critical assessment this investigation seeks to test the following hypotheses:

1) The urban water-edge should provide direct built connection between the city fabric and use of the water.

2) Through provision for collective everyday use and inhabitation of the water-edge certain areas of the river bank should act as social condensers.

3) Built definitions of physical form along the river can manifest an urbanism that celebrates density and diversity -of use and of population- as necessary positive attributes of contemporary civil life.

The above mentioned project area is well suited for testing these hypotheses. The street pattern of the neighborhood is oriented toward the river yet it has been cut off from the water by Storrow Drive. Charles St. at the base of the hill has long provided a strong core of public use. In addition this is an area in which some variety of use is already made of the river bank despite the physical barrier of the roadway.

It is important to note that this thesis is an exploration of built form at the urban water's edge and not a comprehensive city planning effort. Its core thrust is directed at architecture: that is, at the organization of habitable physical definitions and their spatial and experiential implications.

Thesis Supervisor: Maurice K Smith
Title: Professor of Architecture, Emeritus. Senior Lecturer.
Dedication

This thesis is dedicated to the memory of my father, Luigi Gorini, and to his father Costantino Gorini. Both were researchers in microbiology. The elder Gorini was director of the Laboratory of Bacteriology at the School of Agriculture at Milano, Italy. My father, Luigi, received his doctorate in chemistry at the University of Pavia in 1925. He conducted research in microbial genetics in Italy, France, and eventually the U.S. where he was Professor at the Harvard University Medical School. In 1974 he became Professor Emeritus, Department of microbiology and Molecular Genetics at the Medical School. He died in 1976 at Boston's Beth Israel Hospital a few hundred meters from his lab.

During the Fascist period in Italy prior to World War II both these men acted to resist the right wing. Costantino Gorini was among the small number of academics who refused to join the Fascist party. Luigi was at the time a young researcher. He too refused to sign the mandatory allegiance and was among a small group who left the University. In a 1970 talk given at
Montana State University he recalled the events:

"The first uproar was "No" unanimously - we will never do that. But then came second thoughts, the rationalization: "We scientists should not be involved in politics; we should not permit that others, worse than us, would take our responsibilities, etc., etc." At the end we were about one hundred "No's" out of about ten thousand university people."  

He was to join the resistance where his nonviolence kept him from a fighting role. For more than a decade from 1932 till the fall of the Fascist government he was unable to obtain academic employment. In 1955 he came to the U.S. and eventually to Harvard. His dedication to resistance was to continue till his death.

I will always remember Luigi for his lifelong commitment to learning, discovery, and intellectual rigor. In addition I will always be inspired by his lifelong commitment to social responsibility and political activism. I see this quality as a legacy of resistance against Fascism, autocracy, and centralization of power; no matter what flag they may operate under.

For me Luigi and Costantino represent at once the inspiration and the burden of history. I can only hope that I am capable of following in their footsteps.

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Finally a special dedication to Marco, Nika, and especially to Laura for their love and patience.

"I will try to be the most unequivocal radical possible and at the same time constructive."  


2) Ibid.
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Overleaf: Fig. 3. The Charles River Basin, view Southwest from the Longfellow bridge. Photo: D. Gorini
1.1 The city size.

The architectural design project, wether for building form or city form, must be considered and understood at a full range of sizes. It is therefore imperative that the urban project be analyzed in its relationship to the life and form of the city. It is only through work of this type that the project can hope to be more than an autonomous gesture. In addition the project can thereby establish substantive connections to its context without resorting to historicisms or ersatz stylistic vocabularies. This analysis must occur at the largest experientially verifiable size. The notion of experiential verifiability is important; urban form analysis can easily deteriorate into graphic production when done in plan at the largest size. By seeking to maintain a constant connection to experience and use 'on the ground' explorations can become more directly relevant to design of built use-form.

In the case of the project area being considered here the largest experientially verifiable size is unusually extended. This is due simply to the fact that it is located on the Charles River Basin. Identifiable points along a river are by nature associatively and experientially connected to other areas along the same river, even if they are well out of sight. In addition the Basin adjacent to the project area is quite large. The reach between the Harvard bridge and the Longfellow bridge measures approximately one mile in length by nearly a half mile across.

The following series of analyses were done primarily to examine two factors in the Basin's relationship to the surrounding city. They are:

- 1) The built connections -or lack thereof- between the city fabric and use of the water.
- 2) The effect of the roadways which circumscribe the Basin on the form and use of the river.

This document includes a written form history of the Basin that supports the graphic analyses found here. The reader is asked to turn to the chapter of that name for further reference.

1.2 Boston's urban fabric and the Charles River Basin.

The Charles River Lower Basin is a central component of Boston's urban form. It constitutes a basic amenity and an identifying image for the city. However, the vitality of an urban or architectural form can only be validated through use. To that end the re-connection or re-urbanization which I propose is based simply on the notion of inhabitation of the Basin and the river. The Basin can only reach its potential as an expression of civitas by being lived in. If the Basin is to be more than an icon it must be re-appropriated for use. It is too precious to remain simply a vision of romantic landscape.

Despite the obvious success and importance of the continuous park system along its banks the Basin is for the most part disconnected from the city. Not a single neighborhood exists around it in which the built fabric makes physical connection to the water. The roadways which completely circumscribe the Basin have established daunting barriers between the city and the river. The pedestrian does not arrive at the water's edge in the normal course of movement through the city. In addition, uses considered typical of urban rivers are not found in the Basin. As
a result the Basin has been reduced to an icon; a representative symbol for the city. With the exception of recreational boating and the annual armada of independence day revelers the Lower Charles remains little more than a scenic amenity.

The role played by Olmsted’s parks vision is discussed in an essay on the ‘Pastoral Metropolis’ found at the end of this document. Therein I contend that prevailing theory at the time of the basin’s last construction called for simulations of ex-urban or faux-natural environments in the city. These simulations constituted part of a program to render the emerging metropolis in a pastoral palette; that is, to provide areas of spatial de-urbanization in the growing city. As played out on the Lower Charles these theoretical positions, though commendable in their intent, contributed to the disassociation of the river from its city.

1.3 The urban river as a use-form: a relationship between the urban landscape and the river.

The urban river exists as a built form. It is not, nor should it be, a function of purely “natural” hydrological and geophysical forces. It must be understood as an urban form element. It is therefore invariably a product of the spatial conceptions and attitudes which prevail when interventions are made on its form. Seen in this manner the river can be understood as being among the largest and most significant of city forms. The urban river is at once a spatial and temporal instrument of cultural locating. Such locating can achieve some level of authenticity only if it is manifest through collective use.

Clearly the urban river edge must be an absolutely public zone. Given this assumption the river bank may exhibit two basic classes of form. It may be an urban built edge or an urban park edge. The Charles River Basin is circumscribed by an unbroken park edge. This green edge is invaluable. The water provides a guarantee of an open flank. The citizen can therefore find a true spatial alternative to the city fabric. In this condition the river bank acts as an unmatched diffuser for the urban population. Nonetheless this thesis is based on the conviction that river cities need areas of built public water edge. These areas should act in contrast to the park edge; they should act as social condensers. Areas of built edge should provide free access to varied public use of the bank and the water.

The Charles is certainly a physical and cultural locator (as are most urban rivers). To a great extent however the Charles has ceased to be an access and use form. Traditionally rivers have been vital routes for intra-urban transportation. In the past this has unfortunately included the transportation of waste materials in the water itself. In addition heavy use of the waterway by motorized craft is known to make sailing and rowing difficult. Now however the use of urban rivers for public transportation can in fact contribute to the improvement of urban ecologies. The use of low-wash hull designs can allow for efficient water taxi service without disturbing recreational boating, particularly on bodies of water as large as the Lower Basin. Water taxi service could easily decrease Boston’s dependence on Storrow Drive. Provision for parking at Allston Landing could allow commuters from the West on the Mass Pike as well as those on Storrow Drive to use water transport into downtown.
Such a link could easily connect to the existing water transport services in Boston Harbor and along the South Shore. These water taxis already provide commuters from the south and travellers bound for Logan Airport with alternatives to the motor vehicle.

The current condition of Boston’s river is one of continuous physical barrier between the city and the water. At all points the public must cross roadways or negotiate minimal overpasses to reach the river banks. If the Charles is to become a more active public waterway key areas along the banks must be built to provide transition between the urban fabric and use of the water. In these areas building form must be present to define physical connections to the city. Building form can provide the shelter and containments necessary for the full range of public uses.

The river bank at the foot of Beacon Hill can become one of these areas. This stretch of water should be reconnected to civil life of Charles Street. Despite the pedestrian overpasses which currently provide minimal access this zone is varied in its use. The Hatch Shell is a popular venue for public entertainment during the summer months. The city boat house provides public sailing facilities. The Charles Circle MBTA stop offers ready public transportation access to the area. At the Southern end of the area the grain of the city fabric and the curve of the river embankment establish a direct link to the Public Gardens.

Fig. 4. View across Storrow Drive under the Arthur Fiedler Foot-bridge. Photo; D. Gorini.
Fig. 5. The Charles River Basin.

Beacon Hill and the project area are shown here in their relationship to the Charles River basin. The Beacon Hill neighborhood can be seen as the cornerstone of the lower Basin. In addition it is historically and physically oriented to the River.
Fig. 6. An early study of potential sites along the Basin

Having established the intention to explore built public connections to the water, the Basin must be examined at the full city size in order to choose possible sites for intervention. Seven areas are chosen as viable locations. These are:

1) The South bank opposite Governor's Island. A difficult site in the shadow of elevated roadway structures.

2) Open land at the Cambridge spurring of the Boston University Bridge.

3) Charlesgate. An area where roadway structures have had a particularly deleterious effect on Olmsted's park.

4) The sea wall along the M.I.T. campus where existing boat houses establish minimal built definition of the edge.

5) The Esplanade along Back Bay.

6) The foot of Beacon Hill

7) The no-man's land between the older and the newer Charles River dams.
Fig. 7. A study of the neighborhoods which surround the Basin.

A number of distinct neighborhoods are found near the lower Charles River Basin. Some of these were in the past more directly connected to use of the water. Now they are without exception separated from the River by the roadways which circumscribe it. The figure above shows the grain and orientation of these areas as well as the barriers which run between them and the water.

1) Allston
2) The Northern corner of Brookline
3) Cambridgeport
4) East Cambridge
5) Back Bay
6) Beacon Hill
7) Charlestown
8) Site of the former West End destroyed by developers and overzealous planners in the late 1950's
The river edge is largely occupied by businesses and institutions. However these are also cut off from the water by the ever present roadways. In some areas -Cambridgeport for example- a strip of institutional or business land forms a barrier zone in addition to the road. This acts to further insulate the neighborhood from the water.
This figure examines the land area near the Basin that has been taken for roadway infrastructure. At Charlesgate and at Charles Circle elevated interchanges have served to choke off key points of connection to the water.

1) Allston Landing. The major interchange for highway connection to the West. This is the point of arrival for I-90 known as the Mass. Pike.
2) Charlesgate. This roadway is the Storrow Memorial Drive.
3) The Mass Pike Extension. Here the road travels in a wide trench cut through and under the city.
4) Charles Circle. Interchange between Storrow Drive and the Longfellow Bridge.
5) Leverett Circle and the infamous connection to I-95 and I-93. Interchange to points North, South, and East.
6) Memorial Drive, Cambridge.
The solid lines in the figure above indicate subway and light rail lines. The dashed lines are bus routes. Note that there are no transportation routes on or along the river. This is directly related to the lack of use connections between the river and the city. In the proposal being presented in this thesis areas of built public river edge would spawn water taxi service to connect them.

Parking could be provided at Allston landing for travellers on I-90 -see figure, facing page-. Water taxi service could then offer an alternative to the car for the last leg of a commute into downtown. Water taxi service has for a number of years provided such an alternative to residents of the South Shore.
Fig. 11. Area of river and wetland filled for building since the 17th century.

This image affords an idea of the extent to which the topography of the area was altered in arriving at the current form of the Basin. All of the shaded area was tidal wetland or river. All of it had to be filled in order to build on it. The current form of the Basin is shown darkest.
Overleaf: Fig. 12. The project area viewed from the Longfellow Bridge. Photo
D. Gorini
2.1 The Foot of Boston’s Beacon Hill

In considering design interventions on the river bank at the foot of Beacon hill two primary form issues emerge as salient. The first is the problem of Storrow Drive. The second is the lack of built definition for shelter and inhabitation on the embankment beyond the roadway.

The first issue is simply a case of physical barrier. The Drive is built on embankment land originally intended as green space directly connected to the city. This is a condition which has unfortunately become common to many river cities worldwide. The river banks are often the most easily appropriated linear zones on which to build express roadways. (These roadway projects appear to be public works and are paid for with public funds. Yet the results eliminate urban territory from public access and use. The automobile -as it is currently used- constitutes a maximum privatization of transport). The design problem in this project is one of building connections to the city across the barrier of the roadway. These connections must be territorial and not simply provisional crossings as are the existing pedestrian overpasses. Direct and easy access must connect public use in the city to public use at the water’s edge.

The second of the aforementioned form issues is a question of use. Under current conditions the project area offers only minimal built provisions for inhabitation of the bank. There are no structures which might house uses to bring the public to the water edge in the course of daily urban activity. Similarly the limited public dock in the boat haven is practically unused and

Fig 13. Ice Floes, Lancaster Sound, Canadian Arctic, Flip Nicklin, Nat. Geo. 7/91.
in disrepair. More significantly there is little incentive for boaters travelling on the Basin to dock. This project proposes an area of built public edge on the bank and on islands splitting off into the Basin. A variety of uses are envisioned including a theater complex with outdoor stage. Restaurants and bars, retail space and provision for markets could also occupy the area. The existing recreational boat houses would of course be provided for.

A built area of this type, connected to the city, could become active both from the land and the water. Public and private water taxi services would have ample reason to establish taxi stops or even to base operations from such a facility. Municipal services such as police and park maintenance could have auxiliary offices with launch slips allowing for ready water-born access to the Basin. Boaters from the harbor and from up river as far as Watertown would find public docking facilities for small craft. It would therefore be possible to travel by boat from Charlestown, for example, and find public attractions directly accessible from the water. Likewise it might be possible to travel by water taxi from Allston to a public concert and back. The Galleria Mall retail complex at the Northeast corner of the Basin currently makes use of the former Lechmere Canal to connect to the Charles. The mall itself exhibits a typical architecture of garrison exclusion while the canal is nothing more than a quaint cul de sac. Nonetheless some effort has been made to connect with the Basin. The proposal being presented here would establish another connection to the larger city. It does not require a stretch of the imagination to envision a water shuttle connection between these points as well as to others which might be estab-

Fig. 14. Detail of project area from a 1902 map showing conditions before the first embankment. Source: MDC archives.
lished along the river.

2.2 Conditions in the project area

Beacon Hill slopes rather steeply West from the Massachusetts State House toward the Charles River. The hill flattens at Charles Street which runs parallel to the river bank and cuts across the directional grain of the neighborhood. Charles Street has long been the primary public and commercial axis of the neighborhood. At the foot of the hill the neighborhood continues toward the river on land that is practically flat. Prior to the first embankment the urban fabric ran directly to the water, see Fig. 14. That edge is currently defined by Storrow Drive.

Fig. 15. Right. Esplanade Embankment at Beacon Hill. Source: BRA survey map. The project area runs North-South for approximately 1800 ft. from the Longfellow Bridge to the Arthur Fiedler Foot Bridge where the river bank turns West.
Fig. 16. Above. View North along Storrow Drive from the Arthur Fiedler Footbridge.
Fig. 17. Right. Sight lines for photo above
Fig. 18. Above. View South along Storrow Drive from the footbridge at the North end of the project area connecting Charles Circle to the embankment.

Fig. 19. Right. Sight lines for above photo
Fig. 20 Above. Under the footbridge looking toward Charles Circle. Note that there is no access to the embankment between this overpass and the Fiedler foot bridge approximately 1800 ft. to the South.

Fig. 21. Above.
Top: Sight lines for photo at left.
Mid: Sight lines for photo facing page at left.
Btm: Location of photo facing page at right.
Fig. 22. View East across Storrow Drive. Prior to the embankments these buildings backed directly against the water.

Fig. 23. Above. The rather pathetic "Esplanade Refreshment Pavilion" is the only eating or drinking establishment on the river side of the Drive.
Fig. 24. The central steps leading to the water at the existing boat haven.
The view is south from a small dock. Photo D. Gorini
Fig. 25, Left: Approximate sight lines for photos facing page and above.

Fig. 26, Above: View of boat haven steps looking south. The fact that the steps are in disrepair is secondary to the fact that they are not backed by use connections to the city. There is little incentive for boaters travelling on the Basin to dock here. Docking facilities are minimal. There are no built definitions at the water's edge that might house restaurants, stores, indoor public entertainment and the like. Photo, D, Gorini
Analysis in the project area

The following series of studies were conducted in order to establish a basis for design work. They are intended to clarify the grain and dimension of the Beacon Hill city fabric as it is experienced by walking the neighborhood. The hill exhibits an undeniable orientation toward the river. It is among the most clearly defined neighborhoods in Boston proper. This is in part due to the fact that most of its streets do not pass clear through the area. Charles Street is the only major axis that cuts through the neighborhood. It provides a public core for the area yet it does not act as an edge. Beacon Hill without question runs down to the river.
Fig. 28. A study of certain dimensions which can be found to recur and which can be apprehended when walking through the project area.
The Beacon Hill neighborhood is distinctly directional. Streets running up and down the hill are longer than those running across the slope. Sighting down these longer streets often offers a tightly framed view of the river.
Fig. 30. Cross streets on Beacon Hill. Charles St. - center, ending at Charles Circle - is shown darker, as is Storrow Drive - at left.

The streets which run across the primary grain of Beacon Hill are generally shorter than those which run with the slope. The hill is ridge backed. At its crest near the State House - at right, above - secondary slopes run North to Cambridge St. and South to Beacon St. Due to this the two streets which cross through the East end of the neighborhood are not experienced as through streets. In addition these streets - Joy St. and Bowdoin St. - are not through streets at the larger city size. Charles St. is the exception and its public character and use reflect this. However the grain of the neighborhood easily crosses Charles St. The actual physical edge at the base of the hill is formed by Storrow Drive.
This early design iteration proposed a series of piers and islands. Extending finger-like into the Basin these were seen as continuations of the directional grain of the Beacon Hill city fabric. However the primary effect of piers such as these is to intensify and extend a single land edge while blocking the larger direction of the river edge. For both of these reasons this proposal was rejected.
This iteration ultimately became the basis for the project. This form type offers a number of advantages over the piers which had been considered earlier. In contrast to the piers directional islands such as these multiply the water edge rather than extending a single edge. This is important to the project since a central intention of the work is to propose varied conditions of built water edge. In addition water traffic remains free and open through the project area. While piers tend to be private forms these multiplications of the river bank are essentially public. Note the remaining finger along the Longfellow Bridge at the Northern edge of the site. This too was eventually eliminated from the plan.
Fig. 33. Study of existing and proposed use zones in the project area.
Fig. 34. The project at the city size. The relationship of the proposed directional islands to the Basin and to the Beacon Hill fabric is illustrated at this scale. The existing Esplanade island is shown in lighter grey, the project as proposed is indicated by the darker tone. It is important to note the extent of the intended transformation from public park edge to public built edge. This transformation would occur in the circled area at the foot of Beacon Hill. Other selected areas along the river could be transformed in this manner without compromising the value and access continuity of the existing park system.
2.4 Design explorations for the project area.

The primary design objectives in this aspect of the project are twofold: 1) There is the question of transforming the embankment and the roadway in order to establish the intended connections to the city, 2) Proposals must be made for inhabitation of the transformed river bank; there must be proposed built definitions for use.

2.41 The embankment and the roadway

The core actions in addressing the first objective are as follows. The existing embankment is cut back to the edge of Storrow Drive. Directional islands and fingers of fill oriented along the river bank are proposed to establish the primary form condition of the project. By bringing the water to the edge of the Drive the true base line of Beacon Hill is in part defined by the water edge. The Drive itself is proposed as a sunken roadway carried in open topped concrete boat-sections. This roadway is then variably covered and the territory thus defined is inhabited. It is intended that the existence and life of the road below should maintain some associative connection with the world above. Likewise the roadway as an historical and physical fact of the city is to be acknowledged in the form.

Two bands of fill form the proposed land in the Basin beyond the roadway. In the final equation the project proposes a net gain in land surface. At the same time the single existing water edge is multiplied fivefold.

2.42 Social condenser: inhabitation of the project area.

In terms of building and use in the proposed area the most
Fig. 36. Model at 1/50" = 1'. Existing condition of roadway and embankment.

Fig. 37. Model at 1/50" = 1'. Initial design assumption.
important intent is that the form be public and collective. That is, built definitions for inhabitation should serve the stated goal of establishing a social condenser at the Basin. The proposed building form should suggest uses which bring people together at the water edge. This should occur in the course of daily urban life and not only on certain occasions as it does now.

With respect to this question the proposed primary form is a multiplication of the use condition found at Charles St. That is, the public zone of Charles St. would be repeated with decreasing density along the proposed water edges. Significantly the direction of Charles St. -parallel to the major direction of the water- would be repeated. Retail or commercial uses are not proposed perpendicular to this direction. A theater complex would be found on the first band of fill. This would include an outdoor stage to replace the existing Hatch Concert Shell. The existing recreational boating facilities would be housed on the outer band of fill. Urban ground surfacing such as brick would predominate closer to the city while some greensward would reappear on the outer island. Trees inland would be planted singly or in small groups in order to help define open territory in built areas. On the outer island more extensive groups of trees would provide shade and form definition in larger areas of green space.

2.43 Access in the project area.

Beacon Hill is bounded on the North by Cambridge St. and on the South by Beacon St. These constitute the major access to the city at the larger size. Between these there are four smaller
residential streets which lead down to the project area from Charles St. The proposal identifies three main points of entry to the area and seeks to define them physically: 1) At the Northern end is the MBTA stop at Charles Circle. 2) Near the middle of the area is Pinkney St. Here an existing mid-20th century apartment complex would be replaced by a linear finger of park connecting the project to Charles St. 3) At the Southern end a spur of the existing Embankment Rd. leads toward the Public Garden. The proposal calls for building a partially covered market area over the sunken roadway to define this entrance. This would face the existing -and proposed- viewing/seating area for outdoor concerts. It could provide shelter for regular temporary market activity as well as for concert concession sales.

Limited vehicular access to the outer island is provided by a viaduct at Revere St. Rather than an isolated bridge this structure is embedded in a higher density of building and uses. Continuity of pedestrian access is aimed for, particularly in the primary direction along the river. This is achieved through a combination of ground level and elevated access. From the water the proposal calls for open access for small craft and water taxis. The form of the islands allows boat traffic to move into the built fabric while still travelling through in the direction of the water. Numerous areas of public docking facilities are envisioned. It

Fig. 39. Model at 1/50" = 1'. Addition of directional islands.
Fig. 40. Model at 1/50" = 1'. Early pass at the full area. Note the finger along the bridge at top. At middle are some preliminary building form proposals.

Fig. 41. Model at 1" = 25'. Detail of proposed variable covering over Storrow Drive. This view shows the area at the foot of Pinkney St.
Elevated MBTA station at Charles Circle

Revere St.

Pinkney St.

Proposed theater complex

Embankment Rd. entrance leading to
Beacon St. and the Public Gardens. Note
proposed coverings for markets or con-
cert concessions.

Fig. 42. Model at $1/50^\circ = 1'$. Note the removal of the finger along the Longfellow
Bridge. This allows the form to provide smoother access continuity for water
traffic.
2.5 Experiments in higher density

The scale of intervention at the project area size demands some exploration of housing built to the water at relatively high density. The reader must understand that the author views such proposals with great skepticism. Yet it seems clear that a proposal of this nature must at least be considered. Built urban river edges have always been partly occupied by housing. However, the social and economic conditions which govern the Basin severely limit the possibilities. The Basin edge is among the most precious territory in the city. Lower density housing within four or five floors of the ground would immediately become the province of developers. This is therefore rejected out of hand. In addition such intervention would invariably be deleterious to the intended public form of the project. Low-rise development of this sort would constitute an incursion of the neighborhood housing fabric into public territory that has already been claimed. Despite my differences with the Parks Movement the claiming of urban territory for permanent public use is an unassailable accomplishment of that period. Erosion of such public territory is anathema to the convictions which drive this thesis. The transformations proposed in this document are intended to be absolutely public. Physical definitions of privacy at the ground can not be supported. If they are built in the direction of the river edge they will block associative access from the city to the water. (Physical access can always be provided in selected zones as in any street pattern). If they are built perpendicular to the water edge they threaten to block free public access along the bank. Neither of these form scenarios is ac-
ceptable. In addition such housing stock would be of such high value that it would become absolutely private and inevitably the domain of the rich.

Given these understandings the sole remaining possibility is to build up. Such interventions can only occur in two possible forms. We can build vertically in towers or we can build up horizontally by raising buildings on piers. The former is an action of absolute privacy and hierarchy. The latter becomes, by process of elimination, the only possible scenario. If this is the case then certainly the form of such interventions must achieve three objectives: 1) They must be built perpendicular to the river bank so as not to attenuate visual access from the city to the water. 2) They must be high enough above the public ground to allow full light and physical access along the river bank. 3) They must rise from ground level public structures; that is, entry to such structures must be from clear definitions of public territory and public use. These criteria are exceedingly difficult to fulfill outside of utopian fantasy. Nonetheless the proposals illustrated here are an attempt to address these issues.

Fig. 44. Model at $1/50' = 1$. In this case higher density is built directly over the covered roadway along the existing city edge.
Fig. 45. Study of the project area.
CHAPTER 3 BUILDING AT THE URBAN WATER'S EDGE
Overleaf: Fig. 46. An extended dock of the MDC public sailing facility at the foot of Beacon Hill. Photo: D Gorini
Inhabitation of the built river edge.

Fig. 48. Benares; the city builds steeply down to the water.

Fig. 50. Ancien Hotel - Dieu, La Seine, Paris. Source: Les Berges de La Seine, J.M. Leri, Conservateur, Bibliothèque Historique de la Ville de Paris, 1981.

Fig. 51. Venice: An urban environment of built water edge. Photo D. Gorini
Fig. 52. River bank project for the Arno in Florence, Richard Rodgers et al. This project proposed facilities at water level for festivals and the like. It was understood that the project area would be flooded at some periods during the year.
Fig. 53. Zurich, The Limmat. Source: Mann, R, Rivers in the City, Praeger N.Y. 1973.

Fig. 54. Westminster Pier, River Thames, London. Source: Mann, R, Rivers in the City, Praeger N.Y. 1973.
**Built definition and use of the water**

The provision of built transitions to use of the water is a primary requirement of the inhabited river edge. Quite simply the relationship between land and water must be associatively clear and physically easy. If this is not the case use of the water will be hampered. Consider for example that a rocky shore is spectacular for contemplation but a beach is almost universally preferred for swimming or launching fishing boats. This is because a beach generally offers a smooth, negotiable transition to the water. Associatively one enters the water under the assumption that the ground will slope away gradually (Though this is not always the case). The building of steps into the water is found across history and culture. This form may be seen as a built analogue for the easy land-water transition of the beach. Docks, wharves, piers, and launch ramps all serve a similar purpose. Wherever regular use is made of the water forms such as these are built by the inhabitants.

The photographs on these pages (Figs 55 & 56) are taken along the Charles River. They illustrate the value of the basin as an urban amenity. Yet an interesting fact must be noted. The few instances of built water edge on the Basin are all single actions, in most cases single buildings. In addition most of these are private in ownership as well as in form. On the lower Charles the public access along the water edge is always back from or above the water. Where the bank is formed by sea wall public access is not provided at water level. Where the bank is made to appear “natural” access is officially provided near the road at the top of a grass slope. In these areas an informal footpath can

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Fig. 55. The MIT Sailing pavilion on the Charles River Basin. Photo: D. Gorini.
often be found worn along the bank nearer the water.

If the built urban river edge is to be for free public inhabitation its physical form must provide access continuities along the water edge. Likewise it must provide a variety of physical definitions to allow a variety of use. The "berges" along the Seine in Paris or to a greater extent the "ghats" along the Ganges at Benares are examples of this condition. Access is provided to the water but the publicness of the form is vested in access at the water along the bank. In Venice many public edge conditions are characterized by similar access along the canal. In these areas houses that are built directly to the water often provide a public arcade to allow access along the bank. At the Ponte del Rialto this is clearly seen. Associated with this bridge are zones of public water edge stretching along both banks and in both directions along the canal. In short here - as elsewhere - public inhabitation of the urban river edge is dependent on access continuities and on built definitions along its banks.
Fig. 57. Harvard crew house, Cambridge. Wide plank launch ramp leads to a series of floating wharfs at the water level. Photo: D. Gorini
Fig. 58. Timber and masonry at the water edge. Harvard University crew house, Cambridge. Photo: D. Gorini

Fig. 59. Timber to concrete connection. Detail of project designed and built by the author in collaboration with colleague fellow MIT student Greg Iboshi. Photo: D. Gorini
Fig. 60. Tree and Brick. This juxtaposition is characteristic of Beacon Hill. Photo: D. Gorini.

Fig. 61. Brick and granite as ground surface. Photo: D. Gorini.
Fig. 62. On Beacon Hill brick and granite build the environment. Photo: D. Gorini

Fig. 63. On Charles St. an example of public inhabitation of space built and defined by masonry. Photo: D. Gorini.
Fig. 64. Lucien Kroll, Dominican Benefice and Rectory, Rixensart, Belgium. Source: Lucien Kroll, Buildings and Projects, Rizzoli, NYC. 1987.

Fig. 65. Stairs and access in the light. Lightweight building materials build the light edge. The physical definitions serve to screen and thereby activate the light. The light is built as an inhabitable, spatial form; a zone rather than simply a glazed surface.

Hysolar Institute Building, University of Stuttgart, Guenter Behnisch and Parteners; Frank Stepper and Arnold Erhardt, architects. Source: A+U #236, 90:05.
Fig. 66. Contextual connections are vested in materials, dimensions, and experience; not in mimetic reference to style. Lucien Kroll, Dominican Benefice and Rectory, Rixensart, Belgium. Source: Lucien Kroll, Buildings and Projects, Rizzoli, NYC. 1987.
Fig. 67. Masonry walls free to build independent spatial definitions. The building structure is in concrete. The brick is therefore free to act as an independent system. Lucien Kroll, Dominican Benefice and Rectory, Rixensart, Belgium. Source: Lucien Kroll, Buildings and Projects, Rizzoli, NYC. 1987.

Fig. 68. R. M. Schindler. Beach house for Dr. Lovell. 1925-26. Source: August Sarnitz, R.M. Schindler Architect, Rizzoli NYC, 1988
Fig. 69. Study of the Canal Grande next to Rialto, Venice.

Fig. 70. The Canal Grande at Rialto

Fig. 71. Ponte Degli Scalzi

Fig. 72. Study of the Canal Grande at the Ponte Degli Scalzi near the Venice train station.

The analyses on these two pages are intended to explore use dimensions near water taxi stops. Of primary interest is the distance from the bank to the taxi wharf edge. In addition dimensions for public boat docking and for free canal access are examined. Defined zones of use along the direction of the canal are indicated by dashed lines.
Fig. 73. Progressive transformations of the edge condition shown at right. This exercise is intended to examine the generic possibilities of built connections to the water through the public pavilion form. Built intervention as in #4, above, would, of course, alternate with conditions such as those in #1 or #2. That is, the singular park edge would not simply be replaced by a singular built edge.

Fig. 74. A portion of the Cambridge bank of the Charles near Harvard. This edge condition is one of two most commonly found along the Basin. Note that even a few interventions on the level of #2, at left, would make this edge more habitable and usable by boaters and pedestrians alike. Photo: D. Gorini
Fig. 75. The other most common edge condition found along the Basin. A few boat houses near MIT approach condition #3, at right. However the most important aspect of #2, at right, is missing. That is the addition of a pedestrian continuity at water level along the bank. This is the case found in the Parisian "berges". In the boat houses on the Charles the action is one of privacy. The citizen moves down perpendicular to the bank into the building. The public continuity remains above and away from use of the water. Photo: D. Gorini.

Fig. 76. Progressive transformations of the edge condition shown at left. In this case transformation #2, above, is almost a necessity. Without this first public action the edge remains highly disassociated from the water. In addition the continuity of this first action must be maintained through any further intensifications, (#3 + #4). If it is not maintained public access will immediately be forced back on top of the sea wall and the built interventions will become privacies.
Fig. 77. Left: Progressive transformation of an edge. In this case the original condition, #1, exhibits a closed building face built directly to the water. This form is found commonly in canal cities such as Venice.

#2: This iteration illustrates initial minimal moves toward use of the water. These water level definitions are not necessarily public. In Venice for example these forms are often housed within the body of the building. The wharf form shown here may be public if it builds continuity along the bank and connects to free access in the city.

#3: This section indicates the initial definitive move toward public form. An arcade at the ground level is opened running along the bank. Here this has been added to water level forms carried over from #2. This arcade form is often found in public zones along the canals in Venice.

#4: In this case the public pavilion form has been applied to the original condition. Public continuities such as those in #s 2 and 3 might under certain conditions alternate with intensification of this type.
Fig. 78. Venice canal. An example of condition #1 on facing page. In this case built definitions at the water level would be impossible due to the minimal width of the canal. In addition this is not a particularly public area of the city. Built continuities for public inhabitation are obviously not needed or desired everywhere.
As stated at the outset this thesis is intended as an architectural exploration. The abstract at the beginning of this document states; 'Its core thrust is directed at...the organization of habitable physical definitions and their spatial and experiential implications'. It is therefore imperative that the project be explored at the size of the building site. The hypotheses tested at the project area size must be pressed further at the size of the building. The relationships of materials and experience to use of the water are critical to the verifiability of the proposal. The work recorded in this chapter was done in an effort to attain these goals.

The site.

The site selected for building design is on Southern end of the inner island near the middle of the project area. The proposed vehicle viaduct at Revere St. passes across the North end of the site. This affords the possibility of directly addressing the elevated access which recurs for pedestrians at points across the project. An effort is made to approach the design of the elevated access as building form rather than as a provisional connector. The Southeast corner of the island faces across approximately 160 ft. of water to the proposed city edge built over Storrow Drive. It is directly across from the end of the linear park proposed for Pinkney St. This arrangement is intended to form an urban amphitheater. People on the platforms covering the roadway can view the activities in the water against the background of the island beyond. Those on the open Southeast corner of the island experience an analogous association with the city. This
side of the island is protected from prevailing winds. Its orientation would afford sun in a manner that should make it habitable even in colder months. During periods when the river is frozen the relatively enclosed body of water between the island and the city could be used for skating. The area is small enough to be kept clear of snow and to be supervised for safety. If this were the case the area would remain active year round for restaurants and the like. The proposed indoor theater complex would serve as an additional year round attraction. During the warmer months the area could support a full range of activities from boat rentals, water born sight-seeing and public water taxi service to outdoor markets, festivals and exhibitions.

**The extended public pavilion.**

The building project takes the form of an extended public pavilion. The principles of open public access and collective inhabitation are pursued at the building size. The physical organization of the proposed pavilion is composed of two primary systems: 1) A masonry spine composed of concrete vanes or frames variably interlaced and infilled with brick partitions. 2) A lighter frame of engineered timber columns and beams. The two systems interact spatially however the intent is to maintain their structural and associative independence. A second spine, in this case of light, is built into the core of the organization. This forms a zone of longitudinal and vertical access. On the pavilion's lower level a series of partial containments are formed by the masonry spine of the building. These could house bars or food counters. The pavilion however is otherwise left for free habitation. A visitor might therefore purchase food at one of the

Fig.80. Venice: Building and use inextricably connected to the water. Photo: the author.
proposed theater complex

Park at Pinkney St. connecting the project area to Charles St.

Area of building design exploration. See photo at right

Fig. 81. Above: Model at 1/50, detail. At the center is the area referred to in the text as an urban amphitheater; an area in which public activities at the urban water edge could occur ‘in the round’.

Fig. 82. Above: Model at 1/8. An aerial view from the Southeast. At right is the Southeast end of the island that faces the city.
counters and then be free to move within the shelter of the structure or outside to consume it. The open pavilion might also be the venue for small exhibits, concerts, or nightclub activities. On the second level restaurant seating would occupy the west side of the building while the masonry spine would house kitchens and services. Outdoor decks are also accessed from this level as well as from the third level office space.

The open Southeast end of the island forms a small plaza facing the city. This is to be surfaced in brick. Steps and landscape intensifications are formed in concrete. The plaza would contain two large trees to provide shade and vertical definition. This space should provide the necessary physical definitions needed for temporary market stalls and the like. As the citizen faces the proposed pavilion from this plaza she views its East elevation. This face of the building offers a relatively solid aspect. Concrete and brick are the dominant materials. This is envisioned as the urban face of the proposal. As the visitor enters this side of the building he passes first through a dense screen formed by the masonry spine. As he moves West toward the water - or up into the building - he passes through a form transformation into a predominantly timber and glass environment. On its West side the building reaches into and over the water. Concrete builds across the form finding its way into the river. However, on this West side the pavilion presents a face built primarily of timber screens with glass and wood closure. This is a distinctly lighter face, it is the river side of the building. On this side are found open wooden docks and decks; some floating and others built up into the second level. Here the built defini-

Fig. 83. Model at 1/8" = 1'. Aerial view from the Southwest.
Material and context.

Brick is the predominant building material on Beacon Hill and in much of the residential construction on the Boston peninsula. On Beacon Hill it is often found under foot as well as on the town houses. Used in this way the material becomes a spatial constant; building the environment, indeed the ecology, of the city. Such articulation is connected not to image or representation but to the physical fact. In autumn, for example, fallen leaves on brick walks generate a characteristic poetic of experience.

Granite is traditionally the foundation and the wearing material in New England. It is hard and tough and was readily quarried across the region. Granite was used for foundation walls, steps, and cobble stones. In the proposal presented here concrete is seen as a surrogate for this material. However concrete is a plastic material and a spanning material. It therefore must be articulated in a manner consistent with the potential of its properties. Thus brick is no longer necessary for load bearing and is freed for independent definitions of territory.

A number of boat houses can be found along the Charles. Here one finds an entirely different experiential world. Passing from the street into the sanctuary of these buildings the citizen finds an environment of wood, glass and light. The organization is oriented to the water. The boat houses at Harvard, Boston University, and M.I.T. are examples. The Harvard buildings are of masonry while the others are mostly of wood. In all cases however the experience of timber dominates; it builds the boat
racks and is often under foot. The boat storage floor is flooded with light from the river. Timber and glass characterize the form near the water. The upper levels of the buildings often exhibit exposed timber framing. Wood becomes increasingly central to the experience of the building as one moves toward the light and the water. In the best examples the wooden doors leading to the water are set in light. The wide skirts leading to the water are characterized by the sound and feel of the planking.

These contextual references have informed the design explorations of this thesis. As co-determinants they reflect convictions concerning questions of context. I believe that contextual connections are best found directly in the physical environment. The study of materials, dimensions, and building methods can offer a wealth of associative connections. The cultural implications of these determinants are found in their use and their experiential qualities. It is largely in this manner that cultural "image" is truly formed. Mimetic reference to style or to historicist imagery can only lead toward affect.

Fig. 85. Model at 1/8" = 1': Aerial view from the North. Early photo of the ground floor. Later the concrete vanes were to undergo changes as seen in photo on facing page.
Fig. 86. Model at 1/8" = 1': Early photo from the West showing wooden docks and water taxi stop.

Fig. 87. Model at 1/8" = 1': Later photo showing decks built over the water.
Fig. 88. Model at 1/8" = 1': Night view of East face.

Fig. 89. Model at 1/8" = 1': Night view from Southwest.
Fig. 90. Model at 1/8" = 1': View from Southeast. Note the early version of the masonry spine; compare to Fig. on Pg. .

Fig. 91. Model at 1/8" = 1': View from the Northwest. In the foreground is the viaduct from the city.
Fig. 92. Model at $1/8'' = 1'$: Section looking North.
Fig. 93. An early sketch of form intentions for the public pavilion at the water's edge.
This is the first of five drawings based on the sketch in fig. 93. These are intended to diagram the component systems which build the proposed public pavilion form. The form type is proposed as on-going; that is, the pavilion form and its variable relationship to the water can provide a model for intervention in the project area and along the Basin. However, it is imperative to note that the form itself - the product of a single vision - is not proposed as a model but rather as an instance of the type.

The above diagram illustrates the first action of the project. Concrete sheet piling and fill are employed to form the new embankment and islands. This contrasts with the current fill which sits at an angle of repose. The piling forms a vertical edge similar to - but lower than - the sea wall found on the Cambridge side of the Basin. This sharp, built edge is necessary as a base condition for the variable urban edge proposed here. Island level at its maximum is five feet above water level.
Fig. 95. Concrete vanes.

The concrete vanes illustrated in this diagram constitute the main skeletal structure of the project. It is critical that these build into the water particularly on the river side of the site. They should not be built as one-to-one forms coincident with the island.

A reference for these frames can be found in Schindler's Lovell beach house - fig. 68. Those proposed here would be larger to accommodate the dimensions of a public building. In addition they would not be as regimented. They would vary, particularly in the extent to which they reach into the water.
A secondary system of masonry walls is proposed to establish spatial definition and containments for use. These walls are of brick. They are free to build independently and therefore can claim territory not otherwise defined by the concrete frames. Significantly the brick makes ground forms and garden walls which build both into the water and out onto the open part of the island. As mentioned earlier the exterior ground surface on the island is brick as well. This system is therefore primarily a landscape intensification. Occasionally it may appear in the upper levels of the pavilion. The Lucien Kroll project in figs. 64, 66, & 67, provides reference here.
Fig. 97. Timber builds up toward the light.

Timber construction builds the experiential counterpoint to the concrete frame system. This lighter system is built of engineered lumber and not of virgin stock. The timber is supported at island level, on the concrete vanes, and on concrete piers further out in the water. It builds mainly toward the water and up toward the light. Floors and decks near the water and in the upper levels are of timber as well.
Timber roof frames and screens complete the form. These are counted on to articulate interior partitions and weather closure. Shear resistance in the upper levels of the structure is achieved with wood panels and occasionally with steel cross bracing and tension members.

As with the other systems this set of articulations is expected to build habitable spatial definitions. These would, of course, often occur at smaller sizes. In this sense the screens are analogs for the brick forms occurring nearer the ground. This is the system that builds the stairs and activates the light. It builds the places to sit and the surfaces to put things on. It articulates the form at human dimension. In addition this system carries services to the upper levels.

Fig. 98. Closure systems complete the form.

Note: The roof form that tilts up toward the light in this section is facing west. Clearly this would present a daunting problem in terms screening the sun. The section in Fig. 110 shows roof forms of this type turned to the east instead.
Fig. 99. Generating and building 'slack' territory

The generation of 'slack' territory is illustrated in the diagrams above. Rows A and B follow similar progressions. This is to illustrate that the principle is independent of any particular geometry. In this case it holds true whether the organization is orthogonal or angular.

- Column 1: These two organizations are controlled by point foci. There is no territory at these intersections. Here the deployment of form does not generate slack.
- Column 2: In this case each organization is controlled by a line. These transformations also fail to generate slack territory. Space that might be claimed by closure is really nothing more than 'left over' (this is particularly true in the angular example).
- Column 3: Here slack territory is generated. The core determinant is the 'passing' exhibited by the forms. The forms are not controlled or organized by a single line or point. They pass each other and thereby define a zone between them. The habitable space thus generated can be claimed by weather closure, ground forms, garden walls, or other built definitions. Such 'slack' zones are inherently public. This is due simply to the fact that they are generated by the placing of relative privacies. In a public building such privacies might be classrooms, offices, theaters, toilets, etc. In a house they would be sleeping areas, bathrooms, etc. Slack territory generally is: 1) public, 2) access, 3) light, and 4) open. It should be as large or larger than the biggest piece of the organization that defines it.
- Column 4: Column 4 offers quick sketches of possible building organizations. (Rows 1, 2, and 3, are schematic they do not propose building form).
This early library by Aalto is an example of a line controlled organization. The two primary built definitions do not generate slack territory. Access or public space is claimed by two methods. It may be carved from within the primary forms (for example, the hallway in #2). Alternatively it may be claimed by expanding the closure envelope; the entry and the hall (in #3) are built by this method. These actions are necessary when slack territory is not generated directly by primary form decisions.


This unbuilt chapel -also by Aalto- offers a clear example of built slack. Here -two decades after the design of the Viipuri Library- Aalto proposed an organization in which practically all access and public territory are defined directly as slack. The relative privacies of the three chapels are organized such that the space between them is available to be claimed by roofs and other built definitions. This space is also large enough to act as a public zone for the small complex.

Fig. 102. Study of 'slack' in section.
These diagrams are continued from page 90.
*5: Lifting the lid. This action is a first move for opening territory in a building section. It is point controlled and is therefore an analog for #1A. in fig. 99. pg. 90. If it is large enough it generates some inhabitable space. However, it generates no slack.
*6: In this case the lifting action is territorial. It is fully dependent on the primary structure. That is, it constitutes a purely secondary action.
*7: This case illustrates a territorial action that claims space at the largest size of the organization. It generates an independent territorial equivalent in section. Here public space is generated in section. This diagram can be compared to #3A. in fig. 99. pg.90.
A ‘passing’ in the form of an open ‘T’ (see dia. at left) generates slack territory in the section. This space is then available to be claimed by closure. In this case a conic section of glazing.

Fig. 104. Island level plan. Early iteration

Figs. 104 and 105 diagram two iterations in the organization of primary structure for the project. These drawings are plans of the concrete vanes described earlier. In figure 104, above, the concrete frames are seen as a skeletal form. The form of a spine is taken rather literally. (This is the plan that was operative when the model at 1/8" = 1' was built). At the largest size this plan proves to be rather linear and singular. It lacks alternations with the water.

Figure 105 represents a later version. Here an attempt is made to define a series of use-territories which alternate with the water. These pieces of spatial organization are seen as being more useful. The organization is less linear and is based more on alternations. The aim here is to build the access to the water as slack rather than as openings in a wall.
Fig. 105. Island level plan. Later intentions.
Fig. 106. Plan. Viaduct level. Earlier version. Reference Fig. 104
Fig. 107. Plan. Island level. Earlier version. Reference Fig. 104
Fig. 108. Overleaf: Plan, Viaduct level.
Fig. 109. Overleaf: Plan. Island level.
Fig. 110. Overleaf: Section looking North through island level entry.
Overleaf: Fig. 111. Overview of Charles River Basin showing the area of river and wetland filled since the 17th Century. Darker area shows the current form of the Basin.

In order to place this thesis in perspective it is necessary to briefly establish a physical history of the urban Charles River. The Lower Basin—in particular the reach below the B.U. Bridge—is entirely man made; this text will concentrate on the development of its form. The Charles River Basin is technically the term used to describe the last reach of the river between the Watertown Dam and the Charles River Dam. I will use the term "Lower Basin" to mean the river below Harvard University.

4.1. The Bridges.

The development of a transportation network between Boston and surrounding towns played an important role in developing the form of the Lower Basin. In particular the bridges built in establishing that network altered the use, and thereby the form, of the Basin.

In the early period after the European invasion the problem of crossing the river was critical to its use. During the early 17th Century there existed few means of crossing the Charles to connect Boston with settlements north of the river. Boston was virtually an island save for a narrow neck connecting it to Roxbury and the mainland south of the Charles. Ferries were, of course, necessary and became profitable. The most important early ferry was begun in 1631. It crossed the water between Charlestown and Boston. In 1640 control of the ferry was granted to Harvard University by the Massachusetts authorities. The university went on to collect rent on the facilities for the next one hundred and forty five years.

In 1662 a bridge was built near the site of the present Anderson Bridge that connects Harvard Sq. to Allston-Brighton. It was the first bridge to cross the Charles east of Watertown. This bridge did not significantly threaten the Charlestown ferry. The route over the bridge and southeast to Boston was about twice as long as that which led to the ferry. The bridge was initially a wooden drawbridge allowing river transport to pass on the way to Watertown. Though boat traffic beyond this point of the river was not to prove critical in the long run, the bridge represented the first of many hindrances to shipping on the Charles. In effect it signaled the coming victory of land transport over water transport in the area.

More important to the future form of the Basin was the Charles River Bridge. This structure was completed in 1786 at the site of the existing Charlestown ferry, and was for a time considered the greatest American bridge. The ferry controlled by Harvard was obviated by the new bridge but the University—never one to be short changed—obtained compensation throughout the seventy years during which the bridge was a commercial venture.

The Charles River Bridge was the first of many to be built across the mouth of the Charles and across the Lower Basin. Each was built for profit by groups of entrepreneurs who were granted the privilege by Massachusetts authorities. Each was to add another drawbridge and therefore another hindrance to shipping on the Lower Charles. Shipping interests naturally took a dim view of these developments. Nonetheless the tolls on the Charles River Bridge were profitable enough to entice other
groups who quickly jumped into the business.

In 1793 the West Boston Bridge was built on the site of the current Longfellow Bridge. In 1809 a third toll bridge, known as the "Canal" or "Craigie" bridge, was built on what was later to be the site of the Charles River Dam. The bridge was named after Andrew Craigie a prominent -and apparently somewhat devious- Cambridge real estate speculator. It was Craigie who organized financing for the bridge project to bolster the value of his land holdings in East Cambridge. Two more Bridges up-river between Harvard University and Captain's Island (at the foot of Cambridgeport) were soon to follow. These were the River St. Bridge in 1810, and the Western Ave Bridge in 1824. In 1850 the Cottage Farm Bridge was built on the site of the current Boston University Bridge; and in 1890 the Harvard Bridge crossed the river at Massachusetts Avenue.

Before the construction of the dam all the bridges on the lower Charles were equipped with draws to allow passage of masted vessels. During the 18th and early 19th centuries shipping was the critical transport link for manufacturing and development in Cambridge. The hindrance to ship passage caused by the bridges was a concern to the authorities. Rights to construct toll bridges were granted with the requirement that fees be paid to ships forced to pass the new draws. Nonetheless water transport on the Charles was soon to be choked off. Many factors contributed to the end of shipping on the Charles and among them was the built form of the river. That form was beginning to change drastically; the bridges and their effect on the river's use were indicators of things to come.

An 1852 map of the river between East Cambridge, Charlestown, and Boston illustrates the situation clearly; see fig 106. At the mouth of the river, in a short reach from City Sq. to Cambridge St., there were seven bridges, some within a few hundred yards of each other. The Charles River, Warren, Craigie, and West Boston bridges all carried roads while the Boston and Maine, the Fitchburg, and the Boston and Lowell railroads each had their own rail carrying bridges. On the map the piers of the harbor are conspicuously absent up river of the Warren Bridge. Filled land around the north-west approach to the Craigie Bridge had already begun to pinch off the mouth of the river. This logically became the location of the future dam. For better or worse the disconnection of the river from Boston Harbor had begun in earnest. Future events would only serve to complete the job.

4.2 Shipping on the Charles.

The use of the Lower Charles as an urban transport waterway is for the most part a question of activity in Cambridge and Somerville before the hegemony of the railroads. Boston’s main sea link had always been to the south and east of the Shawmut Peninsula which it occupied. Its relationship to the Charles River therefor had a very different character from that of Cambridge. Boston initially had its back to the river while Cambridge faced the river. Like Boston, Old Cambridge -the area around Harvard University- was first settled in the 1630s. Unlike Boston it had no direct sea link; it depended on the Charles for delivery of goods and materials. Further downstream
Cambridgeport and East Cambridge were soon to appear. These areas were to become the center of manufacturing and therefore of water transport along the Charles.

"From the time of settlement until the closure of the Charles River Dam in 1908, the Charles River was a tidal stream that was fully navigable only at high water...The channel of the river was narrow and skirted the Boston shore...At high tide the river was navigable by schooner to Watertown Square and remained so until the construction of the Longfellow Bridge in 1906. The entire Cambridge side of the river was a half tide shore, with flats exposed much of the time and no deep water along the shore to float a ship at low tide. This was not insuperable, however; coastal schooners, shoal draft vessels designed for such conditions, would wait in the channel for the rising tide and tie up to
a wharf before the falling tide stranded them on the flats.\(^2\)

An analogy existed in London where the River Thames is a tidal estuary. Its vast, chaotic port facilities lived and breathed to the rhythm of the tides. Though exposure of flats was not a problem the flow of the tides dictated the time and direction of transport. Smaller vessels, called lighters, which carried goods between ships and facilities were designed to move only on the force of the tide. These boats were simply guided by their operators as they moved upstream or downstream. In the Boston area the tides, which average around ten feet, were not a significant inhibitor to water transport. It was the bridges which presented a more daunting and growing impediment to shipping on the Charles.

"...by 1900 the eight highway and railroad bridges downstream were a real obstacle course. None the less, as late as 1896 the Prison Point draw on the Miller's River opened 552 times and the Canal Bridge (Craigie Bridge) draw opened 4,468 times."\(^3\)

Traffic consisted mainly of coastal shipping, generally of raw materials destined for East Cambridge manufacturers and distributors. Coal, sugar, lumber, and granite were the common cargoes. Cambridgeport was for a while envisioned as an international sea port. Real estate speculation is said to have been in part driven by these hopes. In 1805 Cambridgeport was declared a United States port of delivery and its early form reflected this. Canals were dug into the marshy areas along the river and wharfs were built to receive the expected shipping. The river bank began to take shape as a built edge.

Between 1807 and 1815 embargo and then war served to ruin any hope for Cambridgeport as an international commercial shipping center. The area eventually turned to manufacturing.

The post Civil War expansion of the railroad network signaled the beginning of the end for coastal shipping. However East Cambridge, closer to the river mouth, remained a functioning port for some time.

"The lumber traffic began to shift to the railroads before 1890, but commerce in stone and coal was heavy well into the 1920s... The Cambridge Electric Light Company's Kendall Station received oil by barge until 1985..."\(^4\)

4.3 Railroads

The form of the Charles River Basin was of course influenced by the proliferation of railroads that began in the mid 19th century. Said influence can be considered in to distinct pieces: 1) its effect across the river mouth, and 2) its effect along the banks of the Lower Charles.

As rail transport supplanted coastal shipping, lines of track began to progressively block the mouth of the Charles. The first railroad connecting Boston with the mill towns to the North was completed in 1835. This was the Boston & Lowell and its route carried it through Somerville to a terminus in East Cambridge. It was the first railroad chartered in Massachusetts. The Boston & Lowell was soon to be joined by numerous lines which by 1865 crossed the river to Boston on five separate trestle bridges. As we have seen these bridges were to have significant impact on
the form and use of the river mouth. The Millers River Basin between East Cambridge and Charlestown was soon densely packed with track. As the railyards sprawled across the flats the Millers River was steadily filled. A vast no-man’s land was established which exists to this day.

By the end of the first decade of the 20th Century the density of track crossing the Charles into Boston from this area offered graphic evidence of the supremacy of rail transport. It was at this time that the first Charles River Dam was built. As shall be noted the dam had become an absolute necessity. However, with respect to the use of the Lower Charles it was simply a final exclamation to the reality already imposed by the railways.

Along the banks of the Basin the impact of the rail lines was less critical. The primary rail approaches to Boston developed from the North and South. Rail density from the West never approached the levels found at the Millers River basin. Nonetheless there was a significant difference between the Cambridge and Boston banks of the Charles. On the Boston bank the rail line ran due East from what is now the B.U. Bridge. In this way it connected with South Station. This route ran south of the territory occupied by the developing upper class residential areas of the Back Bay. Critical to the form of the Basin is the fact that the railroad did not run between the developing neighborhood fabric and the water. In contrast the Union R.R. link across the Charles at Cottage Farm (now B.U. Bridge) ran North-East along the river’s edge before turning north at East Cambridge. This route ran between the Cambridgeport neighborhood and the river. It therefore reinforced the barrier defined by the manufacturing area which occupied the zone along the water.

The railroads made manifest the primary difference that had developed between the two banks. The North bank had become a shipping and, later, a manufacturing area. The South bank was instead destined to become an upper class residential area. The development of these banks was to finally determine the form of the lower basin.

4.4 The River banks; residential development, manufacturing.

The Charles River Basin as it now exists is entirely the product of engineering effort. In its pre-colonial days the Charles was an estuary that filled with each high tide past the location of the Eliot Bridge towards Watertown. At low tide large mud flats were exposed on both sides of the river. Inland of the mudflats were tidal marshes. On the Cambridge side these were divided by the colonists into long strips of real estate and harvested for marsh hay. The marshes between Cambridgeport and East Cambridge were eventually owned entirely through these narrow holdings perpendicular to the river. The land near the river on both banks was essentially useless for building. It was not till the end of the 18th century that concerted effort was made to fill low lying areas in order to claim land for construction.

In Cambridge the bridges and the canals were the first built interventions into the wetland. These early interventions tended to lie perpendicular to the main direction of the bank. Therefore the physical edge of the water was active both in function and in form. Filling of wet-land at first grew around these built incursions into what was to later be the lower basin. For example, the
approach to the West Boston Bridge (now the Longfellow Bridge) immediately became prime retail real estate. In the 1860s Cambridge still exhibited a form characterized by fingers of built fabric reaching out across the flats to the river. Embankments running along the river did not appear until the last seventeen years of the 19th century.

In Boston the form of the Basin had a somewhat different genesis. Early filling of the flats on the West side of the Shawmut peninsula tended to hug the profile of existing dry land. Boston's commercial and shipping activity was concentrated on the Eastern side of the peninsula facing the harbor. Territory on the West was generally taken for residential use. Canals and wharfs did not play a part in the form development of the southern bank of the Basin. Instead a mill dam completed in 1821 became the core determinant. The dam stretched across the Back Bay; it was intended to generate power from the flow of the tides for mills envisioned to be built along it. For a number of reasons, including the rise of mill towns along the Merrimack River as well as the growing use of steam power, the mills never appeared. Instead the Dam remained a causeway and the flats behind it became a wealthy residential area. The dam carried what was later to be named Beacon St. in a straight line running from Beacon Hill to what is now Kenmore Sq. In a single gesture this form defined to its South the future city fabric of the Back Bay and to its North form of the Lower Basin. The land filled behind the causeway is still known as the Back bay and the direction of its built fabric still carries the physical memory of the mill dam.

4.5 The dam

By the turn of the century the form of the lower Charles River was approaching its current state. The condition of the river was however reaching a low point. Sewage and other pollutants were being discharged directly into the Charles. With its mud flats exposed twice daily the River had become a malodorous nuisance. The solution was the Charles River Dam. It was in fact the dam, completed in 1912, that brought the Basin into existence. It can be said that the vision of a park lined basin with water levels unaffected by the tides was the progeny of the American Parks and City Beautiful movements. In any case the success of the endeavor is unquestionable. Almost instantly the river was transformed from an embarrassment into a central amenity.

The urban fabric of the Back Bay, Beacon Hill, and the West End had been built directly to the water's edge. However, the condition of the water had caused these neighborhoods to face away from the river. Practically overnight they were provided with a new possibility for contact with and use of the water. That use would of necessity be conditioned by the new state of the river.

The Charles had been remade. Where once there had been a functioning water way there was now a pool sustained in a suspended animation. The river was entirely cut off from the harbor and from its logical connection to the sea. The locks which were provided for limited shipping did nothing to alter the physical reality of the form. In addition a viaduct was run
above the dam intended to screen the Basin from the rail yards to the East. This it certainly accomplished. However it also sealed the Basin from any associative connection it might have had with the harbor beyond.

For thousands of years the river had lived and breathed and stunk with the rhythm of the tides. With the completion of the dam it was captured, neutered, and dressed in the finest of pastoral outfits. What was certainly an end for the river was in greater measure an opportunity for the city fabric that surrounded it. The results of that opportunity were in large measure controlled by the Parks Movement through Frederick Law Olmsted and later Charles Eliot.

In the 1970s the Charles River Watershed was given a flood control system when the authorities purchased up-river wetlands to be preserved as natural overflow areas. As part of the flood control system the US Army Corps of Engineers built a new dam near the Charles River Bridge.

4.6 The park lined river edge and the automobile.

In the 1870s Olmsted, already famous for New York's Central park, was enlisted to help the newly formed Boston Park Commission. This three member board had been created by the city of Boston in response to public demand. The Commission was initially charged with addressing two problems: 1) the need to preserve space for public parks within the city, and 2) drainage of the stagnating Back Bay. In 1881 Olmsted moved to the Boston area and was to remain for the last years of his life. In his office were his son, Frederick Jr., and the young Charles Eliot. These two apprentices were to carry the Olmsted vision after his death in 1902.

In 1892 Eliot and others were able to convince the State legislature to create the Metropolitan Park Commission. This commision was mandated to purchase land for municipal park land and in this it was quite successful.

"It promptly acquired Revere Beach, the lower banks of the Charles River, and land for parkways from the Blue Hills to the edge of Boston. By 1902 the Metropolitan Park Commission controlled about 15,000 acres, thirty miles of river frontage, ten miles of ocean shoreline, and twenty two miles of right of way for parkways, an impressive achievement for one decade’s work.”

In this manner the banks of the lower Charles River came under the control of the Parks Movement. With the Charles River Dam about to be built this control was to be crucial to the form and use of the Basin.

The basic form type that became the continuous condition of the Basin’s banks can be found in Olmsted’s plans of the 1890s. Plans of Olmsted’s park system show the Lower Charles lined with ribbons of greenery along both banks of the future Basin. The proposed treatment of the water’s edge Though commendable is formally singular. The river bank proposals seem almost an afterthought to the much larger and more impressive park system running southward to Franklin Park. Lacking in response to the city fabric these park strips run unbroken along the water. At no point does the park expand to occupy territory in the fabric; nowhere does the built fabric reach across the park
to the water. Like the lining of a hose the river bank parks effectively insulate the city fabric from the water.

Charles Bank at the foot of Boston’s West End, and The Front on the opposite bank at East Cambridge were the exception. These parks, at the proposed location of the dam, were designed with more dimension. At the end of the long promenades that ran along the banks these larger parks provided an expansion of public territory and an anchor for the extensive park system that Olmsted had designed. Seen at the size of the city it is impossible to deny the powerful coherence with which Olmsted had constructed his plan.

Olmsted’s park system (later named The Emerald Necklace) was potent and effective medicine. At the least it proved the feasibility of concerted municipal action to achieve city-wide results. At best it provided beautiful and distinctive open space for relief from the growing urban congestion. Yet there is something disquieting in Olmsted’s plan. A comparison between the Boston Common and the “Necklace” reveals an interesting difference. While the Common is an integral component in the city fabric the Emerald Necklace is at pains to insulate itself from that fabric. The Common is laced with paths which respond directly to the surrounding streets. It is circumscribed by roadway yet threads from the city fabric weave through it, changing rhythm but maintaining continuity. Its form and its dimensions are in essence built by the structure of the city.

By contrast the Emerald Necklace snakes through the urban tissue with a calculated lubricity. Its dimensions are colossal; there can be little doubt that this is a monumental gesture, a pastoral mega-structure. At the city size the form of the Necklace resembles nothing so much as a giant gastro-intestinal tract, complete with varying stomachs and runs of gut. The parkway roads that run continuously along it fit as closely and completely as a biological membrane. The park system provided a passage through the city but emphatically not in the city. In this it was true to the theory that stood behind it; and in this it was the logical precursor of the automobile access systems which were soon to come.

It is perhaps ironic that the automobile desecrated the park system so beautifully wrought by the mega-romantics of the turn of the century. As it happened the space-time tunneling effect of the park belts suited the automobile perfectly. It is in fact a central requirement of efficient auto transport systems that access run through the urban fabric with a minimum of contact and a maximum of lubricity. The parkways were intended as a system of access for the romantic enjoyment of the landscape. As the automobile took over the city they became the most readily appropriated routes for higher speed travel. In Boston this was nowhere more true than along the Charles River Basin.

During the 1920s the volume of cars in Boston had begun to severely restrict efficient movement of traffic. Among many actions and proposals of the late 1920s was the Cambridge Parkway on the East Cambridge bank of the Charles. The park belts along the newly formed Basin had insured that the urban tissue would not reach the water; now the parks themselves fell victim to the automobile.

“A narrow strip of the river front was granted to the Metro-
politan District Commission for a park in the 1920s, but after the Cambridge parkway opened in 1928, between the Charles River Dam and the West Boston Bridge, the traffic posed such a hazard to children crossing the street that the bathhouse and ball field near the river had to be abandoned. Olmsted obviously had not been able to consider the effect of the automobile in his 1894 plan."

In 1928 a recommendation was made for a highway on the Boston bank to be placed on the 1910 embankment known as the Esplanade. The plan met with opposition and was dropped. In the late 40s it was revived and by the early 1950s Storrow Drive became a reality. As Max Hall notes:

"It was built parallel to Back Street on the filled land that was the original Boston Embankment of 1910, and the Back Bay was again cut off from the river."

By the end of the fifties express roadway circumscribed the Basin. The relationship between river and city had arrived at the condition it is found in today. As noted above, as early as the late 20s the automobile was cutting the city off from the water’s edge. By the late 50s the effect was almost total. Today the Boston bank of the river is inaccessible for miles save for occasional pedestrian overpasses. These provisional injectors are minimal and often labyrinthine. From Leverett Circle at the dam, to the River Street Bridge in Allston, the overpasses are the only way of accessing the water. On the Cambridge bank things are better only in that the barrier is less harsh, less physical. Nonetheless Memorial Drive runs without break and can be crossed only in a few places without braving traffic. On Sundays in the summer parts of Memorial Drive near Harvard are closed to auto traffic. Even this minimal gesture drastically alters the experiential -if not the formal- connection of the city to the water.

4.7 Neighborhood fabric and the River

Differing relationships of city fabric to water can be found among the neighborhoods which developed near the river. Some, such as the Back Bay, exhibit organizations which run parallel to the river bank. Others, such as Beacon Hill and the former West End, are characterized by directional fabrics which run perpendicular to the bank. It is in part for this reason that the foot of Beacon Hill is the subject of design investigation for this thesis.

The field direction of Beacon Hill runs primarily toward the river. This is due not only to its orientation but also because it runs steeply downhill to the embankment. This is important because it establishes the experiential connection of the fabric to the river bank. The neighborhood originally tended toward the river both in plan and in section.

19th Century views of the north-west side of Boston show clearly the direct relationship of the city to the river. Charles St. ran parallel to the bank at the foot of Beacon Hill. Significantly it did not run exactly along the water. A row of houses sat between it and the river. At Charles Circle this important street opened onto a larger piece of public territory lying at the foot of the West End. In contrast to Charles St. this open space did sit directly at the water’s edge.

In this configuration the public territory and access exhib-
ited an alternating relationship to the water. This form type is found in many urban water edges. Venice for example contains a rich variety of water edge conditions. In any case it is clear that before the embankment projects the river bank was active both in form and in use. Unfortunately sewage outflow and other pollutants fouled the river with increasing severity as populations grew in the 19th Century. The interventions of the Parks Movement were (in part) a response to these conditions. In this the river bank projects were both necessary and successful. However they served to transform the banks into a singular experience.

It is simply this singularity that limits the potential of the Charles River Basin as an urban form. It is not the notion of parks which constitutes a problem; parks are an invaluable amenity along an urban river bank. In Boston however these parks are continuous and therefore they begin to limit the variety and vitality of river use. It is just this variety (not limited to scenic or recreational activity) that expresses the collective or civic life of an urban river. The built river edge, backed by direct physical connection to the life of the urban fabric, is an essential and natural form element of a river city.

3 ibid
4 ibid
CHAPTER 5: THE PASTORAL METROPOLIS

PASTORAL METROPOLIS: THE URBAN PARKS MOVEMENT AND BOSTON'S CHARLES RIVER BASIN
Overleaf: Fig. 113. Frederick Law Olmsted’s plan for the Boston park system; known as the 'Emerald necklace'. Source: Julius Gy. Fabos, Gordon T. Milde, & V. Michael Weinmayr, Frederick Law Olmsted, Sr. Founder of Landscape Architecture in America, U. of Mass. Press 1968.
Introduction

During the latter half of the 19th century and the early decades of the 20th century the American Parks Movement and later the so-called “City Beautiful” Movement served to establish an urban ethos which to this day impacts the form of American cities. The present configuration of the Charles River Basin and its relationship to the surrounding urban fabric are to a great extent the product of these attitudes. Any proposal involving the condition of the Basin must therefore address the concerns and positions of that period.

Without question the seminal and central figure of the time was Frederick Law Olmsted; often called the father of American town planning. Olmsted was practically omnipresent; during the late 19th Century his name could be found associated with an astounding array of projects around the country. To a great extent it was Olmsted who shaped the prevailing views on urban and suburban space. However it is important to note that he was a product as well as a shaper of his time; a time which was in a sense one of reckoning. A symbolic victory over the great American wilderness was in sight. To Europeans perhaps the vast continent still seemed practically endless. In fact the limits of the continent had been marked. With the completion of the cross-continental Railroads the topology of the North American landscape was irrevocably altered. Its quasi-mythological status would have to be reconciled with new spatial realities. The dream of the boundless wilderness would henceforth be juxtaposed with the hegemonic growth of the cities. The reconciliation of the dream with the dawning reality was to have powerful effects on the manner in which growing populations were to occupy the land. An American spatial credo was coalescing; a credo that was to spawn anti-urban individualist ideals in the ensuing century. The suburban and exurban dream of the detached, single family home is, to this day, the product of that ideology. The “house lot” is no less than an icon; a token homestead carved from the mythical image of the boundless wilderness.

In the mid 19th Century however, the suburban explosion was still to come. Olmsted’s time was one of astronomical growth for cities across the industrialized world. In North America the Jeffersonian dream of a pastoral agrarian society had vanished. A new cosmopolitan reality was rapidly coalescing in the cities. In addition it was a time when Capitalist interests consolidated and centralized their control of the economic structures and therefore power structures of western society. Olmsted was a contemporary of Karl Marx and Frederick Engels as well as of Thoreau, Emerson, and Ruskin. At a time during which the physical, economic, and social condition of the urban working class was reaching a nadir these figures represented radically differing attitudes in the inevitable calls for change. It was the position held by Olmsted and others that was to carry the day in the United States. At once romantic and reformist this vision managed to be simultaneously social and paternal. In ad-
dition it is said to have influenced the form and theory of suburban or “new town” planning worldwide; an influence clearly visible to this day.

The text of this thesis seeks to explore the attitudes and conditions which affected and were affected by Olmsted. A ground is thereby laid on which to propose built connections of the city to the river. This in turn establishes a foundation for the design work that forms the core of this project.

Fig. 114. Frederick Law Olmsted, Sr.
5.2 “Nature” and the “natural”

5.21 American attitudes: The Scenic experience.

scen’ic, scen’ic-ál
Pertaining to scenery; dramatic; theatrical.

The parkway, the scenic vista, the nature walk; these are all legacies of post pioneer North America. The American “nature” experience is for the most part a vicarious phenomenon projected on the gently curved glass of the windscreen or the video screen. Millions of tourists converge on state and national parks every year yet the vast majority never venture more than a few hundred yards from their cars. Snow capped peaks are enlisted to sell four-wheel drive vehicles most of which will never leave the suburban blacktop. Cheap beer is swilled on television by rugged mountain men braving wilderness scenes. Haute couture sells the outdoor look to millions who will never wear it further than the mall. Meanwhile Hollywood cynically and self-indulgently canonizes indigenous peoples. The Indian, the cowboy, the outdoors man, the big-sky: American self image grasps desperately at these icons. It is, quite simply, a grasping at lost images; images of an experience which for most never existed. The North American “nature” experience is in fact a scenic experience. “Nature” serves as backdrop for a culture of consumption and entertainment. It is a syndrome whose roots lie in the crumbling agrarian culture and in the swelling cities of Olmsted’s time.

There can be little doubt that Olmsted believed in the city as an inevitable and desirable expression of progressing culture. Likewise the impact of his work on town planning worldwide is indisputable. Nonetheless questions arise concerning Olmsted’s urbanism. For all his professed love of the city the body of his work points to a desire to apply a pastoral aesthetic to the emerging metropolis. Clearly Olmsted was deeply committed to improving urban life. His vision however seems to have called for solutions which would provide de-urbanized spaces in the city. Improvement in his view apparently depended on rendering the experience of the city less city-like. Biographical consensus seems to tie this vision to his background. Olmsted was a product of puritan small town New England; a Connecticut Yankee. According to Irving Fisher Olmsted was brought up to appreciate “nature” and it is interesting to note the manner in which Olmsted is described to have experienced natural beauty.

“Availing themselves of the improved network of turnpikes, public roads, and canals which veined New England by the 1820s, the Olmsted family toured the New England and New York countryside in their own coach. Years before such places had become the popular Meccas of curious tourists, the Olmsteds had visited the White Hills, Trenton Falls, Niagara, and Lake George. In 1838, when Frederick was sixteen, his father recorded in his diary a journey to the White Mountains which he made with his wife and their two sons. They enjoyed visiting scenes which had been painted by the landscape painter, Thomas Cole, in 1836......”1
Fisher claims that Olmsted’s parents took him in search of the “picturesque” and that “these walks and drives in search of natural beauty Olmsted recollected as the happiest memories of his early life”. If this is true we can see here the roots of Olmsted’s belief in the Park and the Parkway as means of experiencing nature. This was not the nature experience of the pioneer, explorer, or outdoors man. Nor was it the experience of one constrained by fate to a rural existence. It had been more than two hundred years since the settlement of New England began in earnest: already the wealthy Yankee saw “nature” as outside his everyday space. He sought nature as a tonic. His nature experience was in essence a sophistication rather than a communion.


In the eyes of the European arrivals the vast American landscape was a glorious beast to be tamed and put into service. And so it was. The fact that some of the American West remained to be “won” did not diminish the reality that in the East by the mid 19th century the battle had long been over. By Olmsted’s time the original Puritan immigrants had fully established themselves and a new wave -mostly Irish- had occupied the lower economic strata. As the agrarian society gave way to the industrial revolution those lower strata consisted increasingly of the industrial working class. It was these people who formed the swelling populations of 19th Century cities. In two centuries American settlement space had leaped from a landscape of scattered villages to the burgeoning industrial metropolis. In some cases, such as Chicago, change was even more dramatically telescoped.

The landscape was being conquered and, with the battle almost won, a touch of nostalgia seemed to drive a desire for reparations. Of course there was -and is- no turning back; the sylvan idyll, free and virgin, could not be revived. Reparations could only be approximated through preservation and through increasingly obvious simulacra. Meanwhile, in the cities, the speculative fever of unchecked Capitalist real estate interests controlled the growth of the urban fabric. Conditions in the slums became untenable. The prototypical New England liberal of the day was appalled, clearly something had to be done.

Olmsted and others realized that the city would continue to grow. They realized also that private real estate interests would not willingly provide basic spatial amenities for the population. Overcrowding had become endemic and, to the alarm of the authorities, there had been outbreaks of cholera and other diseases. In New York City Central Park, Prospect Park, and a system of parkways intended to provide a continuous “natural” experience woven through the metropolis, were proposed as partial solutions. These proved to be the seminal projects of a movement that was to sweep the country.

Though the parks did not directly address the housing problem, and only minimally served the poor, there can be no doubt of the success and importance of these projects. One need only imagine Manhattan without Central Park to understand the sig-
nificance of Olmsted’s effort. It must also be understood that Central Park was built in the face of daunting opposition from both Capitalist interests and a corrupt city government. Though substantive legislative reforms were to come later it would be overly cynical to fault Olmsted for directing his efforts in the aesthetic realm. More fruitful instead might be a glance at the vision of urban space which Olmsted and his partner Vaux put into practice.

5.23 The panorama, the diorama; nature and the love of ruins.

Olmsted professed various health and moral benefits in support of his Parks vision. These seem questionable in retrospect but at the time they were compelling to the concerned intelligenzia which Olmsted sought to reach.

"It [science] has shown, for example, that under ordinary circumstances, in the interior parts of large and closely built towns, a given quantity of air contains considerably less of the elements which we require to receive through the lungs than the air of the country or even of the outer and more open parts of a town, and that instead of them it carries into the lungs highly corrupt and irritating matters, the action of which tends strongly to vitiate all our sources of vigor." ²

Despite these statements there seems to have been a deeper force driving the Olmsted opus. The core of his work appears to have been set in convictions and concerns about the spatial and aesthetic experience of the city.

"The irritation and waste of the physical powers which result from the same cause, doubtless indirectly affect and very seriously affect the mind and the moral strength; but there is a general impression that a class of men are bred in towns whose peculiarities are not perhaps adequately accounted for in this way. We may understand these better if we consider that whenever we walk through the denser part of a town, to merely avoid collision with those we meet and pass upon the sidewalks, we have constantly to watch, to foresee, and to guard against their movements........Our minds are thus brought into close dealings with other minds without any friendly flowing toward them, but rather a drawing from them........This is one of many ways in which it happens that men who have been brought up, as the saying is, in the streets, who have been most directly and completely affected by town influences, so generally show, along with a remarkable quickness of apprehension, a peculiarly hard sort of selfishness. Every day of their lives they have seen thousands of their fellow-men, have met them face to face, have brushed against them, and yet have no experience of anything in common with them." ³

These phrases in particular hint at a deep aversion to urban
spatial experiences. Yet the phenomena he describes were not simply the products of the emerging industrial metropolis. The city, along with its characteristic brand of constricted personal and inter-personal space, had been part of human settlement for millennia. Olmsted's attitudes need to be contrasted with other views of urban human interaction. The city can be seen as the primary arena of democracy, expression, and freedom. Seen from this position it is precisely the density and anonymity of the city which make it accepting of diversity and the exchange of ideas. Therefore it is the close interaction of people, on the streets, squares, and steps of the city which enrich the cultural medium. Spaces which are distinctly urban in character are often those most conducive to cultural and social intercourse. Nonetheless, Olmsted's negative convictions on urban space inform the lasting legacy of his work. It seems probable that they lie at the core of Olmsted's stated aim; that of simulating a "natural" or rural experience in the midst of the urban fabric. It was important -according to him- to provide the most convincing impression of escape possible.

"We want, especially, the greatest possible contrast with the restraining and confining conditions of the town, those conditions which compel us to look closely upon others without sympathy. Practically, what we most want is a simple, broad, open space of clean greensward, with sufficient play of surface and a sufficient number of trees about it to supply a variety of light and shade. This we want as a central feature. We want a depth of wood enough about it not only for comfort in hot weather, but to completely shut out the city from our landscapes". 4

This he pursued with total conviction and unquestioned skill. The parks were masterfully designed and constructed to provide panoramas and verdant screens which shielded the user from the surrounding city. It was a consummate exercise in scenography; no less theatrical than the ordered park spaces of the French Baroque. Olmsted is adamant in claiming that his work is an art. More to the point, he connects his work to landscape painting thereby indicating his scenic intentions.

"Landscape Architecture is the application or picturesque relation of various objects within a certain space, so that each may increase the effect of the whole as a landscape composition. It thus covers more than landscape gardening. It includes gardening and architecture and extends both arts, carrying them into the province of the landscape painter. In all landscape architecture there must not only be art, but art must be apparent. The art to conceal art is applicable to the manipulation of the materials, the method by which the grand result is obtained, but not to the result which should not be merely fictitious nature, but obviously a work of art -cultivated beauty." 5

One need not reach far, I believe, to find a parallel in the
grand dioramas of the Museum of Natural History. The American appreciation of nature had become analogous to the detached love of ruins. It had been transformed into a cultivated appreciation connected to taste and morality.

Significantly the parks, though they are products of an urban vision, do not necessarily constitute an urbanist vision. In contrast Hausmann's merciless surgery on Paris, whatever its political or formal faults, was unflinchingly urbanist. The Paris work - practically contemporaneous with the New York projects - was ostensibly undertaken to address similar problems. It amounted to no less than a spatial redefinition of the entire city. It was not the trees lining the new Boulevards which altered the Parisian urban experience. It was the dimensions and organization of the new streets relative to the people and to the remaining fabric which imposed a new condition on the city. Hausmann had attacked the Parisian fabric directly as the medium and field of his operation. The result was an altered urban experience rather than a provision for escape from it.6

In the city it is the urban which is natural. Collective urban spaces exist across history and culture: the Agoras, the Piazza Del Campo, San Marco, Red Square, Tienanmen square. These accomplish varying, more or less desirable, collective ends; often without a patch of green. The Italians use the phrase 'scendere in piazza' (to go down into the piazza), meaning to take part in a demonstration. This has more than political significance; it speaks of an ideology of urban space. The large public space is seen as a collector or condenser rather than a diffuser. The piazza is thus a spatial embodiment of public interaction; a place where people gather, as opposed to a provision for expanding the space between them.

My aim here is not to deny the importance of parks - clearly a large city needs diffusion spaces as well as condensers. Rather it is to place Olmsted in a context of urbanism and thereby to gain a view of the 19th century American position; a position caught somewhere between the landscape and the city. It was a position that ultimately constituted a concerted effort to render the growing city less city-like. In Central Park the American landscape myth is consecrated. No longer is the city an entity, a locus, distinct in the expanse of the "natural". The city becomes a medium and within it spaces are carved for simulation of the non-urban. A figure-ground reversal of epic proportions produces a taxidermic icon of "nature" suspended in the expanding urban medium.

3 Ibid.
4 Ibid
6 "The parks that Americans built to improve their cities derived not from European urban models but from an anti-urban ideal that dwelt on the traditional prescription for relief from the evils of the city - to escape to the country." Cranz, G, The Politics of Park Design, MIT Press, Camb. 1982.
Fig. 115. Central Park, New York City.
5.3 American Reformism

5.31 The fear of public

Olmsted’s approach to questions of urban life and urban design must -one can only assume- have been determined by the attitudes of his time. Whether by conviction or by default Olmsted was a member of New England’s liberal bourgeois elite. Despite time spent as a gentleman farmer he was more directly connected to the society he had come to know while his brother was at Yale. His was a group deeply concerned with morality, religion, and social improvement: its positions had evolved through a liberalizing of the Puritan ethic from which it sprang. Seen in retrospect it stands in sharp contrast to the class based “scientific” social positions taken by the emerging communists in Europe. At its core this American liberal attitude was based on a belief in moral reform rather than on social revolution. It assumed the hope of an elevation rather than an empowerment of oppressed classes and races.

The view of working class life held by those occupying upper economic strata was, I believe, important in shaping the spatial proposals of the time. Even among the most liberal of the elite, such as Olmsted, there appears to have been some revulsion underlying concern for the condition of the lower classes. There was, of course, fear as well: fear of rebellion, of disease, of crime, and of moral decay. Today such fear has become endemic and -perversely- commodified as a titillating product of the “info-tainment” and “news” industry. Ironically the wealthy and the middle class today will not venture into Olmsted’s Franklin Park in Boston after dark. As usual adverse social conditions remain stubbornly resistant to direct mitigation through design solutions.

There is a romantic and somewhat paternalist tint which colors Olmsted’s vision as well as that of the subsequent Parks and City Beautiful “movements”. Richard Sennett provides an interesting view of 19th century public cultural psychology that sheds some light on this issue.

“...images [of crowds] have come to be distinct in people’s minds from images of community; in fact, community and crowd seem now to be antithetical. The Bourgeois man in the crowd developed in the last century a shield of silence around himself. He did so out of fear. This fear was to some extent a matter of class, but it was not only that. A more undifferentiated anxiety about not knowing what to expect, about being violated in public, led him to try to isolate himself through silence when in this public milieu. Unlike his ancien regime counterpart, who also knew the anxiety of crowd life, he did not try to control his sociability in public; rather he tried to erase it, so that the bourgeois on the street was in a crowd but not of it.”

Sennett’s thesis -that an obsession with intimate contact has eroded the notion of “public” in western society- can be seen
manifest in Olmsted's vision of urban and sub-urban space. For Olmsted the city is important; however the benefits of civilization are best found in the suburbs.

"Probably the advantages of civilization can be found illustrated and demonstrated under no circumstances so completely as in some suburban neighborhoods where each family abode stands fifty or a hundred feet or more apart from all others, and at some distance from the public road. And it must be remembered, also, that man's enjoyment of rural beauty has clearly increased rather than diminished with his advance in civilization." 8

The growth of the metropolis is, he says, inevitable. However when people must rub too closely together he finds discomfort. Diversity and collectivity are acceptable but only within limits. The danger of physical decay is of concern, but more disquieting, notes Olmsted (as quoted earlier), is a perceived moral and psychological decay. Sennett again provides illustration of this attitude.

"The public as an immoral domain meant rather different things to women and men. For women, it was where one risked losing virtue, dirtying oneself, being swept into 'a disorderly and heady swirl' (Thackery). The public and the idea of disgrace were closely allied. The public for a bourgeois man had a different moral tone. By going out in public, or 'losing yourself in public,' as the phrase occurred in ordinary speech a century ago, a man was able to withdraw from those very repressive and authoritarian features of respectability which were supposed to be incarnate in his person, as father and husband, in the home." 9

While Olmsted professes a belief in public intercourse he seems deeply concerned with the moral dangers of public life. He shows himself to be driven by a desire to ameliorate conditions but his approach seems at times sacramental. In a lecture to a Boston audience he quotes a pair of New York "Herald" articles: the first a comment on the planned Central Park;

"It is all folly to expect in this country to have parks like those in old aristocratic countries. When we open a public park Sam will air himself in it. He will take his friends whether from Church Street, or elsewhere. He will knock down any better dressed man who remonstrates with him. He will talk and sing, and fill his share of the bench, and flirt with the nurserymaids in his own coarse way. Now we ask what chance have William B. Astor and Edward Everett against this fellow-citizen of theirs? Can they and he enjoy the same place? Is it not obvious that he will turn them out, and the great Central Park will be nothing but a great bear-"
garden for the lowest denizens of the city, of which we shall yet pray litanies to be delivered?'"

the second Herald article from a later date;

"When one is inclined to despair of the country, let him go to the Central Park on a Saturday, and spend a few hours there in looking at the people, not at those who come in gorgeous carriages, but at those who arrive on foot, or in those exceedingly democratic conveyances, the streetcars; and if, when the sun begins to sink behind the trees, he does not arise and go home-ward with a happy swelling heart,' and so on, the effusion winding up thus: 'We regret to say that the more brilliant becomes the display of vehicles and toilettes, the more shameful is the display of bad manners on the part of the... extremely fine looking people who ride in carriages and wear fine dresses. We must add that the pedestrians always behave well.'".

Olmsted follows with this comment:

"No one who has closely observed the conduct of the people who visit the park, can doubt that it exercises a distinctly harmonizing and refining influence upon the most unfortunate and most lawless classes of the city, an influence favorable to courtesy, self control and temperance'".

A weekly visit to the great Park, it seems, suffices to cleanse and tame the disturbing masses. Galen Cranz notes, however, that in reality the 19th century "Pleasure grounds" were difficult for the poor to access and, in addition, the predominance of upper-class fashion and taste served as deterrents to lower-class use. In lieu of actual social reforms the parks provided a philanthropic outlet for good intentions. There can be little doubt that Olmsted and those who supported him saw themselves as outside benefactors. Olmsted does not refute the Herald's initial portrayal of "Sam" he merely points out that Central park has rendered him acceptable. In effect Olmsted was not involved in a "civic" endeavor. Though done in the collective interest his was not a vision of public space for expression of collective action. In fact he sought to provide room for the diffusion of the crowd and, perhaps unintentionally, the diffusion of collective will.

5.32 Aesthetic and moral enrichment as key to social reform.

One can not help but assume that Olmsted and his contemporaries were genuine in their desire to improve the lot of urban dwellers. There seems to be little evidence that they intended to mollify the potentially dangerous urban working classes while simultaneously providing models for suburban enclaves of the wealthy (the fact that their actions amounted to exactly that can be overlooked here). If, in fact, their concerns were genuine one might well ask how they came to believe that their faux-pastoral vision could hope to have substantive effect on the appalling
social conditions in the cities of the day. Certainly there was no paucity of ideas for solutions to the question of 19th century social condition. From Haussman’s absolute-urbanism to the rabid threats of the Communist Manifesto to the plethora of Socialist and Utopian visions, there were plenty of views of which educated New Englanders must have been aware. In fact, according to Albert Fein, Olmsted visited and was for a time intrigued by the American Fourierist community at Red Bank, New Jersey. He was, however, too cosmopolitan and too realistic to accept the rough conditions as a viable alternative.

"Thus, while he considered Red Bank superior to the best of New England’s villages, Olmsted was already too much the social reformer to be satisfied with this rather primitive community. Although by 1852 he regarded himself as ‘more of a Fourierist than before,’ and thought the Phalanx Community a desirable model for a large part of rural America, he did not consider it adequate for the nation’s growing cities." 13

Olmsted notes:

"They are not any of them first class people or if so they have forgotten some of their 5th Avenue notions." 14

Economic and political empowerment do not figure prominently in Olmsted’s pantheon of social determinants. In fact it appears that Olmsted believed deeply that aesthetic and moral enrichment would suffice to induce actual urban reform. It was a belief rooted in the ideological phenomenon of American Transcendentalism (which perhaps might more aptly be called Concord Transcendentalism); and it was a belief that reflected the strong anthropocentric confidence of the 19th century Western elite.

Fischer notes that Olmsted read and was moved by the work of John Ruskin and Ralph Waldo Emerson. Here can be found Olmsted’s central conviction that a re-connection to nature was the key to moral and religious transcendence. But there was more. Particularly in Emerson there is a strong faith in the divinity of man and a tendency to the apotheosis of the artist. These attitudes may have instilled in Olmsted the confidence with which he claimed himself an artist; and they may have convinced him that aesthetic endeavor had the power to effect tangible social results.

For Emerson human intellect and artistic expression were reflections of a benevolent god. As such the thoughtful creative man was for him an embodiment of the Almighty.

"There is still another aspect under which the beauty of the world may be viewed, namely, as it becomes an object of the intellect. Beside the relation of things to virtue, they have a relation to thought." 15

In this Transcendental vision “nature” appeared as a cornucopia of physical, intellectual, moral, and spiritual enrichment. The world in effect existed for the benefit of the virtuous human.

"Nature, in its ministry to man, is not only the material, but is also the process and the result."
All the parts incessantly work into each other’s hands for the profit of man.” 16

The world, it would seem, is man’s cradle; existing for his comfort and delight.

“The misery of man appears like a childish petulance, when we explore the steady and prodigal provision that has been made for his support and delight on this green ball which floats him through the heavens.” 17

Emerson reveals here a central condition of his time. He is, in a sense, caught between the Enlightenment and the coming understanding of human limits. The cloak of mystical awe and superstitious belief that pervaded life before Newton has been shed. He sees as axiomatic his status as a passenger on spaceship Earth; yet he seems to feel no fear or vulnerability in his position. He appears to believe completely in the power of human reason. And why not? It would be almost another century before a new physics and a new destructiveness were to expose man’s limits and the frailty of his world. Emerson clearly believed unconditionally in the supremacy of human reason.

“Undoubtedly we have no questions to ask which are unanswerable. We must trust the perfection of creation so far as to believe that whatever curiosity the order of things has awakened in our minds, the order of things can satisfy.”

"The problem of philosophy, according to Plato, ‘is, for all that exists conditionally, to find a ground unconditioned and absolute.’ It proceeds on faith that a law determines all phenomena, which being known, the phenomena can be predicted. That law, when in the mind, is an idea. Its beauty is infinite. The true philosopher and the true poet are one, and a beauty, which is truth, and a truth, which is beauty, is the aim of both. Is not the charm of one of Plato’s or Aristotle’s definitions strictly like that of the Antigone of Sophocles? It is, in both cases, that a spiritual life has been imparted to nature; that the solid seeming block of matter has been pervaded and dissolved by a thought; that this feeble human being has penetrated the vast masses of nature with an informing soul, and recognized itself in their harmony, that is, seized their law. In physics, when this is attained, the memory disburthens itself of its cumbersome catalogues of particulars, and carries centuries of observation in a single formula.” 18

Approximately one century later limits were appearing in man’s capacity to understand his world. In 1932, Werner Heisenberg was awarded the Nobel Prize for his discovery of the uncertainty principal. Based on the new Quantum mechanics, this was a concept that can be seen as a turning point in the hegemony of determinist convictions which had reigned since Newton19. Probability became a key component in the lexicon
of physics. With the construction, a few years later, of the Atomic bomb the specter of evil began to invade the sanctuary of reason.

Given all this it might seem logical to explain Emerson’s position in terms of a linear progression. That is; the primacy of reason generated by the Enlightenment had informed Emerson’s world and, in the absence of further information, he could not but develop his anthropocentric positivist attitude. In fact this would be inaccurate. Hints at a pathos of reason had been in evidence since the 18th century; for example, in the work of Boulee and Piranese. Manfredo Tafuri clearly identifies this in a reference to the Carceri of Piranesi:

"In these etchings the space of the building -the prison- is an infinite space. What has been destroyed is the center of that space, signifying the correspondence between the collapse of ancient values, of the ancient order, and the ‘totality’ of the disorder. Reason, the author of this destruction -a destruction felt by Piranesi to be fatal- is transformed into irrationality. But the prison, precisely because it is infinite, coincides with the space of human existence......Thus what we see in the Carceri is only the new existential condition of human collectivity, liberated and condemned at the same time by its own reason. And Piranesi translates into images not a reactionary criticism of the social promises of the Enlightenment, but a lucid prophecy of what society, liberated from ancient values and their consequent restraints, will have to be”.20

American Transcendentalism may well have been symptomatic of a cultural desperation. Mystical tendencies often develop when society is in crisis. Emerson, like Ruskin and Pugin in England, saw quite clearly the deterioration of human condition under advancing industrialization. In the face of this they turned to explorations of an holistic spirituality connected to god, nature and transcendence. Their response was pedantic; based on the belief that moral and aesthetic enrichment held the key to uplifting the alienated

“...The problem of restoring to the world original and eternal beauty is solved by the redemption of the soul. The ruin or blank that we see when we look at nature, is in our own eye. The axis of vision is not coincident with the axis of things, and so they appear not transparent but opaque. The reason why the world lacks unity, and lies broken in heaps, is because man is disunited with himself.”21

Unfortunately the moral and spiritual enrichment required to re-unite man with himself is invariably dependent on taste; it therefore remains subjective. As I have noted in an earlier essay: matters of taste quickly become matters of class22. Like the British Arts and Crafts movement the American Transcendentalist movement carries an air of paternalist instruction across class
divisions. Such instruction, based on subjective attitudes of taste and morality, acts to intensify class divisions. The transcendentalist program was based in hopes and dreams; its legacy remains more an exercise of personal contemplation than an effort for society.

5.33 Rejection of government in favor of the self.

"The reason why the world lacks unity, and lies broken in heaps, is because man is disunited with himself."

Presumably Emerson refers here to the collective "man", yet the tone of his caveat is telling. Collective or not, the implication remains that redemption is left up to each of us as individuals. This tendency to personalize social thought is perhaps most intense in Emerson's underling contemporary, Henry David Thoreau. In his essay, Walden, one can find epitomized the centering of all issues on the self. Such an attitude stands in contrast to the British altruism of class guilt which seems to have driven the Arts and Crafts movement. Instead American Transcendentalist efforts sprang from, and were directed to, the individual. The pioneer myth and the "do it yourself" ethic were deeply ingrained in the American personality. Sennett notes that this was a general tendency of the period.

"In the 19th century the individual and his peculiar strengths, desires, and tastes became permanently enshrined as a social idea, from rugged individualism, survival of the fittest, and similar fierce justifications of the new economics to more subtle and more troubling beliefs in which society was supposed to work through, exist for, or strengthen personality."²³

Thoreau's On Civil Disobedience, in its stamp-of-the-foot pouting defiance, demands the action of "one honest man" among the elite to catalyze social change. Thoreau's disdain for weak-kneed members of the establishment is understandable and his efforts to illuminate injustice is commendable. However it is nonetheless important to note the central thesis of his work: A call for action of the individual rather than a rallying cry for the collective.

The Concord Transcendentalists were adamant in their rejection of State intervention; yet, theirs was not a call for anarchic utopianism. Instead they seemed to want simply to be left to their Protestant Liberal devices. Presumably if the rest of humanity operated under the same set of assumptions all would have gone well. This attitude is oddly similar to positions taken by American rightists of the 1980s. It is a rather consistent trait of American pseudo-liberal individualism to unwittingly parallel right-wing positions. In fact certain quotes from Emerson sound surprisingly similar to the utterings of recent American conservatives.

"The less government we have the better."

"The State must follow and not lead the character and progress of the individual."

"It is only as a man puts off all foreign support and stands alone that I see him to be strong and to prevail."
5.34 A look at actual reforms

Transcendentalists were, of course, not alone; a belief in laissez-faire ran throughout most forms of American ideology. Unfortunately such attitudes were woefully inadequate for addressing rapidly expanding problems in the real-politic of the urban streets. New York, for example, had grown in population from 62,500 in 1800 to 660,000 by 1850 and was to reach 2.7 million by 1890. Strong action was needed and taken; misty-eyed Transcendentalism notwithstanding. Olmsted unquestionably took upon himself some of the strongest and most visible action; yet his parks were the icing rather than the meat and potatoes of urban reform. It was, of course, government—so despised by Olmsted’s Transcendentalist mentors—which found itself forced to do the real work of instituting change. American urban reform, following developments in Britain, began with health (naked fear of cholera tended to out-run altruism in pressing the issue). Despite Olmsted’s claims of health benefits from the new Central Park, it was legislation—13 years after approval of the park—which paved the way for actual improvement. As Platt notes:

“Sanitary reforms were the logical prerequisite to the consideration of a broader range of urban planning issues such as transportation, housing, economic development, zoning of land, and environmental protection.”

“The New York (State) Metropolitan Health Act of 1866 was the first major American law in this field.”

Similarly one may place Olmsted’s pastoral vision in perspective by contrasting it to the Croton River project; without which Central Park may have better served its city as a cemetery. Begun in 1837 to supply water to Manhattan it was an undertaking of epic proportions.

“The Project involved five major structural elements: 1) a masonry dam 50 feet high and 270 feet long impounding a reservoir with a surface area of 440 acres and a storage capacity of 600 million gallons; 2) a 40-mile covered masonry aqueduct with a cross section of seven-by-eight feet; 3) a 1,450-foot-long “high bridge” to convey the aqueduct across the Harlem River into Manhattan; 4) a 35 acre receiving reservoir located within the future site of Central Park; and 5) a four-acre, masonry walled distributing reservoir located on the present site of the New York Public Library at Fifth Avenue and 42nd St.”

While Olmsted helped to change the aesthetic face of the city and initiate the development of suburbs it was zoning and building regulation which took up the less visible task of re-structuring the spatial definitions of the urban fabric. Nonetheless Olmsted’s opus, along with the movement it generated, characterizes American city form to this day. In its middle-of-the-road aesthetic flow the thin juices of American reformism. The white picket fence, the porch swing, the pursuit of happiness; weapons such as these quelled the danger of revolt and
allowed America to play a central role in imposing an hegemony of consumerist capitalism across the face of the planet.

12 Rap artist KRS ONE of BDP Productions refers in a commentary on his *Edutainment* recording to Lincoln and his “freeing” of the “slaves”. According to KRS ONE “the Black man is not a slave”; he goes on to claim that Lincoln in fact cements their status as subordinate citizens by claiming to free them. “what Lincoln is in effect saying is, ‘I see you as slaves, I will always see you as slaves, and I free you’”. Lincoln was, of course, speaking at approximately the same time as Olmsted and the attitude is perhaps similar.
16 ibid.
17 ibid
18 ibid
19 “It was Heisenberg who first pointed out that the new laws of quantum mechanics imply a fundamental limitation to the accuracy of experimental measurements. In our everyday world we can certainly imagine making measurements sufficiently delicately so that the act of measurement does not cause a perceptible disturbance. In the quantum world this is not the case. Light energy arrives in lumps, and making a measurement necessarily gives a significant jolt to the object on which we are making measurements. Furthermore, there is no way to reduce the jolt to zero, even in principle. For objects of microscopic dimensions such jolts are not negligible. This is the essence of Heisenberg’s uncertainty principle.” Hey, T., Walters, P., *The Quantum Universe*, Cambridge University Press, Camb. 1987.
5.4. A de-urbanization of the Metropolis.

5.41 City “nature”: The urban fabric and the “natural”

In treating *The American Ideology of Space* Leo Marx identifies three core positions on man and nature. The first is utilitarian and embraces the notion of “progress”. The second which he calls “primitivist” is based on the romantic glorification of the wilderness. The last he terms “pastoral” and this he connects to a “middle landscape”; “a via media neither urban nor wild, that combines the best features of each”\(^27\). Two points are important here: one concerns Olmsted’s role in facilitating the “progress” ideology; the other concerns the distinction between “urban” and “natural” spatial experience.

With respect to the first issue, Marx, in his essay, formulates an interesting concept. For him the American spatial attitude can finally be identified as a single ideology; that of progress or utilitarianism. In reference to late 19th century romantic landscape painting -such as the Hudson river school- he notes that the pastoral vision in effect operated as a poetic front for the progressive domination of the landscape. Marx hints at conscious collusion noting that; “the wealthy patrons of landscape painting, including the railroad magnates who sponsored special journeys for artists, tended to be adherents of the progressive ideology”\(^28\). More importantly, however, he identifies the Transcendentalist position as a driving force. He quotes Emerson:

> “For as it is dislocation and detachment from the life of God that makes things ugly, the poet [or painter] who re-attaches things to nature and the Whole -re-attaching even artificial things and violation of nature, to nature, by a deeper insight- disposes very easily of the most disagreeable facts. Readers of poetry see the factory village and the railway, and fancy that the poetry of the landscape is broken up by these; for these works of art are not yet consecrated in their reading; but the poet sees them fall within the great Order not less than the beehive or the spider’s geometric web. Nature adopts them very fast into her vital circles and the gliding train of cars she loves like her own.”\(^29\)

Whether in collusion or not this type of statement constituted an insidious form of cultural propaganda. It is hard to conceive that Emerson truly believed poetry had the power to “dispose” of “disagreeable facts”. (One is again reminded of Ronald Regan’s hazy conception of reality during the 1980s). Olmsted, who spared little effort in connecting his work to landscape painting, followed a similar line of reasoning in formulating his parks vision. The pastoral simulacrum he so vigorously pursued dovetailed perfectly with the progress of industrial production and industrial agriculture.

With respect to the second point mentioned above one must note the fierce distinction inherent in the American landscape myth between *the natural* and *the city*. In the 19th century “nature” (whether a noble savage to be conquered or a fading idyll with which to re-connect) was seen as being entirely outside the city. The city, by extension, was something entirely un-natural.
In Olmsted's work nature was to be grafted -as an encapsulated foreign body- onto the urban fabric. In fact the pastoral vision in 19th Century America seems to have misinterpreted "civilization"; seeing it as that which is \textit{not wild} rather than that which is \textit{of the city}. From this springs Olmsted's suburban model which he equates with the highest expression of civilization. However, as Sennett has pointed out, the terms "civility" and "civilization" have become semantically distorted. Both are etymologically connected to civic life or \textit{civitas} which, at its core, is the experiential manifestation of the city.

" 'City' and 'civility' have a common root etymologically. Civility is treating others as though they were strangers and forging a social bond upon that social distance. The city is that human settlement in which strangers are most likely to meet. The public geography of a city is civility institutionalized.\textsuperscript{30}"

Seen in this view the city is civilization; any action to mitigate it cannot be construed as an expression of civil life.

Every place and every thing has a "nature" and therefore a set of conditions which are "natural" to it. These conditions are not static -that is, they are subject to constant change- yet they exist. Any urban fabric possesses such a nature; in the city the urban fabric is nature. The Piazza Del Campo in Sienna is clearly "natural". The early playground projects of Aldo Van Eyck can serve as contemporary examples of public space formed of the natural fabric of the city. In contrast, Central Park, for all its verdant amenities, is un-natural.

The concept of the urban "natural" can be related to issues of \textit{in} the city vs. \textit{out} of the city, as opposed to \textit{in} nature or \textit{out} of nature. It has been pointed out that an architecture which allows for associative connections to its surroundings obviates the \textit{in/out} question. According to this thinking light and space are continuities; the landscape consists of physical definitions within those continuities. "Architecture" therefor consists in \textit{built} forms of physical definition.\textsuperscript{31} Such forms serve to define spatial possibilities for use; and, perhaps, for poetic experience. Seen in this manner spatial experience does not allow for strict definitions of in and out. The rather well worn example of an Italian Hill Town will serve by way of vernacular example: from inside a dwelling one steps \textit{into} the street, from which one \textit{enters} a square while the town itself is entirely \textit{in} and of the larger landscape. Much of the work of Frank Lloyd Wright operates on this principle. Consider instead the Olmsted park. As desirable as it might be, the clear intent is that one step \textit{out} of the city upon entering the park. This is an obvious experiential analog for the suspension of reality sought for when one steps \textit{out} of the city and \textit{into} a theater. As such it constitutes -for better or worse- a dis-associative spatial experience. Therefor, in addition to being seen with well deserved admiration, the Olmsted park can also be seen as having constituted a reactionary response to emerging problems of urban form.

5.42. Suburbanization and the segregation of use.

In addition to his Parks Movement influence Olmsted was a seminal figure in the birth of the North American suburban form. He saw the suburb -outside the city yet not rural- as an
integral part of his urban vision. In retrospect it is hard to imagine a settlement model more uncivil than the North American suburb. Intended or not, its development, coupled with the urban parks movement, constituted a program for the de-urbanization of American cities. However the needs which drove its conception are certainly understandable. Quite simply, anyone who could escape the pollution and crowding of the 19th Century cities would not hesitate to do so. The result, unfortunately, was an atomization of existence and therefore of culture. City life was gradually transformed into a segregation of uses and experiences: manufacture—the everyday material expression of culture—had become smoky and fouling, it was therefore banished; dwelling, now separated from the production of society, found sterile expression in the bedroom community; the Central Business District (CBD) held sway over the former urban center now reduced to mere icon. Later the mall emerged as an encapsulated, segregated environment in the extreme. A result of this cultural atomization can be likened to the dispersal of a gas released in a chamber. It tends toward a state of homogeneous distribution. A recent drive along an expressway near Fort Worth Texas revealed the same chain franchises that dot the landscape along New England highways. The traveler could have been anywhere and perhaps therefore nowhere.

The dispersal and sterilization of culture has another consequence: the new suburbs become, in one sense, spaces of surveillance. As Sennett has noted such scrutiny is manifest in the accepted codes of moral conduct which govern life in bedroom communities. It is this fact which, in part, inspired the Olmsted vision of suburbia. He believed in a suburban idyll in which all classes might live in bliss, free from moral and physical decay. His 1869 Riverside “community” near Chicago inspired Ebenezer Howard and later became a model for suburban development worldwide.

Fig. 116. Plan of Olmsted’s Riverside suburb near Chicago.

Certainly Olmsted (an avowed Abolitionist) could not have imagined that a century later the American suburb would serve as model for the Black Townships of South African Apartheid. In fact the plan of Soweto, near Johannesburg, bears a striking resemblance to the plans of Riverside and so many other subdivisions across North America. For the South African Government (having plenty of land to spare) the single-family-detached dispersal of the suburb offered a clean form for maintaining surveillance and control. The citizens are removed from potentially dangerous civil interchange in the cities. The Soweto sky is punctuated by towering pylons carrying powerful search lights capable of brightly illuminating whole neighborhoods in the event of an uprising.

Clearly this is an extreme example yet it illustrates the tendency to dispersal. The South African Government was principally concerned with replacing squatter settlements such as "Crossroads". The density of such settlements made them impossible to police and allowed the kind of civil intercourse that fostered dissent. This spatial expression of control can also be found reversed in the suburban enclaves increasing in favor around the United States. In these cases the suburb serves as a garrison intended to protect the occupants from the surrounding citizens. The inhabitants thereby forfeit the authenticity of their citizenship: they are, in effect, less civilized than those they seek to escape.

If Leo Marx is to be believed the trend to homogeneous dispersal is likely to continue. At the end of his essay on ideology of space he identifies the phenomenon of "ruburbia".

"This form of rural settlement, which I will call 'ruburbia', does not fit any of our traditional categories of settlement: urban, suburban, town, rural. Ruburbia is being formed by the dispersal of industry, homes, and other buildings across two kinds of hitherto-underdeveloped terrain: the agriculturally less productive rural areas beyond the suburbs, and remote areas of sparsely settled states like Arkansas, New Hampshire, North Carolina, and North Dakota."

"A striking feature of ruburbia is the highly dispersed, decentralized, noncommunal pattern of settlement itself.....The result is a new kind of decentralized community (if that is not an oxymoron), whose built core may consist of nothing more than a strip or cluster of shopping malls, and a few services located near a freeway intersection."33

These settlement patterns speak of a deeply ingrained philosophy and psychology of space. From the first Puritan invasions of North America the personal occupation of territory has been a central cannon of settlement. In contrast to their Spanish colleagues to the south these new arrivals did not rape, marry into, nor enslave the existing population. They simply eliminated it. There was essentially no cultural mixing or assimilation. The objective here was land and the right to stand on it. All obstacles -living or otherwise- standing in the way of that end were swept away. Living too close to others was inherently un-
desirable while the detached structure was the object of desire. Dispersal was, and still is, seen as healthy. The more territory deeded for the individual to roam on the better. Freedom became equated not so much with the right to express one’s opinions as with the length of one’s leash. Little wonder then at the tendencies to seek escape from the urban fabric; whether by leaving or by effecting internal spatial theatrics.

Set against the specter of “ruburbia” are the continuing use-segregations and de-urbanizations in the city itself. Trevor Boddy refers, in an essay, to the “analogous city”; the overhead and underground walkway systems which sprang up in many cities during the 1980s. These according to him result from a desire to disconnect and escape from the life of the street. The walkways provide an analog free from the disagreeable facts of the real city. This discussion might be extended to include privately owned and maintained “public” spaces. These oxymoronic oddities are proliferating more rapidly than Boddy’s walkways. Typical of this phenomenon are the urban corporate towers and complexes which “give back to the city” by providing interior “streets”. These glorified lobbies may contain shops and artificially sustained vegetation. Occasionally they provide access through the block. They are, of course, private property protected by security services and reserving an implicit right of exclusion. Public life in this type of space is nothing more than a network for movement. Interior atria are provided with extensive plantings and often waterfalls. Here an encapsulation of faux pastoral becomes hermetic; the climate controlled idyll denies the city from within.

5.43 Conclusion

One cannot in good conscience lay all this at Olmsted’s feet. On the contrary we can only assume that he would have been appalled by the spatial and ecological condition of our world. This however is not the salient point. The use of a single figure to construct a point of view is here, as always, an historiographic convenience. The point, in the context of this thesis, is that Olmsted and the Parks Movement represented an aesthetic and social theory that directly influenced the Charles River Basin. It was a position tied to uniquely North American conditions and attitudes. Romantic perceptions of the landscape idyll were ingrained in the American psyche. There was in essence an attempt to redeem the pastoral promise of the New World; solutions to urban problems were therefor sought in the greensward. Certainly conditions in the cities had in many cases become appaling. Overcrowding was often horrible among the urban poor. Yet in addition there seems to have existed an inherent deep seated aversion to the tight dimensions which are characteristic of urban life. As I have noted this may have its genesis in the prevailing desire for physical ownership of territory. Ownership of a plot of land was, and still is, a symbolic claiming of a landscape fragment. The urban landscape parks can be seen as providing such fragments of wilderness myth to the city.

These attitudes gave rise to an ambivalent urbanism that
seek to improve urban life while at every juncture denying the urban fabric. Jane Jacobs has sketched a progression of anti-city ideology from Ebenezer Howard's Garden Cities, through Burnham's City Beautiful, and Le Corbusier's Radiant City, to the "urban renewal" destructions of the 1950s and 60s. In her view these positions are characterized by a common disdain for the very fabric that -in its density- gives cities their life. In formulating his theory Ebenezer Howard was influenced by Olmsted's 1869 Riverside development outside Chicago. Burnham of course was in contact with Olmsted as well. It is possible in fact to find in Olmsted the seeds of the urban renewal attitudes of the late 1950s.

"It has happened several times within the last century, when old artificial obstructions to the spreading out of a city have been removed, and especially when there has been a demolition of and rebuilding on a new ground plan of some part which had previously been noted for the frequency of certain crimes, the prevalence of certain diseases, and the shortness of life among its inhabitants, that a marked improvement in all these respects has immediately followed, and has been maintained not alone in the dark parts, but in the city as a whole." 36

The Parks Movement and the City Beautiful Movement were the prevalent theoretical cannons at the time of the last built interventions on the Charles River. In great measure this social and aesthetic attitude established the form of the Lower Basin. Built connections of city fabric to the water's edge would have been anathema to these theories. As a result the form of the Basin came to be characterized by its insulation from the city. The development of that form, coupled with the hegemonic invasion of the city by the automobile, ultimately resulted in the condition which this thesis seeks to address. A condition in which the city's fabric of use and form are only weakly and provisionally connected to its river edge.

28 Ibid
31 Maurice Smith at MIT teaches these principles as part of his observations of form.
32 Malls may well constitute the extended legacy of the Urban Parks and City Beautiful movements in that they carry the concept of the simulated, escape environment to its logical extreme. Intra cranial escapism reaches warp speed in the "virtual reality" shows now touring the country. These may well evolve into fixed "virtual reality" malls in the near future.
Concluding Notes

In retrospect this thesis has failed to adequately address its stated core issue; that of built form. This has certainly not been due to lack of effort. Perhaps the scope of investigation was over extended given the time and manpower (1) available. Certainly it remains my conviction that all built interventions must be considered and understood at all sizes. In the city this is particularly important if the project is not to collapse into singularity and self-reference. However, in hindsight, I believe that form intentions at the building size must be considered from the start. There must be a simultaneity to the levels of investigation. One cannot attempt -as I did- to explore form issues only in a linear progression from the largest size to the smallest. Clearly decisions at the largest size must be coherent if the project is to succeed. (Secondary decisions are always available to enrich primary actions but no number of secondary moves -no matter how good they are- will aggregate into a reasonable project if larger coherent moves are not present.) Nonetheless form issues at all sizes can and must be considered rigorously from the outset. They are thereby available to inform each other.

In addition, issues of building assembly, material, and form organization must be generic. That is, they must be relevant under all similar conditions. For example, in the case of this project the use-form issues of the public pavilion are applicable to any area that I might have chosen along the river. It was therefore a mistake to consider issues of the specific project area for so many weeks to the exclusion of generic building issues related to the water edge.

Notwithstanding the above disclaimer it is possible to draw some further substantive conclusions from this investigation. Two issues seem particularly salient, they are:

1) The importance of edge conditions in the experience of the city.

2) The necessity -in an urban project for public use- of connections to a larger understandable network of public territory and use in the city.

When considering the Charles River Basin the first issue is inescapable. The 'edge conditions' to which I refer are the zones along which urban fabric meets slack -or open- territory in the city. Such slack space acts as it does in buildings; it tends to be public, open, and provides free access. In the city these slack territories also act as locators; they offer reference for physical and cultural orientation in the extended urban fabric. As I have noted the Charles River acts as a locator of this type. Across much of the Boston area it is possible to orient spatially in relation to the river. In Boston the ratio of square miles of urban fabric to linear miles of physical locator is comparatively small. The Charles River is a primary contributor in this. A recent visit to Mexico City made the importance of this type of locator clear. The view from the observation deck of the Latino-Americano Tower reveals the staggering extent and seeming uniformity of this mega-city. The urban fabric extends in all directions to the limit of visibility bounded only by the mountains which surround the city. Under these conditions physical locators such as parks, plazas, large boulevards, and the like can only be understood within the fraction of city fabric in which each is found.
No habitable edge condition operates at the size ratio of the Charles River to its city. This is not meant to denigrate Mexico’s great capital which certainly dwarfs Boston in its historical and cultural depth. I mean simply to point out a condition of form and physical experience.

Edge conditions are clearly a primary factor in the physical experience of the city. (In the case of Boston the banks of the Charles River Basin form such an edge). However a physical edge is not in itself sufficient. Urban edges of this type must be inhabited and they must provide built public continuities for access and for variety of use. (The Cross Bronx Expressway in New York City clearly forms an edge yet few would argue that it benefits those who inhabit that edge). It is just this variety of use and free availability of public access that makes the Ghats at Benares or the Riva Degli Schiavoni in Venice so compelling. Significantly it is the built condition of these water edges that lends them their quality. It is the built edge that brings the life of the city to the water most directly. Without resorting to theatrical mimicry Boston has an opportunity to achieve such a level of richness along its river edge. This leads to the second issue mentioned above.

The central underpinning of all architectural form generation should be use. Without use as a core determinant architecture becomes little more than conceptual self-reference, or worse, a vehicle for symbolic reference. When public building form is generated in the city it must be usable if it is to be inhabited. In the case of the Charles River Basin this point is central to any proposed intervention. No public pavilion form - regardless of its extent or beauty- will be consistently inhabited if it is not part of a continuity of public use in the city. Public docking facilities, piers, and the like will also sit empty if the citizen cannot use them to access the city. Continuities must be established with an understandable network of public spaces and uses in the larger territory of the city. This entails building across the roadways which insulate the city from the Basin; it must be done substantially and not provisionally as it is now. Certain areas of the existing park edge need to be transformed to public built edge. At the same time the water itself must be enlisted to provide connections through transportation. Of course the banks of the Basin would not be entirely built over. The loss of green space is the first concern of many who hear of this proposal. The interventions proposed here are intended for a selected number of distinct areas along the banks. They are intended to be absolutely public and are committed to maintaining access continuity along the banks. Use of the water for taxi service would allow these areas to form points along a network of public use that should bring the city to the water. Such a network would ideally also be connected to similar points in the harbor and beyond. Continuities, connections, and networks of public use are critical to free access in the city. If these attributes can be built along its banks the Basin can become a condenser for the rich diversity -of population and of interest- that has come to characterize this city.
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