Synergy in a Town Center:
Juxtaposition of Artifact, Public, and Educational Space
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Juxtaposition of Artifact, Public, and Educational Space

By Pamela Wilson Sartorelli

Submitted to the Department of Architecture on January 14, 1994, in partial fulfillment of the requirements of the degree of Master of Architecture

Abstract

This thesis proposes a new model for public and educational space in a synergistic and physical relationship that encourages interaction and change. This model provides an arena for redefinition and mutual transformation of the concepts of public and education through time. The exploration of how these spaces or territories can respond to the changing needs of a community engages the question of how an architectural design response can include the opportunity for change to occur. The proposed design response to change travels two paths. First, the concept of overlap between the space of the public and the educational is explored in shared movement and use patterns that are intensified by alternating layers of transparency and opacity that build the space of interaction. Second, this thesis investigates the representation of time in the architectural artifact. Using the artifact as an element within the formal language of an architectural proposal offers a relationship between old and new that renders the element of time as part of an ongoing continuum. The participation of the artifact within a current formal dialogue is an opportunity to draw the past to the present in ways that welcome and encourage ongoing change.

The design component of this investigation places programs of community college and civic town center within the environs of a New England textile mill and village. The identification of the artifact, from the ruins of the mill, defines the space of the town center and college that is inclusive of the community, region and river environment. Just as the child resembles the grandparent and recalls his embrace, the shadow is there; the cast remembers the mold. Similarly, the architectural artifact is a symbolic embrace -- a continuity in the transformation and redefinition of public and educational space. It is from the shoulders of giants that we can see better the place of our community.

Thesis Supervisor: Rosemary Grimshaw

Title: Assistant Professor of Architecture
In Dedication to

My family:

William, whose support, love and interest made my time in school possible.
Aaron, whose love and humor is a constant inspiration.

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Preface

In choosing a topic and a site for thesis work it was important to find issues I intend to engage in my future work. I identified the desire to be involved with projects that address the needs of effective education and its place within the public realm. Simultaneously, I am drawn to architectural forms and building fragments remaining from previous eras in New England. Having moved to New England only in my adult years, from the American midwest, a region so recently inhabited by Euro-Americans so as to preclude a clear historical sense of form, I am profoundly struck by the marks of history and time visible in the architectural form record of New England.

My interest in this architectural form record is not as a preservationist. I do not seek to restore in an attempt to preserve a symbol, or what is often a picturesque memory of what is perceived to be lost. It is the fragment, the worked material, the artifact, that I seek to engage in a current formal dialogue. I hope to find an interaction with the artifact that can bring it into a current use rather than as a sacred icon from what is often depicted as a better past. I believe that allowing an artifact to remain within its context as a participant, rather than decontextualized within a museum or as an object of preservation, contributes positively to a culture that values continual transformation and renewal. We live within a given time that
overlaps past and future, memory and hope. Preservation often feels like a race to patch the cracking of the dike that protects us from a perilous flood of change and transformation. We must embrace change that draws the past to the present, not set the past aside as a separate, unattainable, lost zone. It is through change that we can use our past to inform our future.

Several years ago I visited the Michigan farm on which I grew up. The house and barn were a distance from the public road, and for me to drive on the farm road seemed like an intrusion to those who might presently live there. I decided to hike through the woods and climb a ridge overlooking the farm that I often climbed as a child. I anticipated what the view of the barn would be like against the fields and distant woods as I ascended the back of the ridge. At the top I was totally confused by what I saw. There was nothing to be seen besides wild fields and bush. I tried to imagine that I had climbed the wrong ridge, but my path had been unmistakable. The farm's structures were gone. I walked to the site of the house and the barn, shocked to think that I had outlived structures built a hundred years before my birth. At first I was filled with lament and guilt over the loss of such a wonderful place as the barn had been with its huge beams and columns holding the hay floor over the animal area that had been dug into the cool slope of the pasture. I had often dreamt of that place, sometimes inhabiting it in my dreams as my present home. I would awake and wonder for a moment if I should return. Visting now, I clearly realized that my life was not there any
more--time had moved me from that place.

As I walked about the site looking for the traces of landscape I could recognize, I became exhilarated at the transformations. The maple tree I spent several summers climbing was no longer marooned in a mowed lawn. It had been reassimilated into the wild vegetation with an understory of shrubs and bushes growing alongside it. The apple tree near where we had picnics of a very formal nature when my grandparents visited was bowed and broken by the weight of a wild grapevine reaching for a place to grow. The rectangular lawn I had been required to cut out of the encroaching field grasses had finally been eradicated and filled with a plethora of naturally occurring plants. I looked into the cellar hole of the house and saw the outline of my workshop and wondered if it needed to remain as a covered protected place or was the a trace enough. The place was a glorious ruin. I could walk freely about and touch the past through the present. It had been reduced, compressed, stored in the marks and artifacts lingering on the site. I could inhabit the past concurrent with the present. My memory was stimulated by the traces around me, but not in a stasis of what had been. By seeing the layers of transformation, I could imagine the future. In some way, the place had become much better than if the structures had remained and been painstakingly maintained. I was free to see that what had been there was not the best that place had ever been or could yet become. My obligation to maintain the past as a vestige of a lost, more perfect world...
was relieved and released. It is in this thesis I hope to explore how to build with the markings from our past.

In looking at the empty and ruined textile mills in the Blackstone Valley, where I live today, I see fragments, markings of time in material that can contribute to new places for the communities that built the mills and then closed their doors when their use had expired. The physical remnants of the mills can accommodate and speak with their communities today.

![Cornerstones from previous mills are incorporated into the wall of a more recent mill in Dover, N.H. (Langenbach, 1977).](image)
Introduction

The investigation in this thesis is focused on the possibilities of creating a synergistic relationship between public space and the space of educational programming in an attempt to create a new type of town center that is not dependent on older models that incorporated a large commercial component. The notion that a synergistic relationship or dialogue between such spatial designations can be found or built by architectural means is an attempt, on my part, to define the role of architecture in serving or facilitating human and cultural interaction. It is my belief that the educational territory of a region can be used as a foundational programmatic element which brings together a large number of people at a specific site that can then be expanded to create the public civic zone for a community and region.

The site I have chosen for the thesis project is in South Grafton, Mass. South Grafton is a small mill settlement created to provide housing for mill workers at the Fisherville Textile
Textile mill towns of Massachusetts in 1906 (Dunwell, 1978).
Mill, one of the many mills established along the Blackstone River. The Blackstone River Valley extends from Worcester, Mass. to Providence, R.I. Along its length is a series of small mills and their towns that were established from the late 1700s to the early 1910s. The Blackstone Valley mill towns are seen as the beginning of the industrial revolution in North America. Unique to the Blackstone Valley mill town model, in contrast to the larger scale of the later Lowell model, was the notion that a small community clustered around its mill could create a lifestyle balanced between an agrarian family base of activity and mill production of goods that could avoid the urban disarray surrounding British mills of that time. The Blackstone mill towns were created by capitalists who usurped a utopian model of productive work combined with self sufficient family life to strengthen their work force and thus insure their own economic success. By the middle of the nineteenth century the markets for the products of these mills (thread and cloth) had become very competitive, forcing a transformation of the mill towns of the Blackstone Valley to a model that required a population of full-time workers living in company-provided housing clustered near the mill with few amenities and infrastructure.

The unique organization of these small separate towns around mills whose locations were determined by the flow and drop of the river has become an empty ordering of territory. The mills, that were both the physical and economic organizing element of these towns, are empty and
impotent in 1994. The towns now live on providing low cost housing and few services to a population forced to travel to distant and low wage jobs. Farm lands surrounding these towns are being broken up to provide suburban housing sites for a new group of well-paid professionals commuting to jobs in Worcester, Boston, and Providence. A new two-class economic system is being created here: that of displaced industrial workers and farmers alongside a fairly wealthy class of the new suburbanites enjoying the bucolic atmosphere of the nonproductive valley landscape.

Douglas Reynolds, historian for the Blackstone River Valley National Heritage Corridor Commission, clearly summarizes the issues relevant to the valley:

"... if we are to believe... in industrialization as a transforming force worthy of the title "revolutionary." we must also look at de-industrialization as a transforming force that holds revolutionary potential in undermining or making socially useful the jobs which industrial workers, their communities, their work cultures, and their children will come to find in de-industrializing areas, and in realigning the two-class society so increasingly clear in the valley today".

Approaches to a new organization for a mill town and environs

Looking at mill towns as transformational sites where the need for fundamental and revolutionary change is to occur, one must assess specifically how the mill village was formally organized and how this organization, dependent on the centralized mill, can be transformed to meet present and future needs. The maps and plans that follow reveal a mill-centered plan in contrast to the commercial or agrarian-based town centers nearby where the town’s public territory was defined by commercial, residential, civic and religious buildings. The classic mill village as it exists today has at its center only an empty shell of an overscaled mill structure with little public space assigned within the village form—a village where all roads lead to the mill gate, with residential areas within walking distance. It is crucial to understand that many of these mill villages differ from the other village types that contain a hierarchy of organizational forms and systems that relate to transportation, markets, gardens, parks, and residential, religious, and civic functions. These mill settlements existed simply for housing mill labor just as the mill pond was created to contain the potential energy to drive the mill machinery.

“The early spinning mills have to their credit one great architectural accomplishment. Around them arose a series of mill settlements. At
this time water provided the cheapest form of industrial power, and the factories had to be located near a waterfall. This meant that generally they were so far off the beaten track that there was no place for the employees to live. Almost from the start the entrepreneurs were obliged to provide housing for the staff. The scheme adopted was straightforward. A single mill stood beside the stream. As most work was done by children (the South Grafton site was developed after the use of children as the primary work force), the manufacturers hired prolific families, and housed them in snug, individual cottages. These they placed in rows behind white picket fences, beside the street.

The first mill hamlets with their ample, regular planning, their broad, well-shaded roads, their simple, but finely proportioned houses seem today like the realization of some utopian dream. Actually the settlements were neither visionary nor strikingly novel. The handful of houses, the company store, the lone church, constituted little more than an up-to-date example of manorial paternalism. So, far from breaking with tradition, in architecture they were conservative, and as a social conception they represented an extension of the recognized scheme of things, rather than a step in a new order.”

(Collidge, 1942 pp 11-12).
Mill and housing in Pawtucket, R.I., 1836 (Dunwell, 1978).
Child labor in Fall River, 1912 (Dunwell, 1978).

Taftville, Conn., housing (Dunwell, 1978).


Fisherville housing.
The collapse of the mill based economy in the Blackstone Valley contrasts with other regions of Massachusetts that were spared by an earlier diversification to economies based on service and multiple industries. The small mill town type in the Blackstone Valley was dependent on the success of a single mill and its owners to support the town’s worker inhabitants.

“For more than 150 years before W.W.II, employers weren’t recruited, because the families that ruled the region had no use for their competition. The Whitins of Northbridge, the Drapers of Hopedale, the Wilkinsons of Sutton and a few others owned the mills in the valley and lorded over the towns. The small businesses they established in the late 1700s formed by the 1900s one of the largest blocks of textile machine and tool producers in the world...As the financial and service industries in Boston and Springfield expanded in the last 20 years, as high technology blossomed along Route 128... and the state’s economy moved out of older industries, the Blackstone Valley was simply drained of businesses and jobs....

The families controlled the land and controlled town governments. For a good many years they were able to keep economic development from growing because they were economic development, and they didn’t want any other kind...In the 1920’s the heads of the Draper and Whitins families,
the two strongest families in the valley, corresponded over transportation development. They agreed not to improve roads traveling east-west, thereby preventing easy travel for workers and keeping wages low. Unfortunately for the valley, the paternal care, the dearth of industry other than the mills and the poor highway system set the stage for a complete collapse of the local economy in the late 1950's and early 1960's when the manufacturers left.”

(Donovan, 1985).

In the heyday of manufacturing in the Blackstone Valley 85 percent of all jobs were supplied by the mills. In the 1990s more than 75 percent of all residents work outside the valley. It becomes clear that if these communities are to have a sense of themselves as a community or even function as one rather than an area of leftover housing, a fringe settlement without a core, an examination of how the mill site can be reinhabited with connections to the village form reinvigorated with systems that previously have not been present must be initiated.

It is crucial to note that these communities extend beyond their original borders to become regional. The housing built for the new ex-urbanites from the late 1970s through the building booms of the 1980s is free-floating in the wooded countryside that lies between mill villages. Any type of house can go anywhere a septic system can be made to percolate in the woods of the valley. Many new homes being built have little connection to each other.
beyond the weak web of roads that serve them and link them to the old town centers of the valley. The inhabitants, after landscaping to the borders of their lots, are limited to a life in the country that is devoid of any greater organization than what they can provide for themselves among their rhododendrons and chipped bark gardens.

The question that the reuse of a mill can raise and answer, then, is what can a large scale building provide to an expanded community whose needs go beyond the private commercial mall that seeks a public place in which to define itself?

If indeed the physical centers of these communities are located within the areas of the mills, than an examination of the mill and its site as an area for intervention leads to the core of what this thesis is addressing. How can the mill and its site become the center of the community both formally and programatically?
"I've worked in just about every mill around here. Now I work construction. Imagination's all right, but it's no good in the mill. They put the work in front of you and you've got to do it. That's what they pay you for. I've bought some land. Someday we'll move".

Leo Bellanceau and his sons (Dunwell, 1978).
“You can tell I'm a working man. I could retire, but I wouldn't think of it. I work 58 hours a week and that means a lot of overtime. I own my own house and I buy my cars new. I weld, I cut, I rig. You name it, I do it”.

George Dessrerens
laid off in 1975,
(Dunwell, 1978).
“An infant watches her hands and feels them move. Gradually she fixes her own boundaries at the complex incurved rim of her skin. Later she touches one palm to another and tries for a game to distinguish each hand’s sensation of feeling and being felt. What is a house but a bigger skin, and a neighborhood map but the world’s skin ever expanding?”

(Dillard, 1987).
The definition of the public territory in small New England towns in the 1990s is different from the public territorial needs when these towns were formed. The small towns of New England and throughout North America are seeing their town centers dwindle in importance as the place for public life. The town centers, characterized by civic, religious and commercial activities, are no longer designated as places for these activities. Growth and development, particularly in New England where distances between original town centers are very small, has in many cases blurred the divisions between towns. Travel between residence, school, church or community activities, entertainment, work, post office, town hall, and commercial activities is often a journey through several towns without concern that geographical town boundaries have been crossed. The centers of activity and population are no longer contiguous with or dependent on older town centers.

New development and building increasingly seek locations appropriate to the populations that they serve today, without reference to past designations of town centers. Linear development along main linking roads of new commercial areas and public facilities has drawn the intensity of use from the older town centers to more regionally-based developments that attract users, arriving in cars, to these more accessible locations. New
The process of leapfrogging, the built-up area expands, initially in a linear fashion, leaving gaps and zones of varied use that change over time (Kostoff, 1992).

developments such as shopping malls are built in areas that are initially remote from older town centers where large parcels of land are available along well-traveled roads. These new malls, equidistant from several town centers, quickly drain commercial viability from them. The mall relocates the old centers of activity to a single center that is now regional. The negative effects of development are not limited to the siphoning off of commercial activities but often include the placement of civic buildings such as post offices, courthouses, schools and town offices on the borders of towns, further blurring the location of the center of activity within a community.

The shopping mall of the 1990s is a very comprehensive beast. High capitalism is at work here. Consumers—which we all are at some level—are savvy enough to expect products to be both competitively priced and available in a comprehensive selection. Town centers are not configured to meet the need for large commercial spaces to display and warehouse the quantities of goods that can attract customers from a regional population base. Shopping malls are well-designed to attract, define and eventually circumscribe the consumption and entertainment needs of its customers. Megaplex cinemas attached to atrium-covered shopping malls with food courts, anchor stores, post offices, and governmental agencies all mixed with a dash of small anecdotal stores and pushcarts have become the most active public spaces in the nonurban landscape of New England and North America.
West Edmonton Mall is the ultimate in private mall spaces. It is built outside the city center drawing commercial activity to a remote spot in the prairie landscape. The saving grace has been that over 50 percent of visitors to this mall come from outside Alberta increasing tourism to the old central city. (Maitland, 1990).

Should we lament the loss of the vital town center of our past and seek to control the spread of the regional mall? Is it possible to exert such control over a phenomenon that we are seemingly eager participants in? What is the nature of our complaint, if by the very act of our participation we ourselves create the opportunity for a shopping mall to serve our expressed needs? The key to understanding what is wrong with this picture is rooted in the most basic fact that shopping malls are not public places. They are private property with a private agenda of profit that have usurped the vision of a public place and surrounded it with a fortress of capitalistic interests. This not a public forum where issues can be addressed or displayed. For instance, an information booth or even a demonstration of any current political or community issue could not be established without permission from the corporation that controls the shopping mall. Individual rights or expression are limited within the

Public Territory
Permission for any activity not initiated or provided by the mall itself is granted or withheld based not on constitutional rights but on the private concerns of the corporation in control of the space.

The public nature of older town centers is based on a relationship between publicly owned land (park, street, sidewalk) that abuts and links commercial, civic, religious and governmental territories. This physical juxtaposition built the public place of the center, a place where people came into contact with the members of their community as they went about the activities of their lives, where spontaneous reactions and discussions both good and bad could occur. Of course many of these same activities and exchanges occur within a shopping mall, but should any unplanned or controversial issue begin to interfere with the workings of that territory, the offending activity is restricted and people and materials involved are removed. The location of our public territory is now very hard

This is the sky above Disney World, which here substitutes for an image of the place itself. Disney World is the first copyrighted urban environment in history, a Forbidden City for postmodernity. Renowned for its litigiousness, the Walt Disney Company will permit no photograph of its property without prior approval of its use. Is there a better illustration of the contraction of the space of freedom represented by places like Disney World than this innocent sky?

Michael Sorkin's cryptic image of the privatization of public space. Disney World capitalizes on picturesque imagery such as "Main Street U.S.A." The search for the actual location of the public territory is becoming completely confused (Sorkin, 1992).
to find when the programmatic elements that have traditionally created the synergy of activity that builds the public center have been placed within private territories.

The Boston Globe recently reported an ironic example of the privatization of what is thought to be public. A small film crew had set up a filming of random interviews with passersby at Quincy Market Place in Boston. Quincy Market and the Faneuil Hall area of historic Boston have come under the control of the Rouse Company, which has invested large amounts of capital to develop this area as a Festival Market Place. The open sidewalks and small plazas abutting and serving this area have the appearance of a public place and historically were a forum of public debate that shaped public opinion and political action that led to crucial events such as the American Revolution. The film crew in question, which had set up on what seemed to be a public sidewalk in front of Faneuil Hall, were quickly asked to remove themselves by security guards of the Rouse company. They were not allowed to use the open, seemingly public, walkways without permission from the Rouse Company which they were unable to obtain for reasons that were not open to public debate or laws. This small event seemingly without much impact on the course of our lives but demonstrates the seriousness issue of where our public space is actually located if not in the space that created the very rights that we have today.

The fact that a mall is not a public place, where our constitutional
rights to free expression, debate, speech and assembly are in doubt or overlaid with a capitalistic agenda, is an issue worthy of our concern. We should not focus on how to make a mall a more public place but should question where the location--the territory--of our public expression and interaction should be and what tools we have left to build this place. I believe the placement of public activities within a private territory focused on consumption is an error. To reinforce a privately owned shopping mall with the addition of more features and a mandate that it behave as a public place builds a situation where private profit and capital can affect the nature of public debate in increasingly powerful ways. The masking of the private territory by a public face is contrary to the basic ideas of effective public forums and restricts a free examination of issues and ideas as they arise in the future. The cultural values that are transmitted by surrounding ourselves solely with consuming activities create a society of exclusion. Those who are economically unable to participate are excluded from that type of public territory which widens class differences and limits interaction. Youth in our culture are increasingly using the shopping mall as their place for interaction. Often there is no other game in town for them. We cannot expect young people or adults to develop a world vision or sense of significant issues that affect us as humans when our exposure to the outside world is narrowed by a place of interaction that is focused on consumption.

This work is concerned with defining a new model for public space
or territory in nonurban areas. These areas are characterised by a low density of habitation and limited programmatic possibilities to generate public spaces. The realization that the once viable mixed-use town center of the past is no longer available nor perhaps even desired becomes the impetus to propose a model that is useful in some instances. This new model takes into consideration that public spaces in nonurban regions should not only engage the immediate community in which they are situated but should also be relevant to larger regional needs that help to create the synergy of use that brings people into physical and social contact with one another. The empty public territory of the traditional town center still exists but is of little value to the basic definition of public territory that can only be truly public by its use. The empty town green overlooked by an historic church no longer attracts our vital and communal activities.
The nostalgic impulse to revitalize these historic greens and town centers as the territory for public interaction is, at the close of the twentieth century, a sweet deception. We no longer live there. It is possible to bring these areas into a physical dialogue with new public territories but this can only be achieved by a reevaluation of the rules of the historic districts that have been created around many of these old town centers. Historic districts diligently preserve the structures under their control but do little to facilitate their use by a new population. They have become icons rescued from the forces of change and are entertaining curiosities depicting past lifestyles that are frozen and decontextualized from present life.

A visit to historic districts in New England becomes like a trip to the zoo where we can look through the frame of the cage at the captured “other”, just as we look over the velvet cord of the museum at the preserved past. We cannot enter either of these zones. In the zoo we cluck and coo in an attempt to engage the animal, the one that we are not, to contact and enter into its world. The animal averts its gaze, turns its back, retreats into its shelter curling into an ever tighter ball, and we go home chagrined and embarrassed by our inability to bridge the gap.

An historic district is a thrill to visit, once or twice with out-of-town visitors, but we are excluded and even tricked by the new paint, clean walkways, and the reverence demanded to keep it nice for future visitors. It is not the place that it was. The detritus of past life is removed; time is
condensed, cleansed and sterilized. We leave with a warped sense of what is lost or where we may have come from. We know undeniably that it is not the place where we are. We are humbled by our poverty of life that has made us mute and passive voyeurs. We glimpse the preserved artifact, which by the fact of its preservation is placed as the meaningful--the real behind the velvet cord. We have collectively placed that cord, that discontinuity with the past. It is our attempt to find a shared past, a moment of beginning that defines us as one. The desire to join with others and find ourselves through collective activities is what public space is about.

The proposal for public space in this thesis offers an opportunity to remove the velvet cord and engage our collective past in the building of an active public space. It is through this engagement of the artifact in the present that invigorates and locates the place for the public territory and links us to our collective beginnings. We can find who we are and who we will be by a free and physical association with the marks and remnants of the past overlaid by the activities of the present. The tools or elements that we have to build this public space are expressed in a program that places our fragmented civic functions with other public programs such as schools, hospitals, daycare centers, libraries, sports facilities, parks, and waterfronts and with other features of the physical environmental.
Educational Territory

Educational Need in the Blackstone Valley

There is a recognized need in the Blackstone Valley for a regionalized higher education system including a community college, and technical training and retraining facilities. The scale of a regional program that can attract several thousand full- and part-time students fits the scale of the large mill type and its site. The potential for a mill to be transformed into an educational site (the new product of the town) provides opportunities for breaking down and bridging the two-class structure of the valley by utilizing trained newcomers in increasing educational opportunities in their adopted communities. The involvement of the new, more affluent class of people moving into the valley is not as the knowledgeable “other” dispensing needed help from above but as a way for both groups to come together to redefine valley life. The new “educational mill “at the physical center of a community brings potential for public involvement and the growth of a sense of a community with a shared purpose.

In thinking of the new territory provided by the concept of the educational mill, care must be taken in creating a genuine place where the needs of the new suburbanite can mesh with those of the village resident to help create a community that serves both as equals.

The upper and lower classes meet in Victorian London (Kostoff, 1992).
This chapter is the condensation of research done earlier in preparation for design of educational spaces. It serves both as a general reference and is the basis upon which the specific proposal in this thesis was generated.

Education: Inclusion or Exclusion of Values

Education can be seen as a self-conscious and collective act by a group of people. It is the means for a group’s renewal, transformation, reproduction, and eventual extension through co-option of others to the group’s ideals and values. A group’s self image and its relationship to the larger world context is present in the chosen curriculum and in its definition of student and teacher.

The concept of “public education” brings education into the political realm, relying on the belief that a consensus of an appropriate educational curriculum can be achieved by a population defined primarily by a shared political system. The measure of publicness achieved can be measured in the extent to which the curriculum represents, endorses and allows replication of all the values present within the group. Public education is rarely optional but is rather the mandatory education of all students within a given political structure in the values and skills deemed important by those empowered by the group’s structure to create the public curriculum. The selection process of the educational curriculum can be seen as a kind of gene splicing at the collective group level in an attempt to create the DNA for the reproduction of a society. The political equality, worth, and representation of group members and subgroups is quantifiable by the inclusion or exclusion of their values within this public DNA.
Historic Models for Democratic Educational Space.

The American democratic public educational system initially looked to the model of educational space provided by charitable religious educational systems in England and rural colonial models. It is important to follow the transformation of these models into a democratic political system quite different from the political systems of their genesis. The adoption and partial transformation of the original models left several unexamined elements that can be seen in the present school environment. Examples of these untransformed elements are specifically related to the designation of teacher and student. The parameters of their relationship is manifest in the spatial qualities of the learning space and in the separation of the teacher's space from that of the student. The control of the learning environment in its removal from the space of the natural physical environment continues in contemporary learning spaces.

The Lancastrian school model in England in the early eighteenth century is important to examine for its control and limiting of physical experiences of the student to an experience of complete control and immersion in the process of rote learning. The school had as its mission the education of poor children of an underclass quite different from the class of the master, who administered the instruction deemed necessary by his peers and supporters of the school, to mold the future workers of a growing
industrial society. It should be noted that it was a privilege for the students to have the opportunity of education that delayed their inclusion in a work force of child labor within the mills and mines usual at that time. The Lancastrian model was an attempt to educate as many children as possible for the least cost and was not challenged to offer individual nurturance of the child or to maximize a particular child's potential. Although motivated by a charitable urge to provide some inclusion through education of an underclass of people, this motivation was still based on maintaining class lines. The child therefore had to accept his or her place in an environment completely focused on a narrow curriculum of rote memorization. Inability to function within this strict structure simply meant exclusion from the only possible opportunity for learning.

The schoolroom was designed to warehouse this process by utilizing a barn or factory model in spatial design that placed windows above sight levels solely for the purpose of admitting light. The children were kept in tightly packed rows unable to move for long periods of time in a space allotment of only four square feet per student. When movement was allowed, it was to go in smaller groups to the side of the room where they stood on painted circles on the floor to deliver their memorized lessons to the monitor.

The monitor system utilized older students who administered the testing and drilling of the individual within these smaller groups.
master instructed only the monitors directly, and therefore he was removed from contact with the students and became only a distant figure that could unpredictably interject himself to administer discipline. The discipline was based on expectations of behavior coming from another social sphere unknown and mysterious to the student. The monitor system also allowed for the design of the schoolroom that could be as long as possible, with the master instructing a few more monitors, who in turn instructed a greater number of students, profoundly increasing the capacity of this system without adding teachers.

"In order that all the children could be seen by the master, it is of great importance that the floor be an inclined plane, rising one foot in twenty from the master's desk to the upper end where the highest or eighth class is situated."


In this description we discover the attention to the design of the space that physically builds the spatial experience of distant and indifferent control. The children can be seen by the master, not the other, more educationally significant, way around. Control of this sort was also present in the private school system of 19th century England, where children were in smaller groups and in direct contact with the master, yet were subject to great control as an educational tool in rote learning systems.
The architectural partee of the barn or warehouse model of the Lancastrian system used symbolic architectural phrasing, clothing school facades in classical or English Tudor style elements. The association was then made with the universities and great public schools of the upper classes. The faux application of architectural style was deliberately (perhaps unconsciously) used as a screening measure of the inherent marginalization of students by class in linking the school buildings to the formal architectural languages of the exclusionary higher classes in Britain (Burchell, p2).

A slightly later British educational model was developed for application to the rural poor by the National Society for Promotion of Education for the Poor in the Principles of the Established Church throughout England and Wales. This new approach, called the Wilderspin system, incorporated the idea that nurture was the foundation of an educational system that could maximize the growth of a child. The system relied on a rote learning style in which children answered lessons and questions in chorus from a raised gallery led by the Master in the simultaneous or collective response method aimed at the prevention of idleness by constant occupation. The gallery was augmented by a monitor system that utilized the mistress and monitors at the lesson posts for smaller group work. The master was the embodiment of a perceivable ultimate power in his placement as leader of the whole group of students at the gallery with his wife-assistant leading the monitors. This model also added the new concept of classroom as differentiated from the
schoolroom where the master was able to lead smaller groups of more advanced students in the finer points of the curriculum.

The schoolroom was smaller and served fewer students than the Lancastrian system allowing almost nine square feet per child. (The modern American classroom allows between 25 and 35 square feet per student.) However it still utilized physical control of the students through the tightly packed gallery and regimentation of children standing at lesson posts. The connection to the outside was broken with windows still raised above eye level--a profound controlling device for children used to a rural life conducted mainly outdoors. The concept of nurture is seen in the addition of a walled playground as a laboratory for observation of individual student traits.

“All this takes place in the presence of the master and mistress who observe the children to learn each ones character and use that knowledge later in the gallery lesson aimed at correcting faults in their behavior.”


The inclusion of living quarters for the master and mistress in the design of these schools became a picturesque ordering of rural life, with the insertion of the master and mistress as symbolic parents benignly delivered to the underclass from above by the National Society.

The concept of home as a center for learning, albeit a highly con-
trolled and ordered home, is an important reference for the American contemporary movement of school reform that promotes classroom design based on residential sequencing of spaces and inclusion of living spaces in the institution. A current initiative to provide learning environments for the inner city of New York is examining how classrooms can provide homelike services and experiences in an attempt to reach marginalized and underserviced students in our public school systems. The Wilderspin model exhibits qualities of control, hierarchical distancing, evaluation and judgments of students in ways designed to maintain the status quo in a class system with the powerful administering their vision to the weak. The current initiative in New York is an attempt to be inclusive of people marginalized by a neglectful democratic capitalist system and must take care that it gives strength to the voices of the students it serves rather than impose a voice from another social locale.

In thinking of the role that education serves as a reproductive and transformational institution for a society, it is crucial to consider Rosalyn Deutsche's analysis of the redevelopment of New York City, where she writes and quotes Neil Smith and Baudrillard.

"(Mayor Ed) Koch's espousal of a city that speaks for itself permits a remarkable silence to prevail about the incompatibility between true functionality and a social system in which production "is accomplished not for the fulfillment of needs in general, but for the fulfillment of one particular
need: profit” (Smith). Indeed, as Baudrillard warns, “any system of productivist growth can only produce and reproduce men - even in their deepest determinations: in their liberty, in their needs, in their very unconscious - as productive forces” (Baudrillard). “Within such a system, if a person eats, drinks, lives somewhere, reproduces himself, it is because the system requires his self-production in order to reproduce itself: it needs men” (Smith). In bourgeois society, when people like today’s homeless are redundant in the economy - or needed to cheapen labor costs - they are converted from residents of the city to predators on the “fundamental” needs of New Yorkers. No longer required as productive forces, the homeless themselves have no requirements.” (Deutsche, 1988, p. 9).

In this quote I find a warning for architects who attempt a redefinition of the public educational venue. We must provide spatial opportunities for marginalized groups and people to define and express themselves to the larger community. Their needs then become seen as relevant and crucial to a community’s need as a whole. As architects we must be aware that our work can be used to transpose values and insert political expectations from a larger societal agenda that can limit the group for whom we are designing. The educational environment is a space of self exploration that is ultimately linked to the larger society. The educational territory must allow for self-awareness and discovery that then can inform and affect the larger culture’s self-definition.
Early Twentieth Century Democratic Educational Space

In the United States, at the beginning of the century, a new vision of the public educational space was developed that was to draw children away from the rural one-room schoolhouse into association with a larger community of students. Both the urban and the small town models were based on Dewey’s philosophy of progressive education. This philosophy went beyond rote learning to include interests of the students and current issues. Education, Dewey thought, must also include instruction in the manual arts and encourage physical and moral development. The aim of public education in the United States at the turn of the century was the construction of an American nation through mandatory public education. The demographic shift from a rural to an urban-industrial based economy required an educational system that could speed the assimilation of the large immigrant population and new urbanites toward a shared vision of the
Patrick Henry School, St. Louis, Mo. by Ittner (Dresslar, 1911).

In a school designed by Ittner an extra-wide hallway becomes instructional space with de-contextualized objects on display (Dresslar, 1911).

United States as a nation. The concept of pluralistic or multi-cultural education was something relegated to the home or neighborhood, not the public schools whose mission was to create a single culture. This single culture was the culture of democratic capitalism based on the values of achievement, production and progress.

The school building became a symbol of this unified quest with its monumental size and architectural language eclectically referencing the historic symbols of the Gothic and the classic Greek or Roman in an attempt to invoke authority and control through connection to the historic architectural symbols of power.

The effect of these buildings on the streetscapes of their towns was a powerful statement of the new democratic society. The utilization of the architectural symbols of ancient political power as the only symbols available to represent the notion of a unified power requires that we go beyond architectural facades to un-
derstand this new democratic educational institution. In these buildings, a particular spatial experience is contained for the purpose of creating a public stage for education. It is a unifying space that guarantees an almost equal experience within this public realm--the realm of the reproduction of society. The shared experiences prepare students for a unified adult life in which they exercise their individual power of suffrage within the context of a shared knowledge of their relationships to one another. By situating the basis of the formation of needs in a shared experience, the aim of the democratic process--the resolution of conflict by majority consensus--is rationally assured.

The architecturally defined space does not operate alone in this process. The content of materials and ideas presented to the students remains the dominant aspect of education. Public education does not remove a person's abilities to determine individual different needs and desires but rather it creates a consensus of which needs and desires are within the public's notion as common and imbued with rights of protection. In Lefort's summary of de Toqueville's interpretation of democratic freedoms we hear this concept:

"As an individual man may well wish to be the master of his own thoughts, to shape his own life and to even determine what is meant by good laws and good government, but he is still necessarily dependent upon received ideas and principles of behavior which are beyond the control of
his will and knowledge...Paradoxically, the passions he directs toward the visible master force him to submit to a faceless domination” (Lefort, 1988, p. 27).

The Classroom

The inception of the rigid box classroom as the arena for instruction in the western world in the mid 1800s has persistently left unquestioned both the nature of the basic space and the hierarchy between student and teacher. Refinements have come and gone, and an increase in the subtlety of classroom design at any one time in history in no way has guaranteed its duplication at a later date. The issues of cost in school construction and the interest or disinterest of the community in a diverse and humanely delivered education for its members is most apparent in the attention paid to the spatial differentiation of experiences and possibilities for individual experience and expression in the classroom space.

Iris Marion Young’s essay, “Impartiality and The Civic Public,” holds some insightful ideas that can be transferred to the place of education—the neutral classroom space under the direction of a professional teacher. It is in the perception of the classroom space as an impartial space that gives each student equal but controlled experiences that Young’s argument is relevant.

“The ideal of impartiality in moral theory expresses a logic of identity that seeks to reduce differences to unity. The stances of detachment and
Nuetra's Kester School attempts to step outdoors but is a relentless space for groups rather than individuals. It remains at the "undecorated diagram" level (Roth 1966). Dispassion that supposedly produce impartiality are attained only by abstracting from the particularities of situation, feeling, affiliation, and point of view. Thus the ideal of impartiality generates a dichotomy between universal and particular, public and private, reason and passion. It is, moreover, an impossible ideal, because the particularities of context and affiliation cannot and should not be removed from moral reasoning... (or the educational space or curriculum). It masks the ways in which the particular perspectives of dominant groups claim universality, and helps justify hierarchical decision making structures.” (Young, 1990, p. 97).

Applying her arguments to the classroom it fuels a challenge to what architects have designed: limited spatial experiences of equal light, equal space, the same number of people in a room all day long, confined and limited by restriction of movement inherent in the single desk for a single student, often learning the same material at the same time.

"The irony of the logic of identity is that by seeking to reduce the similar to the same, it turns the merely different into the absolute other... In every case the unity of the positive category is achieved only at the expense of an expelled, unaccounted for, chaotic realm of the accidental... The first side of the dichotomy is elevated over the second because it designates the unified, the self identical, whereas the second side lies outside the unified as chaotic, unformed, transforming, that always threatens to cross the border and break up the unity of the good.” (Young, 1990, p. 99).
Designers and educators have begun to question the negative role of the classroom in limiting the educational experience and excluding important aspects of a potential curriculum, and ignoring the needs of the individual student. The example that follows illustrates how subtly the design of the educational space can affect the educational experience of students. Although the example speaks of a preschool or primary school experience, it is those very students that have been marginalized in some way in their earlier education that the community college in this proposal hopes to include and return to an educational environment that is useful for their future development. In a report prepared for the American Association Of University Women by the Wellesley College Center for Research on Women “How Schools Shortchange Girls” (1992), research is presented that clearly forces a questioning of the classroom space and the delivery of experiences within it. In the discussion of preschool environments the researchers noted that the curriculum was designed to encourage competency in areas already strong points for girls.

“The traditional working assumption at the preschool level is that children need impulse-control training, small muscle development, and language enhancement to be successful in their early years in school. Since many girls tend to achieve competency in these areas before they arrive in group settings, teachers turn their attention toward the boys, whose development in these areas lags behind that of girls. Indeed, one study found that
preschool experience reduced sex differences in language achievement scores between girls and boys--by raising boy's scores.”

(AAUW, 1992, p. 18).

What have the girls been doing while the teacher’s focus has been on the needs of boys? It is noted that when activities are chosen during freeplay the boys concentrate on large motor activities and investigative play that includes physical manipulation of toys and educational apparatus. The girls, on the other hand, have very little expertise in these boyish activities and hesitate to engage in them. Ideally, the classroom and its curriculum could be reconfigured to encourage and support girls’ investigation of these activities. Even in programs attempting to mediate this type of discrepancy, such as a Montessori type approach, boys scored higher on tests because they were able to dominate the use of the hands-on materials in the school room (AAUW, 1992, p. 21). Would not spatial considerations need to be made to allow the inclusion of larger areas for manipulation of equipment and physical movement of the children that could allow for an equitable and encouraged investigation into areas by all the children? This is but an example of the type of information that must be addressed in the design of the educational space if we are serious about creating the inclusive environment for all to learn.

“Programs that provide highly individualized instruction may unwit-
tingly reward boys with more attention and provide girls with less precise feedback of the most beneficial to their learning...Girls who sit quietly are ignored.” (AAUW, 1992, p.21)

The girls who are being ignored are too easily overlooked in the equal space of the classroom that seeks to control and absorb the exceptions to promote the unity of the class.

The Search for a New Inclusivity in the Educational Space in the 1960s

The Open Plan School of the 1960s is an example of a seriously deficient modern school design. Its stated goal was to allow for the casual grouping of students of varying sizes down to that of the individual in an attempt to meet the demands of a new pedagogy in the mid sixties for a more inclusive learning environment. Its inclusivity extended to the curriculum—a self selected course of inquiry that utilized team teaching and individual tutoring. The eventual failure of the open plan school resulted from the abuse of its perceived formal requirements as a cost-saving opportunity where simple warehousing of people and information was possible. The completely closed forms directed the use of space inward to the “world apart” from the environment, often windowless and oppressing its occupants by a complete lack of designated space in which to study, pursue discourse, or even control environmental factors such as noise and confu-
sion of movement. It was not the Lefebverian notion of “spaces of differences” that may have had a moment in the sun.

It is unfortunate that the ideas that stood behind the concept of the open plan were so misinterpreted. If the ideas had been allowed more time to be explored and find a proper spatial expression and more training given to teachers to retool themselves for an open environmental approach, perhaps we could have seen a different and currently useful development of this concept.

**Toward a New Understanding of the Democratic Educational Territory**

The democratic educational territory is a space of potential differences. It is a place of discovery of who we are to each other and who we are to ourselves. It is a place where education can take place, inclusive of areas of calm. We must however, understand that the classroom cannot alone comprise this place of education. A single student in the midst of a score of others must find a place where he or she can withdraw, perhaps still observe, but take a moment to gather individual thoughts away from a desk. If we are to allow the students to find themselves in relationship to the curriculum and to even find their own curriculum we must open up the educational space to include a variety of environments and spatial possibilities, including the natural environment at a scale both individual and group.
This can be done even in an urban setting. Outdoors and views are all around us, and we must make them visible and physical. It is possible to create spaces that evoke a sense of play without literally supplying a version of play already decided--it is for the child to make her or his own play.

The community that supports a school must be able to interface with this space. The design of schools in the 1990s is faced with the issue of security from violence entering the school. Is the solution then to tighten the entrance and lock the children in and their world out? It must be that inclusion of the community, the street, living space, places of work and study for all people within a community can be examined as a way to ensure safety and care in the educational territory. The inclusion of a broad spectrum of human activities in and around the educational territory allows for the pluralism of experience that can make a school area a place relevant and full of all the possibilities the learning person must draw from.

The blurring of the line between private and public activities, by combining in close physical relationship territories of living and learning, brings an opportunity to allow the continual redefinition, through an active discourse, of who we are and what we want. This combination of activities can remove the abstraction of the professional educator--the group charged with determining the public DNA. It places the professional in a context of shifting and changing priorities that scrambles a predetermined choice of curriculum thereby allowing the voice of the student a full expression.
Lefort’s description of the nature of democracy as it differs from totalitarianism reveals the energy that is possible in the democratic space.

“*We must recognize that as long as the democratic adventure continues, so long as the terms of the contradiction continue to be displaced, the meaning of what is coming into being remains in suspense. Democracy thus proves to be the historical society par excellence, a society which, in its very form, welcomes and preserves indeterminacy and which provides a remarkable contrast with totalitarianism which, because it is constructed under the slogan of creating a new man, claims to understand the law of its organization and development, and which in the modern world, secretly designates itself as a society with out history.*” (Lefort, 1988, p. 16).

Lefort leaves us with a warning, then, that the work of a designer of the spatial environment must allow for the possibilities of indeterminacy and look to the possibility of enabling change and transformation.

My investigation has revealed—unlike Louis Kahn’s hopeful and naive image of education as merely two people engaged in discourse under a tree unaware of who is the teacher and who is the student—that we have instead built educational institutions that clearly proclaim who is the teacher and who is allowed as the student. Architectural design has not lived up to its promise of building spaces that allow for inclusive educational exchange but has rather been the minion of exclusionary and selective agendas. Often,
A proposal for a school in New York by Cameron McNall brings the community into the building through the transparency of the facade to the inner public atrium that hosts shared community facilities. Design by Cameron McNall (Architectural League, 1992).

designers have been unable to understand the needs of the inclusionary efforts of new educational philosophies and have built spaces that have had the reverse affect upon the users. Attempts to resolve the design of new educational spaces have often been clouded by issues of cost control that have limited further the efforts toward inclusive design. When we begin to break the box of the educational territory and bring it into contact with its community the exclusionary qualities of the educational space will change.
The turn of the century school established the separate classroom as the model for the educational territory in the United States. The 
H plan and similar school plans used a classroom module of 24' x 32' or 26 x 30'. The module of 770 sq. ft. per classroom were des-
digned for 40-45 students with a single teacher. This design was a conscious effort to limit the numbers of pupils to no more than 45 per class-
room to insure a healthy student / teacher ratio. 

The classrooms had little relationship to the hallways or other classrooms. They were enclosed spaces with access only through one or two doorways. Windows were often above sight lines limiting views to the exterior.
Crow Island School

The Crow Island school by Perkins and Will in the early 1950s attempted to address the educational needs of the suburban population. The large suburban sites allowed classrooms to have both visual and physical relationships to the outdoors. The classroom became a suite design with two different sized spaces. The relationship to the hallway and to other classrooms remained remote with one doorway to the common hallway.

Crow Island plan and classroom design (Roth, 1966).
Scharoun's Secondary School

Scharoun's secondary school has a very elegant plan for both the school and the classroom. The plan of the school utilizes a hallway spine that has many different spatial qualities allowing for the grouping of different numbers of people. The open hall encompasses the library, cafeteria and small meeting areas. The classroom design has three different sized spaces each with a relationship to an exterior court yard.

Plan of school and classroom (Roth, 1966).

Diagram
The proposed educational territory for the community college is arranged around the concepts of transparency and enclosure. Areas of instruction have both visual connections within the school and to the exterior with more enclosed areas adjacent. The classrooms are made up of clustered flexible spaces of different sizes. Informal group meeting areas are near to the classroom areas. The open atrium allows connections between the floors and with the larger community.
Project Site
Existing Conditions and
Proposed Investigations

The Region:
The Blackstone River Valley

Existing Connections
The region has suffered a loss of identity since the dissolution of the manufacturing activities that were often interdependent on each other. The transportation links that ran north and south throughout the region such as the canal and rail system are no longer in use and are barely visible with the exception of rarely organized historic train ride events. Travel on the river itself, as a continuous link between communities, is not possible except by recreational canoe at times of high water. Roads that might link the region primarily make east/west connections that pass through the region rather than make a cohesive and continuous link within.
The regional identity is further complicated by the fact that the region lies in several different counties and two states with independent government agencies and separate planning and funding systems.

The most promising regional link is the development of the Route 146 corridor that runs on the west side of the valley linking Worcester to Providence. This route has existed for many years but has undergone an upgrade in the past two years to a divided highway that allows high speed vehicular connections to the entire region. This connection is to be further enhanced in the near future by connection to the Massachusetts Turnpike (Rt. 90) in Worcester making it the third ring of highways after Rtes. 128 and 495 that arc through and define the greater Metropolitan Boston area. The Blackstone Valley Region in Massachusetts lies within a greater regional designation referred to as Metro West. When the connection is made to Rt. 90, the east/west connector for New England, Rt. 146 will be a critical link to Rt. 95 which is the north/south connector from Boston to Providence Rhode Island and the other major coastal cities in New England. Rt. 146 is presently an important link that cuts inside the Metropolitan Providence area formed by Rt. 295 and is an integral part of that state’s connections to its capitol city, Green Airport and rail connections to the entire east coast.
Regional Identity to be Developed by The Blackstone River Valley National Heritage Corridor Commission

The focus of the Commission’s work is to stimulate a regional identity that is based on a shared historical relationship that has been largely lost to the present inhabitants of the valley. It is hoped that by revitalizing the shared historical and physical relationships within the area that a regional planning initiative can gain momentum that will stimulate economic growth within the region. It is thought that economic growth would further the preservation of historical sites and raise lifestyles through planned development that increase amenities and improve the environment of the river eco-system.

The planning initiative being undertaken by a federal agency is unique in that it combines both National Park interests of preservation, recreation, and historical interpretation, with regional planning and seed money for projects designed to stimulate growth in an economically depressed region. The Commission is one of a kind in both its political makeup and its mandate to stimulate joint public and private projects.

Participants in Blackstone River Valley National Heritage Corridor Commission:

**Federal Government**
- National Park Service
- Coastal Zone Mgt. Program,
- Department of Commerce
- Environmental Protection Agency
- Federal Energy Regulatory Commission
- Federal Highway Admin.,
- Department of Transportation
- Fish and Wildlife Service
- National Environmental Policy Act

**Rhode Island**
- State Planning Council
- Department of Environmental Mgt.
- Department of Economic Development
- Historical Preservation Commission

**Massachusetts**
- State Planning Department
- Department of Environmental Mgt.
- Office of Economic Development
- Historical Commission

**Project Site**

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Commission’s Vision for Valley Development:

“History, more than any other factor, is the foundation of Blackstone River Valley significance. Hundreds of structures and sites stand as strong physical reminders of the Valley’s history and contribute to its character. Protection of the historic character of the Valley is essential to the durable success of the National Heritage Corridor, and the prerequisite for interpretive tourism programs, and education, and research activities. The Commission has no higher priority than the preservation, restoration, and use of these sites...With its partners, the Commission will work to protect significant buildings, mill villages, districts, and the integrity of town, city and rural areas.

“...The historic character as a whole is as important to the Commission as saving any notable, but individual building. Generally, use and maintenance are essential to preservation, and the best adaptive use comes closest to a structure’s original use”

(Blackstone River Valley National Heritage Corridor Commission and State Planning Council State of Rhode Island, section 03-0, 1990).

Design Issues Raised by Commission’s Approach

There are over 500 historically significant structures in the valley by the Commission’s preliminary counts. Doug Reynolds, historian at the Commission, takes a broader approach than the one above. Reynolds projects that not all structures can be saved and certainly not all structures
A typical loft type mill has brick exterior walls with either steel or wooden columns supporting wood beam and floor systems. The south orientation of mill buildings allows light penetration across their thin dimension (Langenbach, 1977).

...can be used for their original program. It is not economically feasible to preserve so many structures as museums and to think of these structures only in terms of their original use. While many of the mills have been turned into residential stock, warehouses or broken up into small scale manufacturing areas, there is a limit to the demand for these types of spaces. Hundreds of structures stand empty or under-utilized. Stockpiling and setting aside of buildings and sites is one approach that can be undertaken until demand and needs change. However, funds are limited for stabilizing threatened structures particularly large ones. The mill type building that exists throughout the valley, built at the turn of the century, is not compatible with the present needs of manufacturing that generally requires single story open spaces achieved with long span structural components that allow for placement of large machines and open work areas.
Project Selection and Design Approach

I assert that a creative approach to adaptive reuse proposals that include structural intervention allows a flexible use and reuse of these buildings through time and enables variations of space dimensioning that is critical to saving these structures. It is my thesis that a physically radical design approach to adaptive reuse in some cases is warranted. Perhaps a community is better served if only remnants and fragments of a structure are preserved to serve as elements within new structural systems and as definers of new spaces for a community. These fragments become part of a genesis of an identity for a community that is both mindful of a historical past and forward looking to the needs of the present continuously changing community. The utilization of these fragments to create new spaces, that reference the past but break free of the imposition of old values provide an opportunity to design territories inclusive of all members of a community.

For this thesis project I have chosen a mill and its site that has been resistant to reuse plans despite great efforts to find a program that would fit under the skin of the existing structure.
The Blackstone River

The Blackstone River runs southeast from headwaters north of Worcester, Mass. for 46 miles to Providence R.I. emptying into Narragansett Bay. It drops almost 400 feet over the course of its run which is the fastest drop of any river in the U.S. after the Niagara River. The drop is almost even for the entire length with the steepest areas in northern R.I. It is for this reason the river was quickly identified and used first as the basis for industrial manufacturing in New England.

Blackstone River and its Tributaries: Historical Context

The Blackstone River was a working river first and foremost. It was the most important element in the economic development of the Worcester and Blackstone Valley areas particularly during the period of heavy industrialization in the second half of the nineteenth century extending into the mid-twentieth century, and the essential element that determined where new manufacturing settlements were to be established.

The river was there to be harnessed and used by capitalist enterprise. The river was not considered as a source for municipal drinking and water supplies. It was an element dedicated to serve industry. In Worcester, the

American Steel Plant, Worcester, Ma. 1900s
(Kotker, 1981).

Project Site
drainage basin of the river's origination, the creeks and tributaries that fed the main stream were harnessed as power producers for factories and sewer systems for the waste products of manufacturing and for the city's inhabitants. The stench of these waste streams was so intense in the city of Worcester that the flows of these streams were systematically covered over and channeled beneath the city and its occupants only to be released onto downstream communities such as Grafton only a few river miles south.

**Early Planning and Design Approaches to Water in the Blackstone Valley**

“The eastern most watershed has both the most noble and strangest history of Worcester's five watersheds. This is the Quinsigamond Lake area, and the industrialists arbitrarily preserved the purity of the water in order to provide Worcester's industrial workers with a recreational resource. Historian Roy Rosenzweig notes, in fact that industrialists Horace Bigelow and Edward Davis gave hundreds of acres of the lake's shoreline to the community as a working class recreation area in 1884. This paternalistic "refinement ran beyond an expression of goodwill or boosterism to one of encouraging a sophisticated taste for the beauty of nature." Some manufacturers, noted Rosenzweig, helped create a City Beautiful movement because they believed that "parks would actually reshape the public behavior of their employees." by refining, and softening, indeed "cultivating, human-
ity itself.” Lake Quigsgamond and the Quigsgamond River system therefore represents a vision of urban development that contained beauty and civic growth intertwined.

The Quigsgamond watershed reveals to us a conscious decision to use water in a particular social way, one whose immediate use for recreation is apparent, but also one whose use is actually greater than that immediately apparent. The industrialists, Bigelow and Davis, with Park Commissioner Lincoln, were attempting to use the environment for a particular molding of human society. This idea of choice, upon reflection, can be extended to the historic manipulation of Worcester’s other water systems. The important point, of course, is that Worcester’s civic and business leaders recognized a hundred years ago that water related options were available to them and the choices they made were both environmentally and intellectually far-reaching.”

(Massachusetts Foundation for the Humanities, 1992, pp. 57-58).
USGS Map showing Blackstone and Quigsgamond Rivers joining in the Fisherville Pond. Note the locations of mills along the Blackstone.
**Design Issues**

In looking at maps and plans of the Blackstone River and the communities it serves it is apparent how the river has been given a cold shoulder and kept at distance from the civic and more public areas of these towns. The river flows through the working end of these communities.

The river is the focus of the Heritage Corridor initiative and frees it from its past work horse role and proclaims it as the most important theme or thread within the Valley. It is now the focus of amenity planning and is the historical interpretive element that is a constant throughout the Corridor.

The Fisherville Mill site is a perfect example of the water being placed at the back of the community. The only hard edge that the water can be reached from is at the rear of the mill site. This connection to the water both presently and originally is a private connection across mill property. The mill pond formed to the north of the mill is edged by thousands of feet of wetlands that slopes down from housing and farm areas to a variable water level within the pond that results in an ever changing location of the water's edge.

Utilizing the river as an amenity in present planning and design initiatives in valley towns--which seek to blur the distinctions between working, and working class residential areas versus business, civic, middle and upper class residential zones--requires new types of physical design moves toward
the river and ponds. These new design moves will change dramatically the
movement and use patterns of open space previously seen as private zones
within these communities.

Just as lake Quigsgamond was used as a tool of social engineering in
the past, we must now question: exactly how design for present and pro-
posed relationships to the water edge can be configured. This is not an
exercise in preservation but an intervention with a new social and environ-
mental agenda.

The design project in this thesis looks to a plan that includes public
use of the waterfront. Recreational activities on and near the water brings
the river into contact with the community. The increased awareness of the
river and the mill pond as a vital element of community life is reinforced by
the community college’s programs of environmental research and improve-
ment projects focused on the river eco-system. The relationship between the
public and the community college based on river activities and environmen-
tal issues can bring the college into a special relationship with its community
that extends beyond the classroom into the public territory by providing
opportunities for shared activities. The extension of the educational realm
into the public is one of the ways that the new model proposed here begins to
find expression in physical design.
Aerial view of the Fisherville Mill and community (Town Of Grafton).
Grafton, Ma. is a conglomerate of village settlements that include both a commercial/civic/agricultural hill type village and several mill based villages. The Fisherville Mill and village, the focus of my project, and the adjoining Farnumsville Mill village are considered classic mill types. These villages are characterized by a centralized Mill with multifamily dense packed housing, churches, schools, and shops (often constructed by mill owners) that are in close proximity to the mill. All paths and roads lead to the entrance of the work place and provide limited relationships to the larger community or the river’s edge.

A 1990 Vision-plan referred to here has dissolved due to flat market conditions for housing and commercial development in this area.

"South Grafton town planners are working on an idea to enhance the corridor in a variety of ways. A collaboration that could involve the owners of a magnificent but unused mill, (Fisherville Mill) the town, the Ma. Waterways Project, the DEM, the Blackstone Valley Redevelopment Corp., and the Commission could lead to the rehab and reuse of the mill for commercial, residential, and interpretive purposes, the donation of town land to the state heritage park, the enhancement of valuable waterfowl habitat, and the development of the recreation potential of both the Blackstone River and Canal at that site. The South Grafton mill villages (Fisherville
and Farnusville) are classic examples of the distinctive character of the Blackstone River Valley and should be protected and enhanced.


**Site Conditions**

The Fisherville site is located on a 22 acre island created by the Blackstone River on the east and south, the Blackstone canal on the west, and Fisherville pond to the north. The island is bisected by Rt. 122A. The mill is located on the north parcel. The 520 foot long mill runs virtually parallel to Rt.122A set back approximately 120 ft. from the road. The length of the building nearly spans the distance between the Blackstone River and the canal creating a 60 foot high barrier blocking visual and physical connection to the north half of the site and the mill pond.
The Blackstone River gorge on the east side of the site has a very natural feel. Water falling over the step dam rushes along a tree lined natural channel with several small islands in mid stream. The untouched aspect of this part of the river makes it a pleasant place for walking trails from 122A to the dam and pond areas. The visual link from 122A to the step dam and the pond is possible looking up river. This visual link will be intensified in the project proposal.

The slope of the site is a drop of 10 feet from the west to the east along 122A. From south to north the site rises some 12 feet to form the earth dam that forms the Fisherville pond. Fisherville pond is a conglomeration of wetlands, ponds, with three drainage systems feeding from the north and west.

The canal on the west side of the site is presently covered for the last 150 feet before it flows under the stone bridge supporting Rt. 122A. The canal on the north side of the site is channeled by stone walls that are original to the construction of the canal in the 1830s. The uncovering of the canal to Rt. 122A will intensify the island aspect of this site and links to the mill pond. The canal emerges on the south side of the road in a soft edged channel that takes it to the south end of the site where it joins with the Blackstone River.
View of Blackstone River gorge on east side of mill with step dam.
View of Fisherville Mill looking west along Rt 122A.
**Pollution**

Water and sediment pollution on the site and adjacent mill pond is a major problem. Worcester area manufacturing, particularly of metals and plating procedures, has created a legacy of heavy metal pollution that far exceeds environmentally safe levels. Run off of untreated sewage and storm drain systems upstream, particularly from Worcester, further weaken the eco-system of the river. Toxic sediments have built up behind the earthen dam and stone step dam that complicate dredging and the necessary strengthening of the weakened earth dam due to regulations controlling removal and disposal of these toxic materials. Water levels have had to be lowered in the mill pond due to the weakness of the earth dam along the north edge of the site. It is imperative that the earth dam be repaired, toxins removed or sealed, so that water levels can be restored. This will allow an increase and improvement in nesting and bird habitat in the crucial flight corridor that has been established by migratory birds who presently use the wetlands and mill pond.

Pollution on the site itself is also present. The mill originally was built for the weaving of cotton but was forced to change in the 1950s to the manufacture of plastics and aluminum parts for furniture. Solvents associated with these processes were dumped in a dry well near the north side of Blackstone Canal and boat, 1830 (Robinson, 1976).
Grafton for its water supply. This migration of toxins is being monitored and evaluated by the EPA. Plans to control or mitigate the situation are not complete. Oil leaking from underground storage tanks, that have since been removed, is now visible in the remnants of the canal system on the western side of the site. It is thought that the oil pollution can be cleaned up by removal of earth on the western edge of the site, although expensive.

View from the residential area west of the mill
Aerial view of Fisherville Mill (Town of Grafton).
## Design Proposal

<table>
<thead>
<tr>
<th>Community College and Town Center</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fisherville Mill</td>
</tr>
<tr>
<td>South Grafton, Massachusetts</td>
</tr>
<tr>
<td>Program</td>
</tr>
<tr>
<td>---------</td>
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<table>
<thead>
<tr>
<th>Shared Facilities</th>
<th>Community College</th>
</tr>
</thead>
<tbody>
<tr>
<td>• auditorium theater (1,000 sts) 10,000</td>
<td>• 50 -54 classrooms x 1,000 54,000</td>
</tr>
<tr>
<td>• backstage 3,000</td>
<td>• laboratories and special instruction areas 25,000</td>
</tr>
<tr>
<td>• lobby 5,000</td>
<td>• Faculty offices (a large part time faculty) 8,000</td>
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<tr>
<td>• common area</td>
<td>• study areas 3,000</td>
</tr>
<tr>
<td>• informal theater/gallery 3,000</td>
<td>• counseling 1,200</td>
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<tr>
<td>• winter garden 3,000</td>
<td>• administration offices 4,000</td>
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<tr>
<td>• cafe 1,000</td>
<td>• services 5,000</td>
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<tr>
<td>• restaurant /pub 2,000</td>
<td>• circulation 15,000</td>
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<tr>
<td>• waiting area 1,000</td>
<td>• maintenance 3,000</td>
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<tr>
<td>• gym/ spectator area 10,000</td>
<td>total square feet 118,200</td>
</tr>
<tr>
<td>• exercise/ sports 4,000</td>
<td>Total Built Program 237,500 S.F.</td>
</tr>
<tr>
<td>• pool 10,000</td>
<td>Outdoor program</td>
</tr>
<tr>
<td>• locker rooms 3,000</td>
<td>• community greens</td>
</tr>
<tr>
<td>• library 11,500</td>
<td>• open-air Theater</td>
</tr>
<tr>
<td>• bookstore 1,000</td>
<td>• gathering places</td>
</tr>
<tr>
<td>• computer 1,500</td>
<td>• waterfront access</td>
</tr>
<tr>
<td>• student / community center 8,000</td>
<td>• boat launch</td>
</tr>
<tr>
<td>• kitchen services 3,000</td>
<td>• promenade along dam and river</td>
</tr>
<tr>
<td>• meeting conference 4,500</td>
<td>• trails around island</td>
</tr>
<tr>
<td>• day care - 135 children 5,000</td>
<td>• playground</td>
</tr>
<tr>
<td>• services 4,000</td>
<td>• outdoor market/ display pavilion</td>
</tr>
<tr>
<td>• circulation 4,000</td>
<td>• parking 500 cars</td>
</tr>
</tbody>
</table>

| total square feet 97,500 | 500 cars |
Programmatic Site Plan
Floor Plans
Sections
Diagrammatic Analysis
Interaction and Movement by Level

Ground Plan

- Exterior Movement
- Interior Movement
- Zones of Interaction
Building the Public Zone

The project proposes that the public space can interface with the educational territory and the site. This interface is critical to building the synergy of both the town center and the community college to make this a vital place for the community.
Building the Educational Zone

- Movement
- Shared Facilities
- Public Green Space
Model and Elevation
Left page: Schematic model
Right page: South elevation
The Artifacts

The elements, I have used in the design proposal, that define and mark the proposed town center and community college, are illustrated in this chapter. The change of program from a mill to a public building brings new structural codes to bear that can be met only by vigorous structural changes. Fire and seismic codes cannot be met by a mill structure built in the early 1900s. I offer some approaches to how changes can be made to the structure that preserves the mill as an artifact of the community. It is important that a sensitive selection of artifacts from the mill is made that allows a coherent reading of the old structure in the new spatial experience. The mill is a participant in the new building but it is not, by itself, the complete formal vocabulary needed.

The monumental stair towers of Fisherville Mill along the south facade
The artifacts from the mill and its site are markers for the directions to be investigated.

The mill engenders in its community very mixed feelings. It is was the symbol of economic opportunity but eventually became the symbol of economic oppression. Workers at the mill took great pride in their skills and the products they manufactured. However, as the mills in the Blackstone Valley began to go into decline, wages were lowered and jobs were eliminated leaving a population without access to economic survival. Today the empty mills are perceived by the neighboring residents as both hazards--affecting the safety of their homes and children and as relics--that need to be cared for and not forgotten.

The Fisherville Mill is:
- An Unsafe Structure with easy access for children
- A fire in the mill would spread
- Live cinders the size of 2 fists for 1/2 a mile
- A toxic cloud for a mile

The Fisherville Mill Task Force was created by the Grafton Board of Selectmen to study the safety issues and find solutions. Come to our public meetings - listen and talk to Task Force members and special guest experts.

Monday, March 15 7 PM
South Grafton Community House
25 Main Street, South Grafton

It's about your children, your home, your health.

Provocative flyer distributed in the town of Grafton by local residents to stimulate community interest in finding solutions to the presence of the empty Fisherville Mill. (Town of Grafton).
Identifying the Artifacts

The Artifacts

A - The brick facade, stair towers and wood column system
B - The natural elements of the site
C - The chimney
D - The Blackstone River
E - The stone dam
F - The canal and stone bridge
Revealing the Site as an Island

Three Parts

A - Uncover the canal to the historic stone bridge on Rt.122A
B - Lower the west end of the structure
C - Clear view toward the dam allowing the river gorge to be seen from street edge
The Mill Structure Receives the Site

Three Entry Points

A - Canal with footbridge entry crosses through green and over water

B - Center of structure is opened to receive movement in to the building and through to the water's edge

C - West end of structure is opened to the natural elements of the site with a Winter Garden

Artifac
Lee Krasner's collages are made from her old drawings cut into strips and painted over. The reuse of her past work informs her present work. Without either part, past or present, the work is not complete. (Museum of Modern Art, 1983).

The physical elements of the mill, the worked material of the structure, can be reconfigured to both represent the past and participate in the present.
The south facade of mill is 520 feet long and 60 feet high. It is an elegant brick structure with intricate detailing.

South facade of mill looking west.

The length of the facade spans the island site blocking access to the waterfront.
The brick screen provides a limited spatial experience of either in or out.

The view from the stair tower is the only opportunity to see the building from inside.
A habitable screen that allows movement and visual connections through while providing a place to be, in the screen, is illustrated by the galleries of Plaza Mayor in Tembleque (Webb, 1979).

Sketch of the brick screen with passage through and a study area above that moves out from the library.
Early drawing showing the removal of the front brick screen exposing new structure in the center. Visual and physical passage to the rear of the site is through the rear brick screen. In both elevations the new structure in the center steps back from the brick screens allowing the screens to be perceived as retained artifacts. Passersby, on the street, observe movement in the structure-- as their view shifts the new structure changes its visual relationship with the brick screens.
Final elevation of the center showing the front screen removed. The rear screen is lowered by one story giving visual depth to the length of the structure. The ability to move through the remnants of the building into the site is perceivable from the street. The site seems to move through the windowless screen with trees planted in the old footprint of the center. The green crosses the street to the commercial and town office area.
Alvar Aalto’s grassed steps to Saynatsalo town hall are a reference for the center’s entry stair (Museum Of Finnish Architecture, 1985).
Landscape in Bazoches, France is a powerful precedent for the stepping down of the landscape in the proposed center of the project (Museum Of Finnish Architecture, 1985).
Sketch section through the open center showing connector on the second level and trees growing in the center
Sketch section shows the new relationship of the wall and stair tower to interior and exterior spacial designations. Community members enter through the open center passing under the enclosed column and beam system and through the brick screen into the lobby of the auditorium. The stair tower is enclosed by the lobby for the first two stories in the new structure. Physical connections between the college and the community is made in this shared space. The brick screen has a new role in the spatial experience where once it was difficult to reach the brick screen people now pass through it in physical contact with the material of the artifact. The screen is no longer the demarcation of interior and exterior.
Sketch of the college classrooms extending through the wall into the new structures on the south face of the east half of the mill. The spatial experience of the wall in the classroom and lab areas create spaces apart from the classroom for specialized activities and smaller groupings of students. The quality of the light can be very different between the areas enclosed by the brick wall and those of the new structural towers.

Right: section through structural towers showing lab space connected to classroom areas and central atrium.
Stair Towers

Elevation of new stair tower with an outlook conference room at the top that has a view of the river and wetlands.

Stair tower built in 1881 its twin was built in 1910.

Left: The plan of the west end of the building shows the existing stair tower changed to habitable space rather than vertical movement. The damaged tower in the rear is replaced by a new stair tower within the structure that brings light down through the interior.

Artifact
Column Structure

Interior view of the mill structure. The open loft floor is four bays wide = 94 feet across. Interior walls would block light in such a wide space.

Existing column grid is 48 bays long for a total of 520 feet with an average of floor height of 12.5 feet.
Dimensions of the structural grid

Column and beam system

Artifact
Plan of the east end of building used primarily for classrooms and labs. The column bays are 10’ 8” x 22’ almost too small for classroom sizes. A flexible system of moveable partitions work with the columns giving definition to smaller study areas and entry zones on the periphery of the classrooms. Extension into the new structural towers augments the concept of overlapping spaces within the classroom areas. The floors of center bay are removed to allow visual connections between floors and across between common areas, glassed in offices and classrooms.
Detail of section showing the structural towers relationship to the skylit atrium. The atrium light is both north light and filtered south light.

Structural diagram of the east end of building. The structural towers work with the existing floor membranes and column system, attaching to the atrium structure and new walls to stabilize the building against shear forces in both directions.
Model of the new structure added to the west end of the building. Steel column and beam system carries the student center and library roof over the existing wood system of the first two floors. Light is brought into the center of the structure by this new system. The brick screens are stabilized by attachments to the steel structure.
Carlo Scarpa, in his Banca Popolare di Verona, utilizes a screen that sits in front of the structure of the building. The offset between the layers of facade, closure and structure make legible the parts of the building system. The clarity created by the layering and the offset of the vertical elements is a reference for this proposal. The proposed steel structure allows the separation between the brick screen and the vertical members both allowing the new structure to be read in contrast to the old and creating opportunities to modulate the strong south light on the interior.
Detail of section: The structure pulls back from the brick screen. Light enters through arches of screen and from above, reflecting off the interior facade, illuminating the inside of the brick screen.
Looking toward the winter garden, the old column structure parallels the direction of the corridor creating a zone along the wall of the restaurant that allows a comfortable exchange with passersby. The skylight illuminates the center of the building.

Toward the winter garden
Plan of the west end: The structure is pulled back from the brick screen on the south side and steps through the screen on the north side for the library.
Sketch of the winter garden: The steel and glass structure sits within the brick screen and extends out to the river on the west.
Elevation of the west end: The brick screen is lowered to two stories revealing the new structure of the student center, day care play terrace and winter garden.
The chimney becomes the light for the new town center. It can be seen from several miles up and down the valley.
Conclusion

The Fisherville site provides many opportunities for new configurations of built and open spaces. The island, river, pond, canal and existing structure can work together in many combinations. However, the scale of the site and structure in comparison to the neighboring residential and open areas requires a vigorous program that both fills the site but remains open to the physical environment that surrounds it. There is a danger that design for the Fisherville site could take on an urban density that is inappropriate within its context of dispersed settlement. A balance must be made between, inhabiting the site with a programmatic intensity that makes it a viable center for the region, yet reveals and enables public access to the rich continuity of the physical environment of the valley.
Size Comparisons

The comparison of the Fisherville site with large urban commercial centers, in Boston, reveals the problem of programming such a large site as a public place in the nonurban context.

The Fisherville site juxtaposed with the footprint of Quincy Market, Boston.

Copley Place, Boston overlaid on the Fisherville site.
Initial Design Concepts

Early organizational diagrams that investigate public access to the site and built form configurations that open the site and provide places for the community college and town center.

Conclusion
Conceptual Site Models
Development of the shifted arm of built territory toward the waterfront from the front of the site
Working with the Shifted Arm and Grid

Drawing of the angled arm of building that corresponds with a shifted grid of new structure within the existing building
The shifted plan opens the site for the length of the island.

The shifted structure opens the building to movement through to the site.
Model of new shifted structure contrasting with existing grid of columns that make territories of different sizes and orientations to the site
Sketch of the interior atrium generated by the shifted grid
Locating the Center

The diagram of the shifted grid leaves the center of the project in the interior of the existing building. The width of the existing structure makes it difficult to build a public place that is the appropriate size for the numbers of people who will be using this space. The combination of the college and public program will create at times a large number of users. However, in a nonurban context the potential of building a large interior space, that may be uninhabited for much of the time, makes a search for an appropriate center necessary. The final proposal looks to a center that is anchored in the exterior space of the site. The final diagrams and models propose options to this exterior centering that point the way to designing the nonurban public territory.
Diagrams that break apart the program to build the space of the center.
The new center with the intensification of connections
Models investigating the placement of the center and the built territory
Final Site Plan
Final Model
Bibliography:

**Mill Buildings and Towns**

**History and Construction**


Publications by The Blackstone River Valley National Heritage Corridor Commission.

"Cultural Heritage and Land Management Plan for the Blackstone River Valley National Heritage Corridor". 1990


**Educational History and Philosophy**


**Educational Structures and Design Considerations**


**General Reference**


**Social Theory**


**Periodicals**


