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A REHABITATION: FIVE WALLS

by

Timothy F. Hagan

A THESIS SUBMITTED
IN PARTIAL FULFILLMENT
OF THE REQUIREMENTS
FOR THE DEGREE

MASTER OF ARCHITECTURE

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ABSTRACT

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We, as inhabitants of a built society, are surrounded by spaces which go wholly unnoticed as we pass through them. These are the spaces of transition and passage, but by no means are they spaces without importance. The spaces can be seen as having been misplaced by the changes to the environment around them. By studying the cues left behind in these spaces, and attempting to respond to the conditions presented in them, we can reinstill in the spaces a new life, a new architecture. This reinstallation of architecture should be an accentuation of the existing, rather than the replacement of the space.

This thesis attempts to accomplish the task of reinhabiting an existing building by first analyzing the archaeological object through the reordering of found artifacts. The analysis culminates in the reinvention of the building spaces through the addition of five walls.
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There are a number of persons to whom I am indebted for their help on this project, the absence of any one of whom would have made the production of this thesis impossible. I cannot begin to express my gratitude.

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Matt Greer took pictures and brought chicken.
David Guthrie gave the right speech at the right time.
Alex Hussey brought her parents.
John Kisner made fire.
Lars Lerup saw the beginning and the end.
Richard Odom played devil's advocate.
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Matt Selzer stayed up later than I did.
The Texas Department of Transportation did their job, then they called me.
Mark Wamble got excited when it was needed.
Gordon Wittenberg provided the testing ground, and brought his son.
Mom and Dad had never done this before either.
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PREFACE

The process of this thesis project is somewhat different from the standard research thesis. The definition of "Academic research" is assumed to include a process of physical experimentation as a means of providing information and generating new hypotheses and subsequent experiments. This document is the product of such experimentation.

This thesis is organized chronologically within the framework of the project as a whole. The document takes the form of individual entries, each attempting to explain an action or movement on its own terms. Each entry also attempting to define itself historically within the framework of the previous events, and attempting to project itself into and onto the future. In each attempt, as in everything, hindsight is much clearer than foresight. This thesis, then, can be read in the form of a journal or log. In this, I am attempting to illustrate the changing perception of a project which was blessed with continual movement. The project, in its processes and developments, is anything but linear, as is any process of discovery.

There are a number of threads of action and information which make up the real set of issues that this project is attempting to deal with. Some of these threads permeate the fabric of all of the events which make up this project, while others will seem to disappear, to return later. The issues which are continuous or reoccurring are of most interest in the project. How these persistent threads have tied themselves, and what they are tied to, lies at the heart of the real project, despite any obscuration or confusion. This thesis is not a scientific experiment, but a process guided by trial, error, and faith.
PART I
The Box Project
ORIGINS OF THE BOX

The box project is derived from a combination of contemporary opinions of site and context, and the preconceptions surrounding the issue. Specifically, the project is to investigate the preconception that site and context are inseparable. Historically, the site has been seen as the plot of land which defines the location of a project - a three dimensional definition of space. Naturally, the site has been considered to be connected to the location which provides the boundary of the site. However, if that site is seen as only the three dimensional definition of the space, simply the geometric boundary of an area, and context as all of the location specific histories and contingencies of the area, then the two, site and context, can be separated successfully. In this, the concept of site is given abstract geometrical definition: i.e. site is defined by the current placement of its boundaries. Ideas of context rely on more event based definition: i.e. context is defined by internal and external political considerations. Political in this sense is used to describe implied forces from relationships of contents of the site and its surroundings, such as adjacent entities or spaces.

The object in separating the two entities is to investigate the potential layering of memory and meaning possible when a site and its contents begins to have multiple levels of contextual information. This phenomena occurs in the built environment regularly in a few situations. First, the contents of a particular location rarely remain fixed over the course of even the relatively short lifespan of a person. The surroundings of a building upon its initial completion are often very different twenty years later. Context, in the definition provided above, is not static. Pressures on a given location do not remain constant.
The second, more common, example comes from the increasing standardization of the building trade. This standardization of the spaces we inhabit brings about situations where it is possible to enter the same spaces in different surroundings. Nearly everyone has experienced the confusion of exiting an elevator into an identical lobby on the wrong floor. What may seem initially to be familiar surroundings becomes subverted by the onset of the realization that the environment that exists does not relate to the memory of environment expected.

If we then imagine the site as a portable entity, capable of being moved from context to context, vastly different from each other, the potential for a richness of layering of histories and cultural overlapping emerges. As the site is moved, assuming that each time the contents are revised to accommodate for the difference in surrounding while allowing for the preservation of the histories of the previous locations, a new layer of context and history is added to the structures within the site. This allows for multiple readings of the objects within the site, both in relationship to the current locations, and as continuations of previous contexts.

This overlay of contexts is not an unseen phenomena in buildings which already exist. In buildings where the surroundings have changed over the course of its lifetime, often a building is revised to more closely fit into the new demands of a location. This can provide visible indications of the overlay of histories. Windows that have been bricked in, former rooflines on partywalls, and interior surfaces which have become exterior surfaces are seen commonly on buildings in older urban areas, a phenomena which allows us to begin to recreate the past occurrences of the area. There is a certain richness to the buildings in these areas that cannot be built into new constructions.
The box is an attempt to study these changing contexts and uses through forced changes of the building surroundings. Objects contained within must be adapted to respond to the demands of the new contexts.
FORGOTTEN SPACES

There are spaces in the world around us which we rarely, if ever notice. These are the spaces which exist in the expanse between the places we leave from and arrive at. These intermediary spaces can be called forgotten spaces. They have earned this name because while they are manmade, and even encountered on a regular basis, they are not thought of as spaces in themselves. Forgotten spaces have become subservient to the places of destination, and are considered to be the byproducts of the places which surround them.

In reality, however, it is the forgotten spaces which surround our destinations. The spaces are the median in the roadway, and sometimes even the roadway itself. They are the cracks between and behind buildings, the realm of the garbage can and the alley cat. Forgotten spaces are also the hallways and entries of the buildings which we visit daily, the transitional zones which we use to bridge the gap between our cars and our desks and our beds.

The entry to the Rice University School of Architecture is a prime example of a forgotten space. We, as users of the building, pass through the space on a daily basis, but rarely, if ever, do we notice the entry as a space. The space of the entry is merely a passage to the rest of the building. The human body is marked in the space only marginally, by the entry doors, the door the auditorium, and by the hallway entry. But these doorways serve more as markers of exits than as indicators of use. The passages do influence the directions of movement through the space, but this does not influence the use of the space by its inhabitants. Rather, the doorways only lead the body away from the space.
The underside of the Interstate 59 overpass is a similar space within the city. The space referred to is that between the roadways that pass under the highway. The space of the underpass is seen by thousands of people who pass through in cars every day, but the areas outside the immediate roadway goes unnoticed. The columns of the overpass are seen as solid walls when viewed in motion through the peripheral; a blur, non-focused and scaleless. However, when the car is slowed, or one's head is turned, the space opens and presents itself as rhythm, and alignments of solid and void. Generally, the space is filled only by the columns which support the highway above, the regularity of which provides for a rigid uniformity and a lack of scale. Introduce a foreign object - a person walking or a car passing on a road in the distance - and the space is transformed into one in which scale and depth and orientation are again perceived. Space is given cognition by the introduction of the relative object.

This is also the case in the space of an automobile parking structure. Parking decks, in basic structure and form, are almost identical to the form of any personally inhabited structure such as an office building. On the interior, from the vantage point of the driver's seat of a car, the space even seems normal, as the relationship of the space to the inhabiting body (the car) is in proportion. The space is designed for inhabitation by the automobile, as is evident as soon as one steps from the vehicle. From there, one must leave quickly - one does not consider the possibility of personal inhabitation of the parking deck - the space is the realm of the car. The scale of the space, as well as the implied use through signage and other markings, is set to the scale of the automobile. As in the case of the entrance to the school of architecture at Rice, the only human scaled entities, the elevators and stairs, inform the body of the means of exit or passage.
There are similarities between the spaces mentioned above. All are in many ways spaces of passage, dividing spaces of destination. There is little indication of how a human body is to inhabit the space, no implication of use in the space, no assigned function inside them. There is generally a lack of consideration of the surfaces of contact and use. Perhaps most significantly, there is no indication of where the body should be placed in the space. There is no indication of an intended stoppage of the body within the space.

Generally, the spaces are fields of some sort, undifferentiated in path or direction. In the case of the parking deck, the path and direction make up the entire function of the building, yet there is little or no set direction for the body once one leaves the confines of the automobile. The directions indicated serve only the car.

In situations like these, the introduction of an object or space scaled to the human body can change the action of the movement through the space. On a marginal level, this happens in the space of the parking deck, in the area of the elevator/stair. Interestingly, this area is immediately recognizable if the markings of the human scaled elements, doorways or handrails, are turned to face the viewer. If, however, these elements are on the other side of the elevator block, the intended location of the body is lost.

The objects and spaces scaled to the human body create stoppages and, most importantly, cognizance of human scale to space. The elements create locations to which the body can relate and begin to inhabit, either in an actual physical means, or simply on a mental or imagined level. To imply inhabitation through marking or defining an area can be as important as the actual inhabitation. For instance, we as viewers have little problem understanding how our neighbors inhabit the houses that they live in, while we
have often never actually been inside. Instead, we can create an implied inhabitation through the signals we perceive as we pass - furniture and architectural elements such as doors and windows act as cues for us to relate the inhabitation to our own history of spatial inhabitation.

(refer to figures 1 and 2)
Figure 1
FRAME (PHASE 1)

The beginning of this investigation consists of the design and construction of the box frame. The frame construction, as an object, was originally intended to be an insignificant part of the project. The box was to be the definition of the spatial boundary for the installations, mute and simple, a given. At the inception, the project was about the objects inside the box - the frame, merely a container.

Wood is the predominant material used in the study, due to its cost, availability, ease of construction and fabrication. The project also accepted as given the design restraint of the necessary ability of the constructions to be fabricated, transport, and assemble all phases of the project by a single person. The purpose of this assumption is purely a logistical one, reliance on the ability to arrange assistants could slow the process of construction.

The perceived muteness of the frame changed almost immediately upon the attempt to make it a built physical reality. Pressure-treated 4x4's are used for the frame construction. This material is chosen for its ability to resist corrosion and warping when exposed to the elements. Wall structuring chosen consists of vertical corner members with diagonal "K" bracing within each face. Detailing and joinery of the pieces becomes the second concern of the design. Connections chosen between members are standard woodworking details, consisting of a false mortice and tenon joint at the corners and a recessed butt joint at the intersection of the diagonal members with the center of the vertical posts. All joints are secured with double four inch lag bolts in the plane of force. These material and connection choices, while simple, immediately begin to give the frame structure a substantial physical presence. Location of structural members and
detailing of the connections between them begin to influence potential attachments to the frame in the form of installations.

The construction process and the order of assembly also become an issue in the fabrication of the frame. The original plan of construction was to consist of the construction of one full side of the frame, which would be tilted up and used as the basis for the construction of the remaining frame. After a near disastrous construction mishap, and the subsequent introduction of potential physical harm to the builder, the structure was rearranged to allow for the lower triangulations of the bracing to be constructed and tilted up together. This change made the process more like that of standard wood framing practices. Safety was also substantially improved.

In addition to the rearrangement of the structure and order of construction, a system of scaffolding and construction bracing was added to the frame. This system utilizes a set of holes, drilled in each axis of the vertical members at twelve inch vertical intervals, which act as receptacles for pins to hold scaffolding and bracing members. The system can also be utilized to create a ladder for vertical circulation during construction and after, and can be used for the attachment of future installations. This small addition to the frame design proves quite significant in terms of the nature of the object. The frame, once a mute definition of boundary, now offers means of support, connection, circulation, and, due to its substantial material presence, the beginning of scale.

The location of the initial construction of the frame is inside the two story entry vestibule to the School of Architecture at Rice University. The structure is intentionally not located specifically within the vestibule, as it is intended that a future addition to the
structure would provide the bridge between the location of the frame and the relationships of elements of the surrounding space.

Reaction to the frame and its placement within the school proved the failure on the part of the frame to be a mute definition of space. The frame alone begins to define the area within the space, dividing the space into "that which is inside the frame," and "that which is not inside the frame." This creation of heirarchy within the existing space is a development not expected in the original conception of the frame, and most definitely not mute.

The Building and Grounds department of the University considered the frame to be an obstruction of a path of egress. After explanation of the nature of the project, a removal date of October 1, 1993 was set for its dismantling.

(refer to figures 3, 4, and 5)
Figure 4
Figure 5
INSTALLATION #1 - SITTING SPACE

The initial reactions to the placement of the frame in the School of Architecture were not generally favorable. There was much talk of the frame being a fire hazard, followed by an imposed deadline for the dismantling of the frame. This was the first instance of the frame having an effect on the world outside of itself. The box was no longer innocent.

Programatically, the intent of the box is to be a place of inhabittance for one person. The project is not intended to be an inhabitation in the sense of a collection of bedrooms, bathrooms, and kitchens; rather, it would contain spaces that referred to the inhabitant and its postures. There would be places to sit and stand, places from which to look and be looked at. The box is considered to be an investigation of the abstract house in form and function, more a study of the psychological house than of the programmatic.

Its location, the entry to the School of Architecture, is an almost purely public space within the building. There is no element of space which could be called personal or intimate. As the frame was supposed to be a personal space, there is a need to provide in the space a location which could be considered private. The initial concept of this private space for this location is that of a hiding space. It is to be a space in which one could be private, or at least have the impression of being private. This privacy, however, would not be simply given. One could be private in the space, but to be so would require the sacrifice of some ability to be mobile and, in some instances, basic comfort. This was seen to be not unlike a monastic vow of silence in that while the space may provide shelter and room for contemplation, one’s ability to communicate with the outside world is impaired.
There is also a need to use the new construction to relate the frame to the space in which it was located. The idea behind the conceptual location of the frame was that in any space, the frame would be located almost arbitrarily, and that the constructions inside and outside the frame would fine-tune its relationship to the surrounding area. The surroundings would provide cues to the design of the new elements in the same way that they would in any standard design process. These would include issues of entry and egress, prominent vistas, and relationships to other physical features of a location. Some spatial issues inside the entry to the School of Architecture include the presence of a strong axis along the main hallway leading to the entry, of which the entry is part; the skylight, situated on the main axis and at the center of the entry space, marks both the axis along the hallway on the interior of the building and also the presence of the space on the outside of the building. Also an issue was the presence of a consistent height of the thresholds into and out of the space. While the frame itself was intended to be a personal space, there was a desire to leave the area outside of the installation with some of the initial reading intact. The frame would undoubtedly change the nature of any space that it would be in, but a complete transformation would be nowhere as rich as if the introduction of the frame into the space could be seen in the completed installation. This would require allowing the space to continue to function, at least partially, in the original fashion.

With these considerations, the decision was made to create a very small room, open to the skylit space above, and removed from the ground below. Measurements for the space were taken from minimal space requirements of a person of average size, sitting "Indian" style and somewhat hunched over. The bottom of the structure was set at seven
feet above finished floor level, consistent with the height of the surrounding thresholds. Wall heights of the installation are determined by creating a figurative zone of invisibility, so that from locations within twelve feet of the construction, the person inside the space would be hidden from view. The walls themselves are canted outward, partially to relate to the form of the skylight above, and partially to create a nest-like space of the room. Each wall is fixed to the floor structure by a hinge, so that the walls could be laid down to accommodate entry or enhance views. The room was seen to be non-directional in use, and each wall is identical. The entire structure is placed on a track system, aligned with the axis of the hallway, with a set of stops located directly beneath the center of the skylight. The room, with tracks is attached to the system of ladder/scaffolding holes existing in the frame structure.

Materially, the main structure is fabricated of #2 yellow pine, with the surfaces of intended personal contact given other material representation. The surfaces of the walls are made of expanded metal mesh, which provides transparency to and from the inside of the room. The surface of the mesh is left uncleaned to prevent the walls from functioning as seat backs. The floor of the room is untreated particle board, which would, over time, collect the markings of the persons that used the room.

The original intentions, that of creating a space which was private, but restricting and slightly uncomfortable, fails almost completely. The transparency of the expanded metal, coupled with the gaps between the canted walls, provides almost no visual protection from view from the ground below. The room is surprisingly comfortable, the canted walls creating a nest/womb-like cradling of the body. However, a similar emotional response is generated by the resulting space. The elevation of the platform
allows a certain feeling of empowerment to be had by those in the seat, a feeling enhanced by the protective stance of the walls from the outside. Rather than a seclusionary protection, the room provides a type of defensible space from which to monitor the world outside.

One of the most remarkable discoveries of this phase of the investigation is the power of introducing an object that used the human body as a reference point into a space which had none. The empty space of the building entry has no usable body reference, and could be said not to relate to the body at all. The same could be said about the frame of the box alone. During times in which the entry space is empty, and the times when the frame is there without the private space, the space functions merely as a passage from the School of Architecture to the outside. But with the introduction of the private space, movement of people through the space is altered, either for contemplation of the changes to the existing space, or for use of the structure and resulting space.

Additionally, the removal of the structure from the entry on October 1 left the space seeming incomplete. This feeling left the space as memory of the box faded, but an important lesson was learned here also. At first, the space of the entry had been seen to be separate from the object placed in it, but the two have an incredible influence on each other, and both the presence and absence of the box in the space changes the perception of the entry. With the box removed, the entry does not simply go back to being the entry as it had been before.

What is interesting, on a different level, is the reactions of some of the people who used the space and never noticed the presence of the box. Also interesting, is the number of people who felt that they were not allowed to use the space. This reinforces the idea of
the frame creating a defined "inside" and "outside" within the space of the entry. This separation of spaces through the introduction of a non-enclosed entity presents opportunity of future manipulation.

*(refer to figures 6, 7, and 8)*
MOVEMENT #1 - I-59 ELEVATED

After a substantial amount of waiting for approval from Mr. James Richards at Central Parking Systems to construct the frame in his parking deck, I have decided to build elsewhere in the interim. The site chosen for the construction is the area underneath the Interstate 59 elevated highway, between Montrose and Mt. Vernon. The new site is within an established neighborhood, and is relatively stable. Historically, the area underneath the highway is known for its use by homeless persons as shelter. This sheltering is less prevalent in the area immediately adjacent to the site, as visibility is relatively high, but there are some remnants of former inhabitation.

The exact location for the structure is chosen by its virtue of being the least visible in relation to cross streets and inhabited buildings. This is mostly accounting for the time period of construction. Once the frame is built, there is little chance of the project being stopped. During the construction period, however, the chance of confrontation is highest. Care is taken to remain inconspicuous during the construction process. As much of the construction is completed before the actual erection of any pieces. The four bottom triangulations were constructed and set in relative horizontal position, laid flat on the ground. All other members had necessary lag bolts started for quick fastening when in place.

The construction of the frame went smoothly, with no outside interference. Roughly 2 1/2 hours was required for fabrication, almost half the estimated time. This is less time than previously required to dismantle the frame.

The frame, to its benefit at this time, is nearly invisible underneath the bridge. The vertical nature of the existing bridge columns in the space serves to camouflage the
presence of the frame from detection from the cross streets. Only the diagonal members call attention to the structure. From the side street, the box is plainly visible.

Several people happened by the frame during the construction process. None paid attention to the changes to the underside of the bridge. Perhaps that is because I was there, and the people were not willing to inquire.

*(refer to figures 9, 10, and 11)*
Figure 11
INSTALLATION II - SLEEPING SPACE

The ideas generating the most recent addition to the frame come from a number of issues. The issues consider the site in terms of what is there physically at this time and in terms of what is projected onto the site mentally.

One of the qualities of the frame structure that has seemed unnatural since its construction under the bridge is the inconspicuousness of the object. Though the space in which the box resides is completely empty other than bridge columns, the addition of the box has not made the box particularly noticeable from any distance. From Montrose, the box is nearly invisible during the day, and completely invisible at night. One must be aware of the location of the frame to find it at all, even during daylight hours. A primary goal of the new construction is to announce the presence and location of the construction.

The second issue confronting the project is the history of the site. The section of elevated highway provides shelter to a number of homeless persons. This is less the case in the immediate area of the project, but is a well known fact to the persons living in the area. This history is a large reason why the site is in the physical condition that exists. The ground under the bridge is swept clean of all debris. This makes any object that does find itself in the area more conspicuous.

Additionally, the expanse of the highway above provides an extremely protected area of ground underneath. Even after extended hard rainfall, a familiar condition in Houston, the earth beneath the bridge is dry to the point of being dusty. The use of the space for shelter is based on clear logic, the space is dry. Protection provided by the construction need only be in terms of wind and privacy. Other weather considerations are eliminated by the bridge above.
The current intervention will consist of two parts, a sleeping space, and a monitoring space. In the first addition, the sitting space, there was a perceived need for a space of retreat, a protection from the publicness of the location. In the present location, this publicness is removed by nature of the space under the overpass. The site is much more vulnerable here, but in an entirely different way. The necessary protection here is a very literal one, based on the history of homeless residence. One idea behind the program is assuming the role of the construction as a residence for one of the otherwise homeless persons.

In work with the "Mad Housers," a group in Atlanta, Georgia which builds permanent shelters for homeless people, there has been determined a few specific functions for a successful shelter to accomplish. First, the person and his/her belongings must be secure, which necessitates the inclusion of a lockable space for storage. Second, there must be a space for sleeping, which would be separate from the storage space.

The third function is by far the most abstract, the ability of the structure to reflect the person in residence. Included in this is the idea of an external space or yard. In studying the work of the Mad Housers, I noticed that a majority of time spent at the residence is spent outside the residence, necessitated by the fact that the residences are very small. The space immediately outside the residence becomes not unlike a porch on a house, in that it is an extension of the interior.

Also included in this expression of self is the literal application of self onto the construction. In the case of the structures of the Mad Housers, this is most often done with painted surfaces. The differentiation of the domain from the surrounding areas and residences around it is an important part of the psyche.
The first part of the intervention consists of the immediate sleeping area. This area will be a small room inside the site structure, elevated above ground. The space will be large enough for one person to inhabit, sized for the conservation of body heat. This space is the primary means of expression of the person. The space will be situated horizontally, to break the visual verticality of the space, and will use blue plastic coated tarp material as the surfacing material. This material has a number of desirable qualities like wind and water resistance, translucence, and brightness of color. The latter two reasons serve function of projecting the image of the space into the surroundings.

The sleeping space will begin as an operation into and onto the existing private space, designed for the entry to the School of Architecture. This is for two reasons. First, I am replacing an existing private space with a new private space, so the transformation of the existing space is directly tied to the creation of the new space. Additionally, and perhaps most importantly, the idea behind this project is that when a space or object is no longer necessary or appropriate within a given context, this object can be used to create a new and more contextual space without disregard of the former object. The object of this is to attempt to create a new contextual environment from within the existing. A building is never without context, yet that context is not static. Context is constantly changing, and the buildings we inhabit can be adapted accordingly. The manipulation of the former space or object in the creation of the new is essential to this investigation of adaptation.

The second element of this intervention is what I am referring to as a satellite. This space is removable from the main construction frame and is able to be relocated in the area near the site construction. Connection is provided by a length of rope attached to both constructions. Programmatically, the satellite is a space from which to monitor the
area immediate to the sleeping space. It is additionally, in this location, to be placed in a spot of potential sunlight. The box is hiding somewhat under the bridge, and the satellite is an attempt to connect to the environment outside. The outside I refer to is both outside the shelter of the bridge and also the space outside the frame. There is an attempt to engage the space around and between the objects.

The satellite construction begins as an attempt to create new support for the private space existing within the frame in the School of Architecture. Formally, the existing space and the new monitoring space are similar, both being elevated platforms for sitting. The new structure will be designed to receive the actual existing platform from the sitting space. The base of the construction will be a plinth to visually elevate and ground the new space, and will serve the purpose of being a lockable storage compartment.

The distance between the frame and the satellite also creates a new type of space for this project, the inbetween. The orientation of the frame and satellite to each other involves all of the space between them, defined by the length of rope. This radius of potential inhabitation creates the boundaries of the yard of the inhabitation.

*(refer to figures 12, 13, and 14)*
Figure 12
AN EVENT

If the installation under the bridge of the Interstate 59 elevated highway is about giving the box structure a public presence, then it is logical that there would be a moment of public announcement. There could be a time during which the structure would be most public, and interaction with its surroundings. There needs to be an event which marks the boundary between the completion of the addition, and the beginning of the public life of the structure.

Two hundred tea candles were lighted in the area of the constructions under the bridge. The candles serve two purposes; first, to draw attention to the structure with points of light, and second to mark the construction's locations both in relation to each other and in relation to the surrounding neighborhood. Candles were arranged both inside the structures and on the ground leading out to the main streets, Montrose and Mt. Vernon. The candles both mark a path to the box and attempt to illuminate features of the installation and surroundings.

The lighting of candles is an action chosen for two reasons; first, the quality of light given by the candles suggests the action of a person in the lighting of the candle, and seemed the most personal of light sources. Secondly, candles have a certain, defined life span, in this case about two hours. This life span gives the event a defined time limit, a self imposed duration. There is an impermanence to the candles which seemed to fit the nature of the event.

A number of significant developments come from the happenings of the event. First, it happened that the wind was blowing through the space of the bridge just hard enough to extinguish the candles if left unprotected. Because of this, makeshift shelters
for the candles had to be developed on site, using materials found in the immediate area. Members of the lighting party found and used pieces of broken glass, mounded earth, paper and plastic bags, discarded cups, and pieces of wood to fashion the wind shelters. This is significant because of the sheltering constructions use of materials and techniques that were not foreign to the area. The designs of the shelters were made from information gathered on site, generally within a radius of less than ten feet from the given candle location. Each candle shelter is a document of the surrounding area, a site specific construction.

Also significant is the nature of the event itself. When the last of the candles were ignited, groups of people gathered other combustible materials from the area to make small fires. The people were interacting with the box and its surroundings on a very basic level. There are no precedents for people to socially burn things in an urban environment, but this somehow became a natural development of the event.

Additionally, there is a strange affinity between the cathedral-like space of the overpass, the candles, and the altar-like quality of the box construction. One member of the lighting party remarked about the religious appearance of the event. This appearance led members of the surrounding neighborhood to believe that the event was part of a satanic ritual. The Houston Police Department received a number of phone calls from people threatened by the event. Where once the box went unnoticed, it was now cause for alarm.

*(refer to figures 15 through 22)*
Figure 16
Figure 17
DESTRUCTION

The frame, with the sleeping structure and monitor, was torn down and removed from the site under the Interstate 59 elevated highway by the State of Texas Department of Transportation. The dismantling and removal was part of a routine cleanup for the Christmas holidays. I have retrieved the salvageable pieces of the frame, which now reside in the Anderson Courtyard at the School of Architecture at Rice University.

The most significant discovery in the retrieval of the frame is the knowledge that someone had taken up residence in the structure during the time it was constructed under the bridge. There was found inside the sleeping structure a foam mattress, belonging to the new resident.

The possibility of the constructions destruction was present and known from the beginning of the construction under the bridge. Its destruction in many ways was immanent, especially after the candle lighting misunderstanding. The box, through the lighting of candles and the imagination of the viewers, has become something of an urban myth. The men at the Department of Transportation asked me about the reports of animal sacrifice.

The frame itself was taken down somewhat gingerly. The material was unbolted and minimally broken. A few ends, mostly of the diagonal bracing, had damage around the bolt holes and were broken. Some new means of holding these ends must be developed.

The installation inside the frame and the monitor structure were completely destroyed, however. The tarp material was shredded, and few if any of the wood pieces are unbroken. Even the original seat structure was badly broken.
According to Mike Taglarini, the man who was in charge of the maintenance crews in that area, there is a cleanup of that type about once a month. Theoretically, installations could be timed by that schedule.

Oddly, the men at the Department of Transportation were impressed by the structure, commenting on the woodwork and detailing. They seemed genuinely interested in the box's purpose.

(refer to figure 23)
CONCLUSIONS

In hindsight, the box project accomplishes a few things successfully. First, the box frame provides an initial definition of site, and the origins of the analysis of the specific location. The frame acts as a lens through which to view the new locations, and provides a means of comparison of the different locations. It provides the intended constant of a three dimensional boundary for placement within a prescribed location. The box is a physical datum for the investigation to use. The idea of the boundary only defines an area of investigation. The box is not intended to indicate a confine. Engagement of the spaces outside the box is as important as the activation of the interior.

Second, the box serves as the beginnings of the "stoppages" that had lacked so completely in the spaces which it inhabited. The frame provides an initial object to respond to in the new locations, and object which resembles in many ways the buildings which surround it. The construction practices used for the box frame provide a starting point for the form of the constructions within. The scaffolding pegs and corresponding holes provide built in connection points which invariably shape the structures held within. This shaping can be seen as a negative quality, but the inclusion of this system in the design of the interior objects necessitates the consideration of detailing of connection which could have been otherwise ignored.

In its destruction, the box serves to remove completely the idea of an object as being an abstract entity.

Most importantly, the box project introduces the idea of the "spatial manipulator." In this, an object defines and organizes the spaces surrounding it by the nature of the object itself. A example is this of the common chair. The object has a definite front,
back, and sides. By the organization of the object, the space around the chair is divided into areas in front, in back, and on the sides of the chair. The space is given hierarchy based on the object it contains.

The box fails in a few areas, also. The frame construction is, by nature, somewhat inhibiting to the design of the additions. The frame is of substantial visual presence on its own, which creates competition between the frame and the objects inside. The diagonal bracing demands consideration in decisions of location of interior elements and projections, prohibiting the free location of interior and exterior elements. The diagonal members are immovable and unbreakable without jeopardizing the structural integrity of the frame. In that, the box frame cannot be reconfigured to respond to the demands of a site. A very simple failure of the frame is that in its configuration, the box prohibits flow through the space created. One could never contemplate the objects built inside on their own, though the objects were designed to be viewed as such. This is a failure of the design of the box more than of the interior objects. The box could not be integrated into the design of the interior spaces, and vice-versa. The interior objects could have been forced to challenge the frame more.

The box is, in itself, a generic object. The box has no defined front, back, or sides; and could have been set in any orientation. Even its vertical orientation could be rearranged. Other methods of construction could have been used, for instance, common stick-building techniques used in housebuilding, but those changes would have redefined the project completely. The stick-built frame would have defined the space much more rigidly, and would have been seen as shelter by itself. The frame would have excluded the site, rather than engage it. Manipulations would have been to the frame itself, rather
than to objects inside. The frame would have become a suburban "spec-house" in that the modifications to the basic form would not have changed the form in its nature, rather the space inside would have been changed.
PART II

The Design Project
SITE

The site for the final investigation is a currently abandoned sulfur cutting plant. The location of the site is on the north edge of the parking lot of the Downtown Campus of the University of Houston, and the southern edge of the Southern Pacific Railyard. The building is visible from Main Street, to the west, as it passes under the railroad bridge just north of the I-10 intersection.

As it stands, the building is divided into two sections. The first, a section of structural clay brick and metal warehouse, roughly 50’ x 200’. The second, a concrete frame of what was the housing for the sulfur cutting process. Covering the structure of the frame are indications of the former means of the connections between the exterior sheathing devices and the concrete structure. The entire building, frame and warehouse, is elevated on a concrete pad roughly 5' above grade. The frame section will be the specific site for the investigation.

This site has been chosen for a number of reasons. First, the building is related to the spaces of the former study of this project. The similarity exists both in building form and use, and the building can correctly be called a forgotten space. The structure was created as part of a system of transportation which is declining in use, for an industry which has long since abandoned the location. The building specified functional relevance is to a different era, and the development of the surrounding area has switched from the dominance of the rail system to that of the automobile.

The building has had an obvious life previously, a life which is now dormant. The spaces of the buildings have been abandoned, except by a few homeless persons, whose belongings can be seen in a few locations around the site. Otherwise, the building has
been forgotten by all but the owner, who is advertising the property for lease, as noted by a sign on the building which looks as if it has been there for quite some time. Previously, the site was the location of a sulfur cutting process, which was tied to the railroad, adjacent to the property. The processes of the activity formerly housed by the site are unknown, though some of these are hinted at by former connections of machinery to the slab.

The second reason for this site selection is due to the nature of the building design. The original inhabitants of the building were machines, and the building is obviously designed around the functions of the machinery. What these machines were, and what they did is information now lost. All that remains are the locations in which the machines were connected to the building in the form of cutouts in the slab and frame, and the former bolt connection pieces. The people who inhabited this building were secondary to the machinery, as machinery locations dictate the makeup of the former circulation paths. The interest in this is in the attempt to superimpose inhabitation designed for the human body over inhabitation of machinery. There is a foreseeable scale paradox to be dealt with, and an attempt to reconfigure the specific site conditions to the workings of the human body.

The last, and dominant, reason for the building selection is the presence of indications of former use and connection, in the form of protruding bolts and other former connectors left behind in the dismantling of the building. There is an entire life in this building which could be reconstructed from the stories told by the connection points. The goal here is to use these points as the beginnings of a new construction, one invariably influenced by the historical presences in the building, but undeniably non-historical. The
connection points will be the starting point of the investigations into the design of a new building.

*(refer to figures 24 and 25)*
STRINGS

There is a life, a history written in the former connections of the old sulfur cutting plant. The bolts and pins and holes tell the story of the way the building was used, the way it looked, and the way all of the pieces fit together. The former building was clad in corrugated metal panels, framed and bolted into the bays of the concrete framing. The roof was supported by steel trusses connected to corbels in the columns. Most likely, the metal structures were sold off as scrap, the building raided of its remaining value when its function no longer served its purpose. Now, the frame is all that is left standing on the concrete pad, with the occasional steel angle left to rust away. The concrete has long since hardened to impenetrability, making the destruction of the remaining building improbable at best.

The connection points are what attracted me to this building specifically. Their presence suggested countless ways to act on the building. Here, in the connections themselves, were the origins of the way to reintegrate use into the building. The connections suggested a logical way that the building had been put together, grouped together in locations suggesting common use. Groups in the concrete bays of the frame marked the locations of wall and window panels, door frames, and other unknown pieces. By following closely to the former uses of the connections, the building in its past state could be reconstructed, but that state had already been deemed unnecessary by some other force. The challenge of the project is to reintegrate the structure into common, modern use.

For this reason, the action chosen for use of the connections did not attempt to use them in a faithfully historical fashion. There were relationships between connections that
were obvious upon first observation, but also relationships that became clear only after
careful study. These relationships referred the connections to the space of the building,
with suggestions of spatial conditions unseen in the existing building at first glance. This
is specifically the case in the north room of the frame, where connections in existing brick
infill walls repeated themselves across the room, suggesting boundaries or related use
paths in those areas. The relationships between otherwise unconnected portions of the
building suggested that there may be potential for other sections of the building to also
contain spaces created by the correspondence of the existing connections.

The first plan of discovery of the building was chosen based on the unseen
relationships. The action: to initiate new relationships between connection points in the
building by "drawing" lines of association between them. These associative lines were
drawn by tying string between connection points. In all, roughly one mile of string was
used in the process. The results of the string tying process was looked at in two ways;
one in terms of the strings collectively, and the second in terms of the individual strings.

Associations were made at random, with the determined length of string setting a
limit on the number of relationships drawn. The hypothesis used in this is that at the end
of the association process, a new set of spatial definitions could be determined through
analysis of the groupings of random connections. Areas in which large numbers of
strings passed at once could signify areas where use or movement should be developed.
Likewise, areas which remained devoid of strings could be seen as relatively less
important in contrast with the denser areas.

The string process also served to mark or map the movement through the space of
the building. Each string represents a passage through the building by a potential user.
By passage I do not necessarily mean an literal physical movement of a body through space. Rather, a passage could occur in the form of a view to something, or the movement of a glance from one object to another. The strings then mark movements through the building, passages and connections from one point to another. Densities of string could mean openings or pathways through spaces, or indicate locations of related elements.

The original intent of the strings was to begin to establish spaces of importance and the nature of these spaces. Also hoped for in the investigation was the beginnings of architectural form through the densities of string. These forms did not materialize in the course of the string investigation, and the interpretation of the role of the strings is left to their use in determining important locations and the pathways, both physical and visual, through the new spaces of the building.

(refer to figures 26 through 31)
Figure 29
Figure 30
Figure 31
PAPERS

After the running of the strings to mark relationships between the existing connections of the building, certain conclusions regarding the importance of spaces and relationships were reached. In order to test these conclusions against the perceptions of other people, a separate investigation was held. In this, a number of people were given rolls of paper and asked to use the paper to mark the building and the strings. This was seen as an attempt to watch the persons involved and determine if the locations deemed important by the strings would seem important to outside observers.

As in the case of the candle-lighting event of the box/frame investigation, strange occurrences took place. The papers were used less to mark space as to give the spaces animation. Rather than simply mark the spaces with knots and wrappings, long streamers of the paper were made. The wind present during the event was used to blow paper into the strings, marking spaces with little personal intervention. Other collections of papers accumulated in sections of the building in which the paper gathered after it was blown out of the strings by the wind.

Another surprise happening of the event was the indication of very specific locations in the building which were marked by the persons at the event. These markings involved specific personal action on the building and its surroundings completely outside the paper event. In one location outside the north entry to the building, a person collected a group of identical water bottles from the area and suspended them from the strings. Another person collected pieces of glass and tile and arranged them on top of a short wall along the west face of the building. Still another person found unique rocks in the area and wrapped them with paper from the event and tucked them into a corner of the
building interior. These markings, completely outside the defined scope of the
investigation, seemed to indicate very specific locations in the building which were
important for reasons outside the string study. Interestingly, these markings tended to be
in locations corresponding to important places indicated by the strings. This development
carried more confirmation of the original hypothesis than the results of the paper event.

*(refer to figures 32 through 35)*
Figure 33
STOPPAGES

The existing sulfur cutting building is laid out in seeming order of a former series of movements. The building is of very linear arrangement, and along the line of that arrangement, there is a series of physical change that could be called a movement. From the assumed beginning section of the building on the north side, to the last section, the building moves from spaces of enclosure to spaces of openness. This movement towards less enclosure happens both in plan and section. In the northmost portion of the building, the space is enclosed on three sides by brick infill walls. With movement south, first the infill on the west side stops, then the infill on the east side stops, leaving only the concrete frame as spatial enclosure. The concrete pad continues well past the ending of the frame, which completes the full transition from closed building to open.

A spatial transition also occurs across the length of the building. Moving from the north also, the building changes from being primarily spatial, to being mostly a reference of a direction. This happens in changes in building enclosure, and in changes in the layout of the elevated concrete pad which runs past both ends of the vertical structure. In plan, in the north, the building is fully enclosed on three sides, with definite indication of opening and threshold. The building pad at this point covers the full width of the space. As one moves south in the building, the concrete pad narrows to constrict the circulation patterns to a very directional, north-south, mobility pattern, following the concrete pad out past the end of the concrete frame to the south.

The combination of the transitions from closed to open and from spatial to directional spaces creates a series of discreet building spatial conditions. In moving along the path through the existing building along the north south axis, there are a number of
points marking the transitions between sections of the building at which the physical
spatial configuration and the perception of the inhabited space changes. These transitions
can be referred to as stoppages in the existing building. Five of these stoppages are
singled out in the design of the new building. At each of these stoppages, a design
element has been added to the building to complement the building conditions there and
in each case, the design element takes the form of the introduction of a wall construction.

The walls are attempting to define and activate the thresholds between the spaces of
the building. At each threshold, individual sets of spatial conditions are colliding,
creating the spatial transition. Each construction then attempts to provide indication of
the transition of spaces, and helps to provide the joint between them.

Additionally, each wall is attempting to document the forces determined to be
present at a particular location through organization and detailing of the wall. These
forces referred to consist of the record of passages made through the space during the
string exercise, and the nature of the threshold present.

Passages made through the building during the string exercise were documented
by the presence of a string between the two endpoints of the travel. The collection of
passages is seen as both a document of past movements, but also a reasonable estimate of
the conditions of future travel. These strings are then used to project the future of
movement through the space, be it physical passages or connections of views. This
prediction of the future activity is then applied to the design of the wall intervention,
taking the form of passages through and stoppages within the new wall construction. In
this, a new contextual form can be achieved at.
The attempt of this project is to begin to find ways of adding to the existing spaces around us in consideration of the forces present. By attempting to understand the relationships between the elements beyond our control, in this case the existing building, then architecture can begin to align the disparate elements into a collective whole.

Architecture is the bridge between, as much as the space itself.

For a reconstruction, the joint between what is added and what remains is a key element. This element is not an issue of detailing. Rather, the issue is of recognition, connecting history and future in a way that neither is compromised. The project is not a reconstruction, but a reinvention. They are new events in old spaces, new dialogues within old conversations.

In this project, architecture is seen as a facilitator of the spaces of meeting and movement, but a more passive facilitator than active generator of space. Yes, buildings speak to us, the inhabitants, but they should not tell us what to do. Rather, this is an architecture of suggestion of potential. Architecture here is more kin to coincidence and chance and contingency than program and direction and force. The architecture is on the edges of the spaces created and the space is the communication between the elements at the fringe. The five walls are attempts to begin a new dialogue between spaces long silent.

(refer to figures 36 and 37)
WALL #1

The first stoppage in the existing building occurs inside the closed first room. Inside the space, there exists a threshold made up of the space between two openings which create a shaft of space which projects through the room and out into the surrounding area. During the passage through the space, one is confronted by the openings and the space connecting them. This exterior focus through the interior of the room breaks the linear movement through the space, drawing the inhabitant's attention from the space to the exterior. This stoppage is the starting point for the first wall.

The wall attempts to join the two windows and sets itself between them, aligning itself with the space connecting the two openings. Movement through the wall is broken into two paths. In the first path, across the wall, the inhabitant is set on a path marked on the floor, a path broken by a suspended panel, hung from the existing structure. The panel serves as a turning device, and isolates the viewer from the viewing both existing building openings at the same time. In turning, the inhabitant is given a view into a channel between a concrete block wall supporting a stairway leading upwards, and a glass panel wall, supporting a platform suspended above the top of the panel wall and visible from underneath. The stairway is of skeleton construction, without risers, to permit views through the staircase to the opening beyond. The glass panel wall is seen from such an angle that it is only perceived as a reflection of the image seen through the existing building opening. Continuing along the path through the wall, the inhabitant enters a vestibule which leads around the suspended panel. This vestibule has one window which serves as a viewing device, allowing views from the vestibule into the first apartment, and views from the first apartment into the vestibule, framing persons passing
through. This interchange of viewer/viewee relationship is important to the functioning of the individual walls. Platforms and windows serve this dual purpose. The last turn from the vestibule presents a full view of the opposite opening. A turn which, from the opposite direction, turns the viewers back on the same opening. Each turn of the participant in the process of negotiating the walls gives a view in return for the denial of another.

The second path through the wall leads one up the staircase, onto a platform overlooking apartment one and the interior of the vestibule from above. The movement on the staircase is visible from inside the first apartment through the glass panel wall. The glass panels are frosted on the inside surfaces, leaving the reflective coating towards the viewers, both from the apartment and the staircase. In this, one is given a clearer view of oneself than the approaching person. The platform above apartment one serves as a private space, able to be closed in if necessary. The concrete masonry wall extends through the roof of the enclosure via a skylight, allowing light to fill the space from above.

(refer to figures 38, 39, and 40)
WALL #2

The second stoppage occurs at the junction in the building between the sections of concrete pad which divide the building into areas of direction and space. At this point, the wider area of concrete pad stops, and the narrow projection southward begins. This junction is located just after the end of the western infill wall, providing a view of downtown Houston through the concrete frame of the existing building. This is the most dramatic transition of space in the existing building. This stoppage is the location and genesis of the second wall.

The second wall serves to resolve the transition from the wider, spatial section of the concrete pad, to the section in which the pad serves mainly as circulatory space. This section of the wall takes the form of two large, swinging doors. The first door sits on the concrete pad and serves to alternately extend the section of circulatory pad space into the first apartment, and to close the circulation space off from travel. A slot in the door connects to a peg on a door stop in the first apartment, locking the door in place. In the closed position, the door fits into a countertop in the circulation space. A window in the door permits views to and from in both positions. The door rolls on a wheel which rides on a track set into an applied floor surface. New floor surfaces are applied to the existing floor as a means of indicating the presence of pathways. The new surfaces also act to connect spaces both physically and mentally.

The second door is hinged at the bottom on the lower floor level, outside the elevated slab. This door serves to provide separation between the second apartment and both the first apartment and the circulatory space, depending on the positioning of the door. This door can be oriented to work in tandem with the first door in the wall,
providing an extended wall surface parallel or perpendicular to the circulation route. The second door also contains windows, one each placed in orientation of a prospective viewer on the upper slab and lower apartment.

The second wall also provides a platform at the western wall of the space. The concrete pad extends past the end of the brick infill wall. The line of the concrete edge is continued vertically to a platform set at the height of the crossmember of the concrete frame. This platform looks into both apartments one and two, which share a ladder to the platform. From the platform, one can also look out onto the downtown area through a small window above the platform. This window completes an alignment of structures in the second wall.

*(refer to figures 41 through 45)*
Figure 45
WALL #3

The third stoppage occurs at the former location of a large piece of machinery in the sulfur plant. The remaining marks of this machinery are a set of two large foundation plinths which sit in the middle of the lower slab area, aligned with an indentation into the upper slab, narrowing it to its thinnest portion in the building. At the end of this indentation is the location of the edge of the eastern brick infill wall. This stoppage marks an important event in the building more than any spatial transition. The third wall is an attempt to highlight this event.

In the third wall, the plinth of the former machinery is used to support a large sliding stage/table, shared by the second and third apartments. The platform slides on tracks attached to connection points on the plinths. Separating the two apartments is a translucent wall which frames the stage from both sides, creating a window into both spaces which can be viewed from a third, the stage. The stage is reached by an elevated path leading from the upper circulatory slab.

The third wall is approached from the north along the circulation path on the elevated slab. At the location of the indentation into the elevated slab, a low wall is set at the edge of the indentation, to separate the circulation above from a niche for the second apartment below. The low wall extends the width of the indentation. There is a second wall section, similar to the first in construction, which separates the circulation slab from a small sitting platform/viewing device on the other side. This second wall section is angled to serve as a transition to and from the narrow passage at the indentation. The space between the two wall sections provides the opening into the sitting platform and the path out to the stage/table.

(refer to figures 46 through 49)
Figure 46
WALL #4

The fourth stoppage is located at the point along the elevated concrete slab at which the finished floor elevation is changed. In the existing building, this event seems to mark the transition point between an older and newer section of the concrete slab. The higher section seems to be a later addition to the building. Also at this point, the elevated slab becomes wider, and this width continues to the end of the slab. This transition serves as the generator for the fourth wall.

As the existing building makes its transition to continually more open structure and directional spatial qualities, so the walls as a collective group become more open. The first wall begins as a solid concrete masonry object, and the walls progress, each more open - less wall - than the last. The fourth wall continues this progression.

The fourth wall uses elevated platforms to create and mark the threshold between the spaces of the third and fourth apartments. The platforms also serve to create a threshold above the elevated concrete pad as well. These platforms serve the purpose of creating and marking the threshold for the spaces below, but also serve as viewing devices in the space above. Each platform is fastened to the concrete frame at the level of the intermediate horizontal member of the frame. The platforms of the fourth wall are shared by the third and fourth apartments, and serve as visual connections out past the last wall and back to the first. The upper platform is made of a translucent metal grate, which allows light from a skylight above to pass through to the concrete pad. Below the platform, in the lower area between the third and fourth apartments, the floor surface is changed to reflect the outline of the platform above.

(refer to figures 50 through 54)
WALL #5

The fifth stoppage occurs at the end of the new enclosure for the building reinhabitation. At this location, there is an indentation in the elevated concrete pad for which the original use is unknown. This location is beyond the edge of the existing concrete frame, and divides the interior of the enclosed space from the concrete pad extending south of the stoppage. This stoppage is the location of the fifth wall.

The fifth wall marks the passage from interior to exterior of the reinhabited space. The wall attempts to mimic the condition on top of the elevated slab at the lower ground level at the fourth apartment. The wall consists of a plane of transparent glass panels within a structural frame. A sliding door serves as the functioning enclosure device for the wall.

The door is fashioned such that opening the door below also opens the door above. In this, the space of the upper and lower slab conditions are equalized.

(refer to figures 55 through 58)