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Accommodating people with physical disabilities: Five Houston museums

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ACCOMMODATING PEOPLE WITH PHYSICAL DISABILITIES:
FIVE HOUSTON MUSEUMS

by

CLEARY O BUCKLEY

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IN PARTIAL FULFILLMENT OF THE
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APPROVED, THESIS COMMITTEE

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ABSTRACT

ACCOMMODATING PEOPLE WITH PHYSICAL DISABILITIES:
FIVE HOUSTON MUSEUMS

by

Cleary O Buckley

A way of evaluating architectural accessibility is developed, focusing on the degree to which people who use wheelchairs are able to experience a building in the same way as people who are ambulatory. When judged by this system none of the five Houston art museums: The Menil, The Houston Museum of Fine Art, The Glassel Art School, The Contemporary Arts Museum, and The Blaffer Gallery is fully accessible, although several have areas where the accommodation of people in wheelchair is acceptable.

A design for an addition to the Contemporary Arts Museum, emphasizing the unification of circulation systems for the disabled and the ambulatory, addresses the strengths and weaknesses of the five museums. This design employs a ramping system that encourages all museum visitors to travel along the same route.
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PREFACE

In June, 1984, when I was twenty years old I fell from a roof thirty feet above the ground. This fall broke my back at the first lumbar vertebrae permanently damaging my spine, and leaving me paralyzed from the waist down. Even though I had been studying architecture for a year when this accident occurred, I, like most people who are able to walk, had given very little thought to how people in wheelchairs experience architecture. Confronted with this issue, I quickly became aware that a great deal of the architecture in this world does not function well, or at all, for people who are unable to walk. There is a great need for architects and builders who are sensitive to the needs of the disabled. While at Rice, I have attempted to make all of my designs fully accessible, and will continue to do so in the future.
INTRODUCTION
This thesis is about the way people with physical disabilities interact with buildings and with other people. Prior to 1950, people with mobility impairments such as paralysis, blindness, missing limbs, or the effects of old age were placed in situations where they usually became dependent on other people. However, as disabled people have become more willing to assert their rights, and able bodied people have become more aware of both the monetary, and the emotional price paid for dependency, more has been done to promote the inclusion of the disabled in mainstream society.

Physically disabled people typically face two types of handicaps. The first is directly related to the degree to which they are physically impaired, the second is created by the way they are perceived by people without significant physical disabilities. The first can usually be dealt with through the use of wheelchairs, crutches, prosthetics, or other physical devices, however the second is much more difficult to address, as it is socially ingrained and its presence is not always realized. Only through exposure to the disabled in situations where they are not handicapped can the cultural stigma attached to the disabled be overcome. This is perhaps the best argument for the creation of a totally wheelchair friendly environment, as it can demonstrate how people with physical disabilities can be independent, as well as make people more aware of the potential handicap that architecture can present to even the "able-bodied."

Another argument for greater accessibility is the fact that all people experience some form of architectural barrier at some point in their lives, beginning with those experienced by children due to
their small size. Later most people will experience the effects of old age. Many will be temporarily disabled due to accidents or diseases, and about half will experience some form of mobility impairment due to pregnancy. For all of these reasons, as well as the fact that buildings must be used by parents pushing strollers and workmen pushing trolleys, it makes sense to design buildings with as few obstacles as possible.

Typically, buildings are designed for able-bodied people, and then retrofitted to accommodate wheelchairs. This tends to compromise the position of the person in the wheelchair, often forcing them to enter through the back door, and experience a different spatial sequence than the person who is able to enter in the front. Circulation systems for wheelchair users and able-bodied people need to be the same for true integration to occur. The approach that I intend to take in this design will involve designing for people in wheelchairs first, and then possibly retrofitting the building to accommodate the able-bodied. I hope that by following this method that I, as well as the able-bodied people who use the building, will be better able to understand the specific architectural requirements of the wheelchair.

While it is important that everyone enter the front door, and have the opportunity to interact throughout the entire sequence of circulation, another problem exists which is related to scale. Most projects of accessibility only recognize the need to accommodate wheelchairs within circulation elements that derive their proportions and scale from "normal" ambulatory adults. The
accommodation of people who use wheelchairs requires that the scale relationships of an entire project be rethought.

The scale of an adult in a wheelchair is much closer to the scale of a child than to the scale of a standing adult. This suggests that one might analyze existing structures designed for children, such as schools and children’s museums to see how they deal with this issue. By considering height limitations architecture can promote greater independence for both wheelchair users and children. Two important issues that must be dealt with in a design for children and adults in wheelchairs, are the need for both to establish and maintain eye contact, and the way in which one develops an awareness of the size and limits of their own body.

Eye contact is a critical component of interpersonal communication, that is directly related to scale. When both parties eyes are on the same vertical level communication will be more effective. I will attempt to address this issue through the design of certain spaces that encourage, if not force, standing able-bodied adults to sit or occupy a lower ground plane than the people in wheelchairs who share their space.

People are constantly measuring the objects they encounter by comparing them to their own bodies. A horse is a much bigger animal to a child than it is to an adult. Doors derive their proportions from the human body. As a result, they are important scaling devices. To understand the size of a building people in wheelchairs require doors that are directly related to the proportions of a seated person. The more an opening makes one aware of their own physicality and scale, the more powerful will be
their experience of the architecture in which this opening occurs. Large/tall spaces are more powerful when they are entered from a small/short spaces.

My research for this thesis has focused on five Houston buildings which support a common activity. This activity is the display of art. The five buildings I have examined are The Menil; The Museum of Fine Arts, Houston; The Glassell School; The Contemporary Arts Museum; and the Blaffer Art Gallery at the University of Houston. The method I have used in this part of my investigation is to begin by personally visiting each building, and recording my experience through written notes and photographs.

In describing each of these buildings I have attempted to address the way in which they function for people in wheelchairs in two ways. The first is on the simple pragmatic level of whether a person in a wheelchair is able to actually get to every place that is accessible to an able-bodied person. The second deals with the degree to which the experience of people in wheelchairs is equal to the experience of the able-bodied. Given the time frame in which these five buildings were built, it is not surprising that they achieve varying degrees of success on both levels.

This investigation has been valuable in that it has allowed me to better understand the way wheelchairs are generally accommodated in architecture. Not only have I found that many of the issues I have defined in this part of my thesis are embodied in one or more of these buildings, but I better understand the frustration I have experienced using these buildings.
In the following analysis of these buildings I try to describe the experience of a person in a wheelchair visiting the museum or gallery for the first time. Given the nature of Houston I will begin each description at the parking lot. I have tried to refer to people in wheelchairs as handicapped only when the architecture creates a handicap for them. In environments that do not discriminate against people in wheelchairs they are not handicapped.
The fist building I will examine is The Menil. It is the newest of the five, and provides the most equitable accommodation to people in wheelchairs. The Menil was designed by Renzo Piano, and was completed in 1986. The Menil is located at 1515 Sul Ross.

The main parking lot for The Menil is located at 1515 Alabama Street. The fact that this lot does not share the address of the museum can make it difficult to find. On my first visit I was unaware that parking exists on Alabama, and ended up parking on a street, near the museum. However, assuming that a visitor does park in the main lot they will find two spaces reserved for the disabled, one on either side of the walkway to the museum. Both spaces are marked clearly, however, the ramp from the parking to the walk is not well marked, as it is made of black asphalt like the parking lot, and is located on one side of the walkway.

The walkway proceeds in a straight line across a grassy space toward the museum. While there is no apparent reason for the location of this walk in relation to the museum, it is used by all visitors regardless of their physical ability, so there is no inequity between the experience of the disabled and the able-bodied. This walk ends at a street, which can be easily crossed since there is a break in the curb on both sides.

Once across the street one must travel along the sidewalk to another walk which leads to the front door of the museum. This walk rises gradually along the axis of the entrance. Midway along the walkway one passes an earthwork sculpture by Michael Heiser. The front doors of the Menil have offset hinges, which allows them
to be opened easily by most people, and there is always a 
receptionist just inside to offer assistance to those for whom any 
door is to great an obstacle. The hardware for opening these doors 
is kept to a minimum so it does not block anyone's vision into the 
reception space.

This museum actually has another entrance, located on the 
same axis as the front door, but on the other side of the building. To 
use this entrance one is required to negotiate two steps, and there 
is no ramp. This is a problem since this entrance is given the same 
prominence as the front door and is open during the same hours.
Having parked on the street on my first visit to the Menil, I 
encountered this entrance first. Since I was not aware of the 
accessible entrance I got out of my chair onto the ground, pulled my 
wheelchair over the steps, and entered at this point before I realized 
that another option existed. Having to crawl up the steps was both 
dangerous and humiliating.

Once inside the Menil every space can be reached by a person in 
a wheelchair. All exhibition spaces are located on the same level, 
and all doorways are wide enough for wheelchairs to pass through. 
Where there are windows they begin close to the floor so everyone 
can see out, and even where there is a push bar across an emergency 
exit they are placed low enough to not obstruct the view. There is 
no need for signs to tell the disabled where they can go, and no 
instance where they are forced to experience a different spatial 
sequence than the able-bodied. Generally, the art is presented in 
such a way that everyone may view it comfortably, although there
are two instances where the current method of display becomes distracting.

In the main reception space, the museum displays two classical stone torsos. Both works of art are supported by a metal rod attached to a metal plate, which rest on a white pedestal. From a distance the view of these torsos is attractive and dramatic. However, as one moves closer, one finds that the top of one of the pedestals is at the eye level of a seated person. This causes one to become very aware of the pedestal and its relationship to the torso, which actually touches the metal plate somewhat tentatively. The curator of this museum may feel that this is the optimum height for the torso to be seen by the greatest number of people. While this may be true, the view can be made better for people in wheelchairs by lowering the height of the pedestal, and lengthening the support rod. By making this small adjustment the relationship between art and pedestal will be made clearer, and the greater space surrounding the torso may increase its visual power.

A similar situation exists in one of the museum's ancient art galleries, where a small bronze bust is displayed in a wall niche. It appears that this niche was made specifically to hold this bust, and that its height was determined by the average height of a standing adult. As with the torso, the main problem is not the fact that a person in a wheelchair has to look up to see this bust, but rather that the bottom of the niche falls directly at eye level and becomes a distraction. Part of the reason for this distraction is caused by the way the niche is constructed, with a narrow frame surrounding it. This frame calls attention to the point where the wall is broken,
but it is so insubstantial and poorly detailed that rather than becoming a celebration of an exceptional opening it appears more like an ad hoc solution to the problem of how to hide the rough edges of the wall board.

Two solutions to this problem might be to do away with the frame altogether, or to extend it down, below everyone's eye level. Getting rid of the frame could be done simply with putty and paint, although the bottom of the niche would still be at eye level which might still prevent a person in a wheelchair from becoming fully engaged with the bust. Extending the frame down would probably involve extending the niche as well. The bust could be maintained at its current height by using a taller pedestal inside the niche.

The last issue that presents itself inside this museum is related to the proportions of the gallery entrances. These proportions are clearly derived from the proportions of a standing figure, and while there is always ample room to pass through them, their height prevented me from feeling like I had a proper fit. I found further evidence that my scale is not right for these openings when I tried to photograph them. At this point I found that I was unable to get the top of the openings in my pictures without tilting the camera, or taking the photo from the side.

In addition to the two entrance/exits I have already described there are a number of emergency exits located throughout the museum. At all of these exits the door opens onto a landing and at least one step. While this lets the handicapped know that these doors should only be used in an emergency, it may also make them feel uncomfortable about how they will negotiate these steps in the
event of an actual emergency. Since it is also clear from the placement of plants that these doors are not primary exits ramps should be installed to make wheelchair evacuation safer.

At the present time the closest thing to a gift shop for the Menil is Brazo's Book Store located across the street from the museum. There are steps leading up to the front door of this store and no ramp. The people who run Brazo's claim the museum is going to take it over, and instal a ramp. When this will happen is anyone's guess.
THE MUSEUM OF FINE ARTS, HOUSTON
The next museum I will examine is The Museum of Fine Arts, Houston (MFAH), located at 1001 Bissonnet Street, Houston. Since the last addition to the MFAH was completed prior to the enactment of legislation mandating accessibility, the museum has had to retrofit its facilities to accommodate people in wheelchairs. Unfortunately, this approach has relegated the handicapped to small elevators, dark hallways, and a side entrance, as opposed to the grand staircases, open spaces, and front door experienced by the able-bodied. Even if one were to ignore this experiential inequity the MFAH cannot be called totally accessible, since there are bathrooms that the handicapped cannot use, and exhibition spaces they cannot reach.

The main parking lot for the MFAH is located on Bissonnet Street, across from the museum's front door. However, this lot does not contain any spaces reserved for the handicapped. These spaces are located on Main Street, where one is required to parallel park in the street. Whether a handicapped visitor finds these spaces, or settles for a narrow space in the main lot (this is what I did on my first visit), they will face some obstacles getting to the museum's accessible entrance.

For those who park in the lot on Bissonnet, the point where they should enter the museum will seem obvious. A crosswalk in the middle of the block leads from the parking lot to the architecturally prominent front door. The lack of curb cuts at both sides of this crosswalk may cause those in wheelchairs to question whether they are actually meant to enter at this point, however, given the large number of partially accessible buildings and the lack of any other
visible barriers, it is reasonable to assume that the visitor will proceed to one of the accessible crosswalks at either end of the block, cross the street, and make their way back to the front doors.

Meanwhile, the visitor who has found the parking spaces designated for the handicapped will immediately see that there is no parking in these spaces between 4-6 p.m. The museum's hours are from 10 a.m.-5 p.m., Tuesday thru Saturday, and 10 a.m.-9 p.m. on Thursday. Assuming that the handicapped visitor does not want to visit the museum between 4-6 p.m. they will park. What they will then find is that if they unload their wheelchair from the passenger's side of the car they must do so directly against the curb, which can be difficult, or, if they unload their chair from the driver's side, then they must do so in traffic. Since there is no curb cut at the handicapped parking spaces a person who unloads in the street must travel about 60 feet into oncoming traffic to gain access to the sidewalk.

At this point the visitor must decide which door to enter. Since the handicapped parking is located in front of the side door, and since there is a ramp at this entrance it might seem that this would be the obvious choice. However, many will find the MFAH by its address on Bissonnet Street, and observe that this door opens at the level of the sidewalk. For this reason, and because other people will be seen entering on Bissonnet, some of the museum's disabled visitors will inevitably choose to enter the museum here.

Now that the visitors who parked in the main lot and in the handicapped spaces have both made their way to the front door, they may be greeted by a museum guard who will inform them that they
cannot actually enter at this point and must go around to the side door. If the visitor is actually greeted by a guard before they enter the museum, they will miss the art and the arrangement of furniture which is frequently displayed just inside the doors. If, on the other hand, one enters the museum before encountering a guard the first thing they are likely to notice are the stairs which run the length of the space.

Having realized the dead end nature of this space, the handicapped visitor will exit onto Bissonnet, and make their way around to the side entrance on Main Street. Three steps and a ramp, (this ramp has no hand rail,) lead up to a terrace, where a sculpture by Duchamp-Villon is located in front of the entrance. This sculpture is important as it creates a sense that this is a important space where art is displayed, as opposed to being a utilitarian handicapped access ramp to a side door. The experience of entering through this door is also made more significant by the pleasing proportions of the space defined by the terrace, the plants that surround this space, and by the posting of the museum's hours next to the door. The fact that this entrance is the only one used for lectures and movies in the Brown Auditorium also adds to its importance. The actual doors one passes through at this entrance are equipped with offset hinges that make them easy to open, and are the same as those found at the entrance on Bissonnet.

Once inside one finds a guard and coat check desk directly to their left, stairs to the basement directly ahead, a walkway to the front desk to the right, and an elevator tucked somewhat behind the coat check desk.
On one occasion the guard at the coat check told me that the reason for the placement of the ramp at this entrance was so it would be close to the elevator. She then told me to go to the front desk to pay. When I told her the nature of my visit she said, "Well how much can you write about wheelchairs and museums, and how much good it does people?" The obvious implication of this statement was that there is really very little to say about the subject of wheelchairs in museums, and that there is probably very little good that can come from an investigation like this. When combined with a conversation I had on a previous visit to the MFAH in which two guards on the second level were unable to tell me whether there was an accessible restroom in the whole museum, much less direct me to it, this woman's remarks lead me to conclude that the museum staff needs to be better trained on the basic layout of the museum, as well as on the basic social issues related to the disabled and accessibility.

The path from the coat check desk to the main information desk is smooth and level. Along the way one passes the museum's cafe, library, and bookstore, and one is able to see into the large Cullinan Exhibition Hall, and down to the Basement stair landings where the museum's recent acquisitions are hung. The main information desk is 44" high, which is not a comfortable height for a seated person to look over, and barely allows one to see what is on top of the counter.

Having paid, the path of most able-bodied visitors will up one of the two stairs that lead to the Cullinan Hall. To reach this hall a person in a wheelchair must return to the elevator behind the coat
check desk. While this elevator is small it is not unpleasant; having attractive wood venire on the walls inside. However, when the door opens on the second floor, one exits into what is probably the most unattractive space in the whole museum. This space is a long, dark, narrow hallway painted off white and grey. The elevator opens into a corner where the wall is only 4 feet away, and has large scuffs on it.

Moving down this hallway one sees the sign for, and the entrance to, the exhibition in the gallery to the left, and a hallway which leads to the Cullinan Hall on the right. At this point one must choose between the original goal of the Cullinan Hall, and the art which can already be viewed in the gallery to the left. While most museum visitors will want to visit both, the introduction of a choice at this point subverts the relationship between the main exhibition hall and the secondary galleries. Even if a visitor in a wheelchair chooses to enter the Cullinan Hall first they do so through an opening in the side of the hall, rather than at the point at the front of the hall where most ambulatory visitors will arrive from the stairs.

After emerging from this opening, one sees that there is an upper exhibition space overlooking the Cullinan Hall. For most this space is reached by stairs. These stairs are wide, and their slope is not steep. Ascending these stairs, one is able to interact with the level of the North Foyer, the Cullinan Hall, and the Upper Brown Pavilion simultaneously, and is thereby able to maintain a sense of their position within the museum. This sense of connection is denied to people who must use wheelchairs as they are forced to leave the Cullinan Hall in order to reenter the elevator.
From Cullinan Hall there are a number of paths one may take through the galleries on this level. What one finds while passing through these galleries is a grand staircase located in the Lovett Galleries, and another elevator near the Andrews Gallery. This stair and elevator take one to the level containing the Weiss and Arnold Galleries.

The stairs in the Lovett Galleries survive from the first part of the MFAH. They are made of stone, with a wrought iron balustrade and wooden handrail. To ascend these stairs one first passes between two fluted Doric columns, and then climbs a straight flight of step to a landing where the stair splits allowing one to proceed to the left or right. At this landing the museum has hung a portrait in a beautiful gold frame. Unfortunately, this is not the only place where stairs render part of the museum's collection totally inaccessible to people in wheelchairs. From the point where the stairs split one ascends into a long barrel vaulted space where exhibits are often hung.

In contrast to the open, well lit space where one finds these stairs, the space where the elevator is located is dark and narrow. This space is usually located in the middle of the Andrews Gallery exhibition, so one must either come back to the elevator after viewing the exhibit, or finish viewing the exhibit after visiting the upper level. Either way the placement can be viewed as an interruption the exhibition sequence.

This elevator has an international handicapped symbol over the call buttons which are located too high to be reached comfortably by a seated person. Inside, this elevator is finished
with white formica and polished brass. The control buttons and telephone inside are also too high for a seated person to use them comfortably.

Like the place where one enters this elevator, the place where one exits it is narrow, has subdued lighting, and is generally located in the middle of an exhibition, once again forcing disabled visitors to view the art in a different order than was intended by the curator.

The galleries on the upper level are laid out in a U. In addition to the stairs from the Lovett Galleries and the elevator, these galleries are connected to the rest of the museum by stairs at each end of the U, which lead to the upper Brown Pavilion. From time to time the museum hosts exhibits with controlled access, where people are only allowed to enter once and at one point. Invariably, when these exhibits are shown on the upper level the entrance or exit is located at one of the stairs, so the handicapped are forced to either enter through the exit or exit through the entrance. When these exhibits are crowded moving against the crowd can be difficult.

The fact that there are stairs at both ends of the upper level also denies people in wheelchairs the opportunity of experiencing the galleries as a continuous sequence. From the elevator one must travel in one direction till they reach one of the stairs, then double back past the elevator till they reach the other stairs, then double back again to the elevator. The able-bodied are able to take the stairs from Cullinan Hall to the Upper Brown Pavilion, continue up stairs to the upper level, pass linearly through this level, and descend once again at the other side of the upper Brown Pavilion.
For a person in a wheelchair to get to the Upper Brown Pavilion they must take the elevator from the upper level down to the level of Cullinan Hall, and then make their way back to the first elevator that brought them to this level from the coat check desk. This elevator arrives at the Upper Brown Pavilion at the point where one flight of stairs arrives from Cullinan Hall below, and another rises to the upper level galleries. This space is flooded with natural light, and one is immediately presented with a view of an Asian sculpture and the outdoors beyond. While the experience of arriving at the same place as the people who climb the stairs from below is definitely positive, a person who arrives at this point prior to finding the second elevator is likely to feel frustration at the sight of the stairs leading to the upper level, since it is clear from the number of buttons that this elevator will go no higher.

For the most part, the exhibition in the Upper Brown Pavilion can be comfortably viewed by all. The museum uses high quality pedestals and frames, that do not detract from the art, even when the display height is above what is optimal for the handicapped. Also, the layout of this floor allows people to circulate in many different ways, and never presents people in wheelchairs with a totally dead end.

The last floor remaining to be visited at the MFAH is the basement, which contains the Lower Brown Galleries, the Brown Auditorium, and the museum's only accessible restrooms. This floor can be reached directly from the Upper Brown Pavilion via the elevator. Once again the point of arrival at the basement level, is a dark corner. However, this space is made less objectionable by the
placement of art within the space, and by the option of proceeding in either of two directions from this space.

The able-bodied reach the basement via one of two sets of stairs from the entrance level. About two thirds of the way down these stairs are long landings. On the walls at this point the curators of this museum regularly hang photographs and recent acquisitions. As with the stairs in the Lovett Galleries, there is no way for the handicapped to access these landings.

The galleries on the basement level are all accessible, and it is possible to enter the Brown Auditorium without any trouble. However, inside this auditorium one finds that the only place people in wheelchairs can sit is in the back row. In the past, speakers who were unable to walk were carried to the podium by the museum's staff. This same method is used to transport heavy objects, (like concert grand piano's,) to the stage. The layout of this auditorium deprives people in wheelchairs of the same degree of choice and comfort afforded the able-bodied, and forces the museum to assume a substantial liability when its staff carries people up and down the steps.

While the bathrooms in the basement have been adapted to accommodate people in wheelchairs, the method of this accommodation is less than ideal. The one toilet stall that has an opening large enough for a wheelchair to enter has a curtain instead of a door, which is difficult to close, especially if one has limited upper body strength. There is also barely enough room for a wheelchair to fit in the stall without protruding out beyond the curtain. The sinks, soap and towel dispensers, and mirrors are all
conveniently low, and there is plenty of room to maneuver within these restrooms.

Viewing art can become tiring, so it is no surprise to find benches throughout museums where people can rest. In the basement of the MFAH one such bench has been placed beneath the stairs that descend from the Main Street entrance. The result of this placement is that at one end of the bench there is about 9 feet of head room, while at the other end there is only about 6 feet. Most standing adults will feel cramped in a space 6 feet tall, and may even bump their head. However a person in a wheelchair or a child will have no problem maneuvering within a 6 foot space, and may even enjoy the change. The nature of this particular space is not likely to cause anyone to linger here for long, but, the fact that someone has realized its potential, even if by accident, is interesting nonetheless.

After viewing the museum's collection, many visitors will want to get something to eat in the cafe, or visit the book store and gift shop. The cafe and gift shop will present no problem to those in wheelchairs, but the book store is another matter. Isles in this store are narrow, and many items are located well beyond the reach of a person in a wheelchair. Books are also displayed on two levels, which are connected by stairs. If a customer in a wheelchair knows the book they want the salesperson will retrieve it from the lower level, but the stairs prohibit browsing.

To exit the MFAH people in wheelchairs must use the same door through which they entered. Those who are able to negotiate stairs can choose to exit onto Bissonnet, or Main Street. If a visitor has
parked in the handicapped spaces their car will be directly ahead of them when they reach the sidewalk. The sidewalk is extended to the street at this point suggesting a direct connection to the parking, but of course there is no way for a wheelchair to get down from the curb. This is really the same situation the visitor encountered when they parked, only seen from the other side the connection seems stronger. What is different about the journey back to ones car is that this time one must travel the 60 feet from the intersection of Bissonnet and Main with traffic passing from behind. This is considerably more dangerous than wheeling into traffic.

Overall the manner in which the disabled are accommodated in the MFAH is very poor. People in wheelchairs are consistently excluded from the most dramatic circulation sequences, and they are also not allowed the same degree of freedom as the able-bodied to choose where they will sit at lectures, which restroom they will use, or when they will attend the museum. If these cases of subtle discrimination are not enough to convince one of the problem at the MFAH, then the fact that disabled visitors are put in a physically dangerous situation every time they get in or out of their car, in addition to the fact that they are excluded from viewing exhibitions that are accessible to the ambulatory, should change one's opinion. The museum staff seems to be generally unaware that any inequity exists, although this does not seem to be true of the administration.
THE CULLEN SCULPTURE GARDEN AND THE GLASSEL SCHOOL OF ART
Across Bissonnet Street from the MFAH are the Cullen Sculpture Garden and the Glassel School of Art, which are both affiliated with the Museum of Fine Art, Houston. While the Glassel is not a museum, it contains a large exhibition space where the public can usually view student work, and where the MFAH sometimes displays temporary exhibits. The Cullen garden serves as a direct link between museum and school.

To reach the sculpture garden from the MFAH a visitor in a wheelchair will probably cross Bissonnet where it intersects Main Street. From here they will proceed west to the point where the sidewalk intersects the automobile entrance to the MFAH parking lot. At this point the sidewalk blends into the drive. To reach the sidewalk on the other side of the drive one must veer to the right and travel diagonally across traffic, and around a grassy island, to a place where there is no curb. When traffic is heavy this diagonal path is difficult to complete, since cars stop in the drive before entering Bissonnet and block the way. Once the drive has been crossed the gate to the sculpture garden is directly ahead. By forcing the disabled to come in contact with this gate, this path across the drive may encourage them to enter the garden. Perhaps the grassy island should be extended to the street so the able-bodied will be forced to confront this gate as well.

Inside the gate the sculpture garden works well for all. Sculptures are either set on the pavement where everyone can get to them, or in the grass where everyone is discouraged to go. The far
side of the garden is defined by the southern wall of the Glassel School. In the middle of this wall is an entrance that can only be reached by climbing stairs.

The address of the Glassel school is 5101 Montrose boulevard. Visitors who come to the Glassel by car will park in the lot on the north side of the school. There are two spaces designated for the disabled which flank a wide, gentle ramp that is on axis with the front door. Both spaces provide plenty of room to load or unload a wheelchair.

There are no stairs at the north entrance, so everyone enters through the same doors. There are push bars on the inside of these doors, but they are placed low enough to not block one's vision into the school. These doors open directly into the Glassel's exhibition hall, which is a long two storied hall, rung by a second story balcony, and lit by a glass barrel vault.

Upon entering, stairs are immediately visible to one's left. It is usually clear that most of the art is displayed on the first level, although as one moves through the exhibition they become aware that art is also placed along the balcony. In addition to the first stairs one sees, there is another flight at the southern end of the hall, and an elevator in the middle on one side.

On the first floor both stairs and elevator are entered in the center of the exhibition space. Each stair arrives at the balcony at one of the end walls, where there is a view over the parking lot on the north, or into the Cullen sculpture garden on the south. The elevator arrives in the middle of the space on one of the side balconies, where one is able to survey the entire exhibition space.
All three points of arrival are pleasant, and since the nature of the balcony requires people move around the space, everyone is able to experience the view from each point.

While the arrangement of stairs and elevator provides all visitors with a pleasant experience in terms of arrival, the stairs allow a much greater sense of interaction with the space than does the elevator. It is always possible for a person on the stairs to determine their position, while once inside the elevator, a person looses visual contact with the exhibition space, and can only rely on the lights that indicate which floor the elevator is supposedly on for reference. In cases where elevators move through, or adjacent to, multi-height spaces, the experience of traveling in these elevators can be improved by maintaining visual connection with the multi-height space.

Bathrooms at the Glassel are located on the second floor. These bathrooms are not accessible due to the narrow width of the toilet stalls.

The nature of the Glassel’s central space defines a path of movement along its axis from one end to the other. The south wall of this space is glazed with clear glass permitting a view to the sculpture garden. This view and the doors located in the center of this wall suggests that one’s path continue along this axis into the garden. However, the steps which lie just beyond the door, make this impossible for people in wheelchairs.

To reach the garden the handicapped must pass back through the exhibit space, exit through the doors on the north side of the school, turn left to Montrose Boulevard, and travel south along the
sidewalk until they come to a gate, which leads into the garden near the south door of the Glassel school. This detour totally disrupts the connection established by the architecture between the school and the garden. Rather than experiencing the connection between school and garden as one step in a logical spatial sequence, the handicapped experience the school, the street, and the garden as distinctly different places. The size, function, and noise level of Montrose Boulevard are incompatible with the spaces in the Glassel and Cullen garden. This is confirmed by the high wall between the garden and the street, and by the fact that one enters the Glassel, from the garden or parking lot rather than from the street.

Most of the spaces in the Glassel school and in the Cullen Garden work well, although the two glaring exceptions to this are inexcusable. Whether a person in a wheelchair wants to visit the sculpture garden or simply needs to use the bathroom, they are required to leave the school and return to the street. In the event of rain a visitor is likely to get soaked trying to find an accessible restroom in one of the neighboring buildings.

There is no doubt that the administration of the Glassel is aware of the problems that exist in this school. Legislation has existed for many years now concerning the accessibility of restrooms, and the receptionist at the school has made numerous requests that a ramp be installed at the south door. To solve these problems is not difficult or expensive, so I can only conclude that the people in charge at the Glassel do not care about the needs of the disabled.
THE CONTEMPORARY ARTS MUSEUM
The Contemporary Arts Museum, (CAM), is located across the street from the Cullen Sculpture Garden, at 5216 Montrose. This museum has no parking of its own, so visitors must either park on the street, or in the spaces provided by the MFAH. Starting at the handicapped spaces on Main Street, people must get to the sidewalk, and then travel along Bissonnet to Montrose Boulevard. The CAM is located diagonally across this intersection. Since there is no curb cut on the other side of Montrose, people in wheelchairs will have to cross Bissonnet first and then cross Montrose.

The main entrance to the CAM is located at the top of an extra wide ramp. The width of this ramp removes it from the category of ramps installed only for wheelchair accessibility, and elevates it to the status of an elegant processional device, like the ramps used by Le Corbusier at the Millworker's Association Building in India, and by Richard Meier at the High Museum in Atlanta.

While the entry sequence works for everyone on a purely functional level, it is clearly designed around the proportions of a standing adult. At the top of the ramp the CAM is entered through a tall narrow slit in the wall. By entering through this slit people are made aware of their scale and verticality. Just beyond this slit the space begins to expand, and it is here that one finds the doors into the museum. There are push bars on the inside of these doors, but unlike those at the Glassel, these are located at the eye level of a seated adult.

As one enters through these doors the space continues to expand horizontally, and the ceiling slopes downward ending at a
flat soffit. Once again the standing person is made aware of their proportions, although now their height and verticality are in contrast to the space.

Beyond this soffit lies the main gallery which reads as one volume with a tall uniform ceiling height. The most obvious way to move from entrance to the gallery is by crossing a bridge in the middle of the space that passes between two stairs. These stairs descend to the basement. In addition to this bridge there are two spaces, one at each side of the entrance, where the able-bodied can pass between a wall and the stair railings. Only one of these spaces is wide enough for a wheelchair to pass. The gallery on this level is basically one open volume, so as long as wheelchairs are considered when partitions are being installed it will remain totally accessible.

The basement of the CAM contains another gallery, the museum store, and the bathrooms. The able-bodied can use the stairs to access this level, but the handicapped must exit the building and enter another door. Before exiting the museum it is important that a person in a wheelchair notify the guards that they intend to visit the lower floor as the basement door is usually kept locked.

Once outside the museum one will see that stairs lie to the right, and will proceed back down the ramp to the sidewalk. At this point they will turn right 180 degrees, and roll down Bissonnet to the next street. At this street they will again turn right, and continue past a large sculpture to a service driveway that descends to the basement of the CAM. Perhaps the only good thing about following this route is that it brings one in contact with this sculpture, which might otherwise be missed.
The service ramp that one must negotiate from the street to the basement door is much steeper than what is allowed by current accessibility codes (one foot of vertical rise to every twelve feet of horizontal run), and there is no hand rail. This ramp is located against a wall made of standard grey concrete. Even if no other steps are taken to make the CAM more accessible, the addition of a handrail to this wall would greatly improve safety.

At the bottom of this ramp there is a white metal door set in the concrete. There is a door bell button next to this door, but it is located much too high for a seated person to reach. My personal experience is that by the time I get to the ramp the guards have usually opened the door, and are often on their way up the ramp to offer their assistance. There is one step at the basement door, which requires that the museum’s staff lift visitors over this threshold. This places the CAM in a position of liability, and the visitor in a position of dependence.

Inside the basement door is a small hallway that leads through the administrative offices to two large wooden doors. These doors open into the public area at the entrance to the gallery. The two stairs seen on the floor above have merged into one, which lands almost directly ahead. Thankfully, no art decorates the landing of these stairs, where the handicapped would be unable to view it. While this space can be considered the point of arrival for both disabled and able-bodied visitors, the relationship between the stairs and gallery doors allows the able-bodied a view into the gallery that is not afforded the handicapped from the doors to the office.
Like the gallery above, this gallery is basically one open volume that can be manipulated through the use of partitions. At the time of my last visit this gallery contained a show that included a piece by the sculptor Vito Acconci.

Most of Acconci's work has dealt with the human body. Often viewers are required to occupy a confined space or pass through a specifically human shaped opening to understand the piece. While in these spaces, participants are often confronted with monologues by Acconci, in which he challenges social customs and mores. Acconci likens the experience of these spaces to that of entering a confessional, where one is made very self aware by the size of the space and the nature of their activity. The specific piece by Acconci, at the CAM, consists of four walls placed in a row just over two feet apart. The walls are painted primary shades of red, white, and blue. The space in between the walls is tall and too narrow for most wheelchairs to enter. Since it is not until one enters between the walls that the recording of Acconci's voice is heard, it is clear that for a piece like this to effect people in wheelchairs in a similar way as it effects the able-bodied, it must have different proportions. These proportions might be wider and lower.

The museum gift shop is located behind the stairs. Some of the wares are placed above the reach of most seated people, and some are displayed in cases that are too high to be viewed comfortably. The isles also tend to be narrow. While the able-bodied will definitely have an easier time maneuvering through most of this store there is on place where people in wheelchairs are favored. Directly under one flight of stairs there is a flat file
containing prints for sale. This file is easily approached and opened by people in wheelchairs, but the limited headroom created by the descending stairs requires that most standing adults kneel down to avoid hitting their head.

Directly across from the file is a narrow gap between two walls that leads into a small space. This gap is far too narrow for a wheelchair to enter this space. The space contains nothing but an electrical outlet.

The bathrooms at the CAM function well. There is a phone inside which is located at a conveniently low height, as are the sinks, soap and towel dispensers. Only one of the toilet stalls is wide enough for a wheelchair to enter, but this one works well. The mirrors are too high to be used by a seated person.

Perhaps the best architectural element at the CAM is the ramp to the front entrance. At no time does one feel that this ramp was an afterthought or that its only function is to provide accessibility for wheelchairs. It is actually possible to reach the entrance of the CAM by ascending stairs at the corner of Bayard and Bissonnet, but this path is almost never taken.

The administrators of the CAM were very helpful, and expressed interest in the subject of this thesis. They are presently considering an addition to the museum, which will include an elevator. Hopefully, this addition will create an experience that is as pleasant for people in wheelchairs as it is for the ambulatory.
THE BLAFFER GALLERY
The last exhibition space I will examine is The Blaffer Gallery at the University of Houston. The Blaffer is located in the fine arts building at 4800 Calhoun Street, on the main campus of the university. Parking is located across the street from the Blaffer, where there are a number of spaces reserved for the disabled. There is a low wall surrounding the parking lot, which breaks at the handicapped spaces to allow people to access the street. The break in this wall is wide enough for only one wheelchair to pass through comfortably.

Between the wall and the street there is a sidewalk. At the point where the opening in the wall occurs there is a ramp, but no crosswalk. Directly opposite this ramp on the other side of the street is a loading dock. The sidewalk breaks for a driveway where trucks back into the dock. Only on one side of this driveway is there ramped access to the sidewalk. Since the ramp from the parking and the ramp to the sidewalk are not aligned one must cross the street diagonally.

The Fine Arts Building consists of a number of enclosed volumes, connected by exterior covered walkways, around a open central court. To enter the Blaffer one must pass between two of these volumes, under the walkway, to a sign directing them left along one side of the courtyard. Everyone enters the Blaffer through the same doors.

Inside, one soon sees a flight of stairs leading to the mezzanine which overlooks the gallery. From the bottom of these stairs one can see that art is displayed on the upper level. There is
no visible way for the handicapped to reach the mezzanine, although it is possible.

The way this is done is similar to the way one reaches the basement at the CAM. One must first notify the gallery staff that they intend to visit the mezzanine, then exit the gallery, and travel across the courtyard to a bank of elevators. The surface of the courtyard is covered with bricks that are periodically divided with pieces of wood. The wood is old and weathered, and has raised up in places making it difficult to roll over.

In each elevator there are two control panels, one of which is located at a low height that makes it easier for people in wheelchairs to reach. Unfortunately, this control panel does not have a "door open" button, so one must move to the control panel on the other side of the elevator to hold the door. This presents a problem to those who are unable to move quickly.

On the second floor there is a map, directly opposite the elevator doors. This map provides no indication that there is an entrance to the Blaffer on this level, instead calling the area where this entrance exists Lithography, Print making, and Student Lounge. Assuming one has faith in the directions provided by the Blaffer staff, they will ignore this map and continue along a covered, open-air walkway to an ugly, grey, metal door. This door has no knob, doorbell, or sign, so the handicapped must depend on a guard to arrive and open the door from inside.

On the inside of this door is an alarm/lock that has a push bar reading, "Emergency exit only, Push here, Alarm will sound." Because of this the guard must stay on the mezzanine level until the
handicapped person is ready to leave, or the handicapped person must wait for the guard to return. When the handicapped person has to wait they are, in effect, being detained against their will.

Most of the art in the Blaffer can be viewed comfortably by people in wheelchairs. Some small two dimensional works are placed at the eye level of standing adults, which makes them hard to see, but hanging them at the eye level of a seated adult will create an equal and opposite problem, unless chairs are provided so all can sit.

There are no bathrooms in the Blaffer. Everyone must exit the gallery to use the ones located near the elevators. These bathrooms are accessible, although the stall door will not close with a wheelchair inside. Sink and mirror heights are good.

The experience of people in wheelchairs at the Blaffer is similar to their experience at the CAM. In both cases the handicapped must take long exterior route to access the same places that the ambulatory can reach quickly and comfortably without leaving the building. While it may be expensive to equip the Blaffer with accessible interior circulation, steps like noting the mezzanine entrance on the second level map, providing an attractive door, sign and call button at this entrance, and allowing the disabled a way to exit the mezzanine level without setting off an alarm, would make the existing system much more pleasant.
AN ADDITION TO THE CONTEMPORARY ARTS MUSEUM
In each of the museums I have looked at I have found problems with the way the architecture accommodates people in wheelchairs. In some, I gained insight into ways of enhancing the experience for these people. While I believe the lessons I have learned from my investigation can be applied to almost any building program, the nature of the buildings I have examined suggests a museum for my design thesis.

Rather than design a whole new museum from the ground up, I have elected to develop a program for an addition to the Contemporary Arts Museum in Houston. I have chosen this museum not only because of the clear need for it to become more accessible, but also because of the beautiful ramps and entrance sequence it already has. I am also aware that the administration of this museum is interested in expanding their facilities, and is sensitive to the need for greater accessibility.

The program on page 45 was developed with the help of Michael Reed who is the museum manager. The site, like the project, is hypothetical, and lies on the north-west corner of the block on which the museum sits. This site lies behind and to the side of the existing museum. Because of this location one of my first design decisions was to move the museum's entrance from its present location, north to the space between the existing CAM and the Jung Center.

One comment I received in my mid-term jury was that the ramps I used in my addition were not very exciting. Following this review I spent some time thinking about "The Ramp" as a purely abstract form/experience, and developed the ramp shown on page 43.
In this model, the ramp occupies the entire floor area, with S-shaped landings, (required every 30 feet by code,) cut into, and projecting out of its surface. By using this type of landing I am able to express the ramp as a continuous surface with islands of flat, as opposed to a floor that alternates between sloped and flat surfaces.
The following pages contain images from my final thesis presentation. While the jurors agreed that my design was successful in integrating the circulation routes of the disabled and the "able bodied", they felt that the landings in the galleries had become so large that it was difficult to read the ramp as a continuous plane.

Another element of my design that the jurors felt could have been more resolved was the provision of natural light. Most felt that there would not be enough light in the galleries, and that the ceiling of the entrance wedge should not be skylit, as there would be enough light provided by the glass wall over the entrance.

Elements of my thesis that everyone agreed were positive were the basic intent, the scale of the addition, and the grouping of forms that allows the original building by Birkerts to maintain its power and independence. Anderson Todd expressed his opinion that this is my best project to date, and I agree.
Thesis Program:
Contemporary Arts Museum, Addition
Cleary O Buckley
September 5, 1991

Requirements:

<table>
<thead>
<tr>
<th>Space</th>
<th>Square Feet</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wheelchair access to museum's lower level</td>
<td></td>
</tr>
<tr>
<td>Lecture/Performance/Reception Space (250 seated; 600 standing)</td>
<td>2500 sq. ft.</td>
</tr>
<tr>
<td>Bar/Kitchen</td>
<td>250 sq. ft.</td>
</tr>
<tr>
<td>Gallery</td>
<td>4000 sq. ft.</td>
</tr>
<tr>
<td>Coat Check</td>
<td>150 sq. ft.</td>
</tr>
<tr>
<td>Loading Dock and Storage</td>
<td>1500 sq. ft.</td>
</tr>
<tr>
<td>Art Preparation Space</td>
<td>1000 sq. ft.</td>
</tr>
<tr>
<td>Improved Gift shop</td>
<td>700 sq. ft.</td>
</tr>
<tr>
<td>Improved Restrooms</td>
<td>500 sq. ft.</td>
</tr>
<tr>
<td>Cafe - 25 seats</td>
<td>375 sq. ft.</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>10,975 sq. ft.</strong></td>
</tr>
</tbody>
</table>

**Gross Factor - 20%**

**Gross Total**

| Lot Size - 65 ft. x 125 ft. | 13,169 sq. ft. |
| Lot plus triangle           | 12,600 sq. ft. |

Notes: All spaces must be fully accessible to all museum visitors and staff. All visitors should be encouraged to travel along the same circulation route.
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