Constructing Memories: Time Made Tangible

Adele Boyle
Memory believes before knowing remembers. Believes longer than recollects, longer than knowing even wonders.
WILLIAM FAULKNER, Light in August
Abstract

Time, by definition, is an intangible phenomenon. Everyone knows it exists and can tell the passage of time based on the track of the sun and the hands on a clock, but time itself is an invisible entity. This architectural thesis maintains that time can be made tangible through the relationships formed between people and their personal histories and memories. The predominant way the present knows anything about its past is through someone’s telling of it. A person who experienced the past shares with the present and in doing so, gives the past and time itself presence. This Memory Center, located in Dupont Circle, Washington, D.C., gives the opportunity for people to share their memories and experiences in order to give time physical presence. Like an interactive science museum, the Memory Center opens itself to the people who visit it and allows for interactions that create lasting memories. Although one cannot consciously control most of what becomes memory, events that are new or unusual or involve interacting with new people usually form stronger and more lasting memories.
Acknowledgements

The past scampers like an alley cat through the present, leaving the paw prints of memories scattered helter-skelter.

CHARLES DE LINT, The Onion Girl

It’s been a long journey through school, and especially through my thesis year. Along the way, I have found out a lot about myself and discovered a great deal about architecture as well. I’d like to think I’ve evolved and when I look back (in memories) on the years gone by, I can see a journey to be proud of. For sure, there is a large group of people to thank for helping me along this path, but first thanks for this thesis project goes to my committee. Marcia Feuerstein, Paul Emmons, and Susan Piedmont-Palladino, I could not have finished this project without your helpful advice, suggestions, and general aid. Despite the difficulties I kept running into and creating for myself, you never let me think I couldn’t finish this. Thank you for pushing me and letting me take the extra time that ended up being very worthwhile. Second, many thanks are due to my family for making sure I didn’t go insane and for coming in on breaks and after work to fine tune final details. I really appreciate the time you put in when you didn’t have to. I also appreciate the many friends who were willing to come to me when I didn’t have time to go to them, for those crucial 10 minute dinner breaks or mental time-outs. I couldn’t have done it without you either.
Human memory is a marvelous but fallacious instrument...The memories which lie within us are not carved in stone; not only do they tend to become erased, as the years go by, but often they change, or even grow, by incorporating extraneous features.

PRIMO LEVI, The Drowned and the Saved

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The Memory Monster (Project Overview)

All things fade away in time, but time itself is made fadeless and undying by recollection.

PHILOSTRATUS, The Art of Memory

The selection of a small triangular site on the west side of Dupont Circle, in Washington, D.C. seems arbitrary at first glance. However, beneath the surface is a hidden world, waiting to be explored. Twenty feet below street level, an old trolley line tunnel and station platform sits, unused and forgotten in recent memory. The site begged for an archaeological intervention—an attempt to literally and figuratively dig into the past. However, as memory, time, and history intervened, the thesis evolved from an archeological idea of preserving the past into an exploration of memory as it pertains to the experience of history and time. Because the project began with a site and a focused on memory, the Memory Center emerged (Image 1). Although the initial inspiration for the entire project was the hidden trolley line, trying to force the project to fit into the confines provided by the existing line didn’t feel appropriate. However, without the trolley line as a memory, without its history, this project would have never been. So while it does not have a physical manifestation, it is one of—if not the most—important elements in the project. My memory of its existence allowed for me to think of the below-grade world as something inhabitable rather than something left over (Image 2). The program evolved from the thesis’s evolution, and each aspect of the Memory Center’s program finds its foundation in memory.
The program is comprised of three main parts—a multi-level theater tucked into a hidden, mysterious, underground world where performers and speakers can show off their capacity for memory and where memories can be made; four main floors comprised of spaces made memorable through the use of sound and light, alternating between “eavesdropping” and “listening” levels; and a multi-level recording studio where the public can come share their memories and histories in order to preserve them for the future (Image 3). Visitors experience and interact with the building, which contains a series of listening and talking devices. They also get to experience the memories of others since the Memory Center provides not only a place to record memories, it also provides storage for the memories themselves and allows others to listen to them. The inspiration behind the recording studio as memory device came from National Public Radio’s Story Corps program. Story Corps provides multiple locations across the country where people can come and record conversations about moments in time relating to their own lives. Each week, NPR’s national broadcast plays a select group of recordings from all across the country. These recordings are tagged and stored at the Library of Congress in Washington, D.C. Despite being the location where all the recordings get stored, D.C. was not one of the places that had a recording studio in which to record these conversations. While thinking about other aspects of memory, I thought having a D.C. recording studio location included in the Memory Center would fit seamlessly into my project.

The title “Memory Monster” refers to the size and scope that this Memory Center grew to as memory ideas and parts were introduced. Nothing was easy about the site or thesis to begin with, but each move I made seemed to make coming together even harder. However, thinking of memory as the connective tissue between parts that work on their own made it easier to tie things together. The making and drawing of the project also helped keep memory central in the entire design process. Inherent in each drawing is its own memory and history. The method of design for the project was one that kept the memory of making in all the drawings. All of the work except for the renderings was done by hand. Over time, the drawings were built up with their own history, because each time changes were made the old drawing was erased and drawn over. Even with the erasure, some vestiges of the past remained, and as this work continued over and over, a palimpsest of memory formed. Through this methodology, along with the memory as connective tissue, the seemingly separate parts of the project combine to form a cohesive whole and “understanding the parts is accomplished by considering the whole, and understanding the whole is achieved by considering the parts.”

To better understand these parts as they pertain to the whole, I have separated each of the core elements into separate sections to be understood as parts first, and then connected together to form a single entity.

If any one faculty of our nature may be called more wonderful than the rest, I do think it is memory. There seems something more speakingly incomprehensible in the powers, the failures, the inequalities of memory, than in any other of our intelligences. The memory is sometimes so retentive, so serviceable, so obedient; at others, so bewildered and so weak; and at others again, so tyrannic, so beyond control! We are, to be sure, a miracle every way; but our powers of recollecting and of forgetting do seem peculiarly past finding out.

JANE AUSTEN, Mansfield Park

Dupont Circle’s history, like that of most neighborhoods in older cities, is remembered through old photographs and in the few buildings that remain from past eras. The site of any project has a memory that the people usually forget. This site was not any different. The initial inspiration for this project was the forgotten hidden world located below Dupont Circle. Before the advent of the Metro system, DC neighborhoods were connected by a series of trolley lines that shared the road with motor vehicles, and often tucked underground at important motor crossings (Images 4-13). After the entrances to the trolley lines were closed, many people forgot that the space existed. Every now and again from the late 1970s until 2010, someone would “rediscover” this underground world and try to do something with it. In the early 1990s, “Dupont Down Under”—a food-court type series of restaurants was established in the space, but didn’t work out due to a number of issues. In early 2010, the city of Washington, D.C. released a Request for Proposals for the roughly 18,000 square of space encompassed by the paths underneath the circle. This request created the jumping-off point for this project.
Image #6: The first trolley emerging from the underpass, 1949.

Image #7: Construction of the below-grade trolley circle, 1949.

Image #8: Opening day of the vehicular underpass (Connecticut Avenue), 1950.

Image #9: On-going construction of the trolley underpass, 1948.
Image #10: Construction of the trolley lines and vehicle underpass underway in 1948.

Image #11: View of Dupont Circle showing the entries for the underground trolley and vehicle underpass.

Image #12: In 1964, part of the underground was temporarily sealed to provide a bomb/fallout shelter

Image #13: In 1949 the model for the proposed vehicle underpass was revealed.
At grade, four roads cross through Dupont Circle—P Street, Massachusetts Avenue, New Hampshire Avenue, and 19th Street (Images 14, 17, 18, 19, 22). At the level of the trolley line—which sits 20 feet below grade and follows the same circular path as the traffic circle above—is Connecticut Avenue, which bisects the circle in a NNW to SSE orientation (Images 15 and 16). Roughly 150 feet below grade, following Connecticut Avenue, is the Metro line. Metro brought an end to the trolleys in Dupont Circle; the trolley line was simply closed in, and Connecticut Avenue covered the old entrance to the world below.

The specific site chosen for the Memory Center emerged after the thesis went through an iterative process. The Memory Center occupies the triangle created by 20th Street to the West, Massachusetts Avenue to the North, and P Street to the South (Image 23). The site is lively, with places for locals to live and work, restaurants, shops, a bus stop for busses that go all over the East Coast, and tourist attractions. It is a perfect place for a building where the experiences of all the people who cross paths here can be collected and shared; a place where time can stand still, if even for just a few moments (Image 24).

There are a series of eight staircases which are currently closed which used to access the trolley line below. One is located at the easternmost corner of the triangular site (Image 21). The memory of the staircase is kept even though the staircase itself was not. In creating the layout of the Memory Center, the first line which carries through from Dupont Circle itself, through the trolley line, and into the building is the line that the old staircase used to follow. Inside the building, this line becomes the northern boundary of the “memory path” (Image 25).
Image #17 View looking North of Connecticut Avenue as it runs below and at street-level.

Image #18 View of the site for the Memory Center, looking Southeast from the corner of 20th Street and Massachusetts Avenue.

Image #19 View of vehicular traffic from median at the Southern edge of Dupont Circle.

Image #20 View to the sunlight above from the Dupont Circle Metro stop located at 20th Street and Q Street.

Image #21 View on the Memory Center site of one of the original entry/exit staircases which access the trolley line below.

Image #22 View looking South at Connecticut Avenue from Southern Edge of Dupont Circle.
Image #23 Site Map showing the extended context around the Memory Center's site (highlighted in yellow)
Image #24 Site Plan, closer in, showing the placement of the Memory Center on the site in between Massachusetts Avenue, P Street, and 20th Street.
Image #25 Site Alignment Plan, revealing lines that were used to create the paths and layout within the building, all stemming from existing Dupont Circle context. The lines intersect at the innermost point of the underground trolley line's wall. After intersecting at that point, the lines were extended to cross through the fountain at the center of Dupont Circle Park. The path outlined in red is the "memory path".
The Memory Center grew out of the thesis and continued to evolve. The building sits on its own triangular island in the midst of Dupont Circle, reaching taller than the immediate buildings surrounding it, but not in such a way that it blocks views or light to any of its neighbors (Images 26-35).

The building consists of three levels of theater space underground, ramping downward forty-seven feet; an entry level where the building speaks most strongly to the exterior, reaching outward to invite people in; a pair of eavesdropping levels which alternate with a pair of listening levels, where—as one may be able to tell by the names—a series of activities are available to listen or eavesdrop; a transitional space known as the “observation mezzanine” which does not get its own plan, but exists to help emphasize the sound separation from the building below; and a recording studio which ramps upward where people can come and record conversations and memories to share with the public. The recording studio and theater speak to each other as bookends on either side of a memory-as-experience building and act as literal and figurative mirrors of each other. The literal mirrors designed in the theater space give the theater a unique atmosphere. This theater is not necessarily about the direct view of a performance—in fact, the more broken or fractured the view, the more potential for a fuller experience. Some of the mirrors are magnifying and allow for performances for the hearing impaired where hands can be enlarged to show more detail (Images 36-40).
Image #36 View of theater, showing alignment of ramping structure.

Image #37 View of theater, showing trolley level catwalk to hidden niche space and the box seating.

Image #38 Detail view of theater, showing box seating, ramp structure, and mirrors.

Image #39 Detail view of theater, showing box seating and staircase to the entry level.

Image #40 Detail view of theater, showing mirrors, box seating, and staircase to the entry level.
Black is the absence of light but white is the absence of memory, the color of can’t remember. How do we remember to remember…You have to mark the white. A simple enough act, you might say, but any act that re-makes the world is heroic.

STEPHEN KING, Duma Key

The cellular wall emerged as the first person-to-person sound-memory architectural device. In thinking about the Memory Center as a beacon as well as a destination, I wanted its edges to embrace both the inside and outside. It was in this manner that the idea of “fluidity” emerged. Fluidity refers to the notion of revealing either the inside or the outside of the building, depending on the season or time of day. It was important to designate inside and outside, and then, at specific moments, breach that separation using the notion of fluidity. In studying sound transmission, I discovered that the smoothest, clearest sound comes from within a dome. I wanted to incorporate this into the project in some way, but making obvious domes seemed forced on a site that was already geometrically difficult. So, in sketching one day, a circle was drawn inside a square (Image 41). In this image I discovered the cell that would make up a portion of the north wall in the Memory Center. Each cell would be an opportunity for interaction. In order to separate inside from outside, a wall of translucent concrete—Litracon—would be constructed through the center of the circle. A dome would be hidden inside this seemingly square recess, allowing for sound to carry from one side of the Litracon wall to the other. Litracon was used because it created a fluid edge due to its translucency. While not allowing a person to see clearly through the wall, it does allow for clearly defined silhouettes of people on the other side of the wall. (Image 42).

Program Elements: Northern Cell Wall

Image #41 Cells from the Entry Level, each has a hidden interior dome and openings that get wider as the facade evolves from west to east.
Image #42. Detail drawing of plan, elevation, section and axonometric sketch of the cellular wall, showing the Litracon wall (brown), hidden dome, and customized wall configuration. This could be day or night, depending on if you see the elevation as from the inside or from the outside. As drawn, the elevation is a partial section cut looking toward the outside during the day.
I created memory spaces marking the passing of time: the experience of each cell—whether you or your conversation partner is best seen—changes based on the time of day. During the day, when the brightest light would be coming in from outside, the person standing on the outside of the wall would be backlit and thus easiest to see. At night, the person standing inside would have interior lighting shining behind him or her and would therefore be easier for the person outside to see. This allowed for spaces where people could interact with each other in a new way. Rather than having a conversation face-to-face, disembodied, mysterious voices would carry across the small dome and thus create a unique experience.

These cells went through iterations of scale, of paring, of orientation, but once it had been drawn on paper, the answer came clearly. Each cell was an individual, as unique as the experience it created, and thus the wall became a single cell deep, each cell slightly different from the one before it as they evolve from West to East. (Images 43 and 44)

The cells also sparked inspiration for the levels above and below the entry level. The opportunity to create an eavesdropping space—tucked into the recess of the building a level above the dome—arose and thus the first “Eavesdropping” level grew out of this detail. The cells remained as the building grew upward, changing in shape and size, but remaining fluid. The structural arrangement of the entire building began with the fin walls that resulted from the cell arrangement.
I wanted the southern edge to be related to, but not the same as, the northern cellular wall. It needed to have the same fluidity from inside to outside, public to private, but in an architecturally different way. An added advantage of being the south wall was the potential for utilization of the sun. Since the sun has traditionally been used throughout history as a way to mark the passage of time, using it to create an architectural device that showed the passage of time seemed natural. So in designing a sun-shading device, the southern fluid edge was created as well. It began with an idea to use words as the actual shading panels. After sketching and rendering, a two-layer curtain wall system emerged. The outside layer is comprised of a series of aluminum panels which have quotations about memory cut out of them (Image 45). So, during the day, sunlight shines through these letters into the building, hitting walls, columns, and floors, allowing the exterior words to enter the building itself. Their arrangement changes based on the time of day, revealing the passage of time because different words will hit different places based on how the sun shines through the word-voids. It also changes based on time of year as sun during the summer comes at a much steeper angle, only allowing the words to come a little ways inside. During the winter, the sun angle is much shallower and allows the words to stretch further into the interior of the Memory Center (Images 48 and 49).

Program Elements: Southern Panel Curtain Wall
In many instances, the words would stretch in far enough to be seen on the “memory path”, allowing two memory devices to interact (Image 46). The panels begin at 8'-0” above the entry level, to allow for views out (Image 47). Most of them have quotes that face outward, so that when the sun hits them, they hit the ground in a readable manner. A person inside the building looking outward would see backwards words in these instances. Only those panels which align with the inside of the “diagonal passage” face the interior of the building. This is done because only specific moments of specific days would allow for the text to actually enter the passage there due to the alignment of the passage’s walls. So, visitors inside the diagonal passage experience the words facing them, seeming to glow from the exterior rather than physically enter the space. Like the north wall, the time of day also helps connect inside to outside with interior backlighting. At night, being backlit from the lights inside, the aluminum panels’ text would be more visible to those outside the building than inside. The Memory Center would seem to glow with words about the power of memory. (Image 50)
Image #49 Working sketches of the southern wall, exploring potential elevation configurations as well as accurate sun angles for the Winter and Summer sun coming into the space. Knowing the sun angles greatly improved the accuracy of renderings showing the cut-out words hitting the ground inside the building.
Image #50  This image shows the condition at two corners of the Memory Center, one interior and one exterior. Although not used exactly as drawn, this exploration does reveal elements seen in the final design including an iteration of the chalk wall, the exterior bench, and the aluminium panels on the outside of the glass curtain wall.
Program Elements: Memory Path

No memory is ever alone; it’s at the end of a trail of memories, a dozen trails that each have their own associations.
LOUIS L’AMOUR, Ride the River

One day, after a seemingly insignificant snowfall, while thinking about memory and the passage of time, I came upon one of the most inspirational moments in this journey. Looking at the ground where the less-than-an-inch of snow had fallen and was starting to melt away in the sun, I saw the footprints of people past (passed) (Images 52-54). This intrigued me, because no one could say for sure when these people walking, trudging, shuffling, biking along had passed by, but one thing was for sure—they had been there at some point in time prior. The memory of their step, their presence, remained. The footprints revealed something about the people that had been there, just as memories do, and I couldn’t stop taking pictures of this phenomenon. So, capturing these fleeting moments inspired me to focus on capturing moments like it in the project I was creating. These footprints became the inspiration for the “memory path” portion of the Memory Center (Image 51). This moment, where insignificant is made significant due to someone thinking more of it, is forged forever in my memory. You never know what small thing can become momentous. This is why memory is so important.

The actual memory path aligns with the line that runs through Dupont Circle and the trolley line, and matches where the old access stair used to be. It is made of memory foam-inspiredv panels that, when stepped on, retain the mark of the step. These marks remain for a period of time before fading into history but for the time they are there, they are evidence for the passage of time and instill a memory, even if brief.

Image #51 The Memory path exists on three of the floor plans and runs between the paired round columns to the north and the rectangular columns to the south.
Image #52 Disembodied shoes show the history and memory of a person’s movement with footprints that bring the past into the present.

Image #53 Footprints in the snow show the passage of time and reveal the memory of place. No one can know when someone passed, only that he or she did.

Image #54 The palimpsest of the past is revealed through showing paths of bikes and human steps that could not have occurred concurrently and yet they possessed the same space at two separate points in time.
Image #55  View of memory path looking east, cafe and panel wall behind.

Image #57  Entry plaza, showing the memory path leading to one of three main entrances and a portion of the listening domes.

Image #56  View of memory path in between columns on the entry level (memory path hidden to show words hitting the ground).

Image #58  View of memory path, entry space, and main stair.

Image #59  View of entry plaza from Southeast corner, showing space between the round columns, and the listening domes and their seats.
The experience begins in the depths of the ground with an unconventional theater that ramps downward. The theater is a place where the bizarre and unusual are celebrated rather than the typical. The strange layout and use of mirrors throughout the audience creates fractured viewing rather than linear lines of sight. Not all theatrical experiences need to be viewed in the way that most people expect. Broken views allow for the viewer’s memory and imagination to enter the realm of participation. Without a straight on view, the viewer has to use imagination and memory to create whole images to match the sounds being heard. The structure is carried through the entire building and terminates within the theater. The result is an unusual system of atypical views framed through and around columns. In this theater, the best seats in the house are based on individual experience. Seats each person designates as “best” all depend on the experience he or she personally has sitting there.

Access through the theater depends on a system of ramps which spiral down onto themselves, creating a system of overlapping pathways. Moving up and down these ramps adds another dimension of experience the deeper the visitor goes into the ground.

The unique experience continues upward through the building to the Entry Level. Here, the north and south “fluid” walls begin to engage inside and outside, and the memory path first emerges with an open invitation to enter and continue on. Above the Entry Level, pairs of eavesdropping and listening levels allow the visitor to have new sensory experiences. The eavesdropping levels are designed to allow people to experience blind sounds: they can be heard but not seen. The listening levels contain the libraries of recordings as well as listening rooms of various sizes and layouts where visitors listen to recordings of particular memories created in the Recording Studio above. The upward path terminates in a recording studio. The pathway through the recording studio, like the theater far below, is a ramping system. These ramps wrap over themselves as they move upward toward the sky in a spiral. In a mirror of the darkness discovered in the underground terminus of the theater, the terminus of the recording studio spiral is a light well which allows light to enter the group recording rooms.

Memory...is the diary that we all carry about with us.
OSCAR WILDE, The Importance of Being Earnest
Located forty-seven feet below street level, the base of the theater/ performance hall is deeply rooted in the earth. The entry ramp brings visitors down to the level directly behind two entryways (d on the left side of the drawing). After passing through this entryway, visitors can choose from eight different box seating arrangements (f) to the west of the stage (a). From the elevator lobby, visitors go through entryways again (d to right of the stage). Here, the visitor can choose seats close to the stage or in one of the three boxes tucked into niches created by the structural fin walls. In some instances, these are the better seats because all throughout the depth of the theater, a series of mirrors create magnifications and reflections of performances happening on the stage. If a visitor were to want to sit higher up than the level of the stage, he or she need merely to access a ramp up to the next level. On the upper levels, boxes vary in size and orientation based on mirror alignment and traditional views. The columns coming into the space serve not only as structure but also as bases on which to place the mirrors. The structural walls step in where the ground can be used as structure in order to create more intimate corners.
Sitting thirty-nine feet below street level, the theater mezzanine contains a lot of open to below space (b) where the depth is open to provide the angles needed for the arrangement of mirrors. This open space also provides places where visitors can stand if they so choose to watch a performance from a different angle. Boxes are contained within the fin walls as well as around the inside edge of the perimeter structure(e). Here, the space gets a little bit wider to meet up with the structure coming down from the building above, and the system of columns continues upward.

- a - performance stage (level below)
- b - open to below
- c - elevator access
- d - ramp up 2'-0"
- e - box seats
Located twenty-two feet below street level, the trolley level is thus named because it is at the same depth as the adjacent trolley line. Originally planned at this level to provide access to the trolley line itself, it instead plays on the memory of the staircase that once provided access from the street to the trolley. There is a catwalk (b) that carries along the same line as the staircase once did, and enters a small box niche (f). This level is larger, matching up with the sidewalk edges above, providing the largest number of seating options (e). It also contains the main access stair to the entry level, and provides an elevator lobby for visitors to gather in before and after performances (a). The ramping downward from this level creates a spiral-shaped space as the ramps move further inward toward the performance space on the Theater Base level. This design was chosen not only for its visual elements (providing the many angles and surfaces for the mirror arrangement) but also because the spiraling (or cochlear) design helps create an intimate sound environment.
The Entry Level marks the beginning of the more visible program memory elements. The memory path, located between two rows of columns, pulls the passerby inside, as it extends from the sidewalk edge on the east all the way to the Memory Center's West edge (d). There are two main views aligned with this memory path. The first is on the north edge of it, extending the entire length of the path, between the round columns spaced 6’ apart, through the open ribbon window on the east side, through the columns again and out to another ribbon window on the western edge (j). This view was specifically highlighted because it is the “memory line” of the old stair that used to exist on the site. The other view is less direct, but due to the alignment of the rectangular columns on the southern side of the path, can be seen directly along the edge of the columns until it terminates with a ribbon window on the west edge (j, south). This view is contained within the building, rather than extending through it.

The entry plaza gives visitors options to enter (e); the most demarcated being the memory path to a large, aluminum door, the other being a set of glass double-doors which enter into the stair and elevator lobby. On the southern side of the entry plaza, an exterior bench begins and wraps its way to the south and back up to the west, allowing for more seating around the edge of the Memory Center (c). In portions it is shaded by the building above or by the aluminum panel wall (i). Inside the building, the southern edge contains an information desk (f) as well as a café (g). The Entry Level also marks the beginning of the “listening tower” which is a multi-level vertical sound passage which contains various listening and eavesdropping devices and seating areas as it carries upward through the Memory Center (h).
Also located on this level is the first arrangement of the northern cellular wall (a) (Image 65). The cells evolve as they move from west to east. In the west, they are more contained, private and closed off spaces and they evolve all the way down to open public seats. Each cell changes both its opening width and the Litracon wall height. Cells 1 and 2 are self-contained, completely exterior cells, with a Litracon wall facing the interior of the stair tower at this level. Cells 3 through 8 are all from the same family type, a circle inside a square topped by a dome with a Litracon wall stretching through its central diameter. Cells 9 and 10 are cylindrical, glass elevators, made so in order to allow the person using the elevator to see not only outside, but also the change in level as all the structure is visible. Cells 11-14 are exterior cells and evolve again: instead of the Litracon wall being a barrier between people facing each other, the Litracon wall becomes a backrest for benches where people can sit facing away from one another (Image 64). Like the other cells, these are topped by domes, but instead of masonry, solid domes, these are shell domes hanging from the level above. They provide the same intimate sound relationship, but are exposed rather than hidden (See the chart for the evolution of the Litracon wall height and cell opening widths).

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Image #64  Northern cell wall shell dome and seat detail.

Image #65  Northern Cell Wall (a) Elevation Detail
The eavesdropping level moniker came after designing the initial cells on the Northern wall. In designing the dome, a niche was created above where a person could sit within the recess of the wall and eavesdrop on conversations below (b). Since the conversations between the people in the cells below would be mostly contained within the domes themselves, this eavesdropping niche became more of a space where visitors could sit outside, protected from the elements and overhear miscellaneous street and sidewalk noise. The walls facing the interior of the building (a) would be made out of Litracon, so that people on the Entry Level below could see shadows of people on the Eavesdropping level, and wonder how to get there and experience it. There is purposely no access from the main stair, one has to use the semi-hidden stair tucked into the Northwest corner of the building in order to access this level. While most of the level is obscured from below by the Litracon wall, there is one instance where people above and people below can see each other clearly, and this is at the overlook point (g). The rest of the level is double height space from the Entry Level below.
The listening level moniker evolved from the eavesdropping. Instead of having hidden situations related to overhearing, the listening levels were designed for purposeful listening. The main elements on the first Listening Level are the listening rooms (a) for groups up to 3 people. Here, people can take digital memories they check-out from the digital memory kiosks (d)/(f) or from the library—digital stacks (h)—and listen to them in private rooms. Two different listening spaces are situated at either end of the line created by the paired circular columns. The first (e) (Image 71) is a glass-enclosed, greenhouse-like space where sound from within is echoed, and allows for a clear visual relationship to the buildings on the western side of the Memory Center as well as to above and below. This room is meant to be mostly insular, being able to see what is happening, but to hear what is going on, a visitor would have to really try to listen. The other (g) (Image 72) is an outdoor patio-like space that faces the busy Dupont Circle roundabout. It is meant to be a loud, busy, listening experience. Adjacent to the outdoor space are the "listening bowls" (i) which are inverted domes in-line with the hanging shell domes below (Images 68-70). They create a vertical conversation between the visitors inside sitting in these bowls with the people below sitting in the entry plaza. Also adjacent to the outdoor space, two portals (c) to the entry plaza below provide a similar conversation and listening experience to the bowls, but they are more open to cacophony of sound rather than directly connected to one area below. A portal (c) to below similar to those over the entry plaza is situated in the "listening tower" space (b) (Image 74), continuing up through the building. Here, overhead construction is manipulated to amplify the sound being carried up from below and down from above.
These images show the “Dome to Bowl” connection. The cells on the North Wall at the Entry plaza are all shell domes, and in typical dome fashion, help control sound. These domes, however, are different in that they relate vertically to a set of paired “bowls”, which are just inverted domes. Through the pipe between them, sound is passed from the seating area on the Entry Level up to Listening 1, where visitors can sit inside the bowls and have a conversation with someone twenty-five feet below.
Image #71  Greenhouse-like, glass-enclosed west porch, a place for observation.

Image #72  Eastern listening porch, hidden within a recess of the building.

Image #73  View of the Dome-to-Bowl in section, along with the space on the level above the bowls, where one can see over and eavesdrop on conversations below.
Image #74: The “listening tower” where each level offers a unique experience for listening as the building grows upward. At the entry level, there are individual listening booths, and a stepped ceiling to project sound up towards the eavesdropping seating area and above that, the listening overlook.
The second eavesdropping level gained complexity over the first. The double-height listening rooms from the level below cannot be accessed physically on this eavesdropping level. Rather, there are windows which allow visitors to listen in on the memories being played by individuals/groups below (a). The listening tower continues on this level, with an overlook (d) that is open to the seating area below. It also contains a semi-enclosed “whispering wall hall” where concave curves (the most conducive to sound travel) create an elliptical shaped “room” where whispers are amplified and eavesdropping is easy (c). The memory path continues on this level (i) but on the western end, hovers above the level below, allowing for eavesdropping over the edge to the kiosk space below. The diagonal hidden passage is introduced on this level (e). Meant to be discovered and remembered, entrances into this wall are hidden within the thick wall itself, and to access the western side of it, one must know (or remember) how to get through it. Contained within it is a secret stair that goes up to the next level. To give visitors some hint that something is beyond the wall, there are instances of speaking tubes which carry sound from inside the passage to the outside of it (g). There is a series of eavesdropping and listening portals located within the memory path as well as just off of it (f) (Images 77-80). These allow for vertical conversations and overhearing. Like the double-height listening rooms, the listening bowls from the level below are open to this level along with an “eavesdropping seating area” where snippets of conversation from below can carry up (h) (Image 73).
Just as the second eavesdropping level gained complexity over the first, so does the second listening level over the first. Listening rooms are offered once again, as this is the listening level, but they are split into 2 categories. The first set (a) are exterior rooms which provide a place to sit under the cover of the building, as well as in a seat open to the sky. Adjacent to these rooms is the “hall of listening, eavesdropping, and speaking devices” (b) (Images 81, 83, and 84) This space is designed as a world of mystery and memory. Listening devices from one of the “rooms” to the other provide disembodied voices and create memorable experiences. Lofts accessible by hidden ladders sit above the space in 2 locations, providing another hidden space where conversations can happen between people who cannot see each other. The diagonal passage continues up to this level, providing a similar hidden world as it does on the level below. Once again, speaking tubes allow for sound to travel through the passage to the outside to give hints about the experience within (d) (Image 82). Similar to the outdoor rooms to the north, the outdoor listening space on the western side (also a) provides a larger space where groups larger than 3 can listen to the outside world. As there were on the first listening level, this level also contains a library of memories (i) as well as kiosks to search for memories (e). It also provides larger private rooms where groups can come in and listen to memories together (f). If a group desires a more informal listening experience, they can use the group listening area on the eastern side of the building to listen together in a more open space (g). Portals to below (h) in this area allow for the layering of voices which gives the group listening spaces informality and openness.
Throughout the Memory Center, sound relationships are created through the use of listening and eavesdropping devices. These devices create relationships vertically between the eavesdropping and listening levels (Images 77-80), but also horizontally through walls on the same level (Images 81-83). Most of them are conically shaped in order to direct sound either up or down. Some are rectangularly shaped and exist merely as natural portals, neither amplifying nor muffling sound.
The horizontal sound relationships are explored predominantly in the Hall of Listening Devices, located on Listening 2 Level (Images 81, 83, and 84). Here, within a large room, sound can be explored between walls and spaces hidden above. The other horizontal sound projections are tucked into the Diagonal Passage wall, where they are used to reveal a hidden world behind a seemingly solid wall (Image 82).
In between the Listening 2 level and the Recording studio, there is an observation area (g). It is 8 feet below the Recording studio and its purpose is to highlight the transition from the lower levels up to the recording studio. Its two most prominent features are the exposed sound barrier—which acts as the isolation device to prevent sound from the rest of the Memory Center (or outside) from entering the recording studio space—and the open-riser stairs which connect the Recording Studio level to the observation area below—these highlight the difference in elevation as a visitor climbs up, because he or she can see exactly what they are stepping up through from one level to the next. Visitors to the recording studio are greeted by a waiting area (f) where they can ask questions, wait for their scheduled time, or schedule a time to come in and record. Just beyond this, there is a sound-isolation vestibule which allows the person coming to record to transition from noise to quiet (e). If an individual or in a small group, the visitor(s) can access more intimate recording rooms (a) just beyond the vestibule. Engineers would enter the space here and choose to go to their appropriate room—either the Control Room (b) where live recordings are directed and engineers can speak directly to those being recorded, the Mixing/Editing room (d) where raw recordings are edited or mixed to make final, clear quality recordings, or the Mastering Room (c) where the edited recordings are burned to their final digital disc—also called the “master”. If the visitors are part of a large group, they would take the ramping pathway up to the Recording Studio Mezzanine Level (h). The recording studio’s ramping design pays homage to the ramping design of the theater. The theater starts on a level and ramps down, whereas the Recording Studio starts on a level and ramps up, thus creating related bookends on the bottom and top of the building.

a - recording room (for 1-3 people)  
b - control room  
c - mastering room  
d - mixing/editing room  
e - sound isolating vestibule  
f - information desk and waiting area  
g - mezzanine 8'-0" below  
h - ramp up
After walking up the ramp from the level below, visitors can access another group of 1-3 person recording rooms (a) or continue up ramps (d) to the larger rooms available. The mezzanine’s base level sits 10'-6" above the Recording Studio below, but continues up another 2 feet from there to the group listening rooms (c). These are located at the pinnacle of the building, and are unique in that, even though they need to have isolation of sound, they also have a clerestory roof system which allows light to enter the space. If more light is desired, there is a large roof terrace open to the sky overlooking Dupont Circle and the roads below (g). On this patio, an abbreviated version of the memory path (f) leads visitors from the outside into the sound-isolating vestibule (b). Since the engineers are located a level below, should the need for assistance arise, there is an engineering office where people recording can ask for help or ask questions before or during recording sessions (e).
The recording studio employs a system of sound-separation from both the rest of the building as well as outside (Images 87 and 89). The main method of this is a sound-isolating layer built into the actual structure of the building. It is visible moving from the observation level between Listening 2 and the Recording studio and is emphasized at eye level and with open-riser stairs making the movement from one space to the other obvious (Images 90 and 91). The other system—in the recording rooms themselves—is comprised of an enclosed, floating sound-isolating rigid foam system which prevented exterior noise from entering the space (Image 88).
The stair risers were opened between these levels to highlight this condition of stepping from one experience to another. The triple-layered sound-isolating system is visible, with the separation piece highlighted with the darker color. This system is also visible just beyond the stair.

Interaction with the sound-separation system between the observation level and the Recording Studio. Here, visitors can experience (see, touch) the physical sound barrier between the recording studio and the lower levels. The stair risers were opened between these levels to highlight this condition of stepping from one experience to another.
The elevations are designed to stand out—to be memorable. There is no single building type in Dupont Circle, which provides both a difficult and an easy situation. Due to the lack of uniformity around the site, the Memory Center would stand out no matter what it looked like. The northern and southern facades focused on the notion of fluidity. The western and eastern facades focus on a similar notion, but also emphasize view, looking into and through the building at specific elements. All four facades share elements which allow materials to turn the corners without much trouble. These elements include chalk walls that expose structure on the exterior of the building. These chalk walls allow visitors to draw on them, making their literal mark on the building. Over time, the walls are washed and the text fades away, but vestiges of these marks are left behind as memories. Stair towers on all four facades are revealed through glass-block walls. Semi-transparent channel glass follows the pathways of the recording studio, revealing the people moving up and down the ramps. The Memory Center contains a large portion of “memory concrete”—cast concrete, with the marks from the wood framing revealing the memory of how it was made. Concrete with reveals reminiscent of radio graphics show where there are recording rooms, or other sound-isolated spaces, on the recording studio level. All exterior guardrails, such as on the porches and patios, are made of the same aluminum jet-cut panels as the south wall. The darkest horizontal band on the elevations is the sound-isolation layer. Three of the elevations expose this, the exception being the East façade. The sound-isolation layer was cut at the East façade to create the observation landing where the visitors inside the building could interact with it.

We do not remember days; we remember moments. The richness of life lies in memories we have forgotten.

CESARE PAVESE, The Burning Brand

The Temporal Made Visible (Elevations)
The North wall’s exterior reveals the cellular structure within (Image 97). Structural fin walls, which hold up the northern edge of the building, are revealed on the exterior in the form of thin chalk walls (Images 98-103). The North façade contains the same elements as on the other facades: concrete with reveals, the sound-isolation layer, memory concrete, channel glass, and punched openings (Images 98-103). In this case, the punched openings are created more to give a hint about the layout of vertical spaces within rather than views (Image 100). The cylindrical glass elevator tower allows for views from inside to outside as well as from outside to inside (Image 101). There are two different porch types on the North wall. One is the set of recessed “eavesdropping porches” which sit above the hidden domes and allow for the hearing of sounds below (Image 102). The other is a series of four projected porches that extend out above the building below to give access to the sky above (Image 103).
The South wall contains no concrete other than the structural columns, which are covered in chalk treatment, and the seat on the entry level (Images 96 and 104). While the South façade does contain elements shared in all the elevations: the channel glass (Image 105), the reveal of the sound-isolation system, and the stair tower glass (Image 106), the façade is dominated by the curtain wall system of glass inner wall with an exterior aluminum system of panels with words punched out. Most of these words face the exterior of the building, but where they cover the diagonal passage wall, they face the interior (Image 107). The aluminum panels do not cover the entire façade—where appropriate, they step back and allow the clear glass system to be exposed and allow for direct views out of and into the building.
Both the East and West facades feature the memory concrete prominently. On the West façade, long ribbon windows are punched into this concrete (Image 108). The longest windows are the terminus of the lines of sight provided on either edge of the memory path. These lines pass through the paired circular columns and along the line of the rectangular columns in plan. The smaller windows are meant to shape views toward the existing buildings to the West and highlight the visual path from east to west. The large, recessed porch reveals the inward depth of the facade. The projection of the glass-enclosed room lines up just below the recessed porch and creates a partial shaded area below where a long bench provides seating. Just above the bench, a series of chalk panels allow visitors to mark that they had been there. The large vertical chalk wall reveals the structural fin wall exposed on this façade. The East façade also contains a long, punched ribbon window (Image 109). The window exists as a singular element on this façade to mark where the building “crease” is, matched up with the line of sight between the paired round columns. This crease, in plan, is where elements lining up with either the north or south side turn to match up with the opposite side. The East side also shows the edge of the stair tower with glass block, as well as the recording studio channel glass. Aluminum word panels as guardrails are visible on the rooftop terrace as well as at the East porch recess.
The sections reveal the important inner elements that can't be shown any other way (Images 110 and 111). I decided the cast of characters should tell a story as well. The sections needed to be populated with people that give meaning to the space, actually participating in the building, not just standing there to give scale. The use of these characters gave memory to the space. When I design, I imagine spaces that are small on my board as places I can actually inhabit. It is like having a miniature self able to actually inhabit the drawing as if it were a built environment. I used the idea of having a mini-self entering the drawing as inspiration for populating the buildings. In addition to allowing myself—at the scale of the drawing—to enter the drawings, I also used important moments from my past, or photographs of people who inspire memory or that I share many memories with and dropped them into the space. The method for allowing these people to enter the drawing was also an important decision. Instead of printing them and gluing them in, I used acetone transfer. As a method, it actually transfers an image from one place to another—literally making the new, transferred, image a part of the drawing. It also gives a gauzy, temporal quality to the people in the images being transferred. People don’t stay in one position for very long so, by making them appear with a little more softness, it implies this as a moment captured in time, with people as fluid, and in-motion.

Memories are contrary things; if you quit chasing them and turn your back, they often return on their own.
STEPHEN KING, “Memory”
The drawing titled “Schia-Schenographia” is a series of three cuts revealed in the same drawing to show the depth as well as the linear relationships between inner portions of the building (Image 112). The rest of the sections are single cuts (Image A-A). The cross-sections are turned at the building crease to attain a straight view of inner elements (Images 114 and 115). Like the elevations, structure is highlighted with chalk walls, which—like the exterior—allow the visitors to make marks on them. Inside all of the sections, hidden moments are revealed. Hidden moments are revealed in all of the sections and are highlighted within the Plans, but overall, these sections contain elements that amplify sensory experience.
No matter how long we exist, we have our memories. Points in time which time itself cannot erase. Suffering may distort my backward glances, but even to suffering, some memories will yield nothing of their beauty or their splendor. Rather they remain as hard as gems.

ANNE RICE, Blood and Gold

What It Means to Be Memorable

Memory is fleeting; it is an intangible record of the past. Time itself is also intangible. Using sound as the vessel to explore memory allowed for time and history of the past to become visible. Sharing, recording, and listening to memories in turn helped create new memories, and thus the cycle of the Memory Center as memory device emerged. The primary medium used in this project was pencil. It is a memory medium; it creates graphic transfers off the paper on to the hand, arms, et cetera of the artist. It is then retransferred back onto the paper in the form of fingerprints, arm prints, and streaks. This is a tangible memory; one can see where hands, arms, et cetera touched the paper and left a trace behind. The thesis behind this project is the idea of making history and time—as intangible ideas—tangible and present through the construction of memories. This project and thesis developed this idea, which Frascari describes as “the architect's pursuit in conceiving and constructing architecture is to make visible what is invisible...architectural drawings are semiotic tools that make tangible what is intangible.”


El Lissitzky writes, “Time is only indirectly comprehended by our senses. The change of position of an object in space indicates the passage of time.”

Image #116 Collage of different building elements, exploring the relationships between humans and buildings (especially from a sensory experience), highlighting the senses and their connection to memory.
You have to begin to lose your memory, if only in bits and pieces, to realize that memory is what makes our lives. Life without memory is no life at all…Our memory is our coherence, our reason, our feeling, even our action. Without it, we are nothing…I can only wait for the final amnesia, the one that can erase an entire life.

Luis Bunuel, quoted by Oliver Sacks in The Man Who Mistook His Wife for a Hat

In the early part of 2010, Washington D.C. released a Request for Proposals for the hidden trolley line below Dupont Circle. Hearing of this prompted me to start thinking about the space as a potential thesis location. I had heard about the “Dupont Down Under” when it still existed and the melee that followed its failure and closure, but, like most others, had forgotten about this unused space. While still working on the thesis and project, the Washington Post published an article about the proposal that had gained the most favorable following (Image 117). This gave me ideas about my own foray into the space and I started sketching the existing trolley lines and the old entrances into the underground. This led to thinking about how I could get my project to connect with these constructions. One of my earliest sketches was of the existing conditions along with a proposal for my project site (Image 118). From this, I began exploring the potential for two buildings connected by a portion of the underground trolley tunnel. The first building, located on the small triangle between Connecticut Avenue, 20th Street, and Q Street would sit right across Q Street from the Dupont Circle Metro station. I imagined this building as the “Theory” Building, where the clinical side of memory could be explored by scientists. It would be a building where conferences could be held, theories could be studied, research could be made, and papers could be published.
Developers hope to convert Dupont Circle tunnels into entertainment hot spots

BY DEREK KRAVITZ

It's a tough sell: Showcase art, or open a restaurant 20 feet below ground in tunnels once used for trolley service and a fallout shelter.

It was tried once before, in the mid-1990s, with a food court called Dupont Down Under. Within a year, that experiment failed.

District officials and developers are moving ahead with plans to convert tunnels beneath Dupont Circle into art galleries and possibly a restaurant and a winery, akin to subterranean public parks and retail spaces in Manhattan and France. But officials and artists are skeptical about whether tenants will flock to a space so hidden and removed from the heavily trafficked Connecticut Avenue NW corridor.

"It's dicey," said Robin Diner, president of the Dupont Circle Citizens Association. "The businesses at Dupont have been promoting the outdoors and events at the circle for years, and this is really unproven stuff!"

The Arts Coalition for Dupont Underground, a nonprofit group of artists, businesses and developers, recently released some of its initial plans for nearly 100,000 square feet of space beneath Dupont Circle and are awaiting the go-ahead from the city to begin lease negotiations, officials said.

The two parallel tunnels run beneath Connecticut Avenue NW and wrap around each side of the circular park. Financing for the development would come from private donations and restaurant leases. No public money would be used.

Officials with the deputy mayor's office for planning and economic development said they were reviewing the underground plan and will issue a decision about how to proceed by December. Other ideas that have been tossed around -- a gym, strip clubs, a mausoleum -- have failed to gather steam.

The trick, community leaders say, is billing the project as a hype-worthy public attraction.

"The business owners want something that will attract people to the neighborhood and not compete with them," said Paul E. Williams, a historian and author who serves as executive director of the nonprofit Historic Dupont Circle Main Streets. "They want to see something substantial, and we're still looking at what we have in front of us."

Developers say that even with approval they are at least two years away from any type of opening and that the project's success would depend on the rental rates, estimated to be about a third of those for their aboveground counterparts.

"We are first trying to prove the financial viability," said Julian Hunt, a D.C. developer who serves as chairman of the arts coalition's board of directors.

"This is an institution that will put the city on the map."

- Julian Hunt, D.C. developer and Arts Coalition chairman.

And another key to the success of the project will be the hiring of "a nationally recognized arts administrator with deep experience in managing and curating exhibitions," the developers said in a statement. A search is ongoing.

Most of the white-tiled tunnels beneath Dupont Circle have been vacant since 1962, when trolley service ended. The space was used as a fallout shelter until 1975 and a much-ballyhooed food court was started in the mid-1990s. Dupont Down Under was phenomenal in its failure. Its chief architect, entrepreneur Geary Stephen Simon, won an exclusive 20-year contract with the city to build the below-ground retail arcade there. But city officials didn't know Simon had been convicted three times of fraud and other business crimes and had spent the better part of the previous two decades in jail or on probation.

When it opened in 1995, the project had 12 tenants, including food court staples such as Shorro and Schlotzsky's. But within months, the project was in trouble, with issues ranging from broken air conditioning and unfinished entrances to lawsuits against Simon seeking more than $200,000 for allegedly unpaid bills.

"That proposal was totally incompetent," Hunt said. "We were much more careful and much, much more professional!"

Among Dupont Underground's 22-member advisory board are officials at the D.C. Commission on the Arts and Humanities, the Corcoran College of Art and Design and the Art in Embassies Program at the State Department.

Developers will be meeting Monday with members of the Dupont Circle Citizens Association to discuss the plan.

#writito@washingtonpost.com
The other building, located on a triangle created by the intersection of Massachusetts Avenue, 20th Street, and P Street, would be the “Practicum” Building, where the poetic side of memory could be explored by the people. Poetic, in this case, meant memory as an experience rather than a series of signals in the brain (Image 119). In spacing these buildings pretty far apart, the connection between became very important. The literal, but hidden, connection of the trolley line was one but I began sketching out view and sightlines to try and see if the buildings could be a part of the same complex despite their distance (Image 120). While trying out these connections, I also explored the possibility of some connection to the Q Street Metro entrance (Image 121). Closer views of the Theory and Practicum Buildings in their early stages revealed these two sites to be extra difficult to work with (Images 122 and 123). This led to a move and an enlargement of the Theory Building. The new location was to be along 20th Street and Massachusetts Avenue, just south of the Metro Entrance and just across Massachusetts Avenue from the Practicum Building. In moving locations, more controlled connections visually and physically could be made between the buildings, the trolley line, and the old trolley entrances (Images 124-126).
Image #119: Study sketch showing initial layout of two above-ground buildings connected through the existing underground trolley line.

Image #120: A study sketch of the potential two-building complex studying the poetic (the Practicum Building) and theoretical (the Theory Building) sides of memory. This image shows the views thought of as connective tissue between the two buildings and the circle itself. Initially, it was important to have the buildings and the circle speak to each other in some way to create a connection.
Image #121: Sketch showing the two buildings and trolley-line connector with a potential access point to the Metro at the Q Street Metro Entrance/Exit.

Image #122: A closer-up sketch of the Theory Building, and trolley line leg. This building was thought of as a place where professionals in the field of memory study could meet and hold conferences, study, research, and publish leading theories on memory as it pertains to science.

Image #123: A closer-up sketch of the Practicum Building and trolley line. This building’s focus was the poetic side of memory, a place where the less scientific, more imaginative sides of memory could be explored. This building provided the basis for the final Memory Center.
Image #124: Study sketch for the theory building, new location of the theory building, moved from the open triangular space above to the space provided by an existing parking lot. It was thought the theory building would need more space than the previous site allowed. This sketch shows the trolley path and a potential entry point from the line into the Metro as well as into the theory building.

Image #125: Study image for the theory building which focused on entrance and exit points from the trolley line into the two buildings and the path between the two.

Image #126: Closer up sketch of the memory complex and underground trolley line connector. This shows the entrances from the building, the sidewalk along Massachusetts Avenue, and at the terminus above the theory building. This image was meant to help get the alignment of the two buildings set up.
The discovery of memory as thesis was the result of research into human psychology and the human brain. Research into the neurology behind brain function proved to be enlightening but convoluted, like memory itself. I was fascinated with the construction of memory in the brain which doesn’t follow a linear path, but rather follows a stream of consciousness path from one node to another. No one can know for sure why one moment gets stored in short term and forgotten once the short term fills up or whether it remains in long term memory. Long term memory (Image 128) is comprised of explicit—word association, learned memory, and experiences—and implicit—skills and habits, “muscle memory”—memory. Explicit is usually the one most impacted by problems, as implicit memory is thought to be more ingrained in the body than explicit. Memory centers are located in all areas of the brain, not just the hippocampus. The image of (Image 129) proved that slight tweaks in tiny parts of the brain resulted in catastrophic memory impairment. I tried to compare the layering of the site, with an outer face and an inner world of mystery where memory is collected, to the layering of the brain and its inner gem of memory systems (Image 127). These studies were more appropriate for the building I proposed as “theory”, rather than the poetic Memory Center which finally emerged.

As I became interested in the Poetic side of memory, I began focusing more on sensory memory than clinical. That is how I discovered Athanasius Kircher and, thereafter, sound. Coming upon Athanasius Kircher’s work with sound devices and experiments led directly to the use of similar devices within the Memory Center.
While thinking about memory and the way people interacted with each other, sound emerged as a way to create a memorable space. When a space is filled with sound, it can never be empty, whether it is populated with people or not (Images 130-132). Discovering Kircher’s work such as the eavesdropping windows, the elliptical vaults, and the spiral-sound carrying-tube devices gave rise to thinking about the “Listening” and “Eavesdropping” levels in the Memory Center (Images 133-136). Kircher’s work has often been described as “sonorous voyeurism” and I found that idea interesting. I didn’t want people to be voyeuristic in a rude way, but rather in a way that they could gain memorable experiences. Kircher’s most well-known illustration, “The Talking Statue” helped me to discover new ways to get people to interact than just the typical face-to-face condition (Image 137) a similar experience could be forged between people in a similar situation.

Image #130: Kircher’s sketch of a room that was characterized as having an extraordinary echo. Here, he analyzed the shape of the ceiling to prove that its shape reinforced the voices.

Image #131: Images of Kircher’s investigations into the way sound moved around non-traditional spaces, and how sound was reflected back in certain situations.

Image #132: An image related to eavesdropping. The large end of the listening tube was positioned over a public area, and then propelled through a series of walls to another room where voices appear disembodied.
Image #133  This image relays an experiment in which the propagation of sound is investigated in a single, planar surface. Through the use of these "sound domes", a person standing at the above window can hear conversations taking place in the rooms below without the people knowing they are being heard. [From *Phonurgia Nova*, 1673].

Image #134  In this image Kircher illustrates how the curvature of an ellipsoidal vault aids in the transmission of voices across it. [From *Phonurgia Nova*, 1673].

Image #135  "Concerto diffuso tramite tubo cocleato" meaning "concerts [music] spread through the cochlear [spiral] tube". Kircher conceived of this device as a way to diffuse music through a hall from a source unknown to those hearing the music. In this manner, the atmosphere from a musical feast taking place inside the home can be spread through the countryside for all to hear. [From *Ars Magna Luci et Umrae* 1647].

Image #136  "Ellissi acustiche che consentono di comunicare in segreto" meaning "ellipses that allow sound to communicate in secret" [between buildings]. Kircher used this image to describe a condition where two princes could communicate with one another in secret between separate buildings. Each tube was different and explored the use of foci to direct sound to specific windows. [From *Ars Magna Luci et Umrae* 1647].
The spiral tube—whose large end is located in a loud, spirited plaza area—is exhausted through a smaller opening at the mouth of a statue in a separate room. The image just above this one shows a similar condition to an image from the previous page, but instead of having people talking into a vault, here sound enters from the busy plaza, is carried through the vault and hits a different statue. The third image shows a vertical condition where a conical, spiral sound tube allows sound from below to enter a talking statue above. All three of these conditions would allow the statue to emanate the same sounds that were being uttered in the plaza space, thus giving them the illusion of having the ability to speak. [From *Phonurgia Nova*, 1673].
This process of working with sensory experience led to the initial design plans for the Memory Center. While each idea and each part of program had to be rigorously worked and reworked, memory always came in to play a part and help push the project further. Having a steady thesis throughout the design of the project helped make the difficult decisions. These images show the passage of time and the memory of making. The process of pulling this project together from parts into whole was not a quick one, as evidenced by the number of layouts, devices, and other ideas explored over the course of the year taken to design this project. The site was not easy to work with, but the plans became more successful once material and idea were pushed ahead of form. The theater alone took the entire year to figure out, and went through many iterations before it became what it is now. The end result emerged from lessons learned about working with memory, and I discovered what it really means to be memorable.


Bibliography
We photographers deal in things which are continually vanishing, and when they have vanished there is no contrivance on earth can make them come back again. We cannot develop and print a memory.

3-5:
Images #4-13:

8-9:
Images #23 and 24:

10:
Image #25

15:
Image #42

20:
Image #50
Collage: Chalk on wall, by Mr. T. in DC http://farm4.static.flickr.com/3236/2689807203_66c81f290_b.jpg (accessed April 1, 2011) [Fair Use]

25-42, 44-60:
Images# 60-91, 96-116
All Columns/Structure Collage: Chalk on wall, by Mr. T. in DC [Fair Use]
All Litracon Details from: http://www.litracon.hu/images/content/highres/Cella06_HR.JPG [Fair Use]

54:
Images #110 and 111

62:
Image #117

63-66:
Images #118-126
Collages on GIS image

67:
Image #128: Memory in the Brain, Encoding-Storage-Retrieval


68-70
Images #130-137