Boundaries in Architecture
Boundaries in Architecture, by Joseph Chalmers

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Abstract

This research project sets out to establish interpretations of the architectural boundary and addresses a focal point of the Berlin Wall, Checkpoint Charlie. The architectural boundary is considered a term implying division, separation or limits to space, yet it is also used to imply notions of spatial perception.

There is a debate in Berlin about the problem of commemorating the re-unification of Germany. To understand and to participate in this debate it was necessary to review what happened in Germany as World War II ended and through the years leading up to re-unification in 1989.

Another part of the literature review associated with this project addressed memorials. A memorial serves as a focus for commemoration and acknowledgment, usually of an event or of a person who has died. Typical forms of memorials include days in the calendar, sculpture, architecture, and commemorative naming, however, it was a precondition that this dissertation project must result in a design for a piece of architecture.

Some people have questioned the need for a reunification memorial and whether the idea of a memorial is more effective as a perpetual debating point. Speaking of the fascist era and its victims, James Young states:-

“Though some, like the Greens, might see such absorption in the process of memorial building as an evasion of memory, it may also be true that the surest engagement with memory lies in its perpetual irresolution. In fact, the best German memorial… may not be a single memorial at all—but simply the never-to-be resolved debate over which kind of memory to preserve, how to do it, in whose name, and to what end.”

Design concept stage one was an investigation of the boundary using massing models which explored ideas such as symbolism and boundary, unity, memory, shadow architecture and context. This, together with the investigation of memorials, facilitated a summary of final design criteria,

Design concept stage two, based on the final design criteria addressed the form, spatial arrangements and column configurations of a proposed design.

The final design emphasises the horizontal plane by elevating it as a symbolic form of the Berlin Wall and metaphorical architectural boundary. The proposed design is functioning architecture dedicated to commemorating the reunification of Germany, it is not a conventional memorial. It includes exhibition space and recreation space, is a public amenity for locals and a focal point for tourists wishing to visit the former site of Checkpoint Charlie and the Berlin Wall. The shadow architecture of the site, surrounding architectural boundary and the scars of history are emphasized and the Berlin city ground plan, directives and context have been challenged.

An interim building design proposal is illustrated through program and structure diagrams, conceptual plans and perspectives.

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Berlin History

There is a debate in Berlin about the problem of commemorating the re-unification of Germany. To understand and to participate in this debate it is necessary to review what happened in Germany as World War II ended and through the years leading up to re-unification in 1989.

Post-war Berlin

As world war two drew to a conclusion in 1944 the allied forces converged on Berlin in order to occupy the capital of Germany and secure the administrative centre of the Third Reich.

Earlier, in 1943, when it became clear that the Nazi forces would be defeated, the European Advisory Committee was created to oversee the division of Post-war Germany between the allies. Germany was split into four sectors, American, French, British and Russian. The Russians benefited greatly, they controlled 40 per cent of Germany’s land area, 36 per cent of the population and 33 per cent of production resources.

Closure of The Border

On the 23rd June 1948, with tensions at a breaking point, the Russians, intent on driving the western allies out, devised a plan of blockades at all land transportation connections, and effectively held two and a half million West Berliners hostage. The American and British air-
forces managed to secure a small corridor of airspace and flew in over 4000 tons of supplies every day, in an operation known as the Berlin airlift.

The exodus of people into the allied areas increased tension with the Russian authorities and, in February 1952 they fortified the 1368 km border between their sector and the allies with barbed wire fences which were constantly patrolled.

Berlin, located well inside the soviet sector, was also split between the four allies. In retrospect this is seen as a rather naïve decision since Russia was able to use West Berlin as a hostage, described by Nikita Krushchev the Russian leader as the testicles of the West: “when I want the West to scream, “he said”, I squeeze on Berlin.”

Deteriorating living standards and constant dissatisfaction with the German Democratic Republic (GDR) political, social and economic structure led to the progressive migration of East Germans to the West. By 1961 their number had reached more then 2.68 million. Fugitives came from all parts of society, this threatened the social structure of the GDR and amounted to a national disaster.

“In a speech in 1961 Krushchev reportedly said: ‘We’re going to close Berlin. We will just put up serpentine barbed wire and the west will stand there like dumb sheep. And while they’re standing there, we will put up a wall.”

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3 Ibid., 20.
Barbed wire was proposed because it could be easily removed if there were any hostile movements by the western allies. The wall installation began at midnight on the 12th August 1961, with a combined force of nearly forty thousand. By the evening of the following day sixty-nine of the eighty-one crossing points were either barred or bricked up.

Escape attempts were made during the construction and many were successful. As Krushchev' had predicted, apart from a small amount of protest, the allies watched in silence. Most people were relieved that it was only the construction of a wall and not a nuclear-war.

“On August 22, the GDR Ministry of the Interior established crossing points – seven on streets and one at a train station.”4 Checkpoint Charlie became a focal point of the Berlin Wall. It was the only point where the American and Soviet forces faced off with tanks 100 metres apart. “Checkpoint Charlie became a symbol of the Cold War, representing the separation of the East and West, and for some East Germans a gateway to freedom.”5

The wall construction was legitimised to the East German public as a defensive method to protect them from the fascist Westerners. The mass migration from east to west was ended by the construction of the wall but this did not halt the faltering condition of the state. People still sought to escape sometimes via corrupt official channels, and escape attempts often cost people their lives. Between the construction and the fall of the wall a total of 616,854 people left the GDR.

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5 ibid.
Fall of the Wall

A number of factors led to the fall of the wall and Berlin was not the initial location. Firstly the opportunity of a photo shoot on the Hungarian-Austrian border demonstrated a new openness when 6500 East Germans were allowed to cross the “iron curtain” into Austria. Also large numbers of people were leaving through Budapest, Warsaw and Prague.

Through a lapse of communication within the GDR political system, the Berlin wall was opened during the night of the 9th of November 1989. At a press conference, an apparently inadequately briefed GDR spokesman informed the press that people would be granted permits for travel without complications or delay, migration could take place at all crossing points. When he was asked how soon these rules would apply, he was startled into answering, “as far as I know, immediately.”

The news of the fall of the wall spread rapidly through Berlin. Thousands of people rushed onto the streets and to the crossing points where the border guards, with no orders, stood aside to let crowds of people rush through to the west. “After 28 years, 2 months and 26 days, in an atmosphere of total euphoria, the unbreachable was breached. The Berlin Wall had fallen.”

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7 Ibid.
Berlin History

Post-War Berlin Urban and Architectural Development

After the wartime bombing of Berlin it is safe to say that fifty percent of Berlin’s city structure was reduced to rubble, which was cleared to make way for new buildings some of which were subsequently built.

However, it was not only the bombed ruined buildings that were demolished but also buildings associated with the Third Reich and the Nazis. Also any buildings that got in the way of the proposed autobahns and new urban axes were demolished. What was once a densely built area was cut wide open and left exposed. This was a period of destruction that started with the war and continued. The figure and ground plan was first advocated in Berlin by the architect, Josep Paul Kleihues in the 1970’s, it revealed what had been lost through post war development, blocks broken open, large-scale structures and large blunt cuts for traffic. Dieter Hoffmann Axthelm states:-

“it was broken down into a grid of expressways, and the areas these left for buildings were filled with large-scale, industrially prefabricated solitaires separated by green spaces. But this is only half the truth. At the same time the GDR planners, following an entirely antiquated urge to write the state large, overlaid this planning image with the excessively large axes and demonstration areas needed for centralist mass mobilization.”

“The Bauausstellung Berlin GmbH was founded in 1979, after a long period of preparation, and commissioned to set up an International Building Exhibition (Internationale

Bauausstellung IBA), based on the theme “The Inner City as a Place to Live.” There were three exhibitions, in 1982, 1984 and 1987. The IBA intended to acknowledge the deficiencies of post-war development and war scarred areas of Berlin. It aimed “to set model architecture, on human scale but of high artistic quality.” The majority of exhibition areas were neglected portions of the then western sector, areas bordered by the wall. Many of the developed areas are now located within the centre of the united city. A number of famous architects were commissioned to contribute projects, Zaha Hadid, Peter Eisenman, Rem Koolhaas and Aldo Rossi to name a few.

The IBA had two principal concerns “‘Careful urban renewal’ – under the direction of Prof. Hardt–Waltherr Hämer, and the ‘Critical reconstruction’ – directed by Prof. Josef Paul Kleihues.” With these two principles in mind the IBA was primarily concerned with the ground plan of Berlin. Although the IBA only addressed sections of the western sector, it has proved to be a courageous attempt, adding to the quality of inner city life while restoring the ground plan.

Post-war Berlin had become a melting pot of different architectural and urban design ideas with evidence from every architectural and urban design experiment of the modern era, nobody had control. Urban planners and architects had proceeded on the understanding that Berlin would remain a divided city with two centres, one in the East and one in the West, for

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10 Ibid.
11 Ibid.
some year to come.

The damage had been done and what was left Hans Stimmann, Berlins Director of Building, courageously tried to stitch together. Some say he was good for the city others say he was bad. Speaking of Stimmann, A German journalist and author Ulf Poschardt declared, “He saved us from the worst.” The arts editor of The Frankfurter Allgemeine Zeitung, Claudius Seidl, then chimed in. “Yes,” he agreed. “But he also saved us from the best.”  

Hans Stimmann has been one of the most influential individuals to shape Berlin’s recent architectural and urban development history, with the underlying goal of creating a city that worked with the remaining structures of the traditional city of Berlin. Blending the new harmoniously with the old, Stimmann has affectively watered down the qualities of the old city, but strengthened the city as a totality.

Hans Stimmann states, “Here Berlin always presented itself as a location for town planning experiments, which were often daring. The list of architects involved reads like an encyclopedia of modern architectural history.”

Following the 1989 reunification there were two new and very different planning phases. Hans Stimmann, states in a quote from an interview from the New York Times: “I had a drawer and I opened it up and pulled out the old city plan,” he said, recalling his first days on the job in 1991. “I said: ‘It worked for 250 years. Why do we need a new competition?’” Stimmann, concerned with the uncontrollable development of the time, moved immediately to restrict building heights, “Mr. Stimmann set building heights of 72 to 98 feet, or about six to eight stories tall. That move, which stunned cultural critics and architects, proved to be Mr. Stimmann’s most important tool in his effort to return Berlin to the traditional church-dome silhouette of its prewar heyday.”

This was a completely new era in Berlins Urban design history. The first phase, which tended to favour the Western areas in 1990-1995, was the increase of private and federal government investment which led to hasty decisions and huge pressure in terms of capital. The second phase in 1996, was introduced after a time of pause and reflection on the results of previous years of development.

This lead to the introduction of the Planwerk Innenstadt, a document developed to address the urban and architectural development issues of integration of the East and West and to develop a city that recreated the physiognomy of pre-war Berlin. The Planwerk Innenstadt met with vigorous opposition. Dieter states, “the Planwerk Innenstadt is an attempt to overcome Modernist planning without falling back into conservative or pre-modern approaches or giving

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14 Stimmann, “Berlins Post-Wall Master Builder Retires.”
15 Ibid.
up serious planning altogether.” To everyone’s astonishment in May 1999 the Senate and City Parliament accepted the Planwerk Innenstadt, relatively unscathed.

In conclusion, The Planwerk Innenstadt developed from researching the architecture and urban planning which was implemented during the post-war period. It was devised to not restrict the future development of Berlin as a modern city but instead to initiate new architectural and urban development which would enhance the relationship between buildings, streets, squares and their inhabitants. Although the architectural boundaries of traditional Berlin no longer exists in full there are elements, the monuments and buildings that hold wealth in Genius Loci. If the ground plan is restored it will redirect emphasis toward the genius Loci, impressions of pre-war Berlin will be restored. Manfred Kühne an ex-work college of Hans Stimmann and now the Head of Department of Urban Planning and Projects for Inner-city Berlin, said that every year the implementation of the ground plan, through development of the architectural boundaries, emphasises it’s monuments and Berlin appears older.

Dieter Hoffmann, *Berlino Berlin Physiognomy of a Metropolis*, 31
The Architectural Boundary

This research project sets out to establish interpretations of the architectural boundary. In general the architectural boundary is considered a term implying division, separation or limits to space, yet it is also used to imply notions of spatial perception.

Through investigating it from a spatial and abstract perspective it is possible to suggest that the architectural boundary is an element created to manipulate the spectator. The architectural boundary is fundamentally the creator of experience and atmosphere through gestures of, here and there, above and below, inside and outside and contraction and expansion stimulating the curiosity of the moving spectator.

In *S,M,L,XL*, for example, Rem Koolhaas highlights the manipulative potential of the Berlin Wall and what can potentially be considered the vertical plane as an architectural boundary:

> “The wall was a masterpiece. Originally no more than some pathetic strings of barbed wire abruptly dropped on the imaginary line of the border, its psychological and symbolic effect were infinitely more powerful than its physical appearance. The Good Half, now glimpsed only over the forbidding obstacle from an agonizing distance, became even more irresistible. Those trapped, left behind in the gloomy Bad Half, became obsessed with vain plans for escape.”

The current project explores these ideas and transforms them into an architectural solution that addresses the potential of the floor or horizontal plane. It has been developed

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simultaneously from two strands, one being the architectural related study, the other being the literature study.

The architectural strand, considers modern Berlin, Berlin Wall and Checkpoint Charlie history, urban context and site analysis. The second strand, theoretical, focuses on literature relating to space and phenomenology in architecture.

The main goal of this project is to highlight the architectural boundary and reveal the manipulative strength of architecture. This will form the basis for the design of a building in Berlin that strives to commemorate the re-unification of Germany and reinterpret the Berlin wall in a contemporary manner.
Space and Architecture

The idea of space in architecture could be considered one of its most fundamental and influential concepts. It is possible to say that until the second half of the nineteenth century architecture developed through the subconscious understanding of space. There is no mention of space as a defining factor or creative concept in architectural theory until 1804 when Claude Nicolas Ledoux stated, “the small portion of the universe that man inhabits is simply defined by the rise of the tree, and as such Ledoux reduced it to human scale when compared to the immense void of the universe.”

In his book *Space in Architecture*, Cornelis van de Ven deals with spatial concepts developed throughout the course of history. He links, spatial explanations and definitions to bring clarity to the topic. He uses a quote from August Schmarsow, a German art historian, from a speech presented in 1893 detailing the spatial elements that contribute to the architectural boundary.

“Schmarsow distinguished Spatial Idea from Spatial Form, the latter being the representation of the former. Spatial Form was most simply expressed by the ‘four walls’ surrounding people… He came to the recognition that what ever spatial idea or form man might produce, there would always be two polarities: the creation of the enclosed space and its inescapable counterpart, the creation of its boundaries, an enclosing mass.”

It is this enclosing mass that forms the architectural boundary, the point of architecture.
we resonate with immediately. It is the composer of experience and atmosphere and the point that creates or defines our perception of place. The architectural boundary, defined physically, is the defining edge of the created spatial void. It is the invisible external layer of space created by the architectural mass or the spatial product of mass.

Van de Ven, quotes an artistic experience of the street by August Endell, a Munich Secessionist architect. This introduces the spatial structure and method of the architectural boundary and its effects on the spectator.

“Most people think of architecture as the corporeal members, the facades, the columns, the ornaments. But all that is secondary. Essential is not the form, but its reversal space; the void, that expands rhythmically between the walls, and is defined by walls. To those who can experience space, its directions, its measures, to those who these movements of the void mean music, is revealed an almost unknown world: the world of the architect and painters.”

Although this quote deals with the street it is the description of the negative space or void and its structured influence on the spectator that is interesting. It is the produced rhythm of the spatial walls, the ground line and the roof line, the definers of the void, the compression and expansion, the scale and proportion, the movement and the juxtaposition or collaboration of these elements that creates experience and atmosphere at the architectural boundary. This architectural dialogue is what this project aims to develop.

The architectural boundary is not defined by spatiality alone. As stated above, the spatial qualities of the boundary are the composers of experience and atmosphere. Although without the spatial quality the boundary would not exist. Van de Ven states:-

“This theory said that the shape of the object was its mass; the form was what remained after removing the mass: an abstract spatial structure… he saw two kinds of space: a geometric and an aesthetic space. What remained after eliminating mass from the column was spatial structure or form of the column, that Lipps called geometric space. The aesthetic space is the forceful, vital, formed space, life itself confined to space.”

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Ibid., 150.
Ibid., 81.
Phenomenology in architecture

Historically architecture has been viewed and critiqued from a practical perspective, interested in aspects such as function and aesthetics and concerned with the spatial dimension or spatial configurations. In *Genius Loci* (spirit of a place), *Towards a Phenomenology of Architecture*, Christian Norberg Schulz investigates existing architecture. He investigates situations from a Phenomenological perspective. His goal is to search deeper into architecture or the urban environment to define what it is that enables us to feel more located or comfortable in one place rather than another. Norberg Schulz substantiates the existence of Phenomenology in architecture through his philosophical and physiological perspective. He states:  

“our everyday life-world consists of “concrete phenomena”. It consists of the people, of the animals, of flowers, trees and forests, of stones, earth... sun, moon and stars, of drifting clouds, of night and day and changing seasons. But it also comprises more intangible phenomena such as feelings. This is what is “given”, this is the “content” of our existences.”

With this quote it is important to acknowledge the emphasis Schulz places on the things or “concrete phenomena” which make up and influence our everyday life-world. It is the understanding of the experience and atmosphere of these things that phenomenology is concerned with. It is necessary to understand that it is not just the singular thing that is important but the totality. “things having material substance, shape, texture and colour. Together these things determine an “environmental character” which is the essence of place.”

These primitive and natural phenomena of the “everyday life-world” influence our understanding and create the phenomena by which we understand “place”. In *Space in Architecture* van de Ven quotes a French philosopher Henri Bergson, who states:  

“With the passage of time an observer accumulates in his memory a store of perceptual information about a given object in the external visual world, and this accumulated experience becomes the basis for the observer’s conceptual knowledge of the object.”

It is through the articulation of these elements or objects that we can develop an understanding of the existing phenomenological qualities and character of the architectural content created.

Norberg Schulz, introduces the idea of the Genius Loci in architecture. Genius Loci is concerned with the content of the architecture. It is the understanding of the character, qualities and essence of the “place” created through architecture. It is the existing substances in the architecture that we respond or react to subconsciously. Christian Norberg Schulz describes a general overview of the origins of the Genius Loci, He states:  

“Genius loci is a roman concept. According to ancient Roman belief every “independent” being has its genius, its guardian spirit. This spirit gives life to people and places, accompanies them from birth to death, and determines their character or essence. Even the gods had their genius, a fact

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23 Ibid.
The Architectural Boundary

which illustrates the fundamental nature of the concept. The genius thus denotes what a thing is, or what it "wants to be", to use a word of Louis Kahn.\(^\text{18}\)

In this quote it is the perception of the “thing” that we as humans resonate with in architecture, we have a simple understanding of architecture at this level. There is a point at which we as humans subconsciously understand architectural form, although this understanding varies slightly dependent on culture, it is primitive and derives from our own form, the human scale and proportion.

“There was a time when I experienced architecture without thinking about it. Sometimes I can almost feel a particular door handle in my hand, a piece of metal shaped like the back of a spoon. I used to take hold of it when I went into my aunt’s garden. That door handle still seems to me like a special sign of entry into a world of different moods and smells.”\(^\text{19}\)

This quote by Peter Zumthor highlights the interconnected relationship of the thingness of the “thing” or the phenomena of the “thing”.

Shadow Architecture

It has been twenty years since the fall of the Berlin Wall, it has become a metaphor for division, oppression and ultimately a failed ideology. This wall is unlike the Great Wall of China, in that it has no foundations and will not leave any archaeological footprint. Architecturally the real essence of the wall is only visible to a trained eye in the form of shadow architecture. Shadow architecture exists in the dialogue between “positive and negative, between material and immaterial; between the enduring and the ephemeral. Although the wall has virtually disappeared, it is still a resonant and powerful absence capable of generating deeply ambivalent memories.”\(^\text{20}\)

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25 Norberg-Schulz, Genius Loci, 18.
The Nature of Memorials

A memorial serves as a focus for memory, commemoration and acknowledgment, usually of an event or for a person who has died. Typical forms of memorials include days in the calendar, (Waitangi day, Anzac day) Sculpture, (The Tranjan’ column Rome, The Albert memorial London) Architecture, (Arc De triumph, Paris, France, and the Einstein tower, Potsdam, Germany) and the naming of something, (John F. Kennedy international airport, or Jean Batten Auckland international airport). Memorials are not something to be rushed into, for example, it has been ten years since 9/11 and debate is continuing about what might happen at ground zero in New York.

Although a sculpture like a statue (Statue of Liberty) or a triumphal arch may incorporate interior spaces and vantage points, it is arguable whether they constitute architecture. It was a precondition that this dissertation project must result in a design for a piece of architecture, which rules out three of the above categories of memorials.

The conventional concept of memorials and the way in which they interact with the spectator to enhance memory can be questioned. James Young in *The Texture of Memory* states:-

“Through this attention to the activity of memorialization, we might also remind ourselves that public memory is constructed, that understanding of events depends on memory’s construction, and that there are worldly consequences in the kinds of historical understandings generated by monuments… In this light, we find that the performance of Holocaust memorials depends not on some measured distance between history and its monumental representations, but on the conflation of private and public memory, in the memorial activity by which minds reflecting on the past inevitably precipitate in the present historical moment. It is not enough to ask whether or not our memorials remember the Holocaust, or even how they remember it. We should also ask to what ends we have remembered. That is, how do we respond to the current moment in light of our remembered past? This is to recognize that the shape of memory cannot be divorced from the actions taken in its behalf, and that memory without consequences contains the seeds of its own destruction.”

With this in mind it is then fundamental to consider exactly what we develop as a memorial object. Young speaking in relation to the Holocaust rather then reunification states:-

“How does a state incorporate its crimes against others into its national memorial landscape? How does a state recite, much less commemorate, the litany of its misdeeds, making them part of its reason for being? Under what memorial aegis, whose rules, does a nation remember its own barbarity? Where is the tradition for memorial mea culpa, when combined remembrance and self-indictment seem so hopelessly at odds?. Those in Germany are necessarily those of the persecutor remembering its victims. In the face of this necessary breach in the conventional “memorial code,” it is little wonder that the German national memory remains so torn and convoluted: it is that of a nation tortured by its conflicted desire to build a new and just state on the bedrock memory of its horrendous crimes.”

This highlights a question, is the constant reminder of past barbarity a good direction?
The Nature of Memorials

for social progression? Young states, “For a new generation of artists in Germany today, the question is not whether to remember or to forget the Holocaust. Rather, given the tortuous complexity of their nation’s relation to its past, they wonder whether the monument itself is more an impediment then an incitement to public memory.”

The concept of how to invoke memory is intriguing. Is a memorial more effective existing or not existing, Young states:-

“Though some, like the Greens, might see such absorption in the process of memorial building as an evasion of memory, it may also be true that the surest engagement with memory lies in its perpetual irresolution. In fact, the best German memorial to the Fascist era and its victims may not be a single memorial at all but simply the never–to–be resolved debate over which kind of memory to preserve, how to do it, in whose name, and to what end.”

Although they do not all deal with re-unification either, the following three built projects illustrate how architects have addressed remembrance differently. This section also looks at the role of the architectural boundary in their work.
The Nature of Memorials

Bernauer Strasse Memorial, Berlin, 1998

In 1994 the German government held a design competition for the Bernauer Strasse Wall Memorial. Bernauer Strasse is a unique site, it is the only place in Berlin where visitors can see the original arrangement of border fortification barriers, the hinterland and border walls (inner and outer walls), “no man’s land,” sentry path, and floodlights.

The architectural firm Kohlhoff & Kohlhoff won the competition. Their design consisted of the preservation of all elements of the border fortification. They bracketed a 64 metre portion of the border fortification with 6 metre high steel walls.

“The outside surfaces of the steel walls are corroded, inspiring memories of the “Iron Curtain” metaphor, while the inside walls are made of polished stainless steel. This section of the border strip is thus reflected into infinity in the steel surface as a symbolic representation of the former extent of the border fortifications.”

The design endeavours to recreate the Berlin Wall. The architectural boundary, the polished steel walls, attempt to blur the line between history and now. When experiencing this memorial one cannot resist peeping through cracks in the wall. Not being able to see the totality of the internal barrier system provokes a sense of frustration and isolation.

The Nature of Memorials

Memorial to the murdered Jews of Europe, Berlin Germany, 2005

A competition was held in 1994 for the design of the memorial in Berlin and after much debate, Peter Eisenman emerged as the winner in 1997.

Located Centrally in the city of Berlin, the memorial spreads over 19,000 metres: “a rigid grid structure composed of some 2,700 concrete pillars, or stelae, each 95 centimeters wide and 2.375 meters long, with heights varying from 0 to 4 meters. The pillars are spaced 95 centimeters apart to allow only for individual passage between the grid.”

“The enormity of the banal is the context of this monument.”

Through the articulation of the varying heights of the pillars and varying depth of the ground plane, Eisenman manipulates the grid’s otherwise predictable structure to enhance instability and a dissolution of time:-

“These spaces condense, narrow, and deepen to provide a multilayered experience from any point. This agitation in the field shatters any notions of absolute axiality and reveals instead an omnidirectional reality. The illusion of the security of order in the internal grid and the frame of the street grid is thus destroyed.”

Eisenman believes the grid “loses touch with human reason. It then begins to reveal the innate disturbances and potential for chaos in all systems of seeming order, the idea that all

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34 Ibid.
35 Ibid.
closed systems of a closed order are bound to fail.”

The dissolution of time is achieved through the size and predictable rhythm of the grid structure. Eisenman states, “Even in traditional architectures such as labyrinths and mazes, there is a space-time continuum between experience and knowing; one has a goal, to work one's way in or out. In this monument there is no goal, no end, no working one's way in or out.” From the centre or any point within the monument there is a reassuring view out to the street.

Eisenman introduces memory of the past through the experience of the present. He states, “In this context there is no nostalgia, no memory of the past, only the living memory of the individual experience. Here, we can only know the past through its manifestation in the present.” Eisenman’s intention is to unsettle the spectator through the experience of the memorial, this unsettling feeling enhances remembrance.
Jewish Museum Berlin, 2000 years of Jewish History, 2001

In 1988 the Berlin government announced the competition for the design of the Jewish museum, a year later in 1989 Daniel Libeskind was selected as the commission winner.

“The museum deals explicitly with the history of absence and the history of the void”  

“I based the design of the museum on historical documents, both architectural and para-architectural ones: music, books, pictures, the eyes and the looks of people, photographs.”  

Libeskind drew lines to form a matrix that linked events, people and locations to create the geometric forms that shape the building.

“I did not design a museum that treats the history of Berlin ethnography, or that treats the history of the Jews of Berlin as an ethnography of the past. The history of the Jew is living, even in its absence, in its permanent potential, and it lives in its absent presence in the structure, in the collections of the city of Berlin, and in the space of the museum.”

Libeskind emphasises the presence of absence and void created in the museum. He goes on to define a number of spaces:-

“the plane upon which the columns stand is tilted; although the columns are perpendicular to it, it itself is not parallel to the ground, disorienting and even slightly nauseating visitors… the Holocaust Void a concrete tower twenty-seven meters high, standing outside and completely…’

\text{Ibid.}\\
\text{Ibid., 54.}\]
The Nature of Memorials

This space is powerful, dark, cold and silent with just a glimpse of light shining a few metres down the face of a wall, one feels alone and vulnerable. The constant change in floor levels, the disorientating layout, the varying sizes of rooms, hallways and tunnels, the change of light from bright to dark, the structure protruding at different angles and heights, the materiality and texture of walls from damp concrete, to warm white plaster and the controlled variety of internal and external noise is overwhelming and distracting. Libeskind purposely exploits the spectators understanding of a conventional architectural boundary, and in the same manner as Eisenman, he uses the experience to enhance remembrance and commemoration.

Figure xvi: Jewish Museum, Berlin.
Design concept stage one

In order to better understand the effects of the proposed architectural boundary in its context an investigation through physical modeling was undertaken. The models were developed within the context of the proposed site, Checkpoint Charlie, Berlin, Germany. This process is specifically a form analysis where the emphasis is on generating a concept that could be the foundation for final design criteria and second design stage, leading to a final proposal.

Figure xvii: Model one.

Form model one

One conceptual direction was based on opportunity, as a developers site was earmarked by the Berlin city council for an exhibition building.

It was important to address this opportunity as the resulting design proposal could potentially be submitted to the property owner as an option for the development of the site.

The intention of the concept was to observe Berlin city planning directives and to design a stylistically conventional building that also suggests closure.

This is achieved by abiding by the existing context but also dominating it by manipulating scale and proportion. The building is intended to be either higher or lower to break with the rhythm of adjacent buildings. Its mass will be more substantial with a reduced ratio of openings to wall surface area. Above street level the building projects beyond the boundary line. The material context, old stone, will be varied by introducing new textural finishes.
The proposed building strives to dominate and close the corner site. The use of scale, a large façade mass and the projecting boundary line at street level are the key elements. The scale works to highlight the building within its surrounding built context. The large façade mass creates an uninviting atmosphere at the boundary. The projecting boundary at street level confronts the spectator. All elements strive to emphasise dominance and closure through a sense of heaviness.

The heaviness would be most apparent when approaching the building and beneath the projecting boundary. The key gestures at the boundary highlight the building and contradict the local context.

Deviation architecturally from the existing facades is immediately apparent. An architectural solution that addresses Berlins building plans should perhaps either adhere in full or contradict.

Although the building separates itself by its appearance from surroundings buildings and creates an obvious boundary, the site of Checkpoint Charlie is not surrounded physically.

Perhaps the opportunity offered by this site earmarked for an exhibition building cannot, by itself, facilitate the expression of closure that is sought.
The inspiration for this project was to address both Checkpoint Charlie and the Berlin wall simultaneously with abstract architecture, to achieve a sense of closure.

This is achieved by removing Checkpoint Charlie from sight and putting it behind a wall with no windows or access.

By enclosing or confiscating Checkpoint Charlie the topic of visibility and ideas like here and there, time and place, keeping in, keeping out, curiosity, power of absence and monumentality are highlighted, and in turn work to strengthen the presence of Checkpoint Charlie.

The effectiveness of this project is in the way in which it provokes and focuses discussion. There is no architectural merit in the surrounding wall, yet it was important as it highlighted the power of the wall and the strength of not knowing what is beyond.

Model 2 disregards the city plan and directives to produce a different type of architecture which is symbolic and metaphoric. It is a banal and provocative form of architectural boundary. It works to emphasise the strength of here and there, absence and presence and curiosity and exemplifies the fundamental workings of the wall as an architectural boundary.

Figure xviii: Model two.
Design concept stage one

Form model three

This concept explores closing Checkpoint Charlie while at the same time linking east and west by creating buildings which unify and dominate the Checkpoint Charlie intersection and observe the city plan.

It is achieved through the locations of proposed buildings in both east and west territories. A building on the western side of the wall is removed. Unity of both sides is developed through similar forms, scale and rhythm, materiality, texture and colour. This is effectively an extension of model one. The larger building is to be accessible from the street, and the others accessible via the larger building through subterranean links to provoke interest in the apparently closed buildings.

The buildings work to unify through the collaboration of corner sites. The composition of building shapes and volumes was explored as three related objects.

Unity and closure is not strong or symbolic enough, because the building on the fourth corner cannot be demolished. Spatially the length of these buildings work in a negative manner as they direct emphasis away from the intersection.

Models 1 and 3 addressed the architectural boundary and are attempts to relate to the city plan and directives. Although this was the intention, the existing urban façade context is strong and the models contradict it and isolate themselves.

This highlighted the inflexibility of the context and that to build architecture that conformed to the city plan and directives would lead to a project that looked historic, but did not cultivate the symbolic and metaphoric qualities of the location. The architectural boundary in these models is conventional.
Form model four

The concept here was to open the site through a network of connections around, along and above Checkpoint Charlie and the Berlin Wall to provide numerous linkages where once there were few. Also it was considered important to create architecture that became neutral, neither symbolic nor monumental.

This is achieved through a series of bridging structures which either touch the ground, pass through buildings or span the space between buildings.

They are partly symbolic and respect the context in terms of materiality. The links work as the promoters of social interaction and unity. They are fairly random in terms of the building and functions that they link. Any boundaries, which exist or existed, are blurred.

The proposed architectural links do not respect the existing built context, are random in terms of the buildings and functions that they link. Through overkill they could potentially fade into the existing urban context and not help to support the idea of memorial.

The links do not reflect or emphasise Checkpoint Charlie as a point or location.

Model 4 is an example of both conventional and conceptual architecture coming together. The architectural boundary could be considered symbolic in that it is connecting an urban area through the development of a web of architecture.

This model tries to embody the importance of neutrality. Neutrality is produced through a camouflaging approach where materiality, scale and proportion blend with the existing environment.
Form model five

This concept develops the existing vacant sites to emphasise openness, neutrality, and the shadow architecture, which exhibits the architectural scars of Checkpoint Charlie and the Berlin wall. This concept arose out of conversation in Germany with architectural academics.

It is achieved through two vacant sites, which are developed into open landscaped spaces. For locals it becomes a public amenity but for tourists it becomes a focal point as the former location of the Berlin wall and the Checkpoint (it works like a park in New York city at ground zero would work).

The open landscaped space emphasises openness in a simple sense but also works with the existing shadow architecture. The neutrality of the proposal for locals, works through the idea of familiarity, there are many small parks and planted areas within the inner city, the park eventually becomes familiar and neutral to the locals, yet is a focal point for the tourist.

It could be argued that the development of a landscaped area and the emphasis on shadow architecture, although an architectural act, does not constitute architecture. It may be an appropriate idea but it does not fit the brief. The park is located on valuable real estate, which is a source of revenue for the city. The park is also between and around buildings, which block sunlight and cast shadows.
Form model six

This proposal was inspired by the conclusions drawn from the previous concept, land use and adequate light. It also offers vantage points for a number of historical landmarks.

The park is sited above the existing height lines on a horizontal plane with space below for buildings to be constructed.

Neutrality is produced through the idea of out of sight out of mind, as the surface of horizontal plane above is hidden.

This concept produces problems with accessibility, structure and being able to get light to penetrate to internal courtyard areas of buildings below.

Model 6 strives to develop both the architectural boundary and neutrality. The architectural boundary is exhibited in this model as a simple horizontal plane and inspired ideas of here and there, above and below and absence and presence. It is however, possible to suggest that placing a horizontal plane of this nature on top of buildings transforms it into a conventional roof garden.
Final Design Criteria

Design concept stage one explored ideas such as unity, symbolism, boundary and context. Which, together with an investigation of the nature of memorials, has facilitated the following statement of final design criteria.

Symbolism and Boundary
To emphasise the horizontal plane by elevating it as a symbolic horizontal form of the Berlin Wall and metaphorical architectural boundary.

Unity
To promote social interaction and unity, by creating functioning architecture dedicated to commemorating the reunification of Germany including:

- exhibition space
- recreation space

Memory
To provide a public amenity for locals and a focal point for tourists wishing to visit the former site of Checkpoint Charlie and the Berlin Wall.

Shadow architecture
To emphasise the shadow architecture of the site which exists at the surrounding architectural boundary and exhibits the scars of history.

Context
To not reject the possibility of challenging the Berlin city ground plan, directives and context.
Design concept stage two

This stage considers the surrounding context in more detail. Models seven to thirteen endeavour to refine the form and symbolism of the horizontal plane as an architectural boundary. Models fourteen to sixteen explore the refinement of the spatial relationship between the horizontal plane and the context. Models seventeen to twenty configure the structural columns to enhance the architectural boundary.

SITE

The site was chosen because of the surrounding architectural boundary. The wider area of FriedrichStadt was part of a later extension in the Baroque style, the ground plan is well established. However, this area was bombed, so after the war ruined and unsafe buildings were removed. Any buildings that got in the way of the Berlin Wall or Checkpoint Charlie were also removed. New buildings were built according to the Berlin City Directives, however, this site has remained free. Buildings have retained history, bullet craters, and changes in texture, colour and age display the shadows of previous buildings. This project hopes to emphasise this shadow architecture, ground level will remain vacant, touched only by the supporting columns.

Figure xxiii: Site map.
Design concept stage two

Figure xxiv: Site plan.

Site Plan Key

- Path of the Berlin Wall
- Main pedestrian access
- Proposed location of building
Design concept stage two

This was the first proposal for elevated horizontal buildings. The buildings are located on one of the two corner sites. The design proposal emphasises horizontality. There are three buildings, two horizontal and one vertical, one of the two horizontal buildings cantilevers over the other, the vertical building emphasises the horizontality of the other buildings. The space between the two horizontal planes of each building is earmarked for museum facilities, the vertical building for residential.

The horizontal buildings are supported by tripod like columns, holding large steel truss structures. The collaboration of layered and vertical buildings strives to emphasise horizontality, but produces a conventional built arrangement. The layering of spaces, change in built lines and solid masses produce an object that could be read conventionally. It is perhaps not symbolic enough.
Design concept stage two

Form model eight

This proposal explores the horizontal plane and aims to emphasise it symbolically. The building is located on one corner site but reaches out over Friedrichstrasse. The glazed ceiling and floor of the exhibition space allows the relationship between street and recreation plane to be blurred. There is a central void to allow interaction with the street level. The top horizontal plane is penetrated to allow the recreational plane to link with the lower plane. This was seen as a way to unify the two horizontal planes as one boundary. The structural legs are arranged in a rhythmical pattern with a circular stair tower near the Checkpoint Charlie intersection. The pattern of structural columns, perhaps interferes with the symbolism of horizontality.
Form model nine

This proposal is an extension of model eight. The building is located on one corner site and extends over Friedrichstrasse. The glazed ceiling and floor of the exhibition space is enlarged. The support structures are reinterpreted as larger access cores. The circular stair tower is now located directly on the corner of Checkpoint Charlie. One end of the rectangular plan is rounded to soften the harsh form. Both the void linking with the external edge and the rounding of the end of the rectangular form distance the form from the single symbolic form of the horizontal plane.
This proposal is an extension of model nine. The building is located on one corner site but now reaches completely over Friedrichstrasse to the edge of the second boundary. This model reverts to the rectangular shape, the void through both planes is smaller, there is now minimal interaction between the top plane and the bottom plane, creating a second boundary of separation between the two planes. A swimming pool is introduced, it has a translucent bottom, which promotes street level interaction as the shadows of swimmers will be visible from street level. The support structure and configuration is similar to model three.

The open void reduces the curiosity of the here and there as people are able to see and predict what is above. The circular stair tower reduces the impact of the horizontal plane as it becomes a focal point.
Form model eleven

This proposal locates the pool centrally, it becomes the focus of interaction between street and horizontal plane. Strips of glazed ceiling and floor exhibition space are located on either side of the pool. Horizontally the exhibition spaces also offer a view of people in the pool or of the city. Vertically the exhibition space interacts with both street level and the top plane.

The circular stair tower has been removed and an escalator introduced. The escalator is seen as a neutral gesture controlling entry. The support columns are enclosed and entry is at ground level by either escalator or through a single door in each column.

The area of open floor created for interaction with both the street level and memorial plane reduces the symbolic impact of here and there, allowing prediction of what is above, and blurs the architectural boundary.

Figure xxxvii: Model eleven.
Figure xxxviii: Model twelve.

Form model twelve

This proposal works to reduce the openness between the two planes and enhance the concept of here and there, and the horizontal plane. The pool is split into two, a ramp links both planes and a fourth support column is added.
Design concept stage two

Figure xxxix: Model thirteen.

Form model thirteen

The horizontal plane width of this model represents ten times the height of the Berlin Wall. The planes are closed, except for the pool, which has a translucent bottom, the closing of the planes enhances the concept of here and there or curiosity, people at street level only see swimmers above.
Space introduction

The height of the horizontal planes is critical, they create an architectural boundary, suggesting gestures of here and there and above and below, while also symbolising the Berlin Wall as a horizontal form.

Figure xl: Model fourteen.

Figure xli: Model fourteen, section.

Space, model fourteen

This model positions the top horizontal plane at 22 metres high, lower then the 36 metre maximum height of surrounding buildings. At this height it becomes an extension of the existing built context and not an individual object horizontally symbolizing the Berlin Wall.
Design concept stage two

Space, model fifteen

This example positions the top horizontal plane at 27 metres high. Still below the height of some surrounding buildings. At this height the building removes itself from the existing built context.
This example positions the top horizontal plane at 39 metres high. At this position the building detaches from the surrounding built context, yet it is only 3 metres higher than the highest building. The height of the planes now respect the surrounding built context but they are foreign which strengthens their symbolism.
Columns introduction

The column locations are very important, for the spectator they will offer no suggestion of what happens on top of the plane above. It is critical that they do not diminish the symbolisms of the horizontal plane as an architectural boundary. To do this they must become an easily understood secondary visual element, unobtrusive in form and materiality and yet columns are structural elements which need to be positioned effectively to distribute the above load.

Figure xlvi: Model seventeen.

Column model seventeen

This model explored the concept of running the columns up to the edge of the horizontal plane, this effectively created a façade at the front edge of the horizontal plane, which could be read as a large arch. This diminishes the likelihood of the horizontal plane being read as a boundary.
Column model eighteen

This model explores setting the columns back from the boundary of the horizontal plane. This move helps to emphasise the horizontal plane. The horizontal plane is now seen as sitting on the columns. The column layout is a progression from model one, which considers the spread of load but underestimates the distance of the cantilever over Friedrichstrasse. The column layout and size differences are complex and harder to understand, they detract from the visual strength of the horizontal plane.
Column model nineteen

This model explores the concept of arranging the columns in a rhythmical pattern of similar sizes so the composition can be easily understood. The rhythm of the arrangement succeeds in creating predictability but perhaps could suggest a perforated wall, drawing attention away from the horizontal plane.
Column model twenty

This model is a progression from model three, the second column is pushed out of line to disturb the concept of rhythm which suggested a perforated wall. The two columns remain side by side to effectively become an arch over Friedrichstrasse. Although the column composition is not as predictable as the previous model it is simpler and more understandable. The column that is pushed out of sequence supports the cantilevered plane.
Final proposal

Program ground level

The ground level program will consist of only services, fire escapes, lifts, reception and coatroom.

Figure liv: Ground level, program diagram.
Program exhibiton level

Entry to the exhibition is at ground level, from within one of the large concrete columns located at Checkpoint Charlie intersection. People are taken from ground level and delivered to the exhibition space by an elevator. The elevator door opens onto a large open exhibition space.

The space between the two planes is enclosed. It is proposed that although the exhibition space is penetrated by columns it is left as open as possible, emphasising a permanent exhibition and its importance.
Program recreation level

Access to the recreational space through another of the large concrete column. by elevator, a square box glazed on all side. People are taken from ground level and delivered to the recreation space. points of entry will be locations that promote public interaction.

The recreational space has been left open to enhance public interaction. Changing rooms, showers and toilets are incorporated.
Structure step one

The four columns are 7m x 12m in size, the wall is .5m think insitu concrete. The columns are positioned at 30m centres approximately. The hollow cores of the columns will provide space for, services, fire-escape stairwells and lifts.
Structure step two

Concrete main beams vary in height and span. Ranging between 5m - 3m high x .5m wide, positioned directly above the columns. Two Long edge beams run the length of the building, recessed 3.6m inside the horizontal planes. The beams spanning between the edge beams are positioned directly above the columns, enhancing lateral stability.

Figure I.viii: Structural diagram step two.
Structure step three

Suspended steel frame structure, fixed to main concrete beams above, horizontal 400 square steel box section web at 7m centre’s, supporting vertical hung steel 400x400 cruciform steel members supporting a horizontal 400 square steel box section web, all providing a support structure for the exhibition level.
Figure lxiii: Perspective west from Zimmerstrasse.

Figure lxiv: perspective across the commemoration level.
Conclusion

This research project set out to establish interpretations of the architectural boundary and addresses a focal point of the Berlin Wall, Checkpoint Charlie. Investigating literature based on Berlin history, space in architecture, phenomenology and memorials and the development of design concept stage one led to the formulation of the final design criteria. The final design criteria focused on symbolism and boundary, unity, memory, shadow architecture and context. All of which were important in order to develop a commemoration project.

Symbolism and Boundary were achieved through design concept stage two where the form, height of the horizontal plane and configuration of the columns were experimented with. The horizontal form is a metaphorical architectural boundary representing the Berlin Wall.

Memory was addressed by creating a public amenity for locals and a focal point for tourists wishing to visit the former site of Checkpoint Charlie and the Berlin Wall. Unity was achieved by promoting social interaction.

The surrounding shadow architecture and ground level architectural boundary expose the scars of history of the site and are emphasised by being preserved. The existing Berlin city ground plan, directives and context are challenged.

The project was deliberately relatively flexible, areas of research were identified in the early stages and pursued. Flexibility offered chances to develop ideas based on research, models, sketches and discussion. Although literature research throughout the project could be considered extensive, research and understanding of the psychological impacts of memory happened late but fortunately coincided with the acquisition of a number of books on the subject by Unitec library.

The main goals of this project, were to research the boundaries created through the practice of architecture and their resulting influence on the spectator, and document the architectural boundary in a manner that could express its potential to interested persons. Immersion into research based on the architectural boundary led to a number of conceptual questions. The most important finding in this research was the use of the horizontal plane as a boundary and its potential to provoke concepts of here and there, above and below, absence and presence and what is on the other side. Koolhaas says of the Berlin Wall, “The Good Half, now glimpsed only over the forbidding obstacle from an agonizing distance, became even more irresistible.”

The concept of a memorial and the way in which we remember past events was also a critical part of this project. The concept of remembrance led to detailed consideration of the importance of memory and commemoration to a society. Speaking of the fascist era and its victims, James Young states:-

“Though some, like the Greens, might see such absorption in the process of memorial building...”

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43 Rem Koolhaas and Bruce Mau, *S,M,L,X*, 5.
as an evasion of memory, it may also be true that the surest engagement with memory lies in its perpetual irresolution. In fact, the best German memorial… may not be a single memorial at all—but simply the never–to–be resolved debate over which kind of memory to preserve, how to do it, in whose name, and to what end. 

Young, The Texture of Memory, 21.
Literature background

Understanding the concept of the architectural boundary as an element that creates the essence of space was fundamental. *Space in Architecture* written by Cornelis van de Ven and *Genius Loci. Towards a Phenomenology of Architecture*, written by Christian Norberg-Schulz offered insight into the elemental concept of Space. These writings articulated the development of space through the course of history, the way in which space is and has been perceived, and the way in which we interact with space.

One of the most pivotal pieces of reading for this project was by Rem Koolhaas and Bruce Mau, “Exodus, or the Voluntary Prisoners of Architecture,” in *S, M, L, XL*. Their project emphasised the wall as a boundary and the psychological and symbolic strength of division it creates.

*The Texture of Memory*, by James Young outlined the stigma of a memorial. He details research into current social and political opinions. His research questioned existing concepts of a memorials.

Writings like *The Berlin Wall Today*, by Polly Feversham and Leo Schmidt or *Berlino Berlin Physiognomy of a Metropolis* by Dieter Hoffmann Axthelm, that dealt with the recent history of Berlin were also critical to an appreciation of the destruction of not just the city and its architecture but of the social dynamic too.

Helpful general texts included: Daniel Libeskind, *Image and Remembrance*, which describes the architectural boundary and the way in which he employed it, Rem Koolhaas *Delirious New York, A Retroactive Manifesto for Manhattan*, Describing the architectural construction of Manhattan and the effects of the modern city on its population, Peter Zumthor, *Thinking Architecture*, and *Atmospheres* gives detailed descriptions of his view of the essence he has created in his own architecture.
Appendices

Appendix A

The following floor plans are only a selection of the final plans.
Ground level

Figure 1x: Ground level plan.
Exhibition level

Figure lxi: Exhibition level plan.
Recreation level

Figure lxii: Recreational level plan.
Bibliography


