A Constructivist Model for Public War Memorial Design that Facilitates Dynamic Meaning Making

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Abstract

Many war memorials today face loss of relevant meaning to the members of their community over time, an inability to adapt to evolving historical perspectives, and a lack of ability to engage visitors in a deep and authentic way of creating meaning and understanding.

New war memorials should provide opportunities for visitors to engage with them in an active, conscious, and dynamic relationship with the built site. Encouraging such a connection facilitates deep and authentic meaning making that continues beyond the site visit, and that allows the memorial's form to evolve over time in response to visitor interaction.

The constructivist model for war memorial design incorporates ten strategies, and the Active Physical Interaction strategy in particular, that allow designers to create places that encourage visitors to have personalized interaction. These strategies are built on the constructivist philosophy that explains how individuals and groups of people understand the non-objective world through experience.

This position was tested through the design of a Dutch World War Two memorial at Warm Hearth Village in Blacksburg, Virginia. This memorial's main features include community garden beds for cultivation by the Village's elderly residents. The concept of sharp contrast reflected in three distinct areas of the memorial recall the oppression under five-years of Nazi occupation, the celebration of liberation in 1945, and the efforts of Allied and Resistance fighters in making this liberation possible.

To the memory of my grandmother, Lillian Norden.

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To my parents and brothers, Daniel and Peter.

Thank you for always being there and your willingness to provide whatever I needed. It has made all the difference in all the successes that I have had in my life.

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...it is only when we begin to participate emotionally in a landscape that its uniqueness and beauty are revealed to us.

- J.B. Jackson, *The Necessity for Ruins and Other Topics*

Well I found a bunch of letters
that were written for the fellow who broke your momma's heart
and the envelope folds smelled of her ancient perfume
I'll bet she didn't know
how to respond before the blankets of snow
caught him out wandering alone
with no place to go
...
well I found them in the northwest corner of the attic in a box
labeled tinsel and lights
didn't know what I was looking for
maybe just a blanket or artifacts
Eisenhower sent him to war
he kept her picture in his pocket that was closest to his heart
and when he hit shore
must have been a taget for the gunman

there were stars in the sky
there were bunkers on the hill and there were caskets to fill
where he will lie
shrouded in the red white and blue with the stripes

- from Ryan Adams and Caitlin Cary, Houses on the Hill

CHAPTER 1 - INTRODUCTION

Introduction to the position

Modern war memorials are markers of memory and history within our cultural landscape. They are a type of place that embrace meanings in their design to remind and foster understanding among members of a community that they represent. My position in this document is that war memorial designers should implement constructivist-based design strategies, and specifically elements supporting 'active physical interaction.' These strategies will be used to create places that facilitate visitors taking an active and personal role in their making of meaning. This facilitation is through a dynamic relationship unique between each user and the site but also within a range of expected messages provided by the designer and the clients he represents.

Elements in a design characteristic of active physical interaction are based largely in constructivist philosophy and its application in educational pedagogy. Constructivist epistemology explains how people create knowledge and meaning in their world. The purpose of the constructivist connection is a direct one. If this theory of knowing the 'world' and creating knowledge is accepted, and it is accepted that memorials are intentional and important features of human identity, then the constructivist pedagogy can be applied in significant ways by a memorial designer to better facilitate the connection of meanings with the visitor.

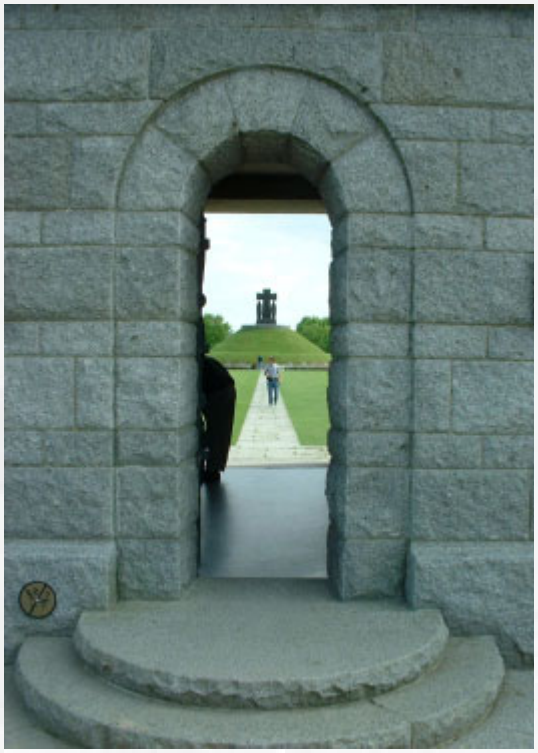


Figure 1.1. La Cambe German D-day Cemetery, Normandy, France: view of central tumulus through cemetery entry.

CHAPTER 2 - MEMORIAL LITERATURE REVIEW

Literature review

In the past 200 years memorials have developed an important and prolific role in Western societies. Monuments have served as markers of territory, power, religious beliefs, and human actions and achievement. The word memorial according to Webster's online dictionary means, "serving to preserve remembrance" (http://www.m-w.com/cgi-bin/dictionary, keyword *memorial*). For the purpose of this discussion memorials are defined as physical places having distinct boundaries. They are built and funded by public agencies or private groups, but all are accessible to the general public. They are created through the work of groups that they collectively represent and all remember a person, people, or event of significance to that group. War memorials are a particular type that share this definition and specifically commemorate some aspect of ideals related to a specific war event, of the role of a nation (or similar group) or of that nation's participants in a wartime event. War memorials include commemorations that honor ideals and mourn individual losses.

"In modernity memory is the key to personal and collective identity" (Abramson 2). Memorials are extraordinary places in the public realm that are very important as places that embody the identity of those who build them. Memorials are built for and by a group with common bonds wishing to solidify and preserve some form of their collective memory. This memory can include the achievements of members of the group, or more often in remembrance of significant members of their community or of tragic events suffered by many. Sociologist Ronald Berger defines collective memory in reference to survivors of the Holocaust as being "a shared past that are retained by members of a group… that experienced it" (Halbachs, qtd. in Berger 1). According to the recent Dumbarton Oaks memorial colloquium Places of Commemoration editor Joachim Wolschke-Bulmahn , "'Commemoration' and 'identity' are…fundamental concerns of human existence." He goes on to say "everyone is occupied consciously or unconsciously with identity, one's origin, and the question of one's palace in humankind and society, past, present, and future." (Wolschke-Bulmahn 1). Memorials preserve memory, but are limited by an ability to represent only some aspects of the subject being remembered. The ideas built into the concrete and permanent form of a monument or of a memorial are not objective

truths. Rather, they are abstractions, selected pictures of history held in common within the agents of remembrance (the group) that are united by a purposive goal of constructing the place. J. Winter, another memorial scholar, makes the argument against only creating memorials of a national scale. He says that in those that are more localized expressions are stronger and have more continuous threads connecting place and experience to the agents of remembrance' (Winter 4).

So, memorials are places that store a society's significant ideals, beliefs, and history for the future. As described by geographer J.B. Jackson, these places are our contracts with the future. In response to a section of Lincoln's Gettysburg Address he concludes, "Here in a few words the purpose of the monument is indicated: on a specific occasion a contract was entered into…and the monument is to remind us that…[it]…is a guide to the future…it determines our actions in the years to come" (Jackson 93). The remembering group commemorates and honors those who strived or suffered for some idea that will be carried on as a debt to be understood, repaid, and sustained. This process is purposive, and reflects the goal-oriented nature of people in their ubiquitous search for knowledge. This in turn embodies the types of processes that make up human behavior, including memorial making. Social constructivist epistemologies support this understanding of the relationship between people and place. They state that a society constructs knowledge in groups of people based on a goal of organizing the world and creation of knowledge (Prawat entire article).

Memorials have a special ability to act as curative mediators between people and events when their subject involves tragedy of a person or people within the society. This is a unique opportunity of memorials, though it is one exercised to greater extent in some sites than others. While hospitals, churches, private spaces, and public parks often serve a range of healing roles from physical to emotional, the memorial can provide an appropriate public setting that directly provides for deep emotional reflection and restoration about a specific event. The Vietnam Veterans Memorial in Washington is recognized as a leader among the growing number of humanistic landscapes that veterans, family members, and friends can go to make this kind of connection. Winter says in relation to the ideas of identity and healing, "the activity of remembrance, and the creation of places of collective experience, is irrepressible, expressing fundamental truths about the need of ordinary people… to face the emptiness, the nothingness of loss in war, together" (Winter 6).

At the same time, this healing power can be among the elements of meaning that is lost over time as those directly connected to the significant people or events being memorialized pass away. In these cases subsequent generations may fail to appreciate the events or people in the same way as those that came before. The primary experience and understanding of a tragic

event can be diluted or lost. This happens because the values, technologies, and artifacts of that society change, and meanings change too. This loss of meaning has been perceived as a significant problem of many memorials over the past 200 years. Many architectural scholars believe strongly that these meanings are lost as soon as construction is 'completed'. Architectural critics like James Young argue that, "It may be the finished monument that completes memory itself, puts a cap on memory work, and draws a bottom line underneath an era" (Young 2). He continues by saying, "…we encourage monuments to do our memory work for us, [and] we become that much more forgetful" (ibid 3). This problem raises the question of if and how memorials can be built in ways that resist the erosion of meaningfulness over time.

Comparative case studies

A significant source of knowledge that informed this discussion came from case studies personally carried out over the past two years. These studies addressed various memorial sites and had specific questions and purposes. A consistent set of questions has been applied to these sites in order to glean information useful to this memorial position. All of these questions address in some way issues that seek to understand how a memorial can influence the ways a visitor makes meaning about its subject. A comparative summary of these questions and the sites they are applied to can be found in Figure 2.1. Photos of selected sites are located in Appendix B.

One question asked of all of these sites is what typological characteristics they have in common. Classifying by types helps to generalize certain qualities and characteristics of the diversity that exists across many memorial sites. Sites can be more than one type. All of the memorials listed in this comparative study are explicitly war memorials except for the two Franklin Delano Roosevelt sites, which still include some aspects of a war memorial theme.

The monument, the first type in this classification, is a characteristic of form and symbolism. Sites that utilize unifying and recognizable markers that embody important meanings are monumental. Visitors to the Vietnam Memorial in Washington, D.C. recognize it as and refer to it as the Wall. This long black reflective marble Wall is the core element of this site and has 58,226 names inscribed within it. The National D-day Memorial in Bedford, Virginia has at its highest point a massive granite archway with 'Overlord' labeled at its top, the codename of the D-day operations. This symbolic marker is visible from the surrounding highways and dominates the line of vision as visitors enter a winding road into the site itself.

Certain memorials use the term monument for their name. The Audie Murphy Monument is simply a stone. Words are inscribed that describe his military life, that he died in a nearby

MEMORIAL NAME	LOCATION	MEMORIAL TYPE	GROUP ORGANIZING FORMATION	PRIMARY AUDIENCES	MANNER OF CONVEYING MEANING		FORMALITY OF SPATIAL ORGANIZATION
					Didactic	Interpretation	
National D-day Memorial	Bedford, Virginia	Monument, landscape	Founded by Congressional act, organized by a nonprofit foundation of Virginia businessmen and wartime veterans; inaugurated 2001	National (US) memorial site, regularly visited by tourists from across Virginia, US, and World War II Veterans	High	Moderate	High
Vietnam Veterans Memorial	Washington, D.C., in the National Mall	Monument, landscape	Founded by Congressional act, creation organized by Vietnam War veteran, Wall dedicated 1982	National (US) memorial site, regularly visited by tourists from across Washington D.C. area, US, around the world, and Vietnam Veterans	Low	High	Moderate
La Cambe German Cemetery	Normandy, France	Monument, landscape, historical marker, cemetery	Volksbund, a private German organization since 1919 that builds and maintains wartime cemeteries, and promotes anti-war messages; inaugurated 1961	Regularly visited by French residents, German and other international tourists visiting the Normandy area, and World War veterans	High	High	High
Coleville American Cemetery	Normandy, France	Monument, landscape, historical marker, cemetery	American Battle Monuments Commission, a government agency since 1923 created to build and maintain wartime cemeteries and memorials; cemetery created during wartime, memorial features created immediately following War	Regularly visited by French residents, American and other international tourists visiting the Normandy area, and World War veterans, and American Presidents and other governmental leaders	High	High	High
Bayeux Commonwealth Cemetery	Normandy, France	Monument, landscape, historical marker, cemetery	Commonwealth War Graves Commission, a United Kingdom governmental agency since 1917 to build and maintain wartime cemeteries and memorials, cemetery created during wartime, memorial features created immediately following war	Regularly visited by French residents, British and other international tourists visiting the Normandy area, and World War veterans	High	Low	High
Franklin Delano Roosevelt Monument	Washington, D.C. (at Archive Building)	Monument	Created by governmental agency according to Roosevelt's personal wishes	Primarily visited by employees and guests of the Archive Building		High	Low
Franklin Delano Roosevelt Memorial	Washington, D.C. in the National Mall	Landscape	Founded by Congressional act, organized by governmental commission, initiated in 1959, final design selected in 1974, dedicated 1997	National (US) memorial site, regularly visited by tourists from across Washington D.C. area, US, around the world	Moderate	Low	High
Audie Murphy Monument	Brush Mountain, near Blacksburg, Virginia	Monument, landscape, historical marker	Erected by Veterans of Foreign Wars Post 5311	Local tourists, hikers on the Appalachian Trail, World War veterans	High	High	Low
Virginia Tech Military Monument, "The Rock"	Blacksburg, Virginia Main Campus	Monument	Erected by Virginia Tech class of 1919	Cadet and civilian students at Virginia Tech, faculty, and visitors to the 'Upper Quad' area of campus	High	Moderate	High

figure 2.1. Comparative sumary of meaning making questions in case study subjects.

MEMORIAL NAME	DEGREE OF VISITOR CHOICE			PRIMARY MESSAGE	DO VISITORS SIGNIFICANTLY ALTER OR CONTRIBUTE TO THE PHYSICAL SITE?	HAS DESIGN BEEN 'OFFICIALLY' AND SIGNIFICANTLY ALTERED SINCE INTRODUCTION?
	Path	Activities	Instruction			
National D-day Memorial	High	Moderate	High	Education of D-day meaning and lessons and to convey appreciation of D-day legacy (from http://www.dday.org/who_we_are.html 21 Nov., 2002)	No	No, construction of later phases on site are pending
Vietnam Veterans Memorial	Low	High	Low	Commemoration of American casualties of the Vietnam War (from http://www.nps.gov/vive/home.htm 21 Nov., 2002)	Yes	Yes, 'Three Servicemen Statue' and 'Vietnam Women's Memorial' later added. Also names have been added to the Wall as additional information about casualties becomes available
La Cambe German Cemetery	High	High	Low	Permanent burial site for German soldiers as memorials to peace, spreading of anti-war, international solidarity message (from site brochure)	No	Yes, addition of visitors center peace exhibit and in 1996 of 'Garden of Peace'
Coleville American Cemetery	High	Moderate	Moderate	Commemorating the services of American Armed Forces (from http://www.abmc.gov/abmc1.htm 21 Nov., 2002)	No	No
Bayeux Commonwealth Cemetery	Moderate	Moderate	Low	Individually commemorate World War II casualties by headstone or memorial from the Commonwealth (from http://www.cwgc.org/task.htm 21 Nov., 2002)	No	No
Franklin Delano Roosevelt Memorial	Low	Low	Low	Commemorating the name of Franklin Delano Roosevelt, 32nd US President and the 12 year era under his leadership	No	No
Franklin Delano Roosevelt Memorial	High	High	Low	Commemorates 12 years FDR served as President, his personal life, and represents American history during that time	No	Yes, addition of a new sculpture depicting FDR in a wheelchair
Audie Murphy Monument	Moderate	Moderate	Low	Commemorates military life of World War II's most decorated American soldier (from http://www.audiemurphy.com/roanoke.htm 21 Nov., 2002)	Yes	No
Virginia Tech Military Monument, "The Rock"	High	Low	High	Commemorates names of 11 alumni that died in World War I	No	No

figure 2.1, con't.. Comparative sumary of meaning making questions in case study subjects.

plane crash, and identifies the group responsible for creating the monument. Similarly, the original public Franklin Delano Roosevelt monument and the Virginia Tech military monument "the Rock" both convey their messages in the same form on an inscribed stone. All of these monumental forms relate directly to the headstone found at most traditional cemeteries. These too are markers that let visitors find the site where a particular person is buried. The American (Colleville), the German (La Cambe), and the Commonwealth (Bayeux) Normandy D-day sites are all cemeteries that utilize this form of identification.

The types and ways information is conveyed in a monumental form relates to the meaning that can be made by a visitor. For example, the German La Cambe Cemetery utilizes very little information (name, rank, and ID number) at each burial plot compared to the British Bayeux site which includes a graphic symbol representing the unit the soldier was a part of, their name, age, date they died, and a very personalized message from them or given posthumously by a loved one. The other 'monument' sites likewise convey information in their text, symbols they utilize or that they represent as a whole, and in the way they present this information to a visitor. The Vietnam Memorial site presents the many names inscribed in a very deliberate chronological manner of the order in which they died. This ordering tells a type of story, and also facilitates the process a visitor must undertake of searching through a nearby register to find the location of a specific name.

Memorials can also be designated as landscapes. Whereas monuments like the Roosevelt marker at the Archives Building or "the Rock" at Virginia Tech are singular elements, they can also exist as parts of more complex spatial organizations including many different elements and distinct areas. The Franklin Delano Roosevelt Memorial at the National Mall is an excellent example of this type. This memorial covers over 7 acres and utilizes distinct "rooms" to present the four terms that Roosevelt served as President. The Bedford D-day site is an example of how a memorial can be both monumental and have landscape characteristics. This site modulates elevation to create three distinct areas within its presentation. The massive arch sits at the highest point above the cliff and a broad plaza symbolizing the Normandy beach where much of the fighting took place, while even further below is a garden area. Moving along the Wall at the Vietnam Memorial involves descending towards the apex at the 'middle' of the site. These landscape forms tend to go further than non-landscape monuments in facilitating a range of perceptual experiences and consequently of moods at one memorial site.

A final typological designation is as a historical marker. These sites exist at a site of primary importance to the person or events being memorialized. The Audey Murphy Monument exists at the site where his plane crashed. All three Normandy D-day Cemeteries exist within the theatre of war where they were killed. Many of those buried at the Bayeux and Colleville cemeteries

actually died on that particular battlefield. In contrast the Vietnam Memorial site does not exist on a site where actual fighting took place. This does not necessarily detract from the meaning of these memorials, but those that do exist where critical events took place often have elevated importance to the meanings of that memorial and are often considered inherently 'sacred'.

The next question applied to all of these sites regards who it is that is building the memorial. This question is not necessarily about the specific landscape architect that designs what is eventually built. It is more about the group responsible for organizing the built commemoration in some way. The existence of two different Roosevelt memorial sites shows that different groups can commemorate the same person in very different ways. Before he died, Roosevelt himself declared that he wished to have only a marker on the lawn of the Archives Building in Washington. This wish was carried out after his death. However, in 1959 a commission was initiated to begin the creation of a new site on the National Mall. Almost 40 years later the new site that portrays Roosevelt in a very different way was opened to the public. This alternative commemoration did not come without debate. This debate exists with virtually every public memorial, and especially those at a larger scale like the national memorials in Washington, D.C. Even still a public debate exists at the Roosevelt site over whether or not he should be portrayed in a wheelchair, something he took great measures to hide throughout his public career. Presenting him as physically handicapped supports the issues important to the identity of proponents of the disabled. Others still wish to represent Roosevelt as he wanted to be perceived.

Many memorial sites are created by private groups, often existing for a smaller audience scale than those meant to exist for the whole nation as the Vietnam, Roosevelt, and D-day sites do. Smaller scale public memorials built by private groups are exemplified in the Virginia Tech military monument (donated by individuals of the class of 1919) and the Audie Murphy monument (created by a local Veterans of Foreign Wars group). The La Cambe German Cemetery in Normandy is among other German post-War sites that were created by a private organization. The messages reflected in these types of memorials are often very different from those created by government agencies and commissions. The La Cambe site has taken a very different approach from its American and British counterparts, and supports a strong anti-war and pro-international diversity message in several of its design elements.

Another important question about meaning making that varies across these sites regards whom the audiences are. Those who create each place are presenting messages being received by particular groups of people. Many sites are 'national' in nature. The Vietnam and Roosevelt Memorials on the National Mall are located in a highly accessible site in the national capital. Many millions of tourists will visit these sites each year coming from within the Washington area, across the US, and from abroad. The D-day

cemeteries in Normandy also receive millions of visitors from a wide array of countries. In contrast the message of the Audie Murphy site is primarily experienced by hikers on the Appalachian trail that runs near that site and local citizens who are aware of the site's location. Who it is that visits a memorial will affect how messages are perceived and the physical impact that those visitors will have on the memorial site. The ability to predict these affects impacts the design of spatial characteristics, the kinds of activities that can be carried in the site, and material durability and other maintenance issues.

Another question related to meaning making is reflected in the different manners of conveying messages in design elements. This manner varies in how didactic and interpretative these elements are, and relates to a position on a continuum rather than being absolutely one or the other. All memorial sites use symbolism in some fashion to convey their meanings. Some sites rely more heavily than others on textual and direct explanation of what their symbols are supposed to represent. The D-day Memorial in Bedford is an example of one heavily didactic in nature. The memorial's foundation explicitly describes the site's mission as one that is educational, and this is reflected in its presentation. Signposts frequently occur throughout the site. One sign describes its three distinct elevations as referring to the three stages of the beach invasion: landing, scaling of the cliffs, and surmounting of the fortress above. Another sign describes the middle plaza's five large "symmetrical segments" distinguished through paving materials as representing the five beaches invaded by British and American forces. To the unknowing visitor, these symbols might not otherwise be understood or perceived. The Colleville and Bayeux Cemetery sites are also highly didactic. In these sites large numbers of inscriptions like, (at the American site)

THIS EMBATTLED SHORE, PORTAL OF FREEDOM,
IS FOREVER HALLOWED BY THE IDEALS,
THE VALOR AND THE SACRIFICES
OF OUR FELLOW COUNTRYMEN

compliment wall-sized maps describing the strategic movements of Allied and Axis troops throughout the Normandy campaign. This type of information literally teaches about events that took place, how the group that created the memorial perceives those commemorated, and how the visitor should feel as well. In addition, the German La Cambe site utilizes an anti-war exhibit in its visitor center that strongly advocates the negative aspects of war and describes ways that the Volksbund (this cemetery's organizing group) supports this message. Monumental sites often very succinctly and literally explain in a very small space. Monuments like the Audie Murphy site include text on their stones that outline dates and facts about the events they commemorate.

On another end of the continuum, some sites may have strong messages that rely on more subtle or even ambiguous clues that the visitor interprets. These sites more tenuously embody

meanings in their form. The Vietnam Veterans Memorial Wall is an interpretive memorial. Inscriptions on the Wall include the thousands of names and the years that mark the War's beginning and end. Beyond that, nothing literally indicates what to know or feel. The Vietnam site can be described as monumental, but it is not the listing of names alone that directly conveys meaning. Some visitors come with knowledge of particular names, and the sheer number of all of the names may convey a particular message as well. The reflective surface of the Wall also allows visitors to see themselves. This reflection superimposed on the names that may have a particular meaning to an individual visitor creates a powerful symbolic element.

The Audie Murphy Monument utilizes a highly didactic manner to explain what it commemorates. But, this site also contains additional elements not part of the original design that are much more interpretative in nature. Immediately adjacent to the monument's foundation are a series of artifacts left by visitors, as well as a stone cairn. These artifacts include several American flags, medallions, and military guidebooks. These types of elements allow a visitor to ponder what these symbols mean to them. So, it is possible for a site to be both highly didactic and interpretative. The La Cambe, Colleville, and Bayeux cemeteries, as well as the Roosevelt Memorial (on the Mall), and the Virginia Tech Military Monument include significant interpretative elements in addition to those didactic in nature.

The next question related to meaning making at these memorials addresses the formality of the spatial organization. These sites tend to facilitate complex perceptual and psychological responses by the ways they modulate space. The more highly organized presentations tend to heighten expectations by their formal nature. Characteristics of more formal organization include axial symmetry, definition of procession through a site, and directionality.

The Bedford D-day Memorial, La Cambe, Colleville, and Bayeux Cemeteries, and Virginia Tech Military Monument can all be characterized as very formal. All of these places employ axial symmetry, where a balanced or identical set of spaces is reflected on either side of a dominant line. The Bedford D-day site has such an axis bisecting all three levels, running from the center of the main garden at the lower level, through the middle plaza, and through the monumental arch at the site pinnacle. All three cemetery sites also contain one dominant and one secondary axis perpendicular to the main one. The effect in all three is to create, in plan view, a cross. This is an intentional symbolic organization that reflects the spiritual qualities and beliefs of their creators.

The Roosevelt Memorial (on the Mall) is also very formal in its organization. The axial symmetry in this case is not as defined, however there is a very developed procession of spaces that intentionally represents the different phases of Roosevelt's Presidency. This procession is developed with a shifting path and

by modulating the distance between walls and other elements. The American Colleville Cemetery also is a very large site that creates a sense of procession between distinct areas. This procession begins when approaching the site by car on a winding road towards the parking area and continues on foot through several distinct spaces until finally reaching the cemetery proper. The Bedford D-day Memorial also utilizes procession. This particular site achieves this by requiring the visitor to physically climb or descend stairs into the adjacent spaces. This type of activity has the effect of raising awareness of transition between two areas. It also heightens expectation in the same way of modulating space by causing certain elements to be partially hidden until finally arriving in the new area.

One other characteristic of spatial organization revealed through these sites is directionality. While some sites exhibit strong procession through distinct spaces, this movement may not necessarily be headed in one particular way. The Vietnam Memorial exhibits an ambiguous directionality because it has two equal entrances. Visitors can arrive and leave from either direction, and this is a more informal feature. The Bedford D-day Memorial is a highly organized set of spaces, but because visitor parking exists in a loop around the entire memorial, entrances are not restricted to any particular point of the site. Instead visitors come in a disorienting fashion from whichever side they parked. Conversely, the Colleville American Cemetery, Bayeux Cemetery, and Roosevelt Memorial (the Mall) all have clear directions based on single entry points and through defined progressions of space.

The next question of meaning making refers to how much choice the visitor has in choosing how to proceed throughout a memorial space. It is directly related to some characteristics of the spatial organization question. While a site may have a clear progression of spaces and have implied directionality, choice is having multiple pathway options presented at different points. The Bayeux Cemetery does have a strong axial symmetry and central path, but about the midway point the visitor is given the choice of entering either of two loggia containing maps and registry information to the left and right of the central path. The Roosevelt Memorial (the Mall) offers a range of elements from inscriptions within the stone walls, vibrant water features, and bronze sculptures placed throughout that allow a visitor to deviate from the procession and more closely engage with them.

This example alludes to another characteristic of choice in the range of activities that can be accommodated by a particular site. Certain sites may offer a more limited scope of behaviors and modes of experiencing the site. Virtually every site engages visitors through a range of visual experiences that involve viewing objects and reading text from a range of distances. Some sites, like the Vietnam Veterans Memorial encourage other types of behavior, like providing paper and pencils for visitors to take rubbings of names in the wall. Though it is not a part of the original design, the

Audie Murphy Monument provides a different type of interaction by allowing a visitor to place a stone on its cairn pile. The La Cambe Cemetery includes a hedge of rose shrubs at shoulder height around the base of its central tumulus that can draw a visitor in to touch and smell the flowers. The visitor's center contains computers with touch-activated screens that allow a visitor to customize the types and language of what information they see.

A final variable of visitor choice is in the amount of instruction that visitors are given of how they are encouraged or limited in particular behaviors within a memorial site. These instructions can be in the form of text or recognizable symbols. Visitors are given a brochure upon entry at the Bedford D-day Memorial. Within this brochure is a listing of expectations of how the visitor will act. It restricts use of "boom boxes", prevents children from playing in the water features, requires voices to be kept quiet, among others. In perhaps a more poetic way the Colleville Cemetery has a sign at its pedestrian entry that says,

LOOK HOW MANY OF THEM THERE WERE
LOOK HOW YOUNG THEY WERE
THEY DIED FOR YOUR FREEDOM
HOLD BACK YOUR TEARS AND KEEP SILENT

These types of messages can intentionally or otherwise set up very explicit experiences at a memorial. The Virginia Tech Military Monument instructs expected behavior in a different kind of way. University Cadets are taught by their peers to salute "the Rock" each time they pass it. Saluting is done for 6 paces before and after passing from any direction, and while saluting the Cadet looks directly at the monument. This is a type of mandated ritual behavior that is unique to military students.

Another question directed at all of these sites is whether or not a visitor can physically alter or contribute in some way to the memorial site. At the Audie Murphey Monument the stone pile is an excellent example of a physical element that visitors are directly responsible for shaping over time. Though this is a spontaneous element, not part of the original monument design, it has become an important part of the site. The pile grows taller and wider as more visitors come, seek out a stone, and place it on the cairn. The Vietnam Veterans Memorial is also shaped in part by visitors' actions. Here they regularly bring artifacts, flowers, and other objects that are leaned against the Wall. The parks service currently maintains a collection of these objects. A memorial site does not necessarily directly impose these types of activities, though some clearly do. These activities do allow visitors to take a more active role in the form of the memorial over time.

A question similar to the previous one directed at these case studies is whether or not these sites have been modified in significant ways since their inaugurations by those 'officials' that maintain them. Some sites like the Bedford D-day Memorial have new additions pending. Other memorials, like the La Cambe

Cemetery, modify and add on to their designs over long periods of time as a way to adapt to changing conditions and needs of the memorializing group. The La Cambe site has recently added the 'Friedenspark', a garden of peace made up of trees outside the original cemetery walls. In addition it has recently added a visitors center with an educational anti-war exhibit. The Roosevelt Memorial (the Mall) and Vietnam Veterans Memorial have both added highly controversial sculptural elements several years after their inception. For better of worse, all of these types of additions facilitate the memorial changing to new conditions presented with time.

One final comparison of each of these memorial sites regards the primary messages they convey. Different visitors may perceive these messages differently, but they exist as a broad set of meanings intended by the memorializing group. Most of these messages are summarized from literature available by the memorializing groups, and web page references are included within figure 1. The Bedford D-day Memorial site explicitly describes its mission as an educational one. The La Cambe German Cemetery also describes the burial spaces not as commemorations of soldier's sacrifices, but rather as memorials to peace. They also promote a clearly educational stance in their other elements that advocate world peace. All these other sites are described as commemorations: both Roosevelt sites are commemorations of his name and Presidential career, and the American and British Cemetery and Vietnam Memorial sites all commemorate the casualties and sacrifices of the soldiers named within. The British Bayeux site unmistakably describes its commemoration of each individual soldier, and this is reflected in its design. These messages are not always explicitly written at their respective memorial sites. Understanding these allows a comparison of the different sites by helping to explain why certain design choices were made similarly or differently than other memorials.

All of these case studies support and go beyond the scope of memorial literature readily available today. These questions and responses have been extracted from actual memorials and allow an important and real understanding of some characteristics that directly affect meaning making by visitors.

Case study findings

The questions applied to all of these sites are interrelated, and they broadly seek to analyze issues from a perspective of the people that create and use them. These questions include: who is doing the creating, what position does the site have in different community scales (i.e. national versus local), what are their main intentions, how has the site changed over time, and how are visitors provided with the kinds of information and choices directing them how to move and interact with the built form. There are several important general and specific things to be learned from the comparison across these different sites.

Broadly, the public war memorial is a concept of place that includes such different types as landscape, monument, cemetery, and historical marker. Most of these memorials incorporate combinations of different types within one design. Many of the more recent sites like the National D-day and Vietnam Veterans Memorial include distinctive landscape and monumental characteristics together that individually have historical precedence in prominent memorial sites.

This analysis also shows that the public war memorial is a broad umbrella that can include many different themes. All of the sites in this study are war memorials in some way. The Roosevelt sites, for example, commemorate the life of a President as well as a twelve-year era in American history in which a significant and devastating world war took place. This commemoration includes many of the war-related social and ideological aspects that occurred in the United States in addition to those military aspects of the actual fighting in Europe. In Europe, the three Normandy cemeteries each commemorate different aspects of the D-day invasion in very different ways. These sites clearly demonstrate that a memorial theme can be primarily about a person or people, about events, or about ideals as well as other subjects. The Audie Murphey monument marks the location where a plane crashed and killed a civilian who also is one of America's most recognized World War II veterans. So, in different ways all of these sites include overlapping themes in addition to their individual contexts, design forms, and intents. This emphasizes the idea that public war memorials do not have any predefined prototype and releases many limitations on the scope of any specific design.

This analysis also shows that all of these sites have specific messages. As places all of them are successful through their design of spatial relationships at conveying their unique meanings, formed and modified by those that built and continue to use the places.

Beyond these broad lessons there are several more specific things than can be drawn as well. First is that creation of public war memorials are subject to public debate regardless of whether or not they are funded by the public or a private organization. The Vietnam Veterans and Franklin Delano Roosevelt (on the Mall) memorials both have endured such intense scrutiny by different groups within the Washington D.C. area as well as the entire nation. It is also important to note that these debates exist lower profile sites as well who serve more limited audiences. Despite their sometimes hostile nature, these discussions are under laid by a healthy discourse that allows groups of people to present their feelings and negotiate particular issues within the community. These discussions are part of a larger public memorial process: one not related to the physical memorial as much as to the ideas behind its creation. So, a proactive approach to presenting ideas and designs should be taken to allow a memorial to respond rather than react to perceptions and needs within a community, while still incorporating

the important needs and spirit that the memorializing group intends to fulfill.

From questions about memorial type (landscape, monument, etc.) and spatial form the matrix describes each site in the manner of conveying meaning. It breaks this down as 'didactic' and 'interpretation'. Six of these sites are described as being highly didactic, while one is moderate, and one is low. (One also is not given a description from lack of information). Similarly, five of the nine sites are described as highly interpretative. Three sites, the La Cambe Cemetery, Coleville Cemetery, and the Audie Murphey Monument are described as 'high' for both categories. Otherwise, there is not a strong relationship between sites being high or low in both categories. This does suggest that a site can be both fairly literal and still maintain a high level of interpretative qualities. On the other hand, some sites like the Vietnam Veterans Memorial are low in didactic qualities while being highly interpretative.

In the analysis of formality of spatial organization, six of the nine sites are described here as being highly formal, one as being moderate, and two as having low formality. This does correlate to the analysis of 'path' in the degree of visitor choice. Generally the same sites that were more formal also had options for visitors to move through the site along different pathways. This suggests that a site can be highly organized and still have a structure that allows visitors to choose how they move through and engage the site. The types of 'activities' analysis of visitor choice shows that some sites provide for a larger set of expected activities than others. The Vietnam Veterans Memorial, described as high, has a wider range of observed activities than the Virginia Tech Military Monument. According to this measurement system, there is not necessarily a strong connection between range of activities and spatial formality or manner of conveying meaning. For the degree of 'instruction', some sites, particularly the National D-day Memorial (which is also described as highly formal) present a high (written) set of behavioral guidelines. Most sites compared here, however, had a 'low' rating and did little to literally prohibit or encourage particular types of behavior.

The final conclusions relate to the analysis of how a site changes over time. With respect to the question of whether or not visitors significantly alter the site, seven answered 'no'. The three cemetery sites are described as 'no' though some flowers and other items are left at individual grave sites and other elements throughout the site, but not to the degree as those described as 'yes'. So, visitors do not tend to take intentional measures that actively contribute to or modify the physical site. Also, three of the nine groups that maintain their respective sites have significantly altered them in some way since they were first opened. Alterations most often take the form of adding new facilities or elements in the existing grounds, as with the Roosevelt Memorial (on the Mall), or that expand the site boundaries, as with the La Cambe Cemetery. These kinds of additions or changes sometimes respond to meet demands for increased capacity of the site. More often they also reflect how the memorializing group changes its position and the meanings they wish to represent with changing cultural conditions.

CHAPTER 3 - CONSTRUCTIVIST LITERATURE REVIEW

A significant portion of this research has been dedicated to understanding how people understand the world that exists around them. This study has led specifically to an exploration of the constructivist philosophy of knowing and meaning making. This portion discusses the characteristics of the constructivist understanding of these processes.

An introduction to constructivism

In its most simple form constructivism is a philosophy that describes relationships between individuals and the world around them. It has emerged over several hundreds of years in response to an age-old debate about the nature of reality and existence. To the traditional schools of thought this reality is objective: they assume existence of the world is independent of individuals living in them. Two fundamental positions regarding the origin of meanings have historically dominated Western thought. A rationalist perspective generally believes that humans have the ability to see and understand truths about the world through innate reasoning. They see meaning as something projected by the individual onto all of the things that make up the world. Conversely, empiricists argue that only through experience can people understand the objective world. With this view meaning is inherent in the objects of the world and through experience humans can come to know them.

Constructivism differs from the traditional positions by claiming a person cannot possibly come to know anything that exists beyond their own set of experiences (though they can gain some understanding from communication with others). Whether or not there is an ontologically real world is an irrelevant question. People build, or *construct*, their unique understandings through prior experiences and understandings. Experiences can never be exactly the same as those of another person, and though they may sometimes seem very similar, there is no way of ever being able to know exactly what another is experiencing or understanding. Constructivism holds that a person is able to experience the world in certain ways, think, and to understand with the purpose of organizing and moving through their environment. It is an adaptive ability that serves progressing through time and space and growing as an individual and as communities of people. Meanings change over time as the individual meets new experiences and adjusts

them. The ultimate measure of truth, or how accurate meanings are to the individual, is viability. If a person's understanding allows them to think, act, and grow, information as they know it is okay, regardless of how it may correspond to the non-constructivist's ontological reality. Limits put on certain meanings and behavior are imposed as rules by that individual or others in the community.

To take this idea further and explain how groups of people interact together, social constructivism believes that communities of people have important experiential similarities that allow them to negotiate and be productive on many levels. Communities relate through common physical interactions where they can create artifacts that facilitate their relationships and conceptualization of their common world. When the community has created some form of knowledge that helps the group, an individual member must still be aware of and incorporate that meaning into their own mind to have access to and use of it. Language is one of the best examples of an artifact. When a group communicates through the same language they can develop and share ideas with each other. However, these ideas are at best good negotiations because a particular word necessarily has different connotations to different individuals, regardless of how negligible the difference may be.

Viability is also the standard of truth for the group. Ethical rules and guidelines define social expectations that put limits on what may otherwise be viable behavior. So, communities of people work together to organize and move through their common physical environment. Accommodation is another constructivist term that essentially means to construct knowledge. It is the method by which individuals process new information in a meaningful way based on their existing framework of experience and knowledge. Consciously internalizing a concept is necessary for new knowledge or meaning to be available to the individual in the future. Reflection is a final important constructivist term. Meaning is created through experiencing particular events and reflection is required to process what has been perceived. Knowledge must be created from unfamiliar experience in the context of prior understandings.

Experience and memory

It is important to emphasize the role of experience and memory within constructivism. Experience is at the heart of the way an individual knows, learns, and behaves. Humans 'see' the world through a familiar set of perceptive lenses: touch, smell, sight, sound, taste, and kinesthesia. These common human capacities all define the way that experience is facilitated, and so humans as a whole see the world in generally similar ways. But despite these similarities the way that the senses exactly perceive the environment and the way the individual's mind interprets the signals both lead to infinite variations of understanding.

Experience in the past tense is memory. Memory consists of fragments of prior experience and ideas that people are able to recall at particular times. As an individual ages he accumulates

more experiences that shape his unique understanding of his environment. Collection of an individual's memories, if it were possible, would tell an abstract story of the past and at least partially explain why they are who they are.

Constructivism in educational context

One of constructivism's most practical (existing) applications is as a model for teaching. There is a good deal of literature that discusses how constructivist strategies can be implemented in the classroom, and some of these are sighted in this discussion. Most of these educational strategies are pedagogy, and attempt to modify (sometimes radically) traditional teaching methods in favor of ones that mandate teachers be better facilitators of learning and students to take stronger responsibility of their education. This educational model is useful in understanding how constructivism is applied to meaning making as a process people carry out in their lives.

Memorial experience and ritual in constructivist context

Memorials convey a specific, yet flexible, range of meanings to their visitors. On a broader level, they are a unique type of place where social concepts and rules are reinforced and modified. This type of psychological activity is the basis of what modern theorists call ritual. The most modern characterization describes rituals as, "an activity that people make meaning out of" (Calorusso 2). More specifically they are actions that "reproduce and reshape [human's] social and cultural environments" (Bell, qtd. in Calorusso 2). This definition has been secularized from its religious foundations following a modern shift that began to place much less emphasis on the spiritual in everyday life. This definition also is based in a more contemporary philosophical view that recognizes "individual actors" as agents that have the ability to facilitate change rather than those that simply reenact formalized behaviors. (Calorusso 3). This broader definition of ritual agrees with the social constructivist belief of how meanings are formed by the aggregate of individuals in a community. The social constructivist philosophy agrees that individuals cannot come to know objective reality, but adds that collective groups negotiate to reach consensus about how they define the 'world'. Within this framework the individual is a player that first by necessity must process and accommodate the meanings of the group that he lives within in order to understand them, and then also contributes to this larger vision through his participation. To a constructivist, ritual is the means of this participation.

Rituals have psychological and physical components. "The physical journey made by a participant… symbolically parallels his or her psychological journey through the performance of the ritual" (Calorusso 4). More formalized ritual spaces typically include two fundamental elements of path and place. Ordering of these two forms leads to a spatial progression involving three points: the point

of departure (a place); the path itself (a path); and the destination (a place). More complex versions of this model incorporate multiple places along the main path. This type of spatial organization reflects the psychological structure of the archetypal pilgrimage. This journey includes stages of separation, liminality, and reincorporation. In a symbolic passage like a traditional American wedding ceremony, arrival at the 'destination' results in an important transformation from the point of separation (Calorusso 4,5). Designing a memorial space with a procession created by 'paths' and 'places' using the three archetypal elements of a journey can allow the visitor to construct meaning in a significant way. More specific physical elements of ritual are discussed with the implementation of the interactive design (API) strategy.

There is also a dualistic relationship between spatial and temporal memorials. This document relates most specifically to the spatial, or built forms of memorials that landscape architects help to create. Temporal commemorations share an important relationship with these built memorials. J.B. Jackson talks about this dualism when he describes monuments as social contracts between the "past and present… and this covenant between the people and their leaders…is given visible form in monuments and a temporal form in a series of scheduled holidays and days of commemoration" (Jackson 98). Holidays are social constructs that play an important role in reinforcing the community's beliefs. They stir memory to keep important ideas and experiences of the individual and the larger community in the forefront. Recent Veterans Day ceremonies at the Virginia Tech main campus act just as one of these temporal memorials. These ceremonies took place at two campus monuments (the War Memorial and at the 'Upper Quad') that honor past military students who died in World Wars I and II and the Vietnam War. The ceremonies included day-long honor guards, a cannon and 21-gun salute, a midnight vigil to honor veterans, and flying of the Prisoner of War/ Missing in Action flag on the upper quad's flagpole. The campus newspaper quoted one Vietnam Veteran observer who remarked that "we all need to be reminded of what the Stars and Stripes really mean, the freedoms it

Figure 3.1. National D-day Memorial, Bedford, Virginia: view along dominant site axis to Overlord Arch.

represents…" (Buchanan 1). Another Cadet participant said, "Many students [have] died in wars. … This [is] a day for remembrance…" (ibid.) Many students that day curiously watched the events and recognized the symbolic importance of the presence of the honor guard. These ceremonies, or community rituals, are mutually reinforcing with the place memorial. Public holidays usually cause members of a community to recall memories and subsequent ideals that may have faded from consciousness.

The markers found throughout memorials necessarily contain symbols to convey their meaning. Barrie defines symbols as concepts and objects with specific connotations attached in addition to their conventional and obvious meanings. An object is symbolic when its meaning is implied. The cross is a powerful symbol in Christian beliefs. Symbols represent 'things' other forms of human communication cannot adequately explain. Barrie argues that symbols are needed to "bridge" the gap between the conscious and subconscious mind that has steadily increased since the onset of the technological age. Symbols that are considered timeless or universal and that recur at different times and cultures are those that are perceived both consciously and unconsciously (Barrie 12). The most potent symbols, those found in architecture, are not only representational, but also spatial and temporal (ibid 13). J.B. Jackson defines public symbols as those that remind a culture what they are supposed to believe and how to act (Jackson 92). These spatial and temporal symbols are also those embodied in the forms of 'path' and 'place'. Awareness of these symbols is based in large part by clues within the site design, but also assumes certain mindfulness on the part of the visitor to actively search these out. This is often most consciously done visually. In constructivist terms, the visitor will first attempt to recognize a distinct element by its different characteristics and assimilate it in to a meaningful concept that he has experienced before.

Text is perhaps the most widespread symbol used at memorial sites. Written text and spoken language are artifacts, and having these distinguishes humans from other organisms. Words communicate abstract concepts to other people. Reading is a process of assimilation and the reader attempts to accommodate an understanding when an unfamiliar word is encountered. This accommodation is done by analyzing its roots and suffixes or searching through the dictionary. Text is often necessary to support the message of non-textual symbols in memorials.

Auschwitz and Sachenhausen Concentration Camp Memorials near Krakow, Poland and Berlin (Orangienburg), Germany respectively, both contain recurring painted black metal shapes. These patterns (shown in Figures B-1 and B-2) are representations of barbed wire. They recur in different variations at Holocaust sites throughout Europe. To many Holocaust survivors they are powerful symbols that represent terrible imprisonment and loss. After spending time at these sites and experiencing different

forms of information, a visitor without prior knowledge of the meaning of symbols like these can accommodate some significance identified by the memorializing group.

Philosophical tenets of constructivist ways of knowing the world

To this point the discussion about constructivist epistemology has included some terms and primary concepts. Theorists recognize the following four tenets (Figure 3.2) as concrete foundations of constructivist philosophy. The following tenets have been adapted from a synthesis by Doolittle and Hicks (unpublished paper 3) and their context within a larger framework is described in the following section.

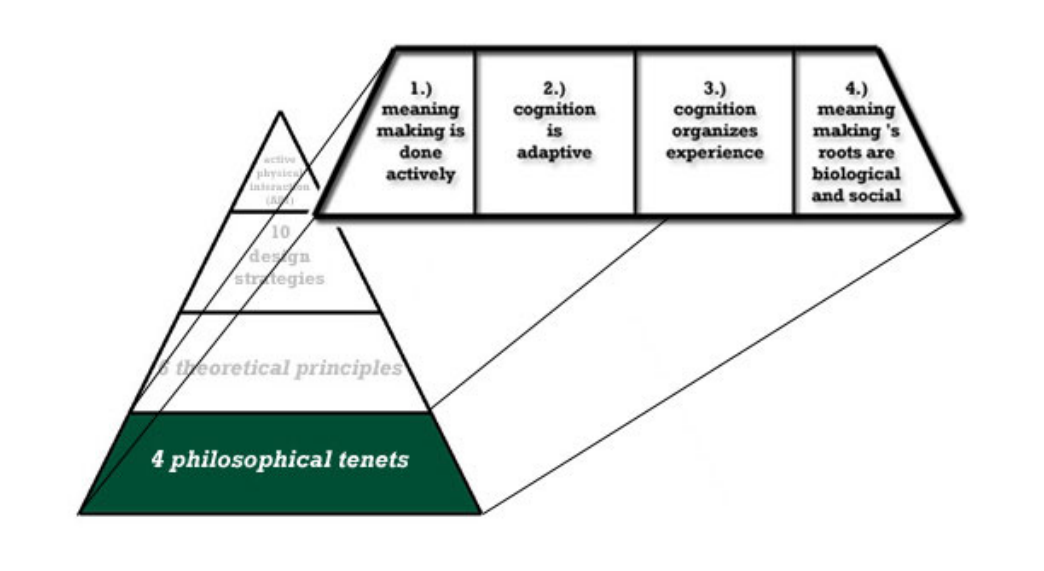


Figure 3.2. Philosophical tenets of constructivist framework, as adapted from Doolittle and Hicks.

1) Meaning making cannot be done passively. It is the result of an active process of cognition by the individual.

2) Cognition (creation of knowledge and making of meaning) is an adaptive process that seeks to make an individual's thinking and behavior more viable given a particular goal.

3) Cognition serves to organize, not an ontological reality (objective world), but the individual's experiential reality.

4) Knowing and meaning making have roots in biological/ neurological construction and in social, cultural, and language-based interactions.

Theoretical principles of constructivist philosophy

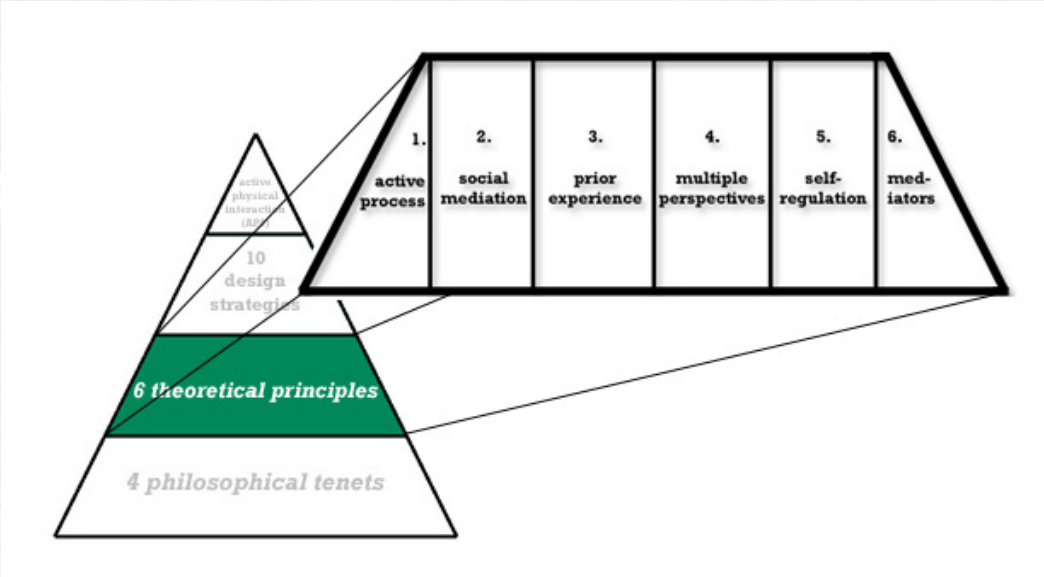


Figure 3.3. Theoretical principles of constructivist framework, as adapted from Doolittle and Hicks.

These six theories (Figure 3.3) represent a transition from a philosophical to a theoretical perspective within the constructivist point of view. They have been adapted from an application of constructivist philosophy towards curriculum and teaching development for social studies educators (ibid.) These theories adapt well towards understanding how visitors would use and create meaning at a war memorial. Constructing knowledge in the classroom context is in many ways synonymous to meaning making at a memorial. It also should be noted that for all of the following listings, "these principles are not canonical, but rather purposefully overlap and intersect." (Doolittle and Hicks, 6). The theories and descriptions below are tailored from Doolittle and Hicks (ibid):

1. *The making of meaning is an individually and socially active process*

An individual's understanding of places and events is constructed through contextual processes of social negotiation, shared discourse, and the creation of social structures. (Packer and Boicoechea, qtd. in Doolittle and Hicks 7). A memorial's environment is contextually responsible for the visitor's making of meaning. This principle is directly based in philosophical tenet 1.

2. *The making of meaning involves social mediation within cultural contexts*

"Any social context – a classroom [or memorial] for example – is itself the product of human language and social practice, not fixed but dynamic, changing over time, in what we call history" (ibid). The individual visitor and the community in which they are a part are mutually transformed by interactions with each other. (Berger and Luckmann, qtd. in Doolittle and Hicks 7). Also significant is that memorial places can

literally and psychologically be created by the interaction of visitors. This principle is directly based in philosophical tenet 4.

3. *The making of meaning takes place within the framework of the visitor's prior knowledge and experience*

"The most important single factor influencing [meaning making] is what the [visitor] already knows." (Ausubel, qtd. in Doolittle and Hicks 7). A memorial experience will be judged by prior understanding, based in: cultural knowledge, personal knowledge, metacognitive knowledge, and tacit knowledge. "Connecting this prior knowledge to new knowledge provides a basis establishing personal and social meaning." (Doolittle and Hicks 7). This implies that a landscape architect is obligated to try and understand cultural knowledge related to the memorial subject to best facilitate the connection to meanings. This principle is directly based in philosophical tenets 1 and 3.

4. *The making of meaning is integrated more deeply by engaging in multiple perspectives*

Since the constructivist philosophy says knowledge cannot be ontologically objective, it supports the idea that multiple perspectives of a memorialized person or event may be viable. Therefore, the memorial is responsible for striving to present historically accurate information, possibly from broader or multiple perspectives, while still remaining true to the goal of retaining and conveying identity of the memorializing group. " An emphasis on engaging in multiple perspectives creates a complex set of interrelated experiences to which an individual or group must actively construct intersections in order to make meaning from a potentially disordered set of circumstances" (ibid). This principle is directly based in all four philosophical tenets.

5. *The making of meaning is fostered by visitors being self-regulated, self-mediated, and self-aware*

By taking a more conscious (authentic) approach to moving through and interacting with a memorial space, visitors will facilitate for themselves a larger experience that strongly promotes deep reflection. "This deliberate regulation of knowledge construction is fostered by [visitors] being actively aware of their understanding. This awareness is based on both the feedback received from the environment (e.g., others, artifacts) and self-reflection on one's understanding and experience." (Kluwe, qtd. in Doolittle and Hicks 8). This principle is directly based in philosophical tenet 1.

6. Corollary – *landscape architects should serve primarily as guides and facilitators of meaning making, not dispensers of knowledge*

The purpose of attempting to re-look at how to design memorials to convey meaning is to avoid purely didactic, one dimensional places and rather to produce places that are adaptive to changing situations and that dynamically involve the visitor in deep, authentic, and multidimensional ways of creating meaning for themselves.

Constructivist findings

These descriptions of constructivism very explicitly connect individuals, as members of a larger community, to their immediate environment in a very specific way. As a philosophy it identifies knowledge and meaning making as an adaptive process inherent in people with the benefit of organizing and progressing through their environment. It is also presupposes that the individual must take an active and conscious role in order to construct knowledge and make meaning. The theories are more specific applications of philosophy. These six principles talk in a detailed way of how individuals make meaning. They state that meaning is contextualized by both the physical and social environment in which it is made and based on all of the individual's prior experience. Meaning making is also enhanced by seeking it from multiple perspectives and by the individual being self-regulated.

On one level an individual's survival depends on fulfilling these basic responsibilities. On a more practical and contemporary level, the concepts of environmental and self-awareness and responsibility are necessary to carry out and optimize those things that define and make valuable everyday existence as a human. It would seem that developing and applying a type of pedagogy based on these beliefs could remediate many of the criticisms addressed in the memorial literature review. To address this opportunity, the following goals have been synthesized here.

Goals of public war memorial design

The following are five goals synthesized from the research of the memorial and constructivist literature reviews and from the memorial case studies. They address criticisms in the literature review dealing with how many memorial sites relate meanings to visitors. These goals both summarize the literature review of the constructivist position and are an important academic link between constructivism and memorial design.

1. Memorials should encompass a physical environment that facilitates dynamic learning of the memorial message. These environments will acknowledge and facilitate personalized meaning making by visitors.

This goal comes out of a widespread question of how designers can leave "room for visitors to frame and understand the past

from their own perspectives…" (Fernandez 3). This is an intrinsic part of the constructivist educational pedagogy.

2. Memorials should facilitate flexibility of cultural contexts over time. These environments will recognize and accommodate adaptation as: a) generations of visitors change from processes of birth and death, and b) as socially relevant meanings and values change.

Savage says, "the world around a public monument is never fixed. The movement of life causes monuments to be created, but then it changes how they are seen and understood" (Savage 3). Architectural scholar Joseph Hudnut similarly declares immediately after World War I, that "a people in continuous and accelerated change covers its land with fixed and static symbols" (Hudnut 59) and criticizes rhetorically, "do not ask the monument what is hidden. The monument does not remember" (ibid 55). These raise important questions of a paradoxical nature. How can a built memorial keep from being static and maintain relevance with changing times?

3. Memorials should facilitate healing for visitors with primary connections to tragic events.

War memorials have a special ability to act as curative mediators between people and tragic events that have affected their society.

4. Memorials should encourage messages of evolving and responsible historical perspective.

"The past is contested terrain" (Fernandez 3). Similarly, Pitcaithley describes how "monuments, memorials, and anniversaries often are designed not to help us understand the past, but to generate support or evoke empathy with one view of the past to the exclusion of often competing views" (Pitchaithley 51). How can a memorial that reasonably represents a group's identity strive for accurate historical perspectives?

5. Memorials should foster deep meaning making that continues beyond the memorial experience.

One memorial scholar characterizes a tendency in building memorials by saying "…we encourage memorials to do our memory work for us, [and] we become that much more forgetful" (Young 3). How can memorial experiences foster meanings to be present in the collective memory of a community once its visitors leave the actual site?

CHAPTER 4 - A CONSTRUCTIVIST MEMORIAL FRAMEWORK

Preface to the Framework

Memorial critic Joachim Wolschke-Bulmahn says in an introduction to Places of commemoration that, "The relationship between commemoration and identity and gardens and landscape design have not yet been investigated in the same thorough and comprehensive manner" (Wolschke-Bulmahn 3). He is speaking directly to memorial places. This research document attempts to contribute in a meaningful way to this investigation. The literature review and case studies presented in previous sections form the basis of the position that I am taking. As introduced before, my position is that war memorial designers should implement constructivist-based design strategies, and specifically elements supporting 'active physical interaction.' My hypothesis is that war memorial elements that encourage a visitor to engage in a conscious and intentional manner support meanings constructed by the visitor consistent with the intent of the designer and the collective group who created the memorial. Using this framework will also create places that facilitate visitors taking an active and personal role in their making of meaning.

Wolschke-Bulmahn raises a valid question when he asks, "Is the visitor's reaction and perception defined by his or her predisposition alone, or can landscape design facilitate a common experience?" (ibid). My position assumes that war memorial design can facilitate a similar experience. This experience is not an exact one, equal among all visitors, but it can be guided by the intent of the designer. If a constructivist understanding of cognition, or making meaning from the environment is true, then it would seem to hold that certain types of physical interaction will generate personalized, deeper, and long-lasting understandings.

A set of strategies to be used in public war memorial design and created from a synthesis of the literature reviews and case studies is presented below (Figure 4.2). These strategies seek to address the five goals presented in the conclusion of chapter 3. These strategies are practical applications, and as such are grounded in a larger theoretical and philosophical context. In order to explain and give credibility to this context the strategies are presented as part of a whole framework. This framework is hereafter called the 'constructivist model', 'position model', or 'research model'. Its relationships are

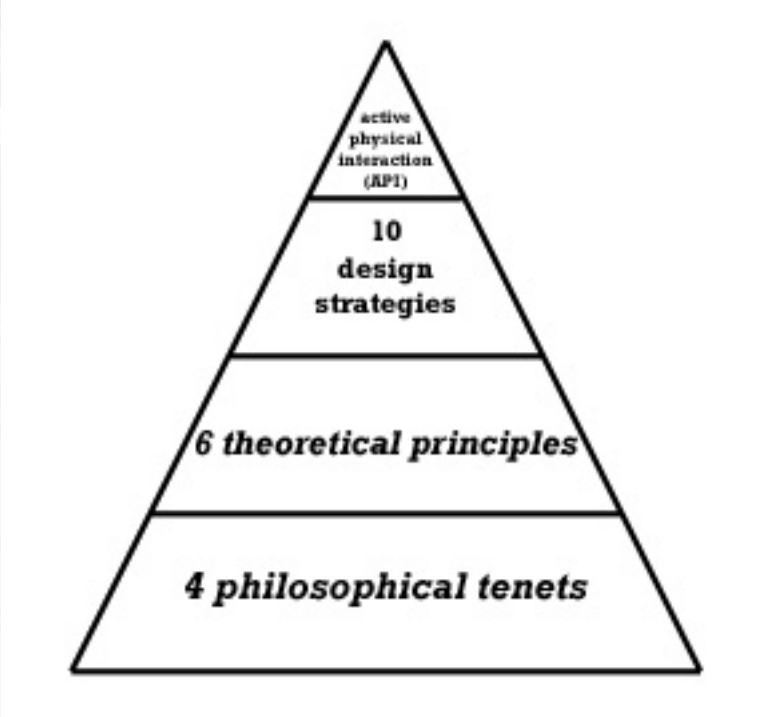


Figure 4.1 Overview of constructivist memorial design framework.

explained in the general diagram in Figure 4.1. Similar diagrams giving more detailed structure and information are provided with the discussion of each of its four levels.

This diagram represents the hierarchal relationship of each level starting with the basic philosophical tenets grounded at the diagram's base and growing more specific with each subsequent layer. The two ground levels of this framework (denoted in italics) have been presented in the previous section of the constructivist literature review. These two ground levels and the framework's overall structure have been adapted for this document in part from a paper by Doolittle and Hicks. These diagrams, the ten design strategies and specifically the active physical interaction strategy and its more detailed design criteria are unique to this position, and therefore are presented in a different section. In addition, elements of the philosophical and theoretical levels have been modified somewhat to fit with this specific framework, while their essence has been preserved.

Constructivist based design strategies

The following ten strategies make up the next layer of the constructivist model. They are practical applications for designing modern public war memorials. Their roots are in the theoretical and philosophical foundation that takes a clear stance on how individuals experience the environment around them. To a certain extent these strategies parallel constructivist strategies that have been developed for teaching in the classroom at any level. When applying these strategies to an actual design process a designer is a facilitator. Rather than developing class curriculum, he designs a space that allows visitors to connect and make meaning on their own. They are pedagogical in the same ways as the things that people learn everyday through regular work and recreation. The process for making meaning that individuals undertake at a memorial is virtually identical to the process that a student uses in an ideal classroom situation. The context is what is varies. This contextual difference can be seen as the primary difference between

the job of a landscape architect designing the memorial, and the architect creating the school. Existing classroom design could perhaps do a better job as well to meet the student's needs and better accommodate an ideal learning environment.

Another difference in public war memorials is that they are important and less ordinary places in a society. As described in the memorial literature review, public war memorials remind their community of important, and often tragic, events in order to preserve particular messages for the present and future generations. These memorials preserve identity of those that create them. People visiting such a place do so to make meaning in some way about that event. This includes gaining a general knowledge about the event itself as for tourists, or for those

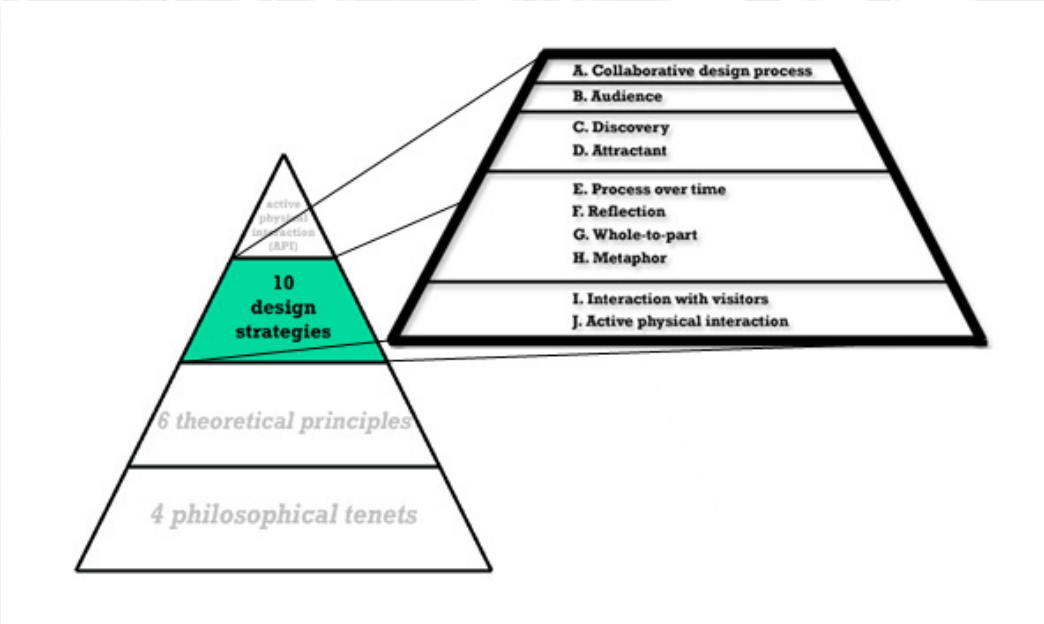


Figure 4.2. Ten design strategies of the memorial framework, grouped by similarity.

more closely connected to create understanding from wartime tragedy. So, the meaning making concept put forth by constructivism intimately fits with the reasoning that drives people to build these places. Therefore designing war memorials in such a way that optimizes the way people construct meaning and that relies on awareness and responsibility will only strengthen the meaning made in a specific memorial's context and will speak to some of the concerns that are prevalent today about existing memorial sites.

Using these strategies in a successful manner involves careful integration in ways and places appropriate for creating synergy between the site, the memorializing group, and the visitors. Some of these strategies are already evident to different degrees in some existing war memorials. Constructivism as an application accepts that "constructivist techniques may be undergirded by a decidedly non-constructivist epistemology…" (Howe and Berv 20). Traditional and other strategies don't necessarily have to be excluded, but can be considered for appropriateness in conjunction with other tools. The creators of a memorial cannot foresee all effects of a design on behavior of visitors,

nor can they ever predict all actions or understandings that the visitors will undertake while experiencing a memorial. The best that any designer can do, who necessarily brings his or her own unique perspective and style to any project, is make a real attempt to merge the needs of the people involved with the elements of the design and these design strategies in a sensitive and project specific way. To that end, this issue is addressed more specifically with the *collaborative design* strategy.

The diagram above shows these ten strategies arranged in five different subgroups. While they all overlap in some ways with each other, they are grouped according to the closeness of how they relate in concept and application. The active physical interaction strategy listed last will be discussed in more detail in the subsequent section of this document, and is one of the most important strategies that can strengthen memorial meaning making

A. Designers should utilize collaborative design process that involves dialogue between many players with interests in the memorial's creation

Where the previous design strategies primarily implicate actual design decisions of creating form, this one relates more with the larger process of design itself. Viewing landscape architects as "cultural resource managers" allows for what Fernandez describes as "mediat[ing] the relationship between the viewer and the past" (Fernandez 3). Using a collaborative design process proactively seeks out the help of multiple parties involved from the initial steps in developing the program, concept, and actual design of a war memorial. The primary justification for this collaboration is that it can collect and organize ideas, experiences, and needs of the community that the memorial will represent. In effect, this process facilitates organizing the group's identity towards the memorial creation.

The collaborative process also supports accessing a greater range of expertise to approach design issues of a multidisciplinary nature. This type of approach is becoming more common in contemporary memorial projects. The Oklahoma City National Memorial purports to be a "democratiz[ation] of a memorial process… for the first time in the history of the country" utilizing a task force whose primary goals included integrating "extensive input from families, survivors, and the public." (O'Connell 70). The project currently under development to coordinate redevelopment on the former World Trade Center grounds with appropriate memorial features is utilizing a similar method to create a "coalition for the rebuilding of lower Manhattan" (nynv.aiga.org.) These types of large-scale collaborative efforts were born in part in response to "remembering the controversy when many veterans felt left out of the design process for the Vietnam Memorial" (O'Connell 70).

Further, the design process on larger scales like that of the community is never a singular, individually guided one. Instead it is

a continuous discourse between designers and community, designers and government agencies, and other interested parties. This strategy also mimics directly the process of social concept formation and negotiation by members of a community. This type of dialogue can easily encounter serious obstacles to meeting the intended goals. It is necessary to approach the different parties in a manner that strives for efficiency and utilizes those trained for community involvement.

The collaborative process does not intend to take away in any form the need for design created by qualified designers like landscape architecture and architecture professionals. Instead it means to broaden the invaluable connections to and perspectives of those that the memorial intends to be for and represent. This strategy is directly based in the theoretical principle that landscape architects are mediators.

B. Designers should tailor the design of the memorial with an understanding of the cultural perspectives of potential visitor groups

This strategy centers on the constructivist belief that designers are facilitators of meaning making processes, not conveyers of objective or static perspectives of meaning of the memorial subject. Constructive educators strive to guide learning by first understanding the learner's views. "Awareness of [learner's] points of view helps [designers] challenge [visitors], making experiences both contextual and meaningful" (Brooks and Brooks 60). The constructivist designer must recognize the relative nature of knowledge among communities and allow for viable individualized perspectives.

Doubtless is that memorial form is different from classroom curriculum in significant ways. The primary difference is that teachers, who are omnipresent in classroom sessions, can alter lesson plans at virtually any point when the need arises. On the other hand, landscape architects cannot manipulate design programming and form practically once the memorial is built and in active use. One remediation for this found in direct use of utilizing elements of direct physical interaction, where visitors are directed or provided an opportunity to physically and psychologically alter the memorial form over time in meaningful ways. Another method of connecting the potential design-visitor gap is through measures taken by the designer to understand those involved in the memorialization process, including those involved in their initial creation and potential visitors. The latter of these tasks is often very challenging and it is necessary to realize that these perspectives will change over time. A large portion of those invested with direct interest in the design of the memorial will also visit the site. Through the interactive process of determining what their experiences are with respect to the memorial subject and their interests in the memorial's programming, the designer can then apply this knowledge towards forming a place that attempts to match in different ways with their perspectives. The designer can also

use his own cultural knowledge, gather other perspectives from newspaper editorials and the like, and perhaps in some instances to actively survey other community members to search out and attempt to determine how to connect the views of the potential memorial users and the site design. This strategy is also directly based in the theoretical principle that landscape architects are mediators.

C. Designers should encourage discovery

Constructivism is in many ways about encouragement. In the context of a war memorial encouragement is about providing for the act of discovery. Discovery in design exists where a landscape that lets the visitor find the important message. In a literal sense discovery lets them journey to the markers or spaces between that manifest that meaning. At the heart of this strategy is the constructivist idea of "helping [visitors] to search rather than follow…" (Brooks and Brooks 102). This idea reflects a widely perceived problem within American school systems from secondary to the collegiate level today. It is also found in many national sites of memory that use overly didactic and leading elements. Discovery should be implemented by providing appropriate challenges to the visitor while also encouraging continuation of the search process. The ritual journey archetype can support this type of search, guide, and discover process. Encouraging discovery leads to increased confidence in the visitor's understanding of the memorial messages. This in turn brings heightened cognitive activity (assimilation and accommodation) and subsequently, heightened emotional response and attachment. The benefits also include the visitor 'getting more' out of the memorial visit, taking much stronger ownership of the meaning that they make through the entire memorial experience (Brooks and Brooks 96), and creating interest and energy in the memorial experience. It also facilitates building more personal commitment to the meanings made which will engender longer-lasting reflection about the memorial subject beyond the individual's actual memorial visit (ibid 30). The principles behind encouraging discovery directly relate to those behind the *reflection* strategy as well, and these two strategies overlap in critical ways. This strategy is directly based in theoretical principles of self-regulation, social mediation, and that meaning making is an active process.

D. Designers should provide an attractant that engages the visitor's interests and encourages them to participate with the site

The central idea behind this particular strategy is found loosely in the constructivist idea in education of emerging relevance (Brooks and Brooks 37). Emerging relevance sees a primary challenge of encouraging authentic meaning making, reflection, and discovery at a memorial, and does so by providing a 'hook' that catches the

interest of a visitor and encourages them to enter the site and become more actively involved. Initial challenges or mysterious elements can trigger simple questions and curiosity that draw the visitor into the memorial site psychologically in a more mindful way as much or more than by physical means. This strategy is directly based in the theoretical principles that meaning making is an active process and that it involves social mediation.

E. Designers should allow for interaction as a dynamic process over time and space

Constructivism recognizes accommodation of knowledge as an active process. Piaget, a psychologist widely respected for his research in stages of child development and responsible for the term accommodation said, "scientific thought, then, is not momentary; it is not a static instance; it is a process… of continual construction and reorganization" (Piaget, qtd. In Brooks and Brooks 25). Scientific thought is appropriately paralleled to meaning making in the case of memorials. Because, for a variety of reasons, individuals, "process the world in different ways" (Brooks and Brooks 115) and because they, "must be given time… to seek relevance and the opportunity to reveal their own points of view" (ibid 38), the memorial's design should incorporate spaces that transition from more active participation, such as an active physical interaction element (strategy E), towards spaces that facilitate reflection. By providing areas that intentionally slow the pace and that are more meditative through a qualitative change in sensory information, the visitors will have opportunities to look back on their recent experiences to make sense of them and ask the questions they did not consider while doing the activities. Failure to provide such spaces can significantly decrease the potential of meaning made during and after a memorial visit. Consideration can be given as to whether or not to incorporate site guides who could answer questions, or other visitors appropriately into these reflective breaks to further increase the potential for accommodation. This strategy is directly based in theoretical principles that meaning making is an active process, and that it involves self-regulation and social mediation.

F. Designers should foster reflection

Reflection is at the root of how a person gains real understanding towards a subject. Reflection is based in the idea that "cognitive growth occurs when an individual revisits and reformulates a current perspective" (Brooks and Brooks 112). It embodies the ideas of adaptation and deep understanding. Both of these describe modification of concepts or beliefs by carefully reconsidering when new information is presented that allows them to contextually rethink what it they know. It also understands that information is not

objective and absolute, and while subject to the measure of viability within a social group, is also subject to some extent to different interpretations based on different perspectives. This is comparable to the constructivist idea of negotiation discussed before. Reflection is achieved by presenting elements that challenge the visitor's ideas through honest and viable situations. The types of questions that may literally or suggestively come about through a design that fosters reflection also "challenge [visitors] to look beyond the apparent, to delve into issues deeply and broadly, and to form their own understandings of events and phenomena" (ibid 110).

Ritual theory calls reflexivity the ability of visitors to "reflect on what the [behavior] means to them in terms of beliefs and identity" (Calorusso 8,9). She includes the activity of leaving artifacts or mementos at site destinations, and by providing spaces at which to pause (ibid). These challenges probably most often should not be contradictory or misleading in character, which could easily seem to undermine the meaning of the memorial, but rather should pose presentation of ideas in a way that thoughtfully encourages reflection. Reflection and resulting adaptation is at the heart of the way that social constructivist views communities advancing through time. Like the *discovery* strategy, reflection is similar in that both can lead to a visitor engendering an authentic, or highly personalized experience that leads to stronger understandings and attachment to their memorial meanings. This strategy is directly based in theoretical principles of self-regulation, multiple perspectives, prior experience, that meaning making is an active process, and that it involves social mediation.

G. Designers should present the overall memorial message in whole-to-part fashion

"Learners of all ages are more engaged by concepts introduced by the [memorial design] and constructed by the learner from whole-to-part" presentation (Brooks and Brooks 48). This idea supports the structuring of cues and information within a memorial in a context that begins more

Figure 4.3. Bayeux Commonwealth Cemetery, Normandy, France: personalized individual grave markers with perennial plantings

broadly, and becomes more specific, while still avoiding potentially linear and static formats. Visitors are "most engaged when problems and ideas are presented holistically rather than in separate, isolated parts" (ibid 46). This also is based in the idea that individuals "seek to make meaning by breaking the wholes into parts that they can see and understand" (ibid 47.) and allows for more personalized appreciation and access to meaning making by allowing for "multiple entrance points" to the subject. How this is done can vary dramatically depending on the site constraints and intent of the designer and memorializing group. This strategy is directly based in theoretical principles of prior experience and that that making meaning is an active process.

H. Designers should design with meaningful metaphors and symbols

"Encouraging the use of metaphor is an important way to facilitate learning." To continue, "metaphors help people to understand complex issues in a holistic way…" (Brooks and Brooks 116). Metaphors hold much similarity to symbols, which are described previously in part 2. Symbols are abstractions of larger ideas that cannot be adequately communicated through verbal or other mental conceptions (Barrie 12). Symbols have traditionally been utilized in all kinds of meaningful places to help structure their form. Today symbols and their constructivist counterpart, the metaphor, remain a diminished yet crucial element in meaningful places. They convey deep meanings in a concise way not possible in other forms of communication. This strategy is directly based in theoretical principles that making meaning is an active process, and that it involves social mediation and prior experience.

I. Designers should provide for appropriate interaction between site visitors

Like the interaction strategy above, designers should consider whether or not providing for forms of direct contact between various visitors to a war memorial is appropriate for meaning making. The social constructivist philosophy is firmly grounded in the interaction between members of a community with each other. While developing detailed criteria of how to facilitate various types of multiple-user interaction is not a subject discussed in detail in this document, it is worthy of further consideration because of the obvious value of making meaning between two or more people. As mentioned in the *reflection* strategy, a more passive interaction can occur by one visitor observing another. Deliberately providing a space where visitors can observe others ahead or behind them in the spatial organization is one intriguing way of providing for interaction. Indeed, something is to be learned from watching others use a place that the visitor himself can intimately experience, and among the reactions to these types of observation can be creating

anticipation for another moment in the memorial experience. In other ways more direct interaction can be fostered by providing spaces large enough or that facilitate traffic flow where visitors communicate directly by talking, coming in close proximity to one another, touching, or other methods. Which one is chosen is dependent on the intent of the memorial's designer and those with interest in its creation. According to Brooks and Brooks, "discourse with one's peer group is a critical factor in learning and development" (p 111). There is strong research towards the benefits of 'cooperative learning' towards the development of meaning and knowledge. Such dialogue, among other benefits, can allow for others in the conversation to have their conceptualizations about war events and effects broadened or confirmed through exposure to other perspectives. The potential emotional effects of such interaction should be weighed against other human factors at particular locations within the memorial. For example, when visitors are emotionally involved with personal feelings around a tragic event like loss of a family member in wartime, it might be appropriate to design for private spaces that allow the visitor some time in relative isolation. When social interaction is fostered it could occur under an unlimited range of possibilities that includes momentary word exchanges, to lengthier discussions that reflect on thoughts about the memorialized event, to guided experiences with a trained leader for a portion of the memorial experience. This strategy is directly based in the theoretical principles that meaning making is an active process and that it involves social mediation and multiple perspectives.

J. Designers should provide for elements that support active physical interaction

Constructivist war memorials should provide opportunities for visitors to become involved in physical activities that engage them in a dynamic relationship with the memorial site. This strategy is focused on specifically in a later section, but this is an appropriate point to begin a description of its basis in constructivist theory. In educational terms, active physical interaction (being coined in this document) might best parallel "hands-on" learning. "Constructivist teachers use… manipulative, interactive, and physical materials" to provide students an opportunity to, "generate questions and hypotheses from working with the materials" (Brooks and Brooks 104, 116). The context of this question-generating purpose is specifically towards the introduction of new subject matter to students in what is referred to as the "learning cycle". This is an adequate goal of active physical interaction (hereafter called API) as well, but constructivist thought goes much further in the profits of interaction. This strategy benefits from intersections with several other design strategies being argued here, but still remains a distinctive and significant entity for the constructivist memorial model.

Interaction, as defined by the Merriam-Webster online dictionary, is, "mutual or reciprocal action or influence." (http://www.m-w.com/cgi-bin/dictionary, keyword interaction). Active physical interaction implies a dynamic relationship of give and take between the visitor and a physical portion of the memorial site. In the presence of an API element in a 'constructivist memorial', the site is completed by the action of visitors. Use of API elements should consider how to provide the visitor with a choice of not engaging in the element directly if they feel compelled not to while still integrating it powerfully into the site design and suggesting to visitors that the element is an important part of the memorial experience.

The most immediate benefit of designing with API elements is that it facilitates a direct and focused connection to construction of meaning relative to the memorial messages. This connection directly relates to benefits of the discovery and reflection strategies. API is distinct from more common passive forms of interaction like walking, making observations, and other ways of experiencing a site in a non-mindful manner. In fact, it is quite possible 'be at' a memorial and not be consciously connected to its physical surroundings. This is common when humans become involved in repetitive acts such as highway driving, but can occur in more extraordinary places as well. Active physical interaction does not imply any high level of aerobic activity. Instead it refers to a range of actions that involve holistic perception through kinesthetic and haptic senses like touching, or listening, as well as visual means of perceiving in a conscious and focused manner. API's potential goes even further. After becoming aware of the element, it becomes a process that manipulates the built form of the memorial by processes of addition, subtraction, or rearrangement. In these optimal cases, visitors can quite literally help to *construct* the memorial. The possibilities in which an API element could manifest are conceivably endless and will not be constrained here. With the further discussion of API later, some short case studies will be presented of sites that use elements that could be characterized as using API.

Another important benefit of API use is that it indirectly allows the individual to interact with other visitors. This interaction can occur by way of other visitors observing him in the act of API. There are some important benefits from this type of connection alone. In the case of the Vietnam Veterans Memorial in Washington, D.C., a visitor without direct connections to the war events watching veterans and family members make rubbings of the name of a family member can give a new perspective into the emotional and cognitive meanings of that memorial and the memorial subject. It can allow, without verbal communication, another powerful dimension to the memorial experience.

A third benefit also relating to indirectly interacting with API elements is achieved without the presence of those other visitors. By perceiving elements that seem to have a spontaneous or

impermanent nature, or that seem to be irregular, the visitor can recognize his ability to consciously take part in the interactive process. The cairn, a 15th century term of Welsh and Scottish origin, acts as an exemplar of an API element. The cairn also has significance in Jewish history, and is a pile of stones that acts as a memorial or landmark. Traditionally they are made of nearby stones, placed one at a time. Seeing such a pile of stones will normally cause recognition of its non-natural, and non-ordinary occurrence, and draws the attention of those that pass close by. If information is available, including prior knowledge, for the reason of the cairn's existence, the visitor will have the choice of participating in construction of the mound. Recognition of his role in the long-term aim of building the pile by many unrelated people can engage some powerful cognitive and emotional connections that foster a deep reflection about the memorialized subject, if he is aware of that subject. It can help create an awareness of the temporal as well as spatial qualities of the memorial. The visitor can see himself in the larger context of the people who have and will connect with the experience at that memorial site. Bringing flowers and other artifacts to the grave of a relative at a cemetery is a traditional process that fits within the API framework. This process is also utilized at spontaneous memorials that form after occurrence of a tragedy within a community.

These last two benefits of using API elements both realistically mimic the social constructivist notion that concepts, knowledge, and tools are created by interactions between members of a community. The contributions of each visitor reflect the additions of individuals in the society, and when taken as a whole element, the product of many visitors over time makes up the socially constructed product that continues to adapt to new conditions. It would not be appropriate to limit the possibilities of API to strictly additive processes as with the stone pile. API could also include subtractive processes of taking something away from the site, or of reorganization, where the visitor manipulates an object (or one of many) and then replaces it in some altered state to the same or a different position than it was before. This strategy is directly based in theoretical principles that meaning making is an active process, and that it involves social mediation and self-regulation.

The active physical interaction strategy

The development of the constructivist memorial design model presented 10 strategies. These strategies are for landscape architects to selectively and appropriately use in building war memorials to optimize the dynamic process humans utilize for constructing meaning and knowledge. This discussion describes the characteristics of the active physical interaction strategy (Figure 4.4) in more detail. A set of design criteria rooted in the constructivist philosophy and guiding implementation of API elements in war memorials will also be explained.

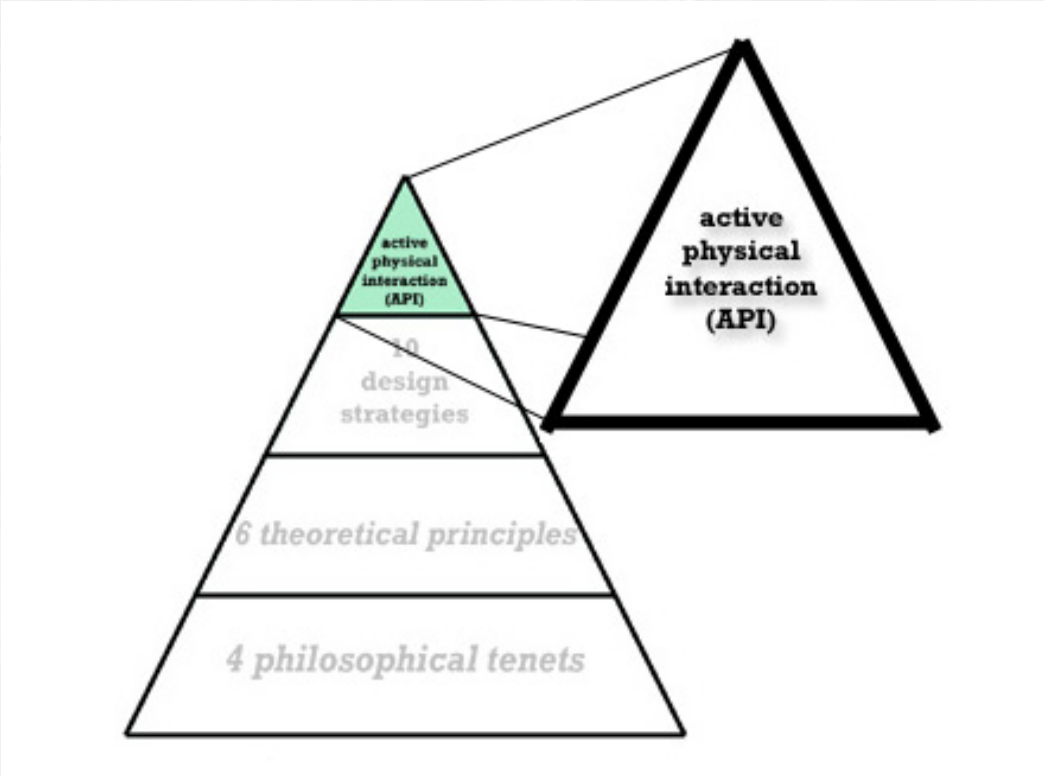


Figure 4.4. Active physical interaction strategy of the memorial framework.

Active physical interaction is a dynamic process that involves the visitor in an act of physical manipulation of memorial form. This strategy has been singled out as both a concise exemplar of the constructivist application to memorial design, and because of the emotional and cognitive power personally experienced in meaningful landscapes that utilize elements characteristic of active physical interaction. This strategy relies most upon the theoretical principles 1, 2, and 6. These are, (1) *The making of meaning involves social mediation within cultural contexts*, (2) *The making of meaning is an individually and socially active process;* (6) *The making of meaning is fostered by visitors being self-regulated, self-mediated, and self-aware.*

The most direct goal of an API element is to deepen the meaning constructed by a visitor at a memorial site. The visitor that would interact at a typical public war memorial site would vary from a war veteran, identified here as an event participant or their immediate relatives or friends. These types

of visitors have a primary experience with the event being memorialized. Other visitors would be further removed from this memorial subject and include observers, or those that do not have direct connections to the event. In either case these visitors bring different types and amounts of "prior knowledge" with them to the memorial site. Some visitors will be at a memorial site for their first time while others make routine visits. The API element is designed to have relevance that can respond in different ways to different levels of prior knowledge or site experience – it is meant to be dynamic. By fostering reflection through forms and symbols that pose questions to visitors intrinsically seeking to make meaning an API element can be a tool that fosters adaptation of meanings over time.

API elements encourage holistic perception of the memorial environment. The API element does this first by drawing the visitor towards it through haptic cues in addition to but also beyond traditionally visual American modes of physical experience. Senses that let an individual "have strong feeling for space and for spatial qualities [are] kinesthesia, sight, and touch" (Tuan 12). These senses primarily lend awareness to the qualities of the individual's environment. They are the main means of exploration, and are often enriched by other senses like smell and taste. It is these modes of perception, particularly touch, that emphasize the moment and form strong bonds to the meanings that are connected through that process. Kinesthetic characterizations of ritual space support several factors of API. Like haptic sensory perceptions, kinesthetic perception leads to "a heightened emphasis to the sensations and movements of the human body…" (Calorusso 8) which "in turn create certain psychological moods" (Bell, qtd. in Calorusso 8). She goes on to support the idea of API elements by saying that "designers can… encourage users to interact physically with the features of a design in order to provide a more powerful experience," and "this interaction with the environment allows visitors to feel and express their connection to and solidarity with a larger community" (ibid).

Reflection and accommodation of experiential information from within different environmental types allow the transformation of an ordinary space into what writers like Steele, Tuan, and Jackson individually refer to sense of place. Place differs from space because of the context of personal and social experience and is grounded in human ways of perceiving. Providing richer sense of place is a major impetus of choices made in design fields like architecture and landscape architecture, which regularly create spaces to be inhabited by people. Some practitioners do this better than others, and 'constructivist memorials' attempt to do this by designing for the holistic approach. The visitor on his first visit to a particular memorial is encouraged to be mindful of sensory clues that define the place and, with choices he makes, lead him to the API element. Upon recognition of these clues the person becomes psychologically involved. Cognitive decisions based on these

mindful perceptions lead him to make choices of physical movement. For example, seeing a flowering bed of roses may remind him of his grandmother's rose beds and he may then inhale in the process of re-presenting that experience in his mind. The act of breathing may act to draw him closer towards the flowers he sees.

Where an API element first works to guide the visitor towards the element and gain awareness for the space around it, it then encourages more direct and literal interaction. At this point the person may choose to physically manipulate the element within a range of expected (or unexpected) behaviors. But as before, a cognitive processing of sensory information precedes the choice of physical action. The manipulation, choosing a stone, feeling it, and placing it on the pile in the case of the cairn, is the result of an attempt to satisfy curiosity spawned by the element's form. In some cases, prior knowledge and/ or expectations the visitor brings leads them to interact with the API element. This may be true of those visiting the Vietnam Veterans Memorial who come to remember a loved one whose name is inscribed in the Wall. In this case the person, who after searching out the veteran's name in the registry locates this position in the Wall and then takes a rubbing, may not be led by curiosity as much as a more direct goal of commemorating the loved one.

It is interesting to note how an infant's needs are different from an adult's. During early development the child's visual senses are still developing. His visual space lacks permanence, and he searches his world through touch with his skin and particularly his mouth (ibid 20). His mother's breast, the source of food, is symbolically a meaningful place in his world. This relationship makes a surprisingly good metaphor to the API element in multiple ways. "The mouth adjusts to the contour of the mother's breast. Sucking is a most rewarding activity, for it requires participation by the different senses of touch, smell, and taste (ibid). In this case the infant searches via the haptic senses. He then physically interacts with it in a goal-directed manner – because he is hungry. His manipulation leads him to his goal.

Design criteria

The following are a set of design criteria related to decisions made when creating, identifying or siting an API element. They have been derived through an analysis of several memorial sites including the Virginia Tech military memorial ("The Rock") and the context within which they exist. A range of literature that encompasses the constructivist design theories and strategies, contemporary and traditional ritual research, and sense of place writings grounded in practical understanding of human existence in natural and built landscapes has all reinforced these questions' framing. These criteria are a set of tools that make up the finest level of the hierarchy presented with this constructivist memorial design model. They relate specifically to designing elements

utilizing active physical interaction, though there is overlap that applies to other strategies as well.

The discussion regarding ritual emphasized that there are traditional formal similarities among a large number of cultures from different times and geographic locations. This listing of questions has been distilled in large part from many of these universals. Nevertheless, when designing a war memorial it's important to recognize the cultural context it is fitting into when considering how these questions relate to specific choices. Cultural context is defined by a particular group value system that has been reinforced, socialized, and evolved over time.

This listing is not exhaustive and should be appropriately modified according to project particular conditions. The API element can effectively be a marker conceivably located at any place within a memorial site. This could be a central element located, in traditional terms, at the most sacred place in a procession. In order to provide for this flexibility, the questions are intentionally somewhat open-ended. A simplified listing of these questions is included in an appendix at the end. These criteria have been organized around three main categories as follows: element exposure, element form, and usage.

1 – Landscape position

The first set of questions relate to choices in the element's exposure within the site. The logic of asking these questions is to determine how the visitor becomes aware of the presence of the element. These choices can generally regard not only visibility from a range of positions, but also emphasis by making a visible element more or less prominent. Many of the characteristics addressed in these questions are important to archetypal ritual spaces as well. Tuan and Steele both emphasize the organization and judgment of space around the fact that, "man is the measure of all things" (Tuan 34). This agrees with the constructivist perspective that knowledge is based on human perception. Tuan continues by saying that spatial organization is based on two connected ideas, first related to the human body posture and structure, and second to the distance between individuals. These relationships are based out of a natural conformation with "biological needs and social relations" (ibid). Tuan points out that spatial positioning is described by terms like 'under' and 'beside' and originate from descriptions that relate the position of an object or space to the individual. Measurement conventions like 'feet', 'furlong' (the length from the tip of the middle finger to the elbow) and 'cubit' all describe quantities of space relative to human proportions. These associations were recognized over 200 years ago by Immanuel Kant, recognized by many as the father of constructivist thought, who said, "our geographical knowledge, and even our commonest knowledge of the position of places, would be of no aid to us if we could not, by reference to the sides of our bodies, assign to regions the things so ordered and the whole

system of mutually relative positions" (Kant, qtd. In Tuan 36). It is through this humanistic perception that sense of place is grounded because it unifies physical space and human experience. Many of the specific questions below find a basis in this constructivist, human based way of perceiving the world. Specific questions include:

Topography: Is it higher or lower relative to surrounding spaces? This question relates to the entire site itself in its surrounding context, and to specific elements within the site like an API element. Tuan suggests, "whatever is superior or excellent is elevated, associated with a sense of physical height" (ibid 37). Steele calls "potent elements" those topographical features that must be addressed in an effortful way (Steele 72).

Destination: Is the element at an endpoint of a progression through space? Is the element within a pathway? Is it 'touchable' from within a path? *Directive features*: does it utilize elements that guide the line of sight (such as a strong axial orientation or alee)? How are formal qualities at the element location relative to other points within the site?

Some important notes apply from Calorusso's synthesis of ritual characteristics with specific attention to archetypal qualities of path. Recall the distinction between path and place, and the model of origin, path, and destination. *Continuity* is an idea that relates to creating a "consistent psychological/ emotional experience for the user" through progression. This is done while maintaining similar patterns of style and material choices by manipulating factors like views of the site destinations and scale of the spaces around the path. *Origin* relates to the way and direction through which a visitor enters the site and subsequent thresholds that may characterize progressions between spaces. *Destination* relates to how the formal qualities defining a space change as the path moves closer to the destination. Similar to this is *directionality*, which describes different typical organizations of path progression through increasingly sacred places. These include: axial path, split path (multiple origins, one destination), radial path (many paths, one destination), and circumambulating path (paths encircle a destination but do not connect to it). These paths create "a psychological impression that mirrors its physical form." Two additional 'path' forms tend to reflect more of a lack of path by offering ambiguous directional cues, multiple choices, multiple destinations, and unclear path definition. These types are: grid path, and segmented path. (Calorusso 6,7). From the constructivist standpoint, combining some more formal and some less formal path organizations would likely provide the kind of structure that would allow a more desirable personalized experience. Purely formal path types provide structured organizations that reinforce specific behaviors and do not foster as much interpretative flexibility.

Spatial Relationships: Is the position of the element relative to the front, side, or back of the overall site? *Enclosure*: How exposed or intimate is the element? (Including, distance to enclosing structures? Height of enclosing structures? Density or transparency of enclosing structures?) *Horizon*: How is the position of the element related to the horizon? Is the horizon visible from the element? *Surprise*: Amount of time between awareness of the element and arrival at the element? *Personal and social space*: Is there room (out of the way of other activities) to freely engage the element? Is this space, if any, usable for more than one person? (Is this done together, or are they separated?) Is there space and structure provided to watch the element or people using it from intermediate distance? *A general quest*ion: Do any of these characteristics vary significantly throughout the day?

Tuan discusses the importance associated with centeredness. In architectural terms this relates to orientation of a space within the community. The rear or backsides of a space, as with behind a person, tends to identify with the past, or the profane (as with service entryways and back doors). The front or ahead is "vivid and much larger than the rear space that we can experience only through non-visual cues" (ibid 35-40) and is symbolic of the future. These spatial concepts relate to the visibility of the horizon. Connecting to the sky and seeing where it meets the ground connects the individual to the future and gives a sense of empowerment.

Some more notes apply here from Calorusso's synthesis of ritual characteristics with specific attention to archetypal qualities of spatial definition. *Identity* is a quality that makes clear that the entire site exists as a whole, and has clear boundaries distinguishing inside and outside the overall site and spaces within. This is done

Figure 4.5. Sachsenhausen Concentration Camp, Berlin, Germany: original barbed wire fencing.

through "consistent vocabulary, in terms of its materials and architectural techniques." (Calorusso 5,6).

2 – Element form

The second set of questions involves choices of the qualities of the element itself. They primarily are a set of criteria regarding contrasts of different sorts. Specific questions include:

Environmental contrast: How do visual elements (size, color, brightness and reflectivity, etc.), auditory elements (sound character and volume), and olfactory (smells) at the element position contrast to their surroundings? Steele refers to these contrasts as "odd combinations of features" (Steele 74).

Inciting curiosity: How recognizable is the element(s)? Is it mysterious, or does it raise questions by challenging a previous conception? Does the element associate with values, have connotations or evoke particular feelings? Steele emphasizes mystery and "unknown contents" (ibid), or those difficult to grasp or understand, in landscapes creating strong sense of place. He describes social and cultural factors in mysterious settings as including those that are sacred (defined here as connected to the metaphysical), that have a particularly interesting known history, and that have a non-understood and unexplainable history (ibid.) Perception of mysterious elements can encourage a imaginative response triggered by fantasy.

Materiality: What are the qualities of the element in terms of density, texture, malleability, and how do they contrast to the surroundings? Is the element natural or synthetic? What is the relationship of these materials throughout the overall site?

Spontaneity: Is the element intentional (originated by the designer?) or spontaneous (originated by users)? Is the element temporary or permanent?

Meaning: How does the meaning(s) of the element relate to the memorial subject?

And as before, is there significant variation throughout the day of any of these qualities?

3 – Visitor Experience

The third set of questions primarily involves the users of the site. Specific questions include:

Site Visitors: *Who*: Who uses (or will use) this site? (How do they vary by age, gender, race, etc?) *Usage*: What other types of activities exist (or will exist) on this site? Posture: Does the user change body position (by crouching, kneeling, laying, or other

kinesthetic responses) to approach the element, or to directly interact with the element? *Contribution*: Does the visitor bring a tool or artifact to the element? (Do they bring it themselves? Do they leave it there?) Does the user physically help make or alter the element? (If so, how?) And as before, is there significant variation throughout the day of any of these qualities? Questions regarding characteristics of potential users of the memorial are practical, and facilitate customizing design programming and features to the prior knowledge and expectations of those the site represents and will serve. As discussed prior, posture relates to what Tuan describes as spatial values (people's position, relative to front and back, up and down, etc)(Tuan 34).

Some important notes should be adapted from Calorusso's synthesis of ritual characteristics regarding how people use memorial spaces and an API element in particular. *Formalism* describes the degree of order in the structure of a space or ritual activity within a place. The degree of formalism expressed will influence the socially constructed rules or "code of conduct" that an individual will apply to the behaviors he undertakes. *Traditionalism* relates to the degree that a specific activity undertaken is influenced by expectations and prior knowledge which will in part guide the behavior carried out within a memorial and with respect to an API element. *Sacral Symbolism* relates to a distinction in spaces as more or less profane or sacred that leads visitor's to perceive them as "special and authoritative" (with those more sacred) and accordingly act in more formalized ways (Calorusso 2,3). J.B. Jackson raises an interesting and relevant question regarding the source of sacred spaces, relative to the idea of the "grove" in 18th and 19th century America. Here he emphasizes the difference between sacred spaces, which exist because "we" put them there, and those that are sacred because of inherent qualities of the place. (Jackson 77). Posture can be manipulated through what is called *framing* and *kinesthetic* characteristics. Framing is the way "some activities or messages set up an interpretative framework within which to understand subsequent or simultaneous acts or messages" (Bell, qtd in Calorusso 8). Kinesthetic characteristics relate to making visitors more aware of the position and movements of the body through space. Both of these two characterizations can be manipulated by utilizing challenges that require increased effort and through spatial arrangements that require physical changes of body position. (Calorusso 8). *Reflexive* characteristics relate to contribution, and are described as those (directly connected to API elements) that foster self-reflection through depositing of "ex votos" or artifacts. Contribution also relates to the characterization of *indeterminacy*. This describes "gaps", or ill-defined social expectations of user behavior in the structure of the memorial place. They provide some of the opportunities for visitors to "interpret the ritual as they see fit "in order to cultivate personally meaningful experiences"" (Calorusso, and Coleman and Elsner, qtd. in Calorusso 9).

CHAPTER 5 - POSITION CONCLUSIONS

Conclusions

Built memorials are places that communities construct to represent important shared ideas and experiences. War memorials are a traditional memorial type built to commemorate people, tragic or heroic events, and ideals associated with wartime. These groups create memorials out of a common need to answer questions about their existence, to remind them of their common bonds, and to define and express aspects of their own identity for the future.

Social constructivist philosophy explains that individuals and groups of people create understandings of non-objective worlds through their own experience. These communities organize their world through negotiation of ideas and creation of artifacts, like language, that allow them to interact and function as a whole.

Many war memorials today face loss of relevant meaning in changing times, inability to adapt to evolving historical perspectives, and a lack of ability to engage visitors in a deep and authentic way of creating meaning and understanding.

Designers should utilize the ten strategies of this document's *constructivist memorial design model* to create new public war memorials that remediate many of these issues.

The following is a listing of five goals synthesized from the memorial literature review and case studies that the ten strategies seek to fulfill :

1. Memorials should encompass a physical environment that facilitates dynamic learning of the memorial message. These environments will acknowledge and facilitate personalized meaning making by visitors.
2. Memorials should facilitate flexibility of cultural contexts over time. These environments will recognize and accommodate adaptation as: a) generations of visitors change from processes of birth and death, and b) as socially relevant meanings and values change.
3. Memorials should facilitate healing for visitors with primary connections to tragic events.
4. Memorials should encourage messages of evolving and responsible historical perspective.
5. Memorials should foster deep meaning making that continues beyond the memorial experience.

Figure 4.1 illustrates the layers that make up the constructivist memorial design model. There are four philosophical tenets that form its foundation. The tenets are:

1. *Meaning making cannot be done passively. It is the result of an active process of cognition by the individual.*
2. *Cognition (creation of knowledge and making of meaning) is an adaptive process that seeks to make an individual's cognition and behavior more viable given a particular goal.*
3. *Cognition serves to organize, not an ontological reality (objective world), but the individual's experiential reality.*
4. *Knowing and meaning making have roots in biological/ neurological construction and in social, cultural, and language-based interactions.*

The following six theoretical principles are based in the tenets above.

The making of meaning:

1. *is an individually and socially active process*
2. *involves social mediation within cultural contexts*
3. *takes place within the framework of the visitor's prior knowledge and experience*
4. *is integrated more deeply by engaging in multiple perspectives*
5. *is fostered by visitors being self-regulated, self-mediated, and self-aware*
6. *Corollary – landscape architects should serve primarily as guides and facilitators of meaning making, not dispensers of knowledge*

The practical applications of this model are the following ten strategies for designers to implement in creating a public war memorial.

Designers should:

A. utilize collaborative design process that involves dialogue between many players with interests in the memorial's creation
B. tailor the design of the memorial with an understanding of the cultural perspectives of potential visitor groups
C. encourage discovery
D. provide an attractant that engages the visitor's interests and encourages them to participate with the site
E. allow for interaction as a dynamic process over time and space
F. foster reflection
G. present the overall memorial message in whole-to-part fashion
H. design with meaningful metaphors and symbols
I. provide for appropriate interaction between site visitors
J. provide for elements that support active physical interaction

The active physical interaction strategy is the most instrumental strategy in meeting the position's five goals, though it is best used in conjunction with the other nine. Implementing this strategy facilitates holistic, reflective, and authentic meaning making by providing visitors opportunities to activey interact with important elements. By facilitating this kind of connection visitors physically and psychologically impact parts of the built site and allow it to evolve over time.

Appendix A includes a summary of design criteria developed to implement the active physical interaction strategy.

CHAPTER 6 - IMPLEMENTATION OF THE POSITION IN A DESIGN PROJECT

Introduction to the design project

The creation of a design is the final stage of this thesis project and was used to test the research model's design strategies as a particular way to build public war memorials. The kind of memorial these strategies will create encourages users to take active roles in their construction of meanings, leads individuals to stronger and longer lasting understandings, and allows memorials to maintain relevance in a changing society. This design project makes the theory-based position research much more practical through the creation of a conceptual place. This segment presents this design project.

To make this presentation, this section describes one person's dream for a memorial which became the site for this design project. Several drawings and supporting descriptions explain the design and the specific process used to develop the design proposal. Conclusions then reflect on the relationship between the design project and the research model, conclusions about the research model's strategies as a whole, and the relevance of

Figure 6.1. Warm Hearth Village memorial site, facing northwest.

the strategies for building public war memorials that support more personalized experiences.

This design project is a Dutch World War Two memorial. This memorial commemorates the liberation of the Netherlands by Dutch Resistance and Allied forces. The site for this memorial is the Warm Hearth Retirement Village in Blacksburg, Virginia.

Evaluation of the entire thesis is based on how well this design project implements nine of the following ten strategies of the research model. The first strategy, *collaborative design process*, is not being tested because time constraints were too limiting to adequately address the range of issues within this strategy.

Designers should:

A. use a collaborative design process (not being tested)
B. tailor the design of the memorial with an understanding of the cultural perspectives of potential visitor groups
C. encourage discovery
D. provide an attractant that engages the visitor's interests and encourages them to participate with the site
E. allow for interaction as a dynamic process over time and space
F. foster reflection
G. present the overall memorial message in whole-to-part fashion
H. design with meaningful metaphors and symbols
I. provide for appropriate interaction between site visitors
J. provide for elements that support active physical interaction

Description of design process

The strategies of the position model are strongly implemented in the Dutch War Memorial because of the particular design process that was used. A diagram explains the different layers that make up this process (Figure 6.2).

Research of the story of Dutch occupation and a site inventory and analysis began in November 2002 and this collection continued until the preliminary design was completed. The information produced by this search was revisited continuously in different ways to provide the inspiration for creation of a particular kind of place and experience. In order to get a wider perspective of the events in the Netherlands during Nazi occupation and during wartime in general, three main sources proved very valuable. The initial search revealed that there is little written specifically about the Netherlands during World War Two. Henri Van Der Zee's Hunger Winter (1998), Louis de Jong's The Netherlands and Nazi Germany (1990), and Paul Verhoeven's film *Soldier of Orange* (1979) are three sources from Dutch citizens that provide important insight into the Netherland's War experience. Interestingly, the information these resources provided covered different parts of the Dutch War story and came from three distinct voices, but were extremely similar in their "feel" and content. Interviews with Dr Webe Kroontje, the man whose dream this memorial fulfills, also strongly corroborated this other information. This research process was guided in part by the fifth goal put forth in the constructivist position,

that memorials should foster responsible historical messages. It is important to note that these primary sources closely parallel each other, which suggests a high degree of "historical" accuracy.

Once some of these Dutch experiences were collected the processes of site selection and analysis within the Warm Hearth Village began, leading shortly thereafter to the design development. This development involved: determination of a program, development of concepts, design of schematic alternatives, creation of a schematic plan, creation of a site model concurrent with production of a preliminary plan, creation of supporting drawings, formal presentation to reviewers, analysis of the preliminary plan, and refinement and production of final design plan and supporting drawings. Feedback was given after the formal presentation and from interaction with the advisory committee throughout the entire project. Each step of this staggered process coincided with gathering and relooking at the historical and site analysis and an examination of how the nine strategies from the position model had been implemented.

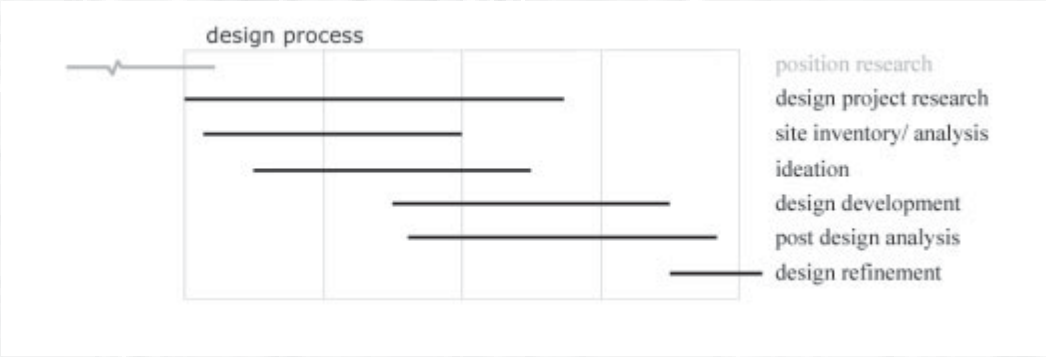


Figure 6.2. Diagram of design process used for the Warm Hearth Memorial.

The dream for an Allied memorial

The unique dream of a Dutch immigrant and War survivor formed the impetus behind this memorial project. The historical context presented here is discussed further during the description of the concepts and design elements.

Dr Webe Kroontje and his wife moved from the Netherlands to the United States in 1948 after surviving five years of occupation and liberation during World War Two. The couple met after several days of standing in line for American visas. Upon being told that no more were available for travel that year, Dr Kroontje insisted they be allowed to make their journey then and promised the administrator that someday he would repay the American people for helping his country and for allowing him and his new wife to start a life in the United States. After convincing the consulate and moving to New York, Dr Kroontje went on to earn his PhD and eventually served over 20 years as a soil science professor at Virginia Tech. This fulfilled the first of three lifelong goals that Dr Kroontje set to accomplish after the War's end. He and his wife also promised to find some way to repay to the American people who supported them after the war. Founding Warm

Hearth Village realized this second dream. Warm Hearth is a progressive retirement community of 210 acres that serves a range of ages and health care needs. It was born out of the idea that the elderly need an environment in which to live that

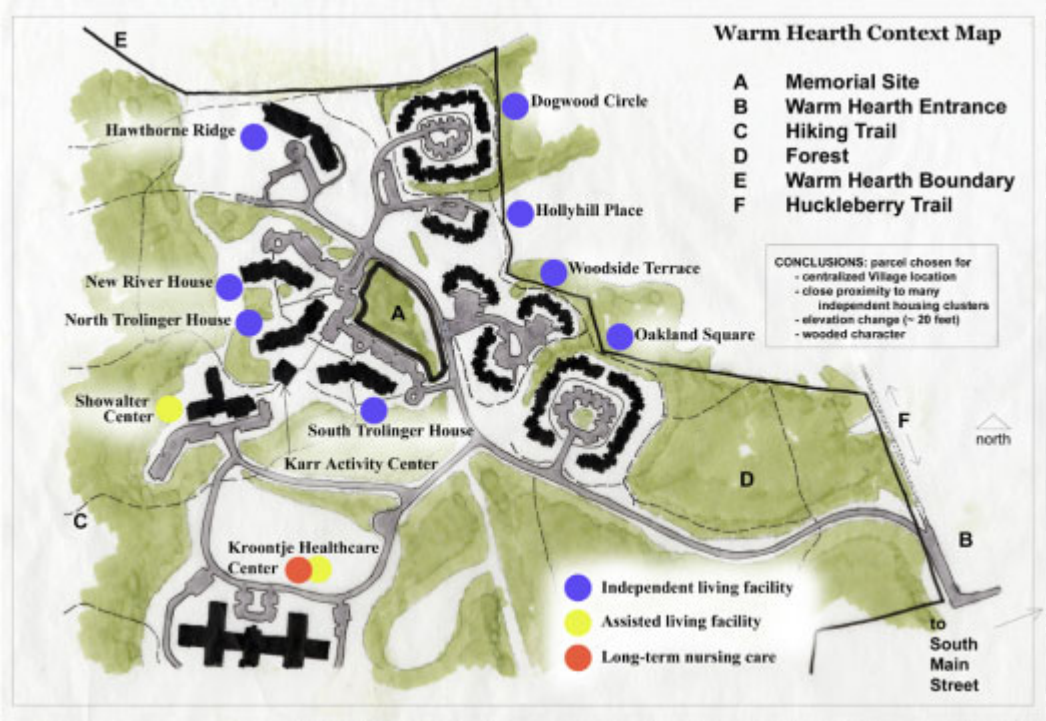


Figure 6.3. Warm Hearth Village context map.

places a high value on older generations and that is flexible enough to evolve to meet new demands.

Dr Kroontje's final dream was to commemorate the efforts of the soldiers that freed their home country. This built public memorial to the Allied liberators has been in planning for many years. As a professor he shared stories of his life experiences with thousands of students that enrolled in his classes. He frequently led design competitions to solicit ideas from them for how to build his World War II memorial. It is this final and most important dream that is the impetus for this thesis design project.

Over several visits to Warm Hearth Dr Kroontje shared his experiences with me about the War in his country and about his entire life. These formed the basis for an understanding of what this memorial was supposed to be about and influenced many underlying themes incorporated in its design. Though strategy A, *collaborative design process*, of the position model was not being formally tested through this design, interacting with Dr Kroontje to understand his experiences and dreams made up the essence of the goals behind this strategy.

Site context and analysis

The design of a Dutch World War Two memorial may seem unusual when placed in a retirement village in Virginia. The blue-gray mountains that mark the Blacksburg horizon are alone enough contrast in comparison to the flat and engineered landscape that is the Netherlands. But

it is this juxtaposition that creates unique opportunities for telling a particular kind of story based in Dr Kroontje's dream. Ultimately Warm Hearth's natural and built qualities closely guided the design of this Dutch memorial and the result is a place intimately grounded in the context of the land and connected to the residents of the Village. These are the basic requirements for creating sense of place.

To prepare for the act of designing, an inventory and analysis was used to select a single site within Warm Hearth Village. This search was driven by criteria from the position paper and other practical needs, and especially those of the elderly Village residents. Once the particular site was chosen more visits were made and a refined inventory and analysis was conducted at the smaller scale. Information was gathered from several sources but particularly from personal walks through the grounds, the Village's website (www.retire.org), and interviews with Dr Kroontje. A local design firm provided necessary base maps. My first site visit occurred in December 2002 when I walked some of the several miles of trails covering the Village's land. Figure 6.1 shows a panorama of the memorial site.

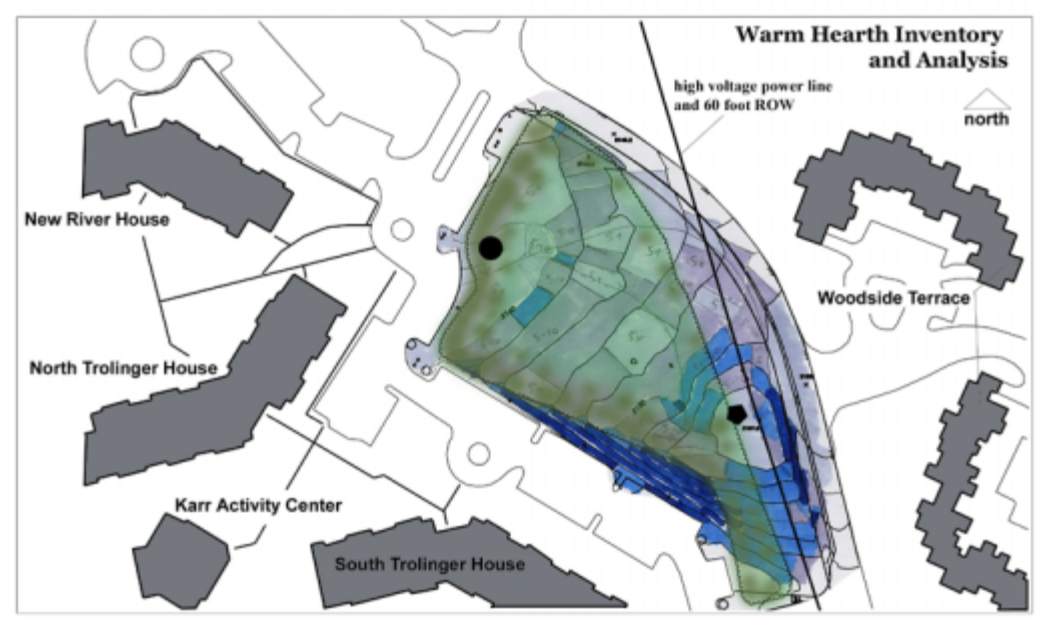


Figure 6.4. Site inventory and analysis diagram.

For practical and research position needs, it was necessary to determine early on the target audience of the built Memorial. Figure 6.3 identifies the types of residential housing throughout Warm Hearth, the relationship to existing hiking trails and the forest, and the centralized site chosen for the memorial. This location, with respect to the independent housing that surrounds it, was chosen for its potential to become a centralized outdoor landmark for the Village. A formally programmed outdoor node is an amenity the Village currently lacks.

The first site inventory and analysis diagram (Figure 6.4) more closely shows the relationship between the memorial site and the surrounding living clusters. Today the site is forested, just as most of Warm Hearth. The interior of the site is composed of mature hardwoods like oak and hickory, with the

outer edge consisting mainly of younger pine. There is a 20-foot difference in elevation between the southeastern and northwestern areas of the site. The most extreme slopes occur on the south and eastern corners surrounding the high point. A much more gradual slope connects the high and low points through the site's center.

Several conclusions drawn from the inventory and analysis are shown in Figure 6.5. This site should be developed as a node of outdoor activity but in a way which maintains the wooded character found throughout Warm Hearth. The naturally occurring elevation changes provide several unique design opportunities and the potential to create a strong connection between the context of the site

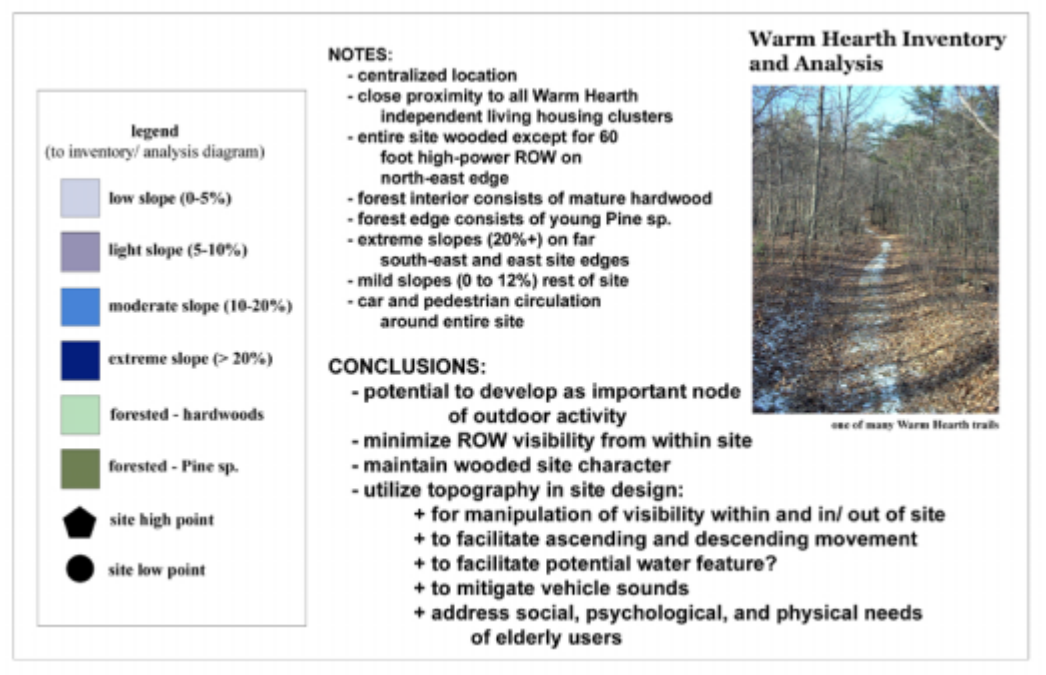


Figure 6.5. Site inventory and analysis legend and conclusions.

and the built place. All of these conclusions provided important understandings that are reflected in the creation of the design concept and the design itself.

Design concept and ideation

A particular understanding of the experience of the Netherlands' occupation and liberation became the essence of this memorial's main design concept. This concept is best described as sharp contrast: contrast between light and dark, exposure and enclosure, above and below, and others.

A story of contrast is prevalent throughout literature about the Dutch liberation. Utter joy swept across the Dutch people as news of German capitulation was broadcast over hidden radios in back rooms across the country. Upon hearing these reports, thousands of citizens crept up in unison to peer into the streets from behind dark curtains. Many of them were met by the sight of their red, white, and blue tripartite being rolled from windows and raised atop buildings for the first time in five years. The meaning of this symbol took hold instantly, and thousands of imprisoned citizens rushed into the streets in a passion of cheering, hugging, crying, and disbelief – once again as free men and women.

As a concept, sharp contrast clearly takes form as a dichotomy between two distinct areas within the memorial. This relationship is shown in the diagrams in Figures 6.6 and 6.7, and is described further in many post-design analysis diagrams presented in the following section. On the one hand, there is a looped outer path, characterized by a wandering forest trail that steadily increases in elevation and passes through five waypoints. This Forest path symbolizes oppression by a dark occupying force. The Forest's interior counterpart is a very different experience, and takes the form of a celebratory liberation garden. It is a bright, safe, and colorful place. Despite the contrasts between these two areas, there are transitional connections between that unify and give meaning to experiencing this place as a memorial.

This concept has the opportunity to make use of existing site topography in a meaningful way, as illustrated in Figure 6.8. A single visitor entry is another important characteristic of this layout. Upon reaching the interior of the Forest, a visitor has a choice of movement but must travel along the outer path for a short distance before entering the Garden. In this way movement is both controlled and flexible. There are paths and pauses along this route. The geometry is highly formalized but broken up by irregularities throughout the site.

Utilization of this concept and its fit in the site came about by overlapping the layers of information synthesized through the design process. Ideas about Dutch War history and schematic

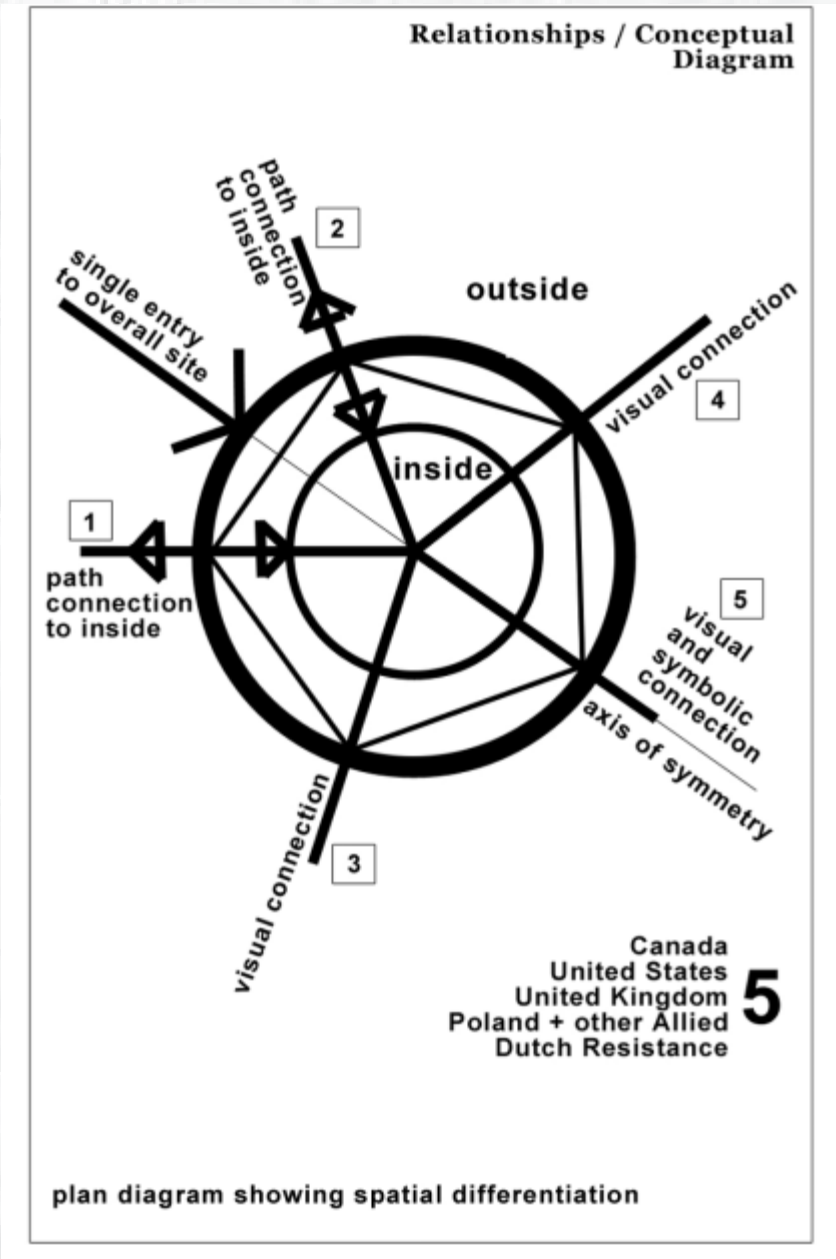
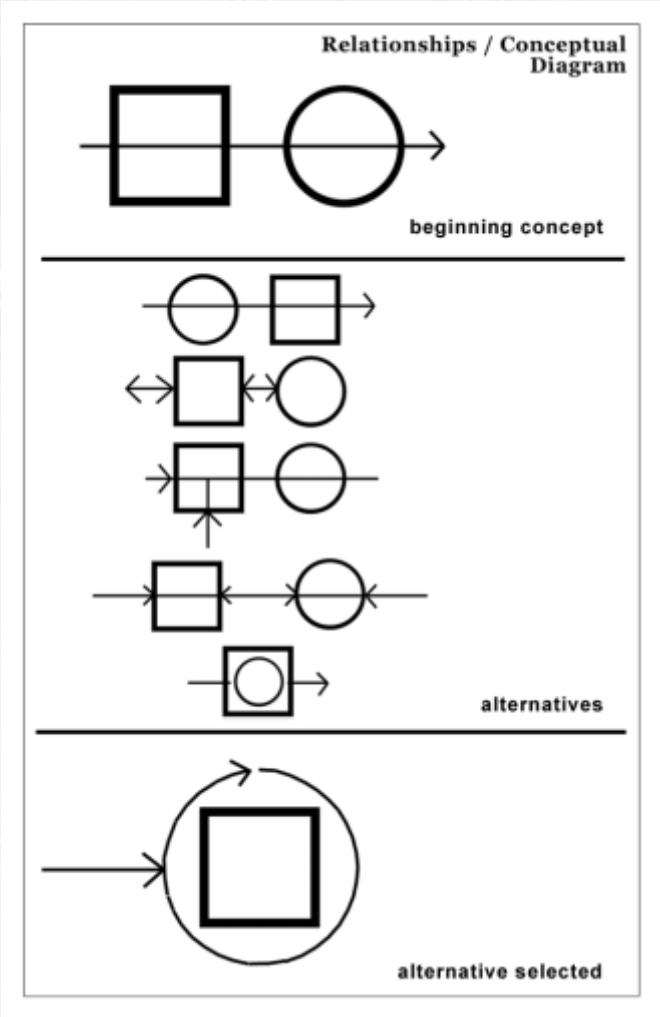


Figure 6.6. Concept diagram one.

alternatives based on qualities of ritual process and the position model's strategies of *discovery* (C) and *memorial experience as a process* (E) were laid on a site plan and manipulated to reveal different possibilities. This 'layering of layers' encouraged a strong connection with site, relevance with historical meaning, and implemented the important elements from the position research.

This final design concept evolved through a series of concept iterations. Figures 6.9 A-D show some of these alternatives. All of them utilize different ideas of entry, path versus place, and ways of separating or connecting the two distinct ideas of the design. Figures 6.10 A-D show sketches of ideas for the memorial created at different points of the overall design process.

Other themes integrated in the design came from Dr Kroontje's repeated description of many phenomena as biological cycles, and similarly, of the value of



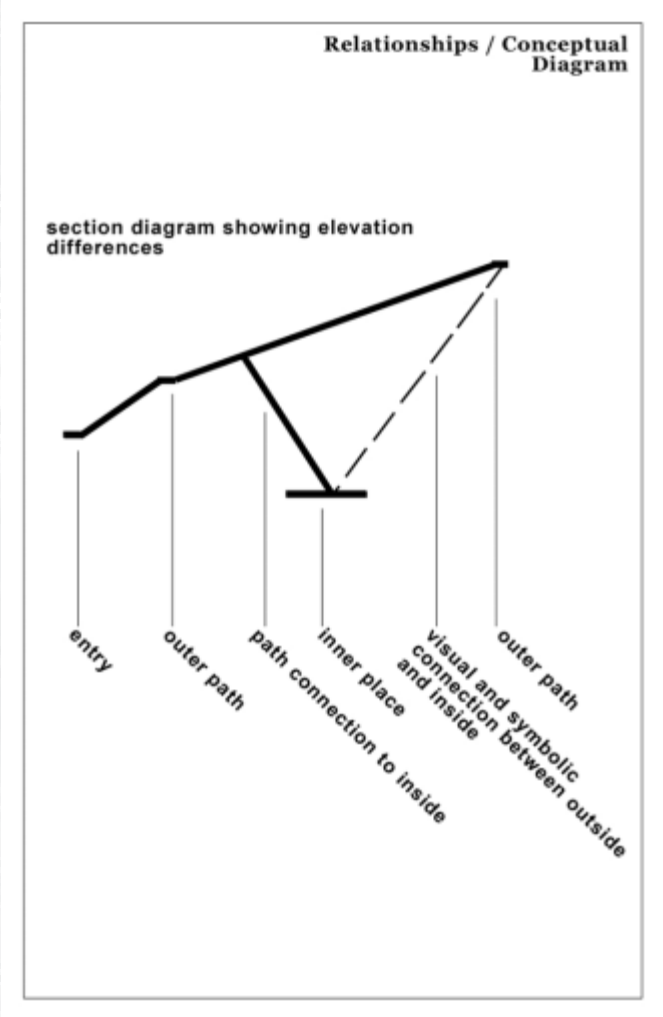
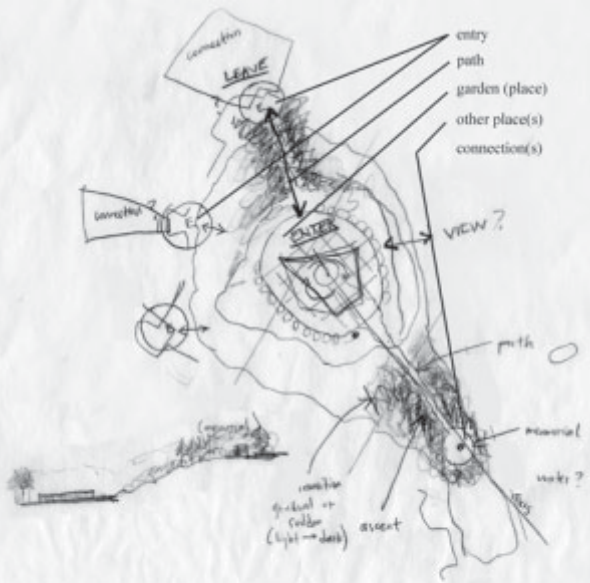
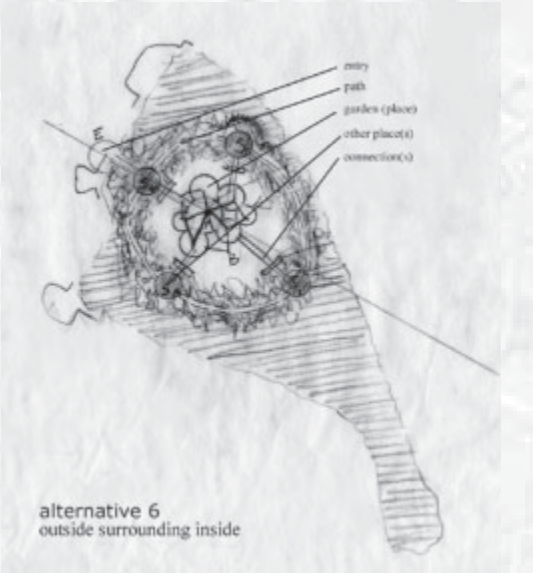
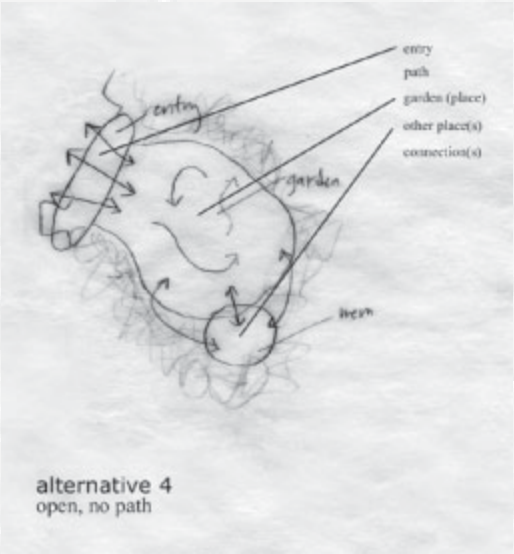


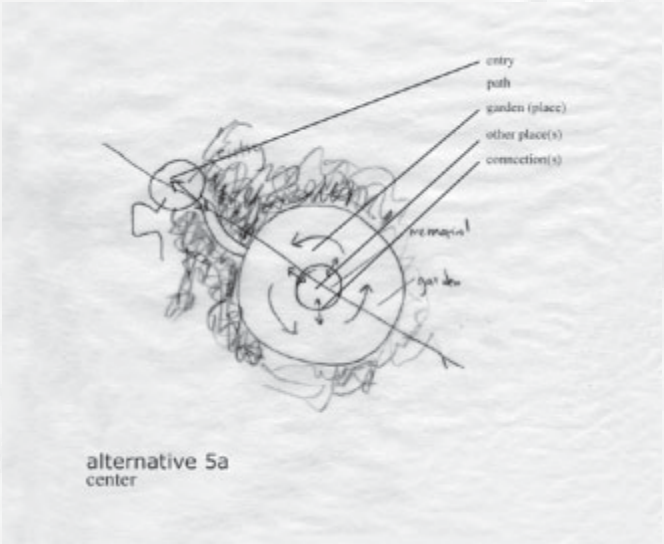
Figure 6.7 (left). Concept diagram two. and 6.8 (above). Concept diagram three.

living things. The idea of cycle is reflected in the looped path and the way that a singular entry and exit allows the visitor to be both same and changed from the memorial experience. In plan view the design takes on an organic and cell-like form, having a sort of nucleus with concentric edges emanating outwardly. This place is designed to have seasonal successions and to literally grow over time. Natural processes of decline and renewal represent the rebirth of the Dutch people in the springtime of 1945. Finally, this place serves elderly people who find themselves, as described by Dr Kroontje, at the end of their own life cycle. This memorial concept is of a place that encourages reflection and remembrance of their own lives over multiple site visits. This memorial intends to be an *active* and central outdoor node of the Warm Hearth Village.

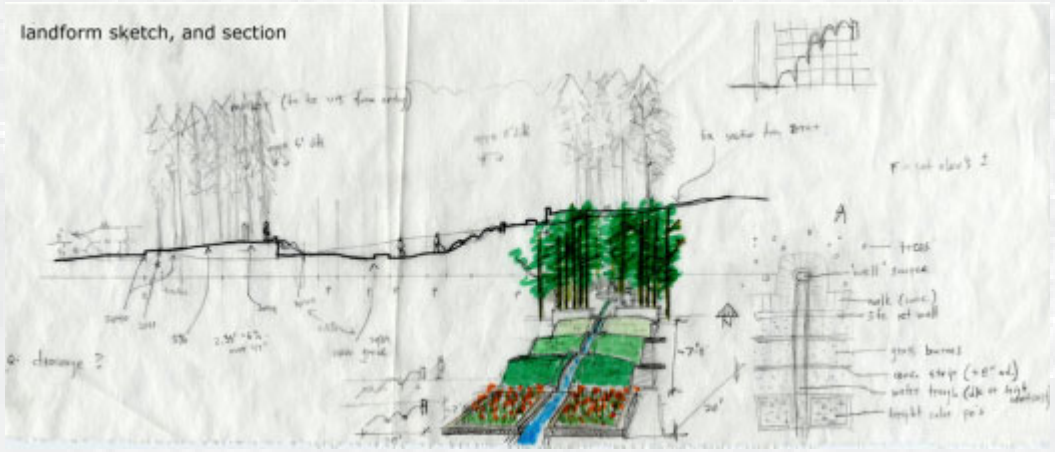


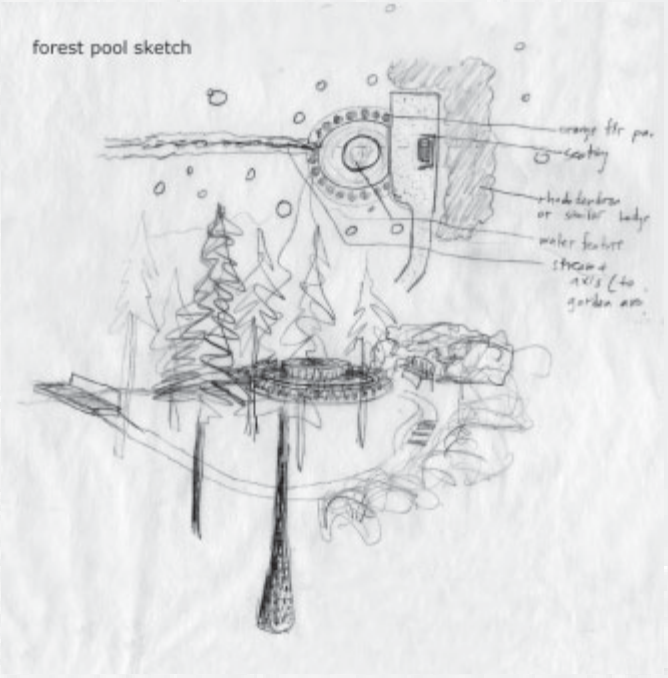






Figures 6.9 A-D (this page). Conceptual alternatives





Figures 6.10 A-D (this page). Sketches from throughout the design process.

Figure 6.11. Master plan and enlargement key for the Warm Hearth Village Dutch Memorial.

Design

This section illustrates the elements of the memorial design in more detail by describing the way they relate to the nine strategies of the position model being implemented and tested. This description begins with a general overview.

Overview

Figure 6.11 shows the master plan and enlargement key of the memorial's final design. This drawing identifies four major design elements: the single entry path, the outer Forest boardwalk, the inner Liberation Garden, and the pathways connecting the two areas that represent the liberation efforts of the Allied forces. It also identifies four numbered squares that correspond to one of the four detailed plans (Figures 6.12-6.15). Seven additional diagrams (Figures 6.16, 6.18-6.19, 6.22-6.23, and 6.25-6.26) illustrate how each strategy is implemented in the memorial design. The refinements made since the preliminary design are briefly pointed out in the following section, but are incorporated in these final design drawings.

Waypoints

There are five waypoints along the outer Forest boardwalk. These five small places represent five groups responsible for liberation of the Netherlands. Four are 'Allied', representing the Canadian, American, British, and Polish and other coalition forces. The fifth and highest waypoint represents the efforts of the Dutch Resistance, those native people who fought and suffered to regain their freedom. The first Allied waypoints (one in each direction leading from the entry path) are gateways to paths that descend into the Liberation Garden. The other two Allied waypoints are symbolic connections that provide overlooks into the Garden area. The Dutch Resistance Waypoint is also an important symbolic connection.

STRATEGY B

Strategy B, illustrated in the analysis in Figure 6.16, says *designers should tailor the design of the memorial to the perspectives of those predictable visitor groups*.

audience

The memorial site at Warm Hearth was chosen to provide a high level of access to the Village's independent residents. The more immobile and dependent residents venture outside much less regularly and will travel to the memorial via bus and with the supervision of their caretakers. The memorial will also serve resident's families and potentially local school groups. Virginia Tech horticultural therapy students could work with elderly residents in cooperation between the two programs.

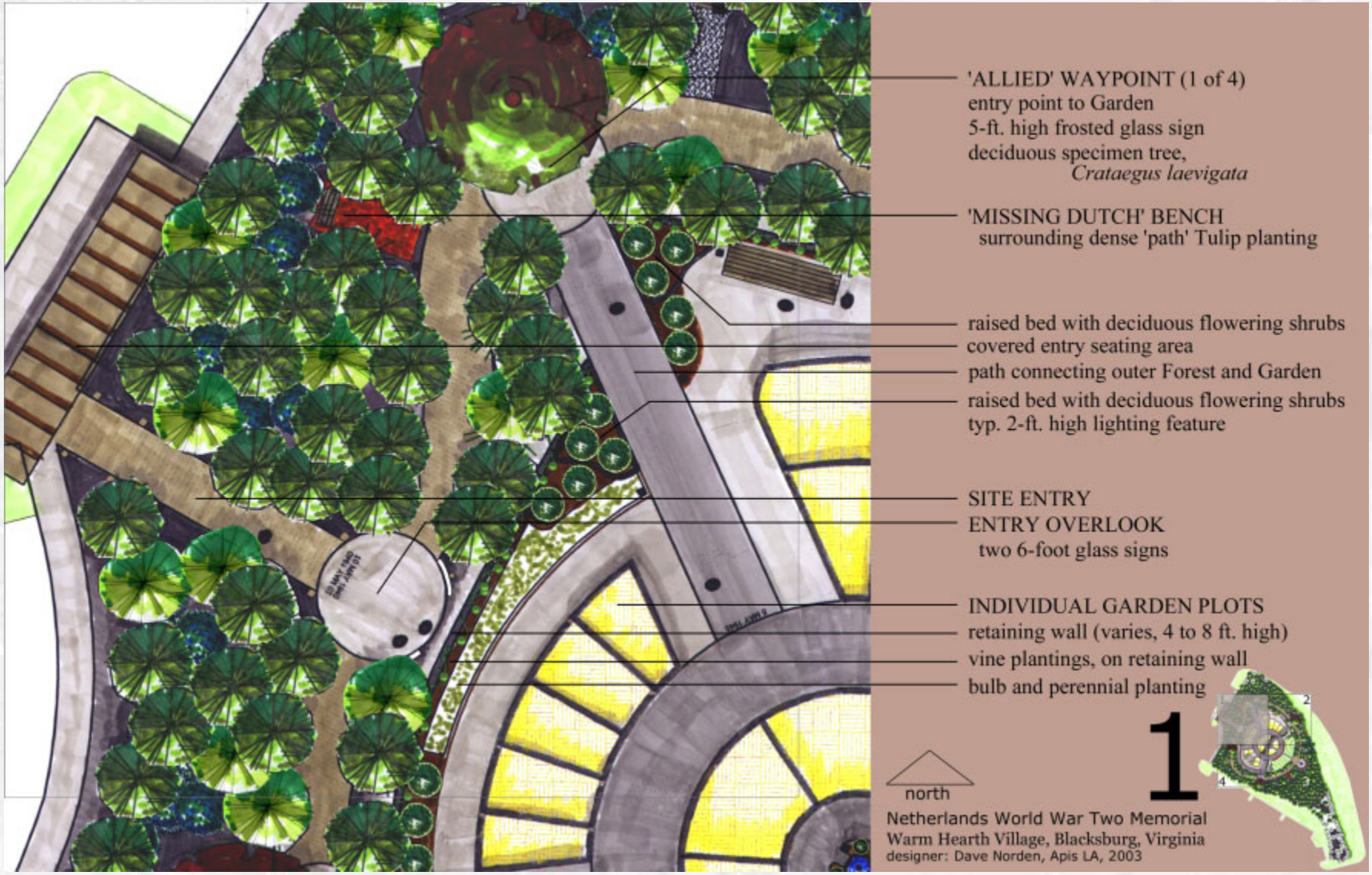


Figure 6.12. Enlarged plan one for Warm Hearth Dutch Memorial.

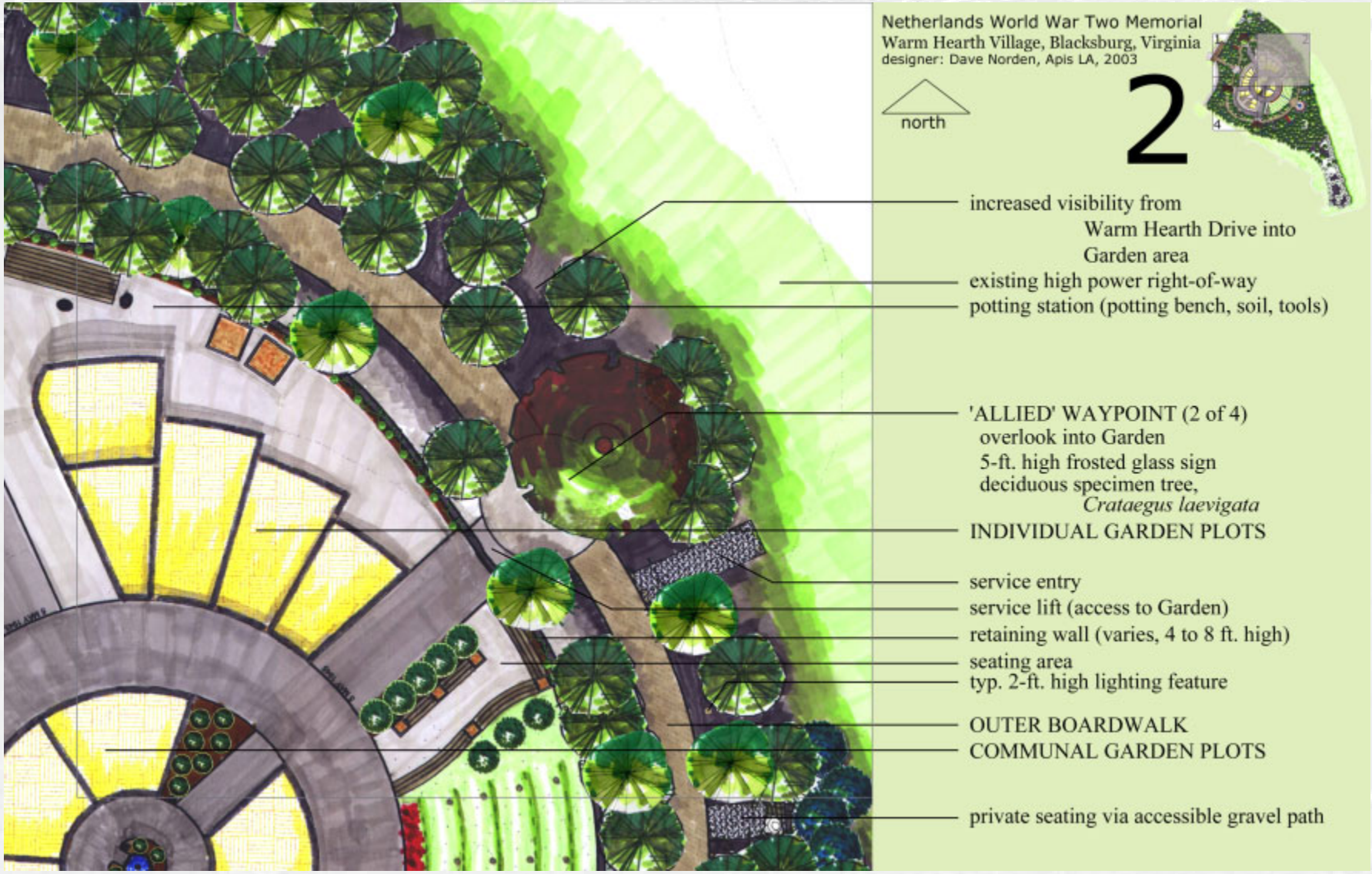


Figure 6.13. Enlarged plan two for Warm Hearth Dutch Memorial.

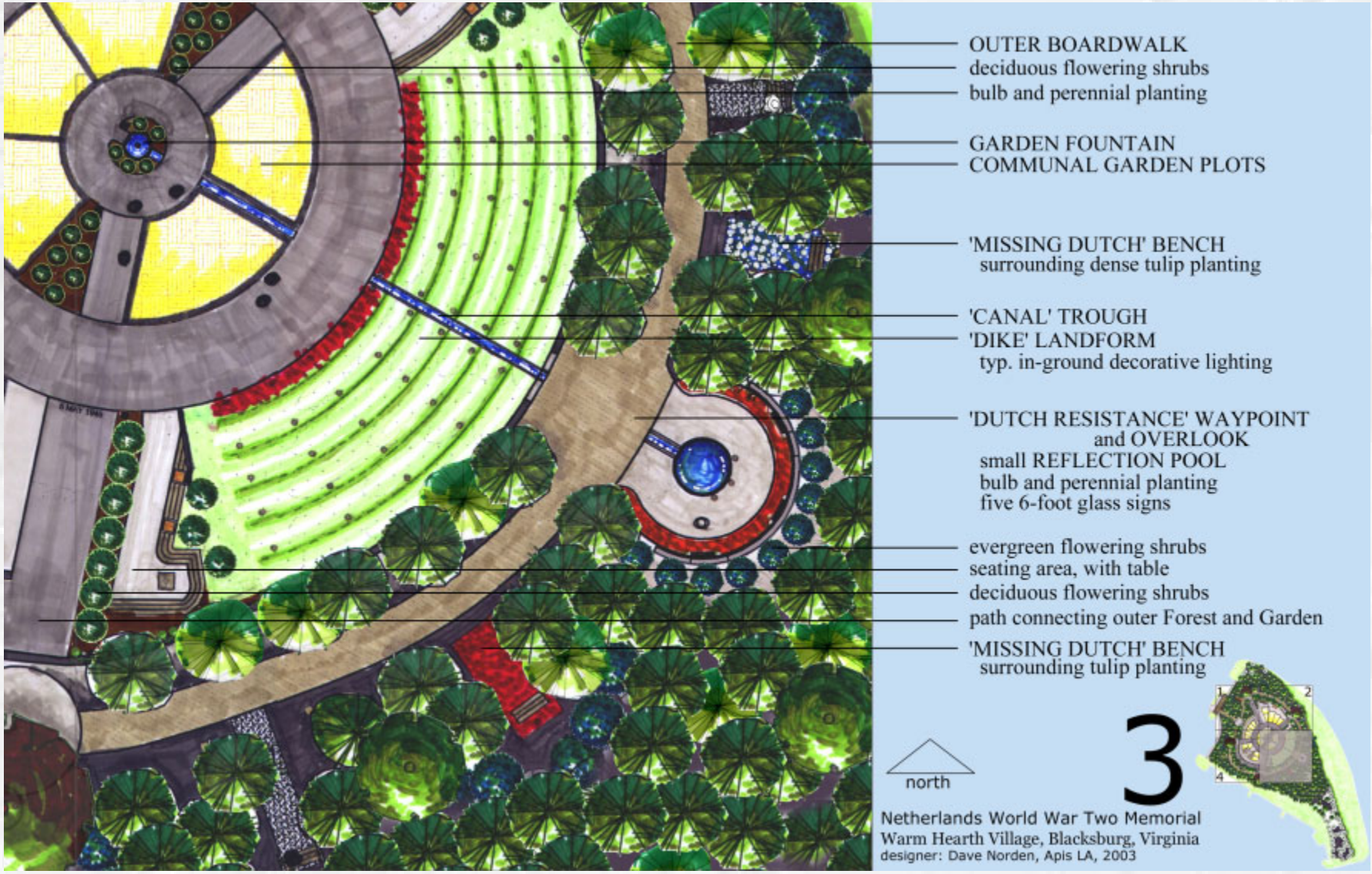


Figure 6.14. Enlarged plan three for Warm Hearth Dutch Memorial.

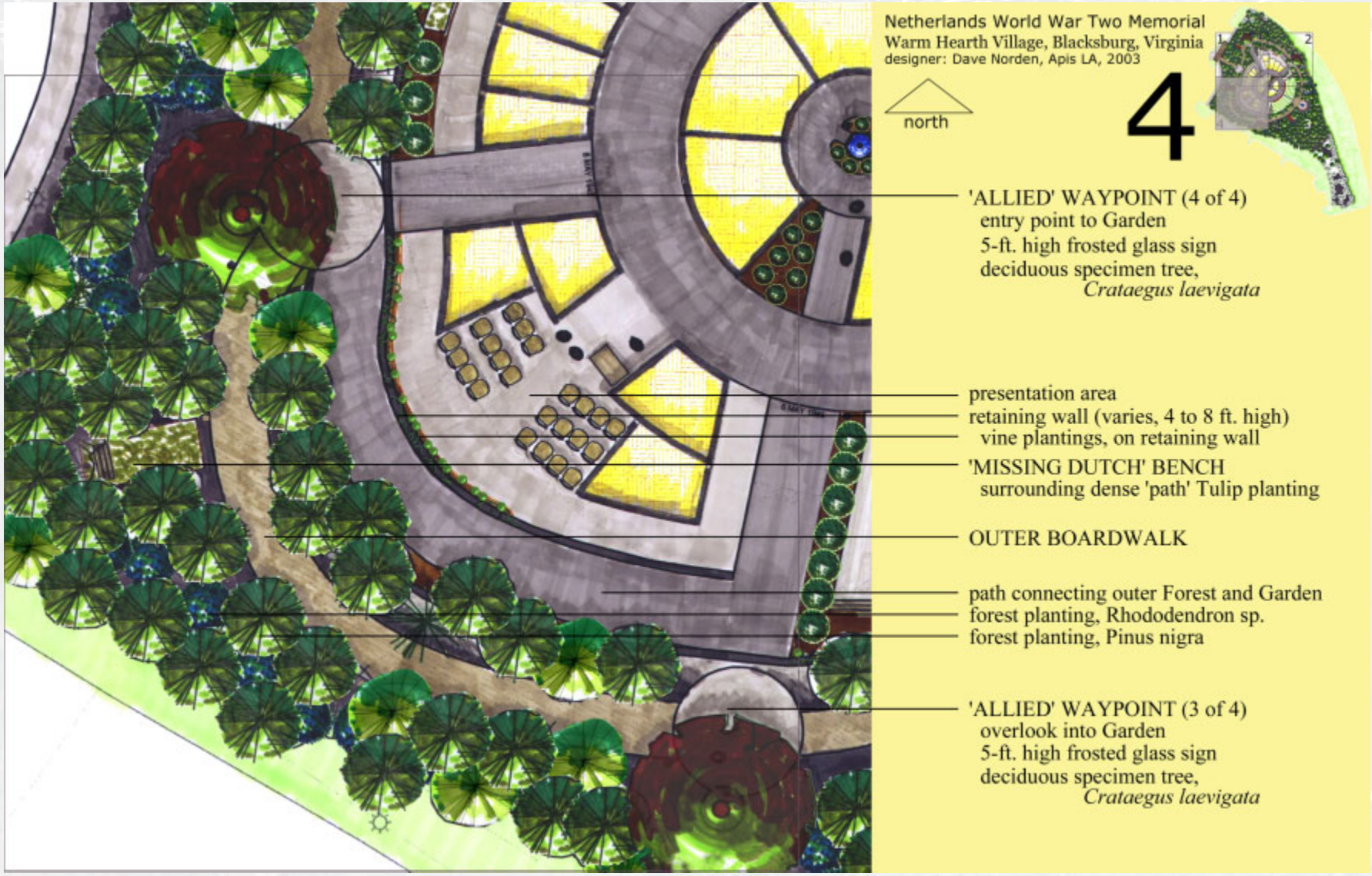


Figure 6.15. Enlarged plan four for Warm Hearth Dutch Memorial.

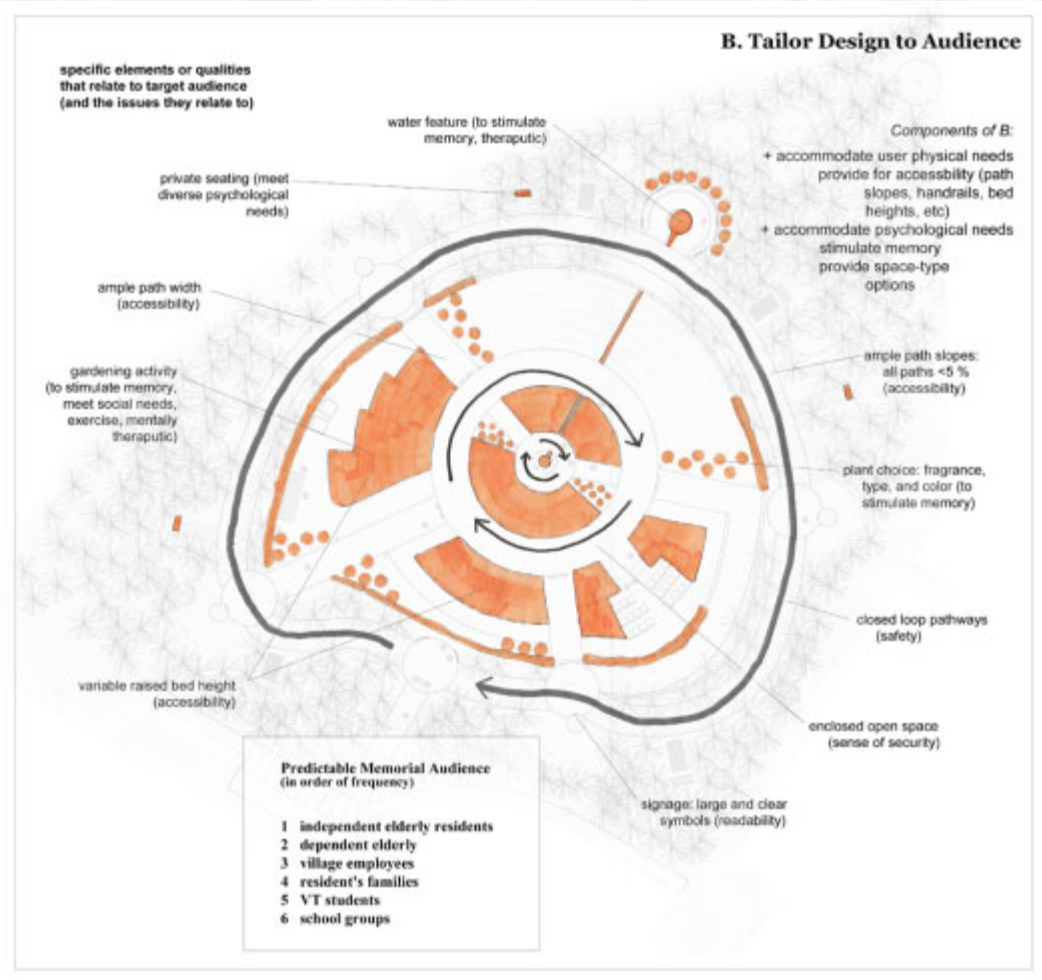


Figure 6.16. Diagram illustrating the implementation of strategy B.

memory

To create a place specifically for the elderly, an effort was made to incorporate the idea of memory. Older people age 80 and above typically deal with advanced decline of sensory abilities like smell, taste, sight, touch, hearing, and balance. Their ability to process and recall information is also reduced. Stimulation of memories is nonetheless essential to their psychological well being. Many of them are living in a new and unfamiliar place and have also lost friends and loved ones. Creating an environment that allows them to recall and connect with experiences of the past will increase the memorial's success and the happiness of many who use it. A sensory place like the Liberation Garden not only stimulates personal memory but also holds the meanings of the memorial, and these multiple layers reinforce each other over time. This memorial has the potential to be a sought after amenity of Warm Hearth Village.

The incorporation of fragrant deciduous flowering shrubs as permanent plantings throughout the site interior is one of the main ways that memory is stimulated. Using the kinds of plants familiar to older generations such as flowering quince (*Chaenomeles* sp.), fragrant daphne (*Daphne odora*), burning bush (*Nandina domestica*), and camellia (*Camellia* sp.) also provide an environment

Figure 6.17. Perspective of inner Garden area.

with familiar elements. These plantings can be replaced throughout the memorial's life.

The trough and pool water features described with implementation of strategy G, the *metaphor* strategy, are other elements that stimulate memory. These water features have been designed to be accessible and inviting when standing or in a wheelchair. This interaction is illustrated in the drawing of the center of the Liberation Garden (Figure 6.17).

Gardening in the communal and individual plots (shown in yellow in plan views) provides space for elderly residents to be physically involved with soil and plants. This activity is a direct and therapeutic memory-stimulating exercise.

accessibility

Maximizing accessibility is a practical consideration that will encourage the use of this memorial by increasing safety and feeling of security among users. All pathways are closed loops of 5% or less slope, the ideal maximum grade for a place used by elderly users who often have reduced strength and muscle flexibility. All paths are at least six feet wide, and most are ten feet or more. Six feet is adequate for two wheelchairs to pass side by side. Materials like wood, brushed concrete, and crushed gravel were chosen to support visitors of any ability level to access any area of the memorial. Seating is provided around the entire outer path and at several points within the Garden to provide frequent opportunities for rest. Half of the beds in the Garden are elevated from one to three feet in height to allow visitors of different ability levels to participate in the activity of gardening.

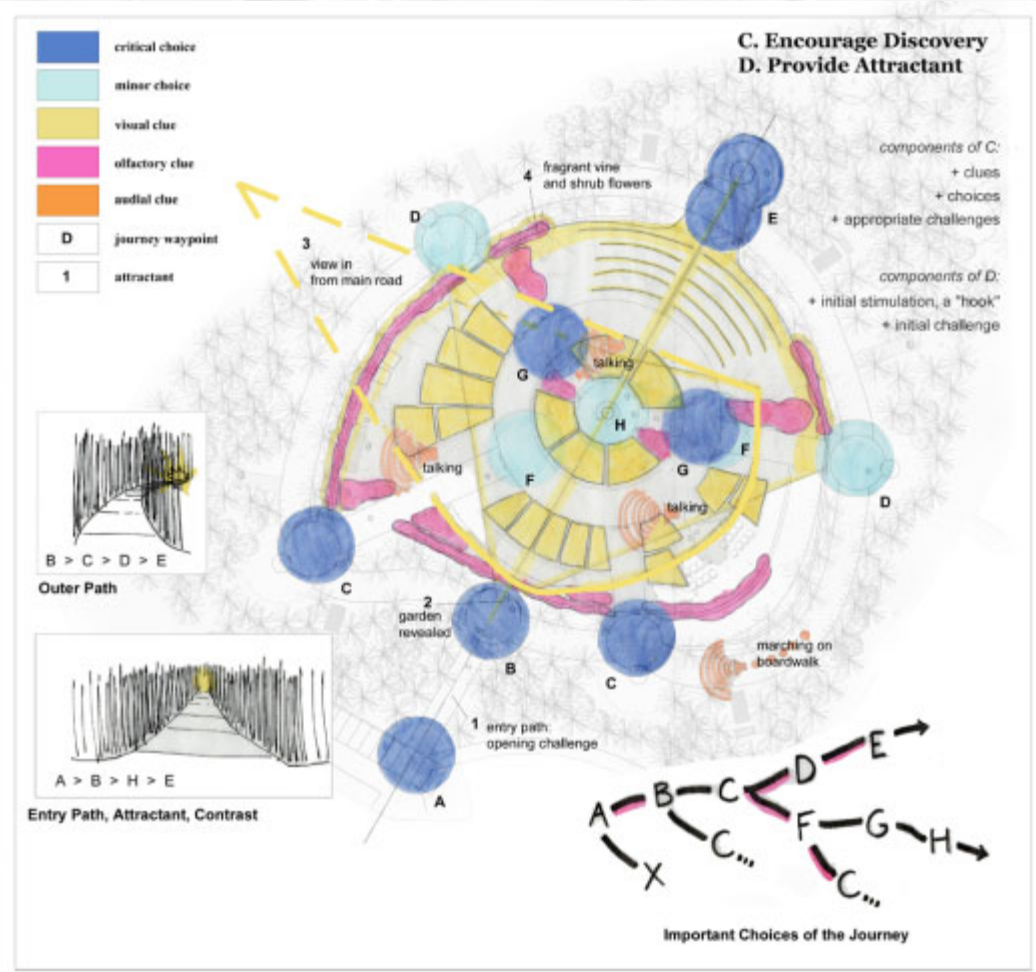


Figure 6.18. Diagram illustrating the implementation of strategies C and D.

This memorial provides a range of distinct space types. The bright, social, and energetic inner Garden is enclosed by the dark, secluded outer path where the most private seating areas are located. The options of movement through these different spaces respond in part to the idea that users will revisit the memorial often. These usage options are further enhanced by the seasonal variations of color, dormancy, and smell. All of these features make this memorial likely to be an active place where visitors both construct memorial messages and satisfy their psychological and physical needs.

STRATEGY C

Strategy C says *designers should support discovery*, or encourage visitors to use the memorial to search out important messages.

journey

Providing for discovery creates a memorial that is a journey. It has beginnings, transitions, and ends. Successfully encouraging visitors to seek out memorial messages increases confidence in their understanding, heightens emotional responses, and increases personal attachment to messages. Providing discovery means including choices and giving clues that lead the visitor to other parts of the journey. This memorial does this by giving visual, olfactory, and audial clues at particular places and by providing an appropriate challenge that stimulates but does not discourage visitor use.

The *discovery* diagram (Figure 6.18) highlights the locations of the most critical choices visitors must make in dark blue. These occur first at the beginning and end of the entry boardwalk. The visitor must first choose to pass through the Forested entrance. Doing so puts them on the dominant site axis. To go directly to the Garden the visitor must choose whether to take the path to the left or right. Upon arriving at the first waypoints, he has the choice of taking the path that descends into the Garden or continuing along the outer boardwalk. Other choices include stopping at each waypoint to read the glass signs that describe the Allied activities that contributed to the Dutch liberation, or to watch the Garden from above. The somewhat concealed seating outside the outer path provides more options for movement as well.

clues

The fragrances of the different flowers in the Garden provide olfactory clues even when the visitor cannot see into the Garden area. The same is true of the sounds of people talking and using their tools. The views from the different overlooks provide framed views into the Garden, and allow someone moving along the outer path to see part of what awaits them on the boardwalk ahead. Different lighting effects encourage nighttime use as well. The sound of walking along the elevated wooden boardwalk suggests the eerie noise of marching troops patrolling the forest for resistance fighters.

STRATEGY D

Strategy D, *provide an attractant* to encourage participation in the site, is different from C in that it catches the attention of someone on the outside. This “hook” encourages a potential visitor to make a conscious decision of whether or not to actually begin the memorial journey. This strategy is also illustrated in Figure 6.18.

Several of the sensory elements related to discovery also act to draw visitors in from outside the memorial. The fragrance of some flowering shrubs will drift in through open homes on warm days, drawing their inhabitants outside. The second Allied waypoints are at the existing grade. Though there is a three foot drop in elevation between the outer path at these points and the bright flowers at the center of the Garden, the view provided through the pine trees (*Pinus nigra*) is enough to incite curiosity from a car passing on Warm Hearth Drive. As these residents are drawn to the memorial, they turn into the entrance where the brightness of the garden beyond contrasts the darkness of the axial Forest path. As they arrive at the entry overlook, discovery takes over as Garden and other elements are revealed.

STRATEGY E

The next strategy is *designers should provide a memorial experience that is a process*. This means that the journey is not

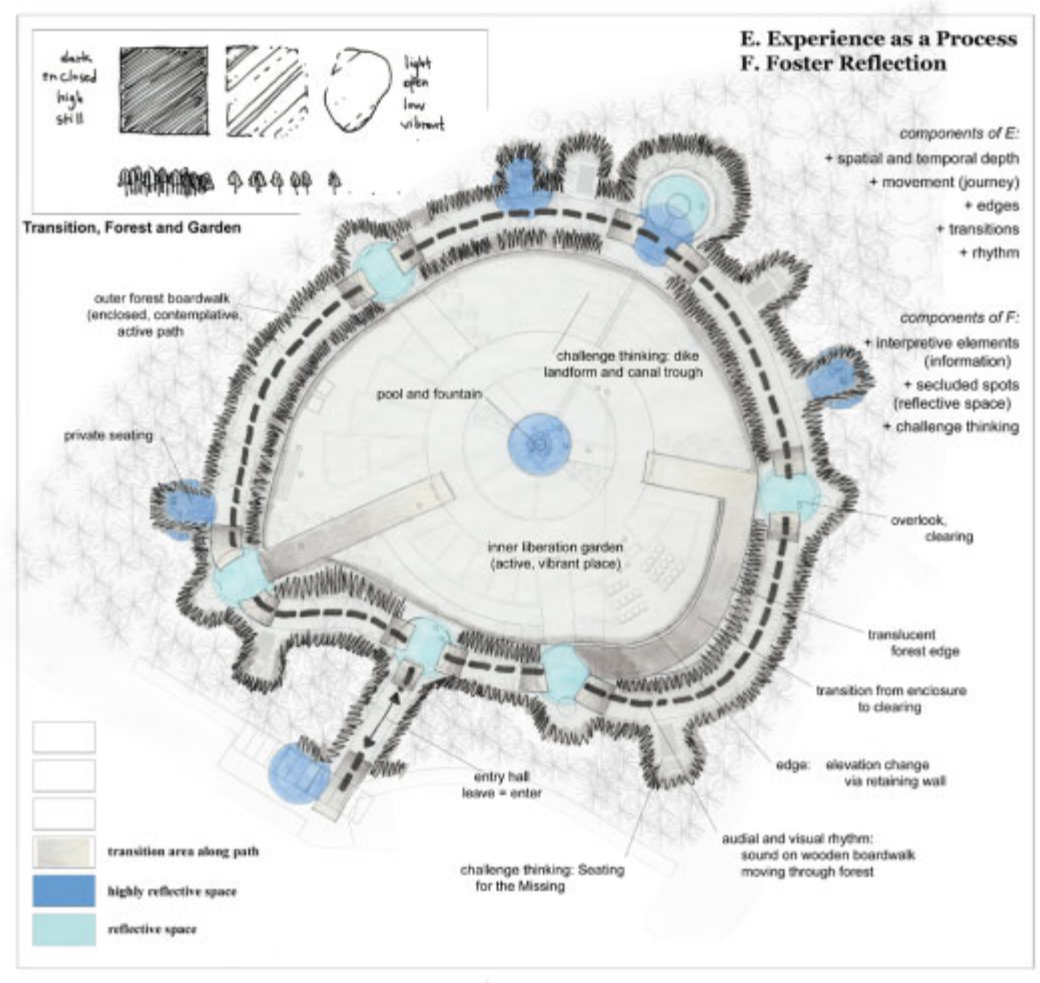


Figure 6.19. Diagram illustrating the implementation of strategies E and F.

only an instantaneous 'moment', but also a richer place that acknowledges a person's meaning making as a process that plays between perception and reflection. This strategy is shown in Figure 6.19. In satisfying this strategy the memorial must have edges, transitions, places for reflection, and a rhythm that carries movement between different areas. Reflective places are addressed specifically in the following strategy.

edge

The Forest, outer path, and retaining wall all work together as a translucent edge separating the Forest from the Garden. This edge is illustrated in the section through the site's dominant axis (Figure 6.20). Tall pine trees are on either side of the boardwalk path, and those on the Garden side allow selective visibility into the Garden itself. This 'buffer' becomes progressively more dense as the path narrows on approaching the Resistance waypoint. This adds as much as four more feet between the two spaces at the higher elevations. All five waypoints and the entry overlook provide clearings that sharply contrast the filtered darkness along the rest of the Forest path. The elevation differences between the Forest and Garden (varying from four to eight feet) create another effective edge separating the two distinct areas.

transition

The 'Allied' pathways transition between the Garden and Forest. Despite the sharp edge between these two areas, the gradual descent (less than 5% slope) of both Allied paths reminds us that, though it may have felt instantaneous, liberation was a long, gradual, and painful process costing many lives. Raised shrub beds straddle the sides of the Allied pathway to the north. The southern path has pine trees planted between it and the retaining wall to mimic the effect of the raised beds on the northern side.

rhythm

Rhythm is found throughout the memorial. The trunks of the Forest trees, the sound of marching steps on the boardwalk, and the regular intervals of two-foot high lighting features (identical to others found throughout Warm Hearth) all contribute to a strong sense of rhythm along the outer path. This cadence reflects the order and control imposed by the occupying Nazi forces. The Garden space has less formal cadence similar to the unrestrained celebration characteristic of liberation.

The feeling of descending and ascending that comes when moving along the Allied paths is reinforced by the elevation patterns of the raised beds and the dike landform. The rolling dike landform steps up five levels. The outer ring of raised beds in the Garden steps up and down

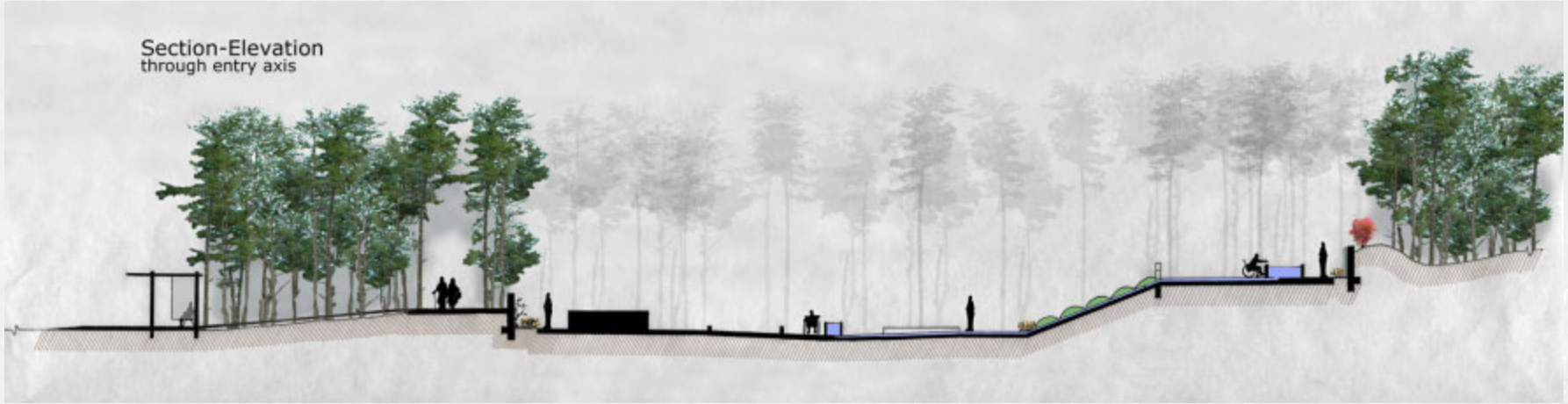


Figure 6.20. Section-elevation through the dominant site axis of the Warm Hearth Dutch memorial.

progressively so as a visitor travels around the inner path he still feels a sense of movement.

STRATEGY F

The *reflection* strategy (Figure 6.19) is a part of the idea of memorial experience as a process. Reflection is based in the notion that growth occurs when a visitor revisits his understandings. In terms of memorial design, this means a visitor must be presented with 'new' information or that which challenges prior conceptions, and an environment conducive to contemplating new meanings.

Figure 6.21. Perspective of 'Hidden Dutch' seating along outer boardwalk area.

This memorial provides both literal and interpretive information. This balance strives to furnish enough context so the memorial does not lose meaning over time, while still providing abstraction that requires visitors to draw some of their own conclusions. The more literal elements are discussed with the next strategy, G, *whole-to part messages*.

interpretation

There are several interpretive elements that incorporate reflection by challenging visitor's prior conceptions. The 'Dutch Missing' seating along the outer boardwalk is one highly interpretive component. These benches, placed within small clearings in the forest, are completely enveloped by dense bulb and perennial plantings. This feature is illustrated in Figure 6.21. The benches are not intended to be used by visitors, but rather, to commemorate those Dutch killed under Nazi occupation. The 'Canal' trough and 'Dike' landform

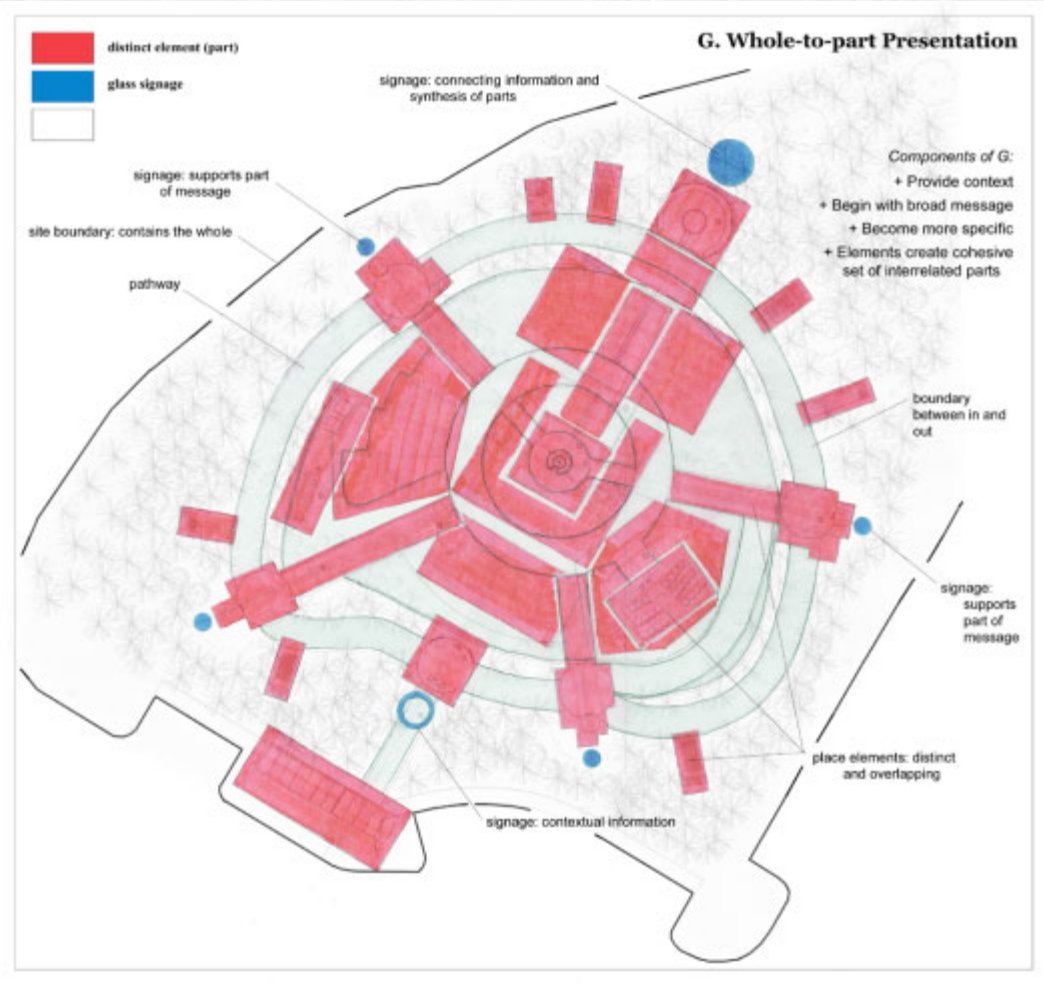


Figure 6.22. Diagram illustrating the implementation of strategy G.

both are examples of abstract, interpretive elements inside the Garden area.

The accessible private seating areas along the outer path and, to a lesser extent, the overlook waypoints and the pool and fountain at the center of the Garden are all reflective spaces where visitors can process their memorial experiences.

STRATEGY G

Strategy G says *designers should layout the overall memorial message in whole-to-part format*. In this way the meanings of the memorial tell a story that begins broad and contextual and becomes more specific. Implementation of this is illustrated in Figure 6.22.

literal messages

The memorial's signage provides literal messages about the Dutch occupation and liberation. They are the strongest example of implementation of the whole-to-part message. Each individual sign tells a particular story and when taken together they synthesize a larger and holistic message.

All of the signs are curved and made of frosted glass. Colored up lighting illuminates each sign from behind. The entry overlook contains two six-foot signs that provide contextual information about the entire memorial and frame the view into the Garden. Each Allied waypoint contains one five-

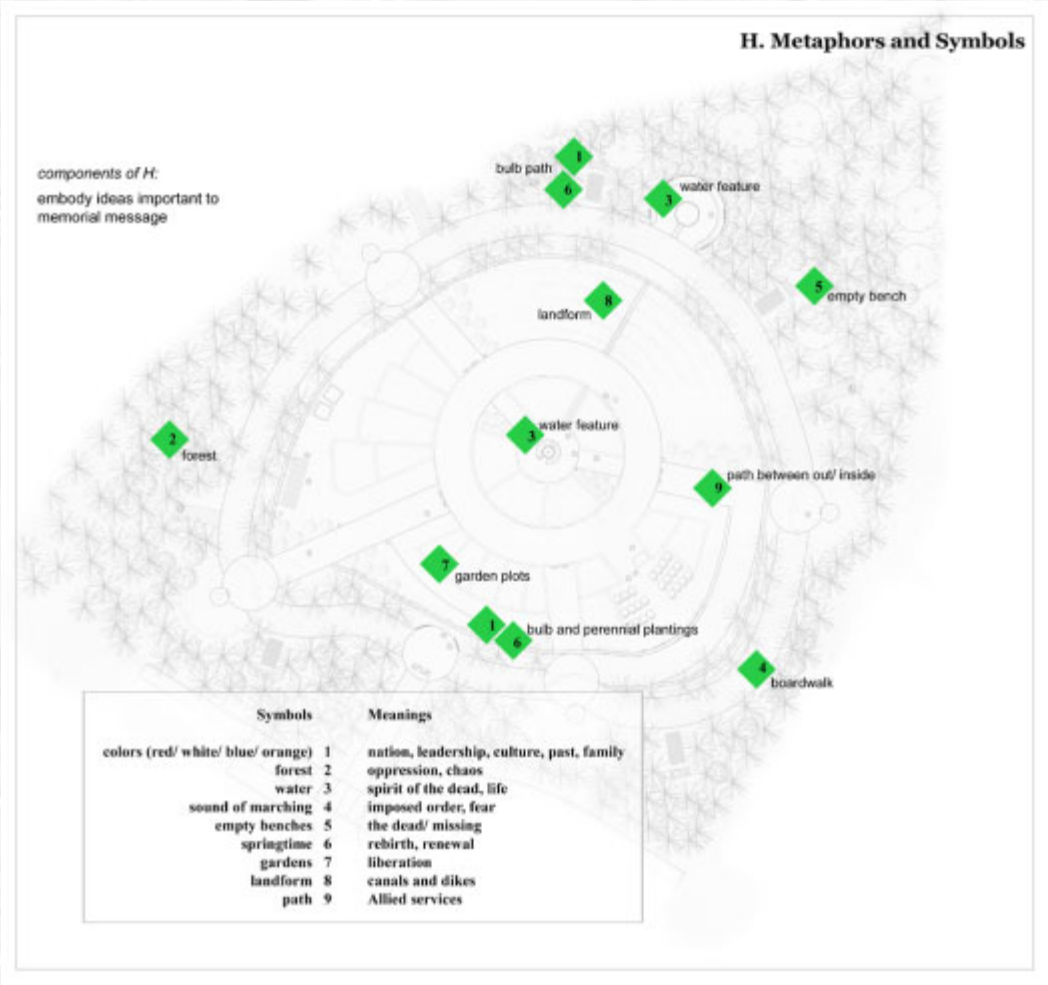


Figure 6.23. Diagram illustrating the implementation of strategy H.

foot sign about actions of the Allied force that it represents. The final Resistance waypoint contains five six-foot signs about the efforts of the Netherlands' own Resistance fighters. Each sign marks a different area of the memorial, and all of the signs and distinct memorial elements taken together unify as a place that is a cohesive set of interrelated parts.

STRATEGY H

Because of their powerful connotations, *metaphors and symbols* are important for representing particular meanings important to the Dutch people. The diagram illustrating strategy H (Figure 6.23) identifies many of these symbols within the memorial.

the Dutch landscape

Water is used in the memorial to symbolize the Dutch Resistance fighters. Water from a small pool at the Resistance Waypoint flows into a narrow trough and down to the center of the Garden. Water becomes the Resistance's spirit and symbolically gives life to the plants of the Liberation Garden.

The troughs symbolize the Dutch canals. These narrow structures disappear underneath the boardwalk and two Garden paths recalling the relationship between water and man in the Dutch landscape. The rolling landform on either side of

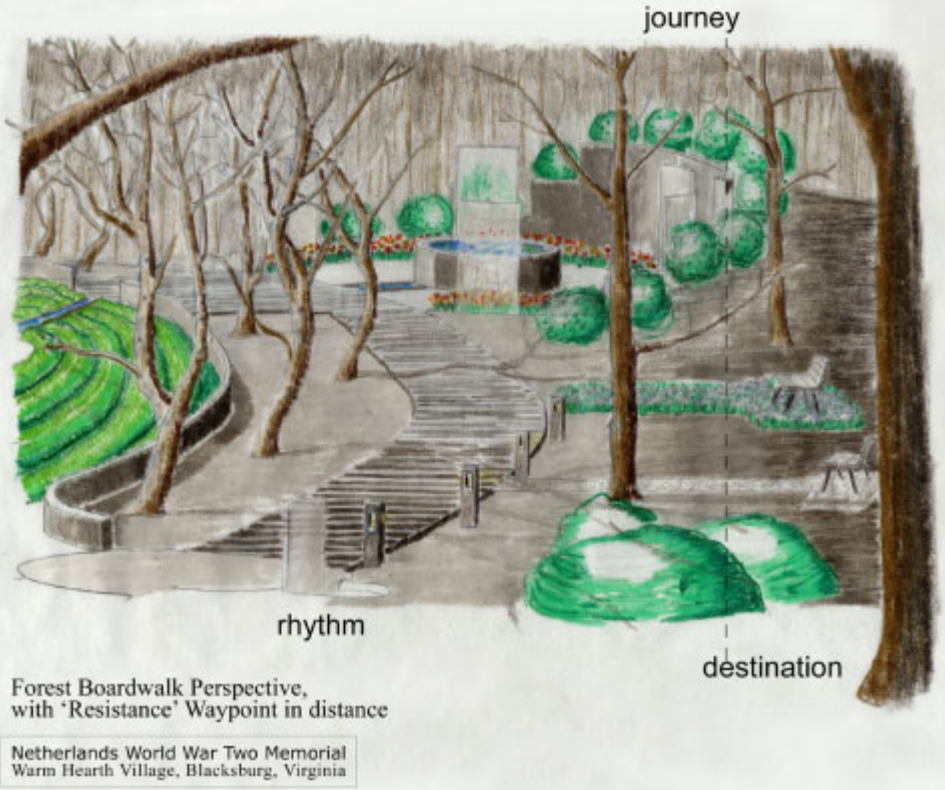


Figure 6.24. Perspective along outer boardwalk, with Resistance waypoint in distance.

the troughs (in the Garden) represents the dikes that were strategically important infrastructure both historically and during the War.

other symbolism

The Forest, Garden, and Allied pathways are metaphors that have already been described. Figure 6.24 illustrates the enclosure of the boardwalk in the Forest with the Resistance waypoint in the distance.

Color is another important symbol. Orange has long represented the royal house of the Dutch monarchy. Red, white, and blue horizontal stripes make up the national flag of the Netherlands. These four colors were repressed by the Nazi occupiers and became very important in representing the hope of the Dutch people. These colors have been used throughout the Garden area in mass Tulip and other perennial plantings.

STRATEGY I

Strategy I of the position paper calls for designers to facilitate *appropriate forms of visitor interaction*. This interaction can be distinguished between passive and active forms. In the Warm Hearth Memorial, both forms are appropriate in different areas of the site. The diagram, shown in Figure 6.25 highlights all of the accessible areas of the memorial and distinguishes between areas that generally support more active or passive kinds of visitor interaction.

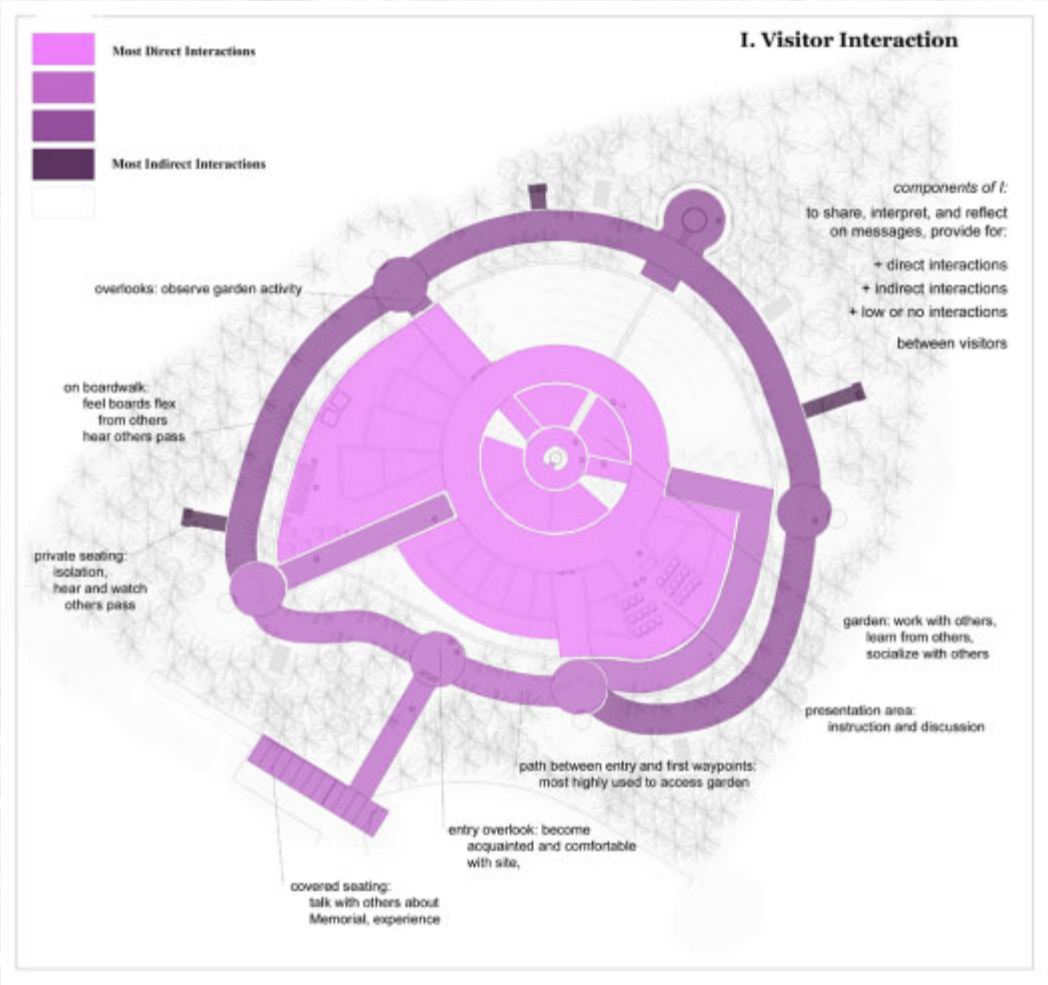


Figure 6.25. Diagram illustrating the implementation of strategy I.

outer path

Indirect forms, like watching, hearing, and feeling the actions of others, occur most frequently along the outer boardwalk and the associated seating areas. Watching from the overlooks is an important indirect activity, as does hearing footsteps on the raised wooden planks and feeling them flex as someone passes by. The area between the entry overlook and first waypoints is more direct in interaction because it necessarily supports the traffic of all visitors going to the Garden.

inner Garden

In contrast, the Garden area supports a wide variety of active and direct visitor interactions. Most significant of these is the process of working together in the garden plots. Gardening allows the users to socialize, discuss, and reinforce messages of the memorial.

STRATEGY J

The final strategy directly implemented in the memorial design is that *designers should provide elements that support active physical interaction (API)* (Figure 6.26). Providing for API encourages visitors to interact with the memorial in a holistic and more meaningful manner. As a result visitors create stronger and more personalized understandings from their experience. Providing these interactive

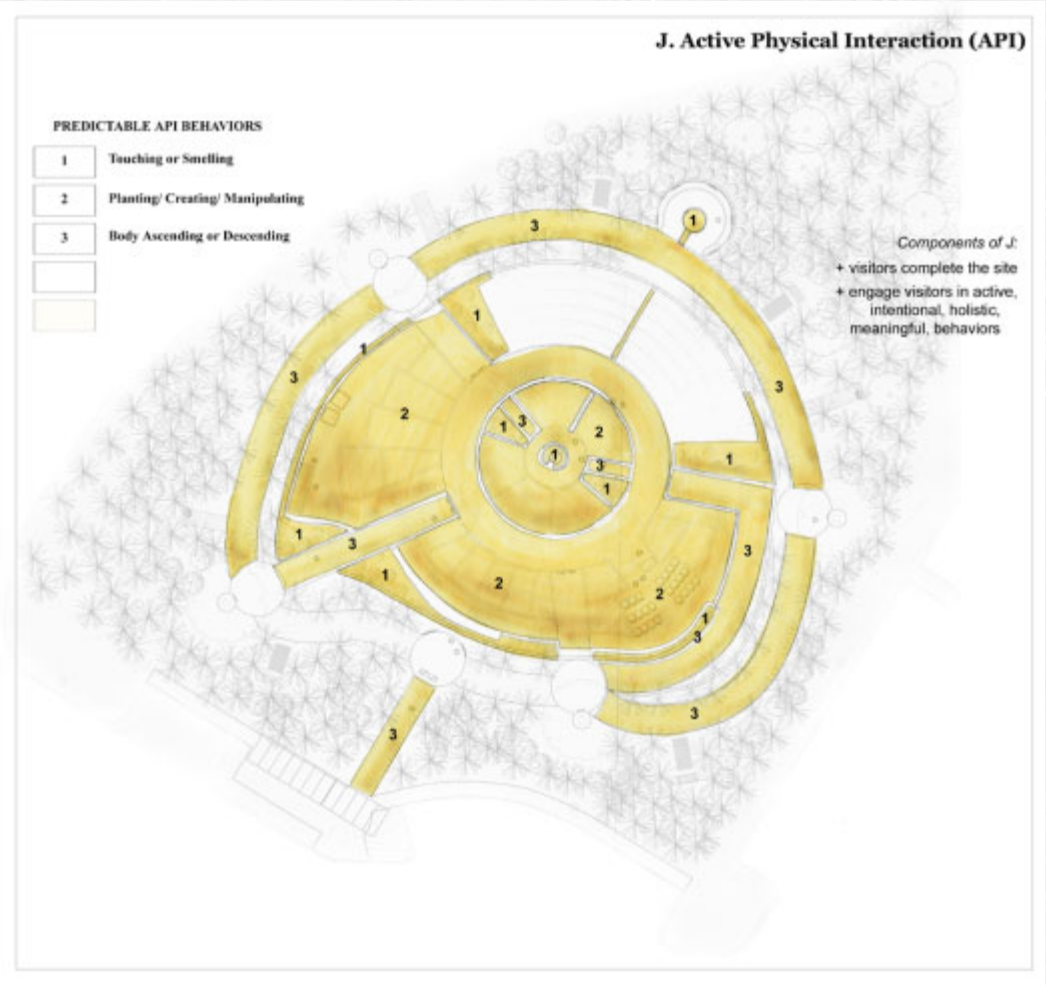


Figure 6.26. Diagram illustrating the implementation of strategy J.

elements means that a site is not really "completed" until visitors move through it and bring it to life. Active physical interaction can include touching, turning, smelling, descending, taking rubbings, and leaving flowers and other artifacts.

cultivation

The act of gardening is the primary API element in the Warm Hearth memorial. This is very appropriate in a retirement village because it allows the elderly residents to exercise their bodies and social connections. The meanings about the Dutch liberation and Resistance are reinforced while they dig in the earth and realize the fruits of their labor.

other API elements

The water features are each approached and touched in distinct ways. Touching and drawing in the fragrance of leaves and flowers directly connects a person to nature and stimulates memory. The kinesthetic act of ascending and descending throughout the site accentuates the sense of movement and involves a person's whole body.

Post-design analysis and refinements

The seven post-design diagrams presented to illustrate the memorial's design elements were created after a preliminary plan and midterm presentation was completed. They are analysis tools,

used primarily to evaluate the extent each strategy had been implemented in the memorial's design. Once they were completed, they were layered on one another to reveal patterns that helped determine where changes were possible or necessary. The minor changes made since the post-design analysis are included in the plan enlargements presented in the previous section. Some of these changes are identified here to explain what was modified and to emphasize the process that was used.

strategy E refinements

Half of the refinements made to the final design enhance the implementation of the strategy of *memorial experience as a process.*

The first refinement improved the transition between the Garden and Forest, and reflects the idea that liberation was not instantaneous, but a gradual process. This is already evident in the long, deliberate, and gently sloped Allied paths, but raised beds that straddle the path on the northern side were added to strengthen the feeling of transition. Trees already create this kind of transition on the outer side of the southern path, and because of space limitations, no changes were made there.

In order to create a more distinct experience at different points along the outer boardwalk, the width of this path was narrowed two feet after each subsequent waypoint. This creates a variation in width from ten feet just beyond the entry overlook to six feet at the highest point near the Resistance waypoint. The portion removed was taken from the path's inside edge so the forest buffer separating Garden and Forest is effectively widened. These modifications were made to emphasize the feeling of difficulty along the journey, and to increase the feeling of separation by decreasing transparency between the Forest and Garden.

strategy F refinements

The other modifications to the design resulting from the post-design analysis affect how strategy F, *reflection*, is implemented.

The ropes surrounding the 'Missing Dutch' benches along the outer path were removed and the dense tulip and perennial beds in front of them were expanded to completely envelop each small forest clearing. These two changes convey the original message of these interpretive benches in a stronger and simpler way.

Two seating areas were also added inside the Garden on either side of the dike landform. This change is both functional and increases reflective spaces inside the Garden itself. With these seating areas users have more places to sit to talk in small groups, to observe people entering the site, or simply to take a rest from working in the Garden.

CHAPTER 7 - CONCLUSIONS

Conclusions

There are three main questions to be asked in evaluating the ideas in thesis project as a whole. They are presented in order of scale:

- How are the strategies of the research model implemented in the design of the Dutch memorial?
- How do the strategies of the research model relate to each other as a whole? Is there a hierarchy within these ten strategies?
- How well does the research model work to meet the goals created to remediate issues discovered in the literature review?

question one – testing the model through design

The first question addresses the use of the Dutch memorial design project at Warm Hearth Village to implement and test the research model. This question is relevant for evaluating the quality of this thesis project. It is more important for getting a sense of how this set of strategies, based in a philosophical belief of how people understand their world, can work as a design tool.

Because of the design process used for the memorial project, the strategies are strongly and successfully woven into the fabric of the Dutch memorial.

The memorial design is very much a product of the process used to create it. This process is a set of overlapping layers. The site and historical information discovered early on was revisited throughout the later phases to continually strengthen the ideas, concepts, and details that are present in the design. The post-design analysis really began during the ideation and concept phases in a casual but deliberate way. The creation of post-design analysis diagrams after the completion of the preliminary plan (not presented in this document) allowed a formal evaluation of how each strategy

had been implemented. This evaluation revealed opportunities for several minor revisions that were then incorporated in the final design.

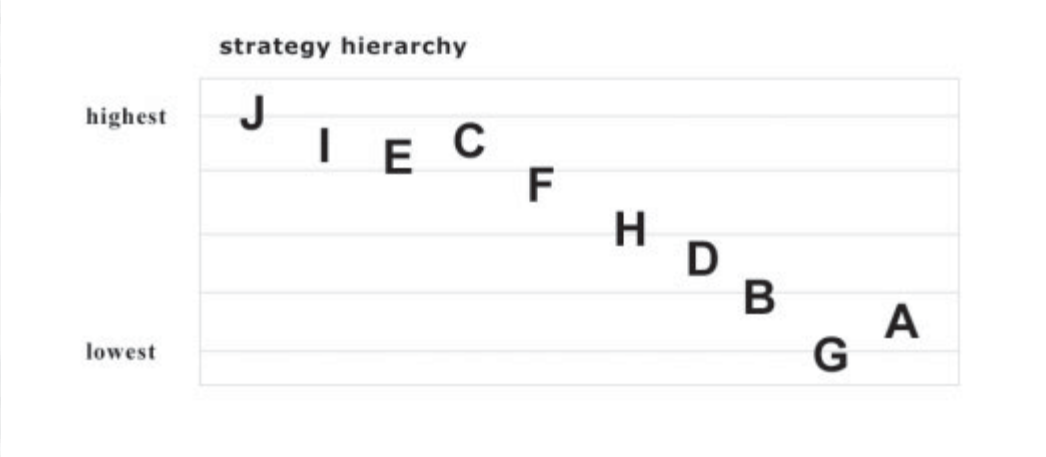


Figure 7.1 Diagram of strategy hierarchy as used in the Dutch memorial design project.

question two – the design strategies as a whole

The ten strategies were created to allow a visitor to take an active and successful part in making meaning during and after their memorial experience. The strategies are intended to work together in a way that is sensitive to how people construct understandings in the world around them.

Overlaying each post-design analysis diagram is one of the best ways to evaluate how they do work together. They are strongly integrated with each other in addition to being integrated in the memorial's site plan. The nine strategies being tested from the research position compliment each other very well and should be maintained as ten distinct but interrelated applications.

There were no problems of knowing how the strategies could be applied in practical ways. This suggests that the strategies are adequately explicit to be used as design tools. They are flexible enough to work at the conceptual, schematic, and detail levels.

The ten strategies are very successful as a set of practical applications as shown by evaluation of the design process. Two clarifications will strengthen them as a set of complimentary tools. First, the relationships shown in the strategy model diagram (Figure 4.2) are necessary to emphasize how the applications form subgroups. These subgroups are connected by similarities in how they work to facilitate meaning in a memorial. Secondly, a loose hierarchy of the importance of each strategy within the framework became somewhat clear when working with the Dutch memorial design. This ordering is illustrated in Figure 7.1, and is not concrete because it will vary depending on the programming and context of any particular project. All ten strategies are interrelated, so this particular

ranking places importance on those that are more unique and not necessarily more important then others below them.

question three – the research model and public war memorial design

This final question considers how relevant the position model is for creating better public war memorials.

Though the research model intuitively seems as though it would be successful for creating an actual memorial, there is no way of testing this without building a real place and understanding the experiences of its visitors. Because of limitations of this thesis to answer this particular question, the best way to speculate how successful the research model will be is to evaluate how the design project meets the five goals established from the literature review.

1. Memorials should encompass a physical environment that facilitates dynamic learning of the memorial message. These environments will acknowledge and facilitate personalized meaning making by visitors.

This memorial has been designed as a whole landscape. It comes alive with visitor's use as opposed to being a single monumental moment. High activity areas contrast those adjacent to them that are reflective and more passive. It is a sum of many individual parts.

2. Memorials should facilitate flexibility of cultural contexts over time. These environments will recognize and accommodate adaptation as: a) generations of visitors change from processes of birth and death, and b) as socially relevant meanings and values change.

This has been attempted by several design characteristics. It uses both literal and interpretive elements. At the same time it is a community garden that will be used and reused by members of the Warm Hearth community throughout the warm seasons. The active and intentional interaction of these users with the land and the memorial makes meanings more conscious and allows the place to change over time.

3. Memorials should facilitate healing for visitors with primary connections to tragic events.

The last generation alive during World War Two is passing into retirement age about this time. Dr Kroontje would be, as a Dutch survivor living in Warm Hearth Village, a person who will visit this

memorial to bring closure to some of his very personal experiences sixty years ago.

4. Memorials should encourage messages of evolving and responsible historical perspective.

Understanding World War Two in the Netherlands was explored and compared from multiple sources in order to represent responsible historical perspectives. These sources strongly reinforced each other and suggested a high degree of historical accuracy of the ideas underlying the memorial's design.

5. Memorials should foster deep meaning making that continues beyond the memorial experience.

This is the intention of this memorial experience, but it is impossible to say how well it was achieved until it is built, used, and evaluated. All of the nine strategies used in this design intend to meet this goal.

CHAPTER 8. EPILOGUE

epilogue

One of the reasons for the success of this project is that it was born out of one person's need, connected to the needs of a larger and unspoken community, to commemorate and remember an important time in many millions of people's lives. Working to fulfill such a dream raises the inherent value of an educational design exercise far above any that would be fabricated to simply fulfill a class project. It was extremely interesting and motivating to meet with Dr Kroontje so he could share his personal experiences under Nazi occupation and so I could begin to understand how they have affected one person's entire life. These personal connections are many of the qualities that made this an enjoyable and meaningful opportunity – educationally, professionally, and personally.

It is important that cultural and memorial sites like the Warm Hearth Memorial continue to be built. These public places allow groups of people to heal, to question, to understand, to discuss, and to remember. Undoubtedly they always will be created, and hopefully they will be constructed in a way that allows them to be deeply relevant and deeply meaningful to those that visit them and to those that they represent.

CHAPTER 9 - APPENDIX

APPENDIX A – Summary of Design Criteria (from page 40)

A. Choices in landscape position
    a. Topography
        i. Is it higher or lower relative to surrounding spaces?
    b. Destination
        i. Is the element an endpoint?
        ii. Is the element within a pathway?
            1. Is it 'touchable' from within a path?
        iii. does it utilize elements that guide the line of sight (such as a strong axial orientation or alee?)
    c. Spatial relationships
        i. Location: Is the position of the element relative to the front, side, or back of the overall site?
        ii. Enclosure
            1. How exposed or intimate is the element?
                a. Distance to enclosing structures?
                b. Height of enclosing structures?
                c. Density or transparency of enclosing structures?
            2. Visibility to (relationship to) horizon?
            3. Element of surprise?
                a. Amount of time between awareness of the element and arrival at the element?
        iii. Personal and social space
            1. Is there room (out of the way of other activities) to freely engage the element?
            2. Is this space, if any, usable for more than one person?
                a. Do they do this together, or are they separated?
            3. Is there space and structure provided to watch the element or people using it from intermediate distance?
        iv. Do any of these characteristics vary significantly throughout the day?
B. Choices in element form
    a. Environmental contrast:
        i. Visual elements:
            1. size
            2. color
            3. brightness or reflectivity
        ii. Auditory elements
        iii. Olfactory elements
    b. Inciting curiosity
        i. Recognizability

1. is it mysterious, eerie, etc?

ii. Connotations

1. does it evoke feelings?

iii. Challenge

1. does it evoke questions of values?

c. Materiality

i. Quality of:

1. density
2. texture
3. malleability
4. natural or synthetic

ii. what is the relationship of these materials throughout the overall site?

d. Spontaneity

i. Is the element intentional (originated by the designer?) or spontaneous (originated by users)?

ii. Is the element temporary or permanent?

e. Meaning: how does the meaning of the element relate to the memorial subject?

f. Do any of these characteristics vary significantly throughout the day?

C. Visitor experience

a. Site visitors:

i. Who uses this site?

ii. Use: what other activities go on here?

iii. Posture

1. does the user change body position (kneel, crouch, lay, etc)?
   a. to approach the element?
   b. To interact with the element?

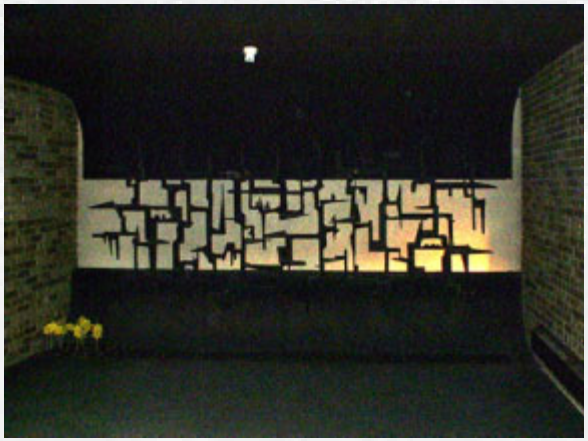
iv. Contribution

1. does the visitor bring a tool or artifact to the element?
   a. Did they bring it to the site themselves?
   b. Do they leave it?
2. does the user physically make or help alter the element?

Do any of these characteristics vary significantly throughout the day?

APPENDIX B – Photographs of case study and other memorial sites discussed in paper

Figures B-1 - B-4. (from top left, clockwise): inside the Israeli Memorial at Auschwitz Concentration Camp, Poland; metal sculpture inside the 'New Museum' at the Sachenhausen Concentration Camp, Berlin; original fencing at Sachenhausen Concentration Camp; restored fencing at the Auschwitz Concentration Camp

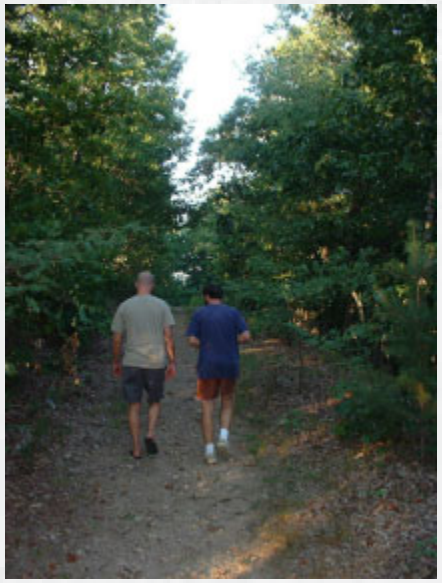


Figures B-5 - B-7 (from above left, clockwise) National D-day Memorial: entry drive; view along dominant site axis, from lower level towards Overlord Arch; view of 'beach' area representing surmounting of the Normandy cliffs.

Figures B-8 - B-12 (from top left, clockwise) La Cambe German D-day Cemetery, Normandy, France: view of central tumulus through cemetery entry; decorative headstones among rows of grave markers; an individual grave marker set into the ground; the visitor's center with Friedenspark or 'Freedom garden' behind; view of Normandy coastline from the American Coleville Cemetery

Figures B-13 and B-14 (near right, far right): Coleville American D-day Cemetery, Normandy France: field of Latin Cross grave markers; single Star of David grave marker

Figures B-15 and B-16 (near right, far right)
Bayeux Commonwealth Cemetery, Normandy, France: personalized individual grave markers with perennial plantings
Cross of Sacrifice, a central element around which rows of grave markers are organized



Figures B-17 - B-21 (from top left, clockwise):
Audie Murphey Monument, Blacksburg, Virginia: view of trail to monument; view of monument with artifacts left at its base; Virginia Tech 'The Rock' Military Monument, Blacksburg, Virginia: flagpole with monument at its base; the back of monument with names of nine World War One alumni killed in action; Virginia Tech War Memorial (on Alumni Mall), Blacksburg, Virginia: view of memorial from under Torgerson Arch

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Vita

David Norden, first of three sons of Roger and Carol Norden of Raleigh, North Carolina, was born December 21, 1975, in Pittsburgh, Pennsylvania. After graduating from Enloe High School in Raleigh, he attended North Carolina State University where he completed the first year of *design fundamentals* in the School of Design. He then transferred to the Department of Horticulture where he completed his Bachelor of Science of Horticultural Science. After one year employed as perennial department buyer and manager in a large retail nursery, he returned to graduate school at Virginia Polytechnic and State University, in Blacksburg. With this thesis he completes his Masters of Landscape Architecture.

He is a member of Pi Alpha Xi horticultural honor society, and Sigma Alpha Lambda landscape architecture honor society. He completed his Eagle Scout award in 1994. He is a brother of Phi Delta Theta fraternity, and was voted Brother of the Year of the NC Delta chapter in 1998.

He was awarded a Teaching Assistantship with the Virginia Tech Department of Landscape Architecture from 2001-2002. Later that year he won the Toro Landscape Scholarship. In 2003 he won the American Society of Landscape Architects Excellence in Landscape Architecture Studies Graduate Merit Award, and was second place winner in the Bruce Scott Scholarship for Study of Ethical Issues in the Architecture Professions.

Traveling is among his most enjoyable hobbies. He backpacked more than 60 miles in the Teton Mountains, Wyoming, and over 150 miles in the Appalachian Mountains in North Carolina and Virginia over several trips from 1990 to 1994. In 1999 he traveled across the United States by car over 10,000 miles to the far south, west coast, and to Vancouver, British Columbia. In 2002 he completed a month of memorial research at various World War Two and Holocaust sites throughout the United Kingdom, France, Germany, Poland, Czech Republic, and Austria.