Top: A sketch of one side of the top of the pyramid wall showing the walls capped in copper flashing providing a drip edge for precipitation.

Bottom Right: A sketch of the hydraulic elevator for lifting the body up to the top of the platform from the base of the pyramid.

Bottom Left: Sketch of a steel member buttressing the bottom corner of the pyramid. The steel member transfers forces to the concrete piers in the ground (pier not shown) while piers directly underneath transfer the weight of the wall and floor to the ground.
Sketches of elements found within the pyramid. The images on the left display the treatment of the edge of the platform. The intention is for the concrete platform to come to a "sharp" edge and to cantilever at some distance from the outer column ring to add to the sensation of its levitation above the shadows.

The right are images of how the floor relates to the inclined wall of the pyramid. The particular sketch is of the walls of the precinct at the Brion-Vega cemetery by Carlo Scarpa, which embody a similar idea of how to display an edge and control a person's approach to that edge.
The top opening of the pyramid revealing the expanse of sky to the sanctuary platform.
4 Field

The field is a space of honor. The body is carried to committal through the field on a path connecting the space of the sanctuary with the crematorium below the large cylinder mass. The fine gravel path passes by three cylindrical elements on the way to the large cylinder at the end of the field of high grass. Visual connection to the city in the valley beyond is blocked by the perimeter wall. The expanse of sky is the ceiling of this space.
4 Field

The mourners and the body of the deceased return to the level of the path under the sanctuary. The mourners assist the body from the darkness amongst the columns of the hypostyle hall, out into the precinct of the field under the sun. Tall grass ripples in the wind. Shadow filled doorways to either side of the path mark the passage of space and time as the mourners slowly progress towards the pure form of the cylinder.

Top: Plan of the field regularly punched with round light wells that allow light to pass into regions below the field.

Bottom: Section through the gravel path of the field
This is an image of an early model of the space where the body of mourners separates from the body of the deceased. Light enters the darkness of the cylinder from above, through an oculus directly over the where the body is laid.
5 Chapel

Moving into the cylinder form, the mourners place the deceased onto a polished stone slab in front of a large open doorway. The dark ceiling above this space, at the same height as the diameter of the cylinder, rests on a halo of light and is punctured with an oculus directly above the polished stone slab. The body of the deceased separates from the body of mourners lowering out of sight and the expanse over the valley is framed in the doorway before the assembly. The mourners exit a narrow ramp which follows along the walls of the cylinder.

Top: Section showing the resting place of the deceased after the procession across the path of the field. Here the body will be committed to the crematorium below. The ceiling supported above the walls hovers on a halo of light.

Bottom: In plan, a narrow ramp down encircles the stage on which the body of mourners exits in single file after they separate from the body of the deceased.
5 Chapel

Left: Detail sketch of the concrete roof of the space, supported on steel members that are embedded into the concrete formed walls of the cylinder. This allows light to come in just under the roof and gently wash the edges of the ceiling.

Right: Rendering of a view up to the ceiling.
5 Chapel

Early study models in sunlight of the space where the body of the deceased separates from the body of mourners. The form second from the left was chosen. It blocks views to the outside world except through the opening behind where the body is laid. When the body lowers out of view the opening reveals the valley and mountains beyond.
The World Below
Plan and section of the ceremonial crematorium below the chapel and terrace.
6 Terrace and Ramps

From the cylinder the curved ramp descends onto a semi-circular, grass terrace. The view is out to the city below, the forests and hills all around. From here the mourners can begin to regain their bearings as to the direction of the world from which they had come. Grass pathways to either side slope into the woods and criss-cross down the hillside.

Looking back in the direction of the building, a facade of 7 stone arches sunken into the ground offer five shadowed openings into the earth flanked by two light openings with ramps returning up to the level of arrival.

Top: Plan of the terrace which gives views out to the city in the valley and the wooded hills beyond.

Bottom Left: Section displaying the relationship of the cylinder to the terrace.

Bottom Right: View out to the city of Roanoke, the mountains, and the sunset beyond.
The World Below
Paths crossing down the slope of Read Mountain away from the place of committal.
6 Terrace and Ramps

Top: A section and plan of the ramp that connects the mourners back to the world from which they came.

Bottom: The initial idea for the ramp (bottom right) and how the ramp relates in a later transverse section to the crypt below and the field above (bottom left).
6 Terrace and Ramps

Sketch of one of the ramps which runs alongside the field from the terrace back to the parking area.
7 The World Below - Crypt

Early sketch of a view into the crypt space under the field.
7 The World Below - Crypt

The mourner will return to the deceased’s cremated remains. This visitation occurs in the shadow realm of the crypt. There is much hidden in shadows and space that remains unseen but only heard in the sound of footsteps against elevated floors. Regular punctures in the ceiling among the grid of sunken archways allow the light of the living into the space directly above the family tombs.

Top Left: One cell with the ceiling (the field) removed. The wall for housing the cremains of individuals is penetrated by the arc of the stone wall, ending in shadow.

Top Right: Section of one of the cells in the crypt area of the building. The pre-cast slabs of the floor are elevated from the ground and do not come in contact with the rough granite walls or the polished stone of the family tomb.

Lower Right: Plan of a cell of the crypt. The double lines on the floor represent the edges of the elevated pre-cast concrete slabs.

Bottom: Transverse section through entire crypt area.
An early idea for the character appropriate to the space.
Narrative, Emotive, and Sacred: as Found in Various Modern Buildings
Cemetery of San Cataldo
Modena, Italy
Aldo Rossi

A head, a navel, a vertebrae, a spine, a skeleton, a pair of wings, a halo, an angel, an angel of death

Down into the earth,
A perimeter, a center
Connecting with the expanse

A space filled with moments of light, shadow, memory, and emptiness, surrounded by death

Narrative
Emotive
Sacred
Santa Maria Degli Angeli
Ticino, Italy
Mario Botta

The world above
The world below
and a pathway into eternity

Weight and timeless stones emerge from the earth,
casting deep mysteries

Walls and Roof? Shadow and Light.
Brion-Vega Cemetery
San Vito d'Altivole, Italy
Carlos Scarpa

Narrative
Emotive
Sacred

A beginning, A source (photo by D. Mali)
A love (photo by D. Mali)
Buried, Timeless, Ruin (photo by D. Mali)
Weight (photo by D. Mali)
Mystery (photo by D. Mali)
Distant Hope (photo by D. Mali)
Crematorium
Berlin, Germany
Axel Schultes

Narrative
Emotive
Sacred

Fire Dust Shadow

breaking up into light
and a hovering mass in the hand of god

An undisturbed center
the generator of it all
(photo by J. Harrison)
Appendix B: Essays on Related Topics
It is perhaps looking on the body of the deceased that humanity first began to understand the nature of its existence and the possibility that there may exist things beyond the realm of what men may taste, touch, smell, and see. In fact, death has helped in the realization of all civilizations. Governments, money, homes, toothbrushes, lampshade covers, all are inventions to prolong the arrival of death.

Life, therefore death; death, therefore life. Not only is death very relevant to the living, it is essential to the living. For anything to come to life, something must go to death. In fact many things in our world will commit suicide for the continuation or benefit of an entire species. In acknowledgment and understanding of death, gratitude of life can be attained.

Sociologically, in the US, the “ideal” death would be an invisible one, a death without pain, suffering, humility, and fear. Most do not want to be bothered by what a corpse represents. In the body of the deceased a person views their own mortality, a threat to social order, and an economic burden. Much of what is done at the end of one’s life is an attempt to get the social and biological lives (and death) to match up. In this scenario, (especially in the US) many are left to die alone and forgotten, left to strangers that are paid little to care for or ease the transition.

Avoiding the pain of death is a mistake and a disservice to humanity. Grief is a direct result of death and is pain looking for a cure. The cure is accomplished through mourning. Mourning enhances our ability to deal with the pain. The mourner and the deceased will take similar paths. Both will break from society for a time to be reunited later (the deceased to be united with the society of the dead).

When a family cat dies what does one do? A cardboard box big enough, is found and if the person has a yard, out back a hole is dug in the earth, and the remains are buried (of course a vet can be paid to transport and dispose of it). Why is this process so different from when our relatives pass? The corpse, in a very physical way, is offensive to sight and smell. What is to be done with the dead body? Many rituals have developed around the process of caring for the dead. These rituals are essential for helping people mourn and for dealing with grief.

Death and Dying in the USA

1. Fustel de Coulanges, The Ancient City (Garden City, New York: Doubleday & Company 1864), 25
2. Clive Seale, Constructing Death: The sociology of Dying and Bereavement (Cambridge, United Kingdom: Cambridge University Press, 1998), 7
Cremation

Funeral rites have long assisted the dead into the next world and to bring the living back to everyday life. The American funeral is a fairly recent event in terms of the history of death rituals. Most commonly the body of the deceased is buried 6 feet down in the earth, at the end of a public ceremony commemorating the life of the deceased. At that point, in the USA, care for the dead mostly ceases. Our ancient ancestors all favored a way of dealing with the dead known as cremation: The incineration of the remains into a mound of bone fragments and ashes. Greeks preferred this method to burial, because they believed the flames separated the pure soul from the impure body.

The history of cremation is shrouded in controversy. Most arguments for or against cremation have taken place among Christians. Is the body required for the after life? If the body is the temple of God’s spirit does man have the right to physically destroy it? Is a body in flames too close to the notion of Christian hell? One of the biggest religious concerns was that the basis for this rite was in “heathen” or “pagan” religions. At one time, the act was banned by the catholic church who thought the act to be supported by no more than “…atheists and infidels, professed enemies of God and His revelation who] re-echo the spirit, if not the words, of Pagan crowds who burnt the martyrs.”

Cremation continued to gain support among people in the USA. The fears of those who opposed it, hundreds of years ago, are still unrealized. It has not become customary, as some had thought, to toss bodies into flames haphazardly. In fact, the argument could be made that the movement toward cremation in the USA is based on the desire to make death more ritualized, not less. While the burial ritual is quite cemented in the American way of life, the cremation ritual remains almost nonexistent. Without the traditions of burial, families are allowed to take back the power from clergy, funeral directors, and undertakers, and have authority over the death rites and customize them to the needs of the mourners. Another pro-cremation argument is the notion of elegance and beauty in the transformation of a body into ashes by being laid to rest in something akin to entering the sun. In burial, while things may be beautiful in the countryside cemetery known as “God’s acre”, below ground bodies decay and rot.

“The aesthetic argument was more fully developed. The swiftness of the process of incineration was “a relief to the mind” when compared with “the slow and distressing” decay of inhumation, Frothingham said, while “the graceful urn” was more beautiful than “the shapeless mound” and “white ashes” were preferable to “the mass of corruption” lying in the grave.”

“God’s acre” will most likely be dug up and turned into a strip mall and surrounded by urban sprawl in a number of years. This is not what most people are thinking of when they imagine themselves being laid to rest. Burial is seen as artificially complex, while cremation is simplicity. Burial is earthly, cremation is spiritual.

The procedure of cremation is in no way extravagant, but is simple out of necessity not poverty. There is no need for expensive coffins or embalming. Although some states do require a cremation container that the body be placed in, for the most part, all that is needed is the body and a powerful oven. The most efficient ovens will use oil or gas to fuel the heat. The process happens with very little noise, vibration, or smoke due to the technology of the today’s ovens. When placed in the “retort” which is the chamber of the oven where the body lays to receive the application of heat, it is exposed to temperatures so hot that any material inside, with the exception of some prosthetics or metal on the deceased’s clothing, will rapidly burn and turn into dust. The body can be consumed in a matter of one half hour. Afterwards the remains are collected into a cooling bin attached to the side of the retort. The material in this bin will not be composed entirely of dust. A number of bone fragments, such as large ball joints, like the hip, will be visible (as well as material such as metal, prosthetic equipment, gold and silver, such as that used in dental work, will melt down and mix with the dust). Foreign matter will be picked out and the rest of the fragments and dust will be processed through a machine which will bring the remains to a fine even consistency. At this point it will be placed in whatever vessel is specified and delivered to the family or friends. The whole process can be performed in about an hour with the right type of oven.

A study done by the University of Notre Dame in 1990 found that people who were using cremation were less likely to hold a service in a traditional funeral home and three times as likely to hold a memorial service as opposed to those who practice burial. A 1995 national telephone survey of American attitudes toward ritualization and memorialization found that 83 percent of the survey sample that preferred cremation wanted some kind of end-of-life ceremony.

One of the major reasons people chose cremation is their ability to customize the ritual and avoid tradition and social pressures that are associated with the typical burial.

2. Ibid., 74
3. Prothero calls these the “death professionals”
4. Ibid., 18. Reverend O.B. Frothingham delivered a pro-cremation sermon at Lyric Hall in New York City in the early 1870’s
5. Ibid., 202, this passage is from an article by Robert Fulton called “Death and Identity”
6. Ibid., 202

[59]
The Sublime Nature of Pure Form

Architectural purity is simple beauty without that which is extraneous. This simplicity is not the simplicity of boredom or poverty, but one of discretion and extreme care. Le Corbusier, who sought purity of form in architecture, spoke on this subject extensively. Le Corbusier ascribed people’s attitudes coming out of the Middle Ages and into the Renaissance as seeking for spiritual clarity. As their societies stabilized from all the uncertainty of the medieval world, people began to search for clarity. This can be seen in the example of the clean cornice against the sky.

Pure form in architecture is powerful. As Le Corbusier explained,

"...This horizontal and this vertical, this harshly serrated line or this gentle undulation, the closed and centered form of a circle or a square – these all work strongly on us, characterize our creations, and determine our sensations. Rhythm, variety or monotony, coherence or incoherence, a surprise that may enchant or disappoint us, joy of light or chill of darkness, the serenity of a sunny room or the anguish of a room filled with dark corners, elation or depression, these are all consequences of the things I have been drawing, and they act on our sensibility as a series of irresistible impressions."

Cubes, cones, pyramids, and cylinders are forms which are clear to our minds and tangible. As children we come to appreciate pure form. Children grab them, as toys and shove them correctly into corresponding holes in childhood puzzles. These basic forms are easily identifiable. Claude-Nicolas Ledoux called the circle and square “the alphabet used by artists in putting together their best works.” When one of these forms is submerged or perhaps obstructed from view by another object, often enough information is even though a person may be dwarfed by its size, the viewer can understand all facets of the building with out having to fly around it in a plane or a computer model. Not only is the form easy to comprehend, but the space around the form also becomes clear. The negative space is clearly defined and often can accommodate clean shadows with distinct edges. Shadows also read more clearly, therefore on the surfaces of pure forms. In relation to ceremony or ritual, pure forms may be helpful. Each form can be autonomous and exist on its own. It is reasonable that each stage of a ritual could be housed within a pure form with a distinct beginning and end or a distinct perimeter or boundary for that matter. This is the beginning of architecture and its relationship with ritual: the perimeter creates a center and therefore, a hierarchy, a sacred or holy place. Understanding of center is made tangible in a pure form and is therefore helpful in making ritual and procession clear.

Pure forms survive most easily in an ideal world, but when these forms enter the real world there is much accommodation to be made to bring them into being. It is especially difficult in the realm of architecture, where people will live and work. The placement of doors and windows will play as large a role in impacting the emotions of the viewer as the form, proportion, and harmony.

"Consider, then, the supreme importance of placing windows; see how the walls of the room are affected by the light. This, in effect, is a crucial moment in architectural design, a source of decisive architectural impressions..." "Light and forms, specific intensities of light, successive spaces – these all act on our sensibility, producing physiological sensations that scholars have recorded, described, classified, and specified..."

Placement of elements in the façade of a form must be made to support and enhance the form and bring the interior to life with a certain character. Windows and doors will help create a place in the agony of darkness or in the delight of sunlight.

Ledoux once said that “everything that is not indispensable tires the eye, disturbs thought, and adds nothing to the conception.” It is on the undisturbed surfaces and at the clean edges of these pure forms, that one will find the shadows and light that are essential in architecture.

2. J.C. Lemagny, Visionary Architects: Boullee, Ledoux, Lequeu (Houston: Gulf Printing Co., 1968), 67
3. Jacques Guiton, 28-30
4. J.C. Lemagny, 67
“Architecture of Shadows”

In ancient Greece there was a way of punishing a man for a crime that sentenced him to forgo burial at the hands of his surviving family. Those who were denied proper burial would not be able to enter rest after death. These unfortunate souls became what were called “shades”, forced to wander our world in the darkness and heard only in the night. If the dead reside only in the darkness than how appropriate is an “architecture of shadows” for funerary buildings.

Etienne-Louis Boullee was perhaps the first person to coin the term “architecture of shadows” for his work. Especially in his funerary monuments and cenotaphs this term is clearly realized. Richard Etlin, in his book “Symbolic Space” identifies three parts to Boullee’s architecture: nakedness, “buried-ness”, and negative space. This architecture was naked and unadorned made out of stone that was unpolished and absorbed light. It was a buried architecture, bringing the earth closer to the body. It was an architecture of negative space in which shadow would form ghostly images of architectural elements.

Comprehending existence in this world is linked to the space around the human body. Upon entering a room, we immediately fill the rooms with our presence and the space acts on our bodies consciously or sub-consciously. How does the masking darkness of a shadow affect our ability to understand a space? Deep shadows create a mystery for the viewer connecting them with something intangible. This connection could be described as an absence that can be felt. Shadow can express qualities in a building or domain that can be quite different from the familiarity of the daytime world. This is part of the job of architecture, to create a feeling distinctly different than the surrounding world.

Architecturally shadows can be used to hide the profane and create privacy or separate the profane from the holy. This separation is at the heart of the human psyche’s need for orientation and direction in the cosmos. This is similar to a ritual which begins at the creation of a perimeter and a center. In a perimeter of shadow, light will exist in the center.

Shadow can add weight to a composition. Boullee's idea of “sinking” architecture into the ground is tied with this notion of the weight of shadow. Especially in funerary architecture, Jacques-Francois Blondel “counseled architects to lower the level of the ground a few steps from the surrounding terrain. That way the kinesthesia of walking down into the earth would affect the visitors in a powerful way, engaging the senses along with the imagination, to give an intimation about one’s own mortality.” Like standing beside the impenetrable mass of the Vietnam Memorial on the National Mall in Washington D.C., after entering the earth, with only the expanse above, and a dark mass which is the shadow present beside the visitor. A shadowy mass hovering above can have a similar affect on the viewer. In a halo of light in the Hagia Sophia or in the chapel at Ron Champ there is a powerful affect on spirituality. This is due in part to the affect of the dark mass above which seems supported by the hand of God or mystery. Also in the architecture of shadow, like the mass of the Vietnam Memorial, the buildings themselves can become the shadow. Boullee used dark, light absorbent material to achieve this. The monotonous surfaces of his buildings were unadorned and the shadowy masses defined the spaces where light would not reach. The voids became like decoration in a negative light.

“Whatever exists has already been named; and what man is has been known; no man can contend with one who is stronger than he. The more words, the less the meaning, and how does that profit anyone? For who knows what is good for a man in life, during the few meaningless days he passes through like a shadow? Who can tell him what will happen under the sun after he is gone?”

1. Fustel de Coulanges, The Ancient City (Garden City, New York: Doubleday & Company 1884), 23
3. Richard A. Etlin, 152
4. Ecclesiastes; Solomon
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Case Studies

Brion Cemetery (page 55)
a-f – permission for the use of photographs granted by Darshana Mali

Crematorium in Berlin (page 56)
a-b – permission for the use of photographs granted by Jon Harrison
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Gregory Scott Hirschmann

Hayes, Seay, Mattern, Mattern, Inc., 2007-
Roanoke, Virginia

Virginia Polytechnic Institute and State University

Bennett Frank McCarthy Architects, Inc., 2001-2004
Takoma Park, Maryland

Bachelor of Science, Architecture, 1997-2001
University of Maryland at College Park