RICE UNIVERSITY

Closer to Heaven: The Typology of the Cemetery Tower
by
Amanda McRae Slaughter

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APPROVED, THESIS COMMITTEE:

Clover Lee, Assistant Professor

Albert Pope, Professor

John J. Casbarian, Professor

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Closer to Heaven: The Typology of the Cemetery Tower

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Amanda McRae Slaughter

Within the past few decades the unsustainability of mainstream cemeteries has been variously addressed. The cemetery high-rise offers one of the most dramatic models for correcting widespread problems of land use, high burial costs, and issues of isolation from the city. The "cemetery tower" takes advantage of the existing high-rise for a new purpose but the twelve extant buildings have not recognized the potential of the cemetery program to alter and liberate the conventional high-rise typology. My project demonstrates how the high-rise can be reimagined when it houses a cemetery. Correcting what Rem Koolhaus dubbed the "lobotomy" of the modern high-rise in which the sub-divided interior diverges from the iconic exterior, my design induces a salutary effect by marrying the design of the exterior and interior.
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closer to heaven | what's plaguing conventional cemeteries?

What's Plaguing Conventional Cemeteries?

- Land Use Issues
- High Burial Costs
- Inaccessibility
Ground burial for today's world population would fill the area of 60 major US cities with uninterrupted graves.

Land Use is the most pressing issue surrounding ground burial worldwide. Some countries have tried to conserve land by enforcing cremation or recycling graves. In the United States no such restrictions exist and 70 percent of the population chooses ground burial. The small footprint of a cemetery high-rise addresses the issue of land use by way of design.
Part of the ecological impact we witness today results from the modern burial practice of memorializing individuals, which was established by municipal cemeteries in the nineteenth century. Previously most burials occurred in the charnel houses or mass graves in parish cemeteries, which consolidated burial space. Pere Lachaise Cemetery (1804), which consists entirely of individual graves, arose after the closing of such collective-burial cemeteries as the famous Cemetery of the Holy Innocents (1780), formerly located in the heart of Paris.

One hypothesis suggests that dwindling religious faith bolstered a newfound reverence of the body and placed a new value on individuality, leading to the craze for individual memorial in burial. Whether manifest as a life-sized sculpture of the deceased or a plain tombstone, it has become commonplace for every burial to be marked by a discrete stone; as a result the expansion of the cemetery occurs at a rate of one memorial per burial.

Pere Lachaise Cemetery was among the first of those to be built outside the city when cemeteries inside the city were closed due to changing societal ideas about death. Pere Lachaise is potentially the most famous and influential Western cemetery in history. Its mausoleums represent the individualism and self-dramatization that was encouraged by the romantic ideals of the nineteenth-century: values that have persisted in cemetery design to the current day.

"It is in the beginning of the nineteenth century that everyone has a right to her or his own little box for her little personal decay..."Michel Foucault

THE SUBURBAN CEMETERY / THE SUBURBAN HOUSING DEVELOPMENT

The suburban cemetery model presents the same relationships among people as the suburban housing model. Social hierarchy is clearly delineated; land is valued differently according to its location in the cemetery; tombstones, sarcophagi, and mausoleums differ in size and shape to reflect status. Like a new housing development, Pere Lachaise had trouble attracting tenants at first. Only after it acquired the bodies of a few notable figures did it become a prestigious burial ground.
Chinese “can’t afford to die” as funeral costs soar
Thu Apr 5, 2007 9:31AM EDT

“It’s a severe violation of China’s funeral regulations and a waste of land resources”

Cost of burial increases by 61% in 5 years in UK
Scotsman.com News - UK

The 61 per cent increase is largely due to a shortage of burial plots and the number of expensive coffins available

Average Japanese funerals cost enough to make the deceased roll in their graves

Japan has the highest funeral costs in the world (13,000 USD) despite the fact that 99% of the population is cremated. The high cost is largely due to the high demand for land to bury cremation urns.

Southern Africa: AIDS Puts Funeral Traditions Under Pressure
Inter Press Service - February 17, 2006

South Africa’s port city of Durban, found that it cost the country’s citizens almost seven times more to bury a person than care for a sick relative. Certain households affected by HIV/AIDS spent up to 30 times more on funerals than on health care.

Funeral industry mourns over China-made caskets
USA Today
Sunday, July 17, 2005

China’s entry comes as the U.S. funeral industry fights four federal lawsuits alleging that leading funeral home chains and a top casketmaker are conspiring to fix coffin prices.

High Burial Costs are another pressing problem with full body burial worldwide. In the United States, a funeral is the third most expensive purchase a consumer will make in a lifetime, with an average cost of $8,500. Tower construction saves money mostly by conserving land and building above ground, reducing the average cost of a funeral to $1,800.

$5,000 - $10,000
typical ground burial
closer to heaven | high burial costs

A funeral is the third most expensive purchase most Americans will make in a lifetime.
Inaccessibility is another notable problem with mainstream cemeteries. Cemeteries in the United States are usually constructed outside urban centers where land is least expensive. These remote locations are incompatible with the ways in which cemeteries are visited. Cemetery visits on average are brief and frequent. The average visit to a cemetery is minutes long.

0:25

Men generally stay at a cemetery for 18 minutes and women on average stay 27 minutes. Of the people who do visit the cemetery, 41 percent visit weekly.

Currently, commemorative traffic peaks during the weekends when people are available to devote time to travel to the cemetery.

By accommodating a cemetery in the paradigmatic urban form of a high-rise, the cemetery can be reinstated in populated urban centers and made better able to accommodate its visitors.
...it is only from the start of the nineteenth century that cemeteries began to be located at the outside border of cities....the cemeteries came to constitute, no longer the sacred and immortal heart of the city, but the other city, where each family possesses its dark resting place.”  

Michel Foucault

The modern cemetery is not simply an isolated city of its own, it has a critical relationship with the city: as its mirror image. Pere Lachaise Cemetery was among the first of those to mirror the city: it is equipped with its own streets and street names. This “mirror image” is as alienating and revealing as Jacques Lacan describes the mirror image to be vis-à-vis ourselves.

Michel Foucault describes the cemetery as a “heterotopia,” or utopia that has become manifest in real space and exists as a “counter-site” by which real sites are “represented, contested, and inverted.” These spaces are “outside of all places, even though it may be possible to indicate their location in reality”; their “role is to create a space that is other, another real space, as perfect, as meticulous, as well arranged as ours is messy, ill constructed, and jumbled.” The modern cemetery’s isolation from the city, and even its extreme form of representation in regard to the individual serve to create as space that is not meant to be a part of daily life but rather a compensatory reflection upon it.
Scaling Up: The Cemetery Tower

The Miniature

The Giant
The Miniature

When cemeteries were moved outside of the city they were not only designed as towns within themselves, they were built as miniature towns. Pere Lachaise consists mainly of mausoleums, a miniature form of the house, fully equipped with doors, windows, fences, and organized on scaled-down, named streets. The miniaturization of the cemetery further isolates it from the city by precluding any functional interaction. The useful form of the house was now intended only to create a sense of domesticity for the deceased. In her critical meditation on nostalgia, On Longing, Susan Stewart theorizes the role of scale. She writes that "use-value" is converted in a miniature to "display-value." But the miniature also emphasizes "private, individual history" in its display.
Aerial photographs dramatically reveal the miniature appearance of mainstream cemeteries with their miniature infrastructure. The scale of the "cemetery city" is inconsistent with the scale of the surrounding city such that the cemetery visibly violates the pattern of the urban fabric.
If the miniature functions at the level of display, Susan Stewart argues that the gigantic functions at the level of landscape; with the gigantic one accumulates knowledge in "parts" and one "moves through" it just as she would a landscape. Stewart suggests that the "natural history" element of the gigantic associates it with the "public" as opposed to "private" interest. The cemetery high-rise functions as a kind of "giant" on the horizon; embodying notions of the collective and public, this "giant" suits the urban environment in which it is situated.
MEMORIAL NECROPOLE ECUMENICA, in Santos, Brazil, is the tallest cemetery building in the world, standing at 108 meters, containing 32 floors, and accommodating 147,000 graves. It includes an eight-story garage for visitors, two churches and 21 chapels. Amenities include beds for grieving friends and relatives and soothing and somber background music 24 hours a day. Each tomb costs $1,800 and is guaranteed in perpetuity, except for those reserved for the poor who are able to lease a tomb for five years. On the top floor, between the ventilating machinery, tombs are available for free. The 12 precedents of high-rise cemeteries that have been built—all in Brazil—show the benefits of using this architectural typology to correct some of the problematic aspects of cemeteries.
Re-Imagining the High-Rise

- Redistributing the Program
- Reinterpreting the Envelope
- Reuniting the Interior
Redistributing the Program

Typically, high-rise buildings are organized by plan in order to maximize floor area. However, a cemetery is experienced mostly in elevation, which implies that an ideal high-rise cemetery would be organized to maximize elevation. In response, my proposal redistributes the cemetery program of the graves from the floor to the skin of the building.
closer to heaven | redistributing the program
Reinterpreting the Envelope

Typically, the skin in a high-rise is thin and constructed out of glass to allow for views out. In the case of a cemetery, in which the graves serve as the display, the object is not to look through the skin as much as to look at the skin. Now the skin is thickened to contain all of the graves, forming a structural skin, and the views beyond the envelope are replaced by views of the envelope.
Reuniting the Interior

The thickened envelope liberates the core of its structural responsibility. By redistributing the vertical circulation into the envelope as well, the functions of the traditional core are absorbed and the central volume can be removed. One can now occupy the center of the building for 360 degree interior views of the grave displays.
Reuniting the Interior

Floors that typically subdivide the interior surface are pulled away from the skin allowing for vertical views. Now the floors function like bridges that structurally brace the wall, maintain visual unity of the interior, and provide access from the peripheral catwalks to the center of the building for new vantage points.
closer to heaven | reuniting the interior
closer to heaven | project site: trinity cemetery

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Project Site: Trinity Cemetery

- Site Selection
- Reclaiming the Park
Various urban site scenarios exist for a high-rise. The tower in the park is one that is suitable for the Trinity Cemetery site.

Site Selection: Manhattan Island

The island of Manhattan fits the profile of a site that has a scarcity of land, high cost of burial, and which is currently served by remote cemeteries off the island. Large expanses of land in Brooklyn serve the population of Manhattan, with the exception of one functioning cemetery in Harlem. Inserting a cemetery high-rise on the site of this existing cemetery in Upper Manhattan would provide the city with approximately 80,000 graves within the footprint of two typical Harlem lots.

Site Selection: Trinity Church Cemetery

Trinity Church owns a 24-acre cemetery in upper Manhattan. In 1978, when the grounds were filled, the cemetery built a 3-story mausoleum to continue functioning. Now, the mausoleum has only 1,300 remaining plots and is facing the terminal condition common to cemeteries: reaching full capacity.

This project proposes a cemetery high-rise in place of the existing mausoleum. The construction of a high-rise affords the opportunity to exhume the existing graves and reinter them in the tower in order to reclaim the park for the city.
closer to heaven | site selection
Reclaiming the Park

The cemetery high-rise that will replace the existing mausoleum will extend the lifespan of the cemetery. To integrate the cemetery with the city, the existing cemetery grounds will be reclaimed as a public park. The existing graves will be exhumed and reinterred in the lower 4 floors of the tower, the headstones will be relocated respectively. The landscape will remain open and green. Here are examples of the countless activities that the people of Manhattan bring to central park. I imagine that the community will institutes similar activities in this landscape.
closer to heaven | reclaiming the park
Project Building: The New Cemetery Tower

- Envelope
- Sanctuaries
- Public Path
The Envelope

The tower will accommodate two types of burial in the envelope, full body niches and cremation niches. The full body burial necessitates a minimum wall width of 8 feet to accommodate a casket and an additional 8 foot wide catwalk to access the graves: constituting a 16 foot thick wall. The cremation niches are much thinner, with a minimum depth of 18" the cremation wall will have an overall thickness of 9-1/2" with its catwalk. The vertical elements that divide zones of graves and the horizontal members that form the catwalks create a robust egg crate structural envelope.

Graves can be purchased as single pixels within the structural bays, or clusters of pixels can be purchased to amass a more sizable burial plot. The maximum number of pixels one person may devote to him/herself is limited by perimeters of the structural bays, which vary on each face of the building. The maximum number of casket-size pixels within a structural bay is 32.

Due to the thin and thick wall types, the combination of full body burial niches and cremation niches establishes levels of opacity and transparency in the building. The majority of cremation niches are located on the west side of the building that faces the river to allow for views through the openings of the thinner wall. The north and south facing walls, which are directed towards residential neighborhoods, consist entirely of full body burial with few openings.
**medium sanctuary**
75 person capacity
floor 21

**small sanctuary**
25 person capacity
floor 14

**large sanctuary**
200 person capacity
floor 4
closer to heaven | sanctuaries
closer to heaven | sanctuaries

medium sanctuary

opposite page: view from north wall of sanctuary space beyond

this page: view from lookout platform facing wall of cremation niches
closer to heaven | sanctuaries
closer to heaven | sanctuaries

small sanctuary

opposite page view from within the lower void of bridge that connects the sanctuary and lookout spaces

view of sanctuary space and bridge from the same level
Public Path

The tower, which sits at the end of the park, is intended to create a visual presence for the cemetery in the city while maintaining a degree of physical separation between the recreation space of the park and the space of the cemetery. One path that connects the series of lookout spaces begins at the entry from the park and ascends to the lookout platform at the top of the building to provide a public passage that prioritizes views to the river, park, and surrounding city and treats the grave displays as a backdrop around these highlights.
Public Lookout Platform
The top floor is designated as a fully accessible public lookout platform. Since it is at the top of the building, and does not obstruct views to the wall, the floor connects to the periphery of the building, yet a whole in the middle allows one to also view the interior of the building from this level.

There is no roof to the building to allow in additional light and ventilation. The only conditioned spaces would be those of the sanctuaries, bridges, and lookout spaces.

Vertical Circulation
Three elevators that extend the full height of the building provide access for both the public and the private users of the building. Two additional service elevators extend from the caretakers area on the lower 3 floors (underneath the large sanctuary space) to the three sanctuaries where funerals take place each day. All elevators are imbedded in the thickened envelope.
Addressing the "Lobotomy" Conundrum
Addressing the “Lobotomy” Conundrum

The traditional relationship that exists in high-rise buildings between the core, floors, and envelope has been overhauled in light of the unique demands of the cemetery program. The changes have a larger effect beyond the functionality they afford.

The design eliminates the disparity that typically exists in high-rise buildings between their monumental exteriors and subdivided interiors. The quality that Rem Koolhaaus described as the “lobotomy” of the high-rise buildings affords an opportunity in offices buildings of effacing the variety of the interior but precludes a sense of collectivity that is critical in a cemetery high-rise. Koolhaus writes that a lobotomy “relieve[s] some mental disorders by disconnecting thought processes from emotions” and in the architectural analogue the static “Monolith spares the outside world the agonies of the continuous changes raging inside it.” In the case of the cemetery high-rise, however, the monumentality of the surface aptly portrays the memorials of the interior; here, the reintegration of “thought processes and emotions” can be seen to aid a healthy process of mourning.
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References


