Celebrating the Natural Cycle of Life:
A Birthing and Hospice Center

by Heidi Blycker FitzHarris
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Key words: Birth, Death, Lifecycle, Courtyard, Water, Sustainable, Cyclical

Thesis submitted to the faculty of Virginia Polytechnic Institute and State University in partial fulfillment of the requirements for the degree of Masters of Architecture.

by Heidi Blycker FitzHarris

Approved

Susan Piedmont-Palladino
Committee Chair

Paul Emmons

Marcia Feuerstein

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Thesis Abstract

When the special moments of life and death are imminent, where do you want to be?

My thesis seeks to create an eco-sensitive, sustainable building that celebrates the time and place of two of life’s most amazing events: birth and death. Rather than a conventional singular center, my thesis proposes a combined program for a new architectural project type: a Birthing and Hospice Center. Although the concept may be surprising, once people fully understand that we live in a closed system and embrace the cyclical nature of life, it is an appropriate program that represents another aspect of sustainability. The project site is located in an urban area of Old Town Alexandria, Virginia along the Potomac River.

The Birthing and Hospice Center integrates both the human life cycle and the material life cycle of the building’s materials, water, and site for a holistic experience and celebration. It explores how to heighten our environmental experience of place, light, air, water, and time. My thesis seeks to create a beautiful place where people can celebrate their own special event, while at the same time, understand and celebrate the larger realm of the natural life cycle.
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Thinking of human beings alone is a bit narrow. To consider that all sentient beings in the universe have been our mother at some point in time opens a space of compassion.

His Holiness, The Dalai Lama
from Zen Baby by Judith Alder

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I also want to thank my husband for his encouragement, support, and patience throughout this project and the past several years of school. He has helped me see the larger picture of life and the importance of celebrating every moment.
Introduction

I began thinking of my graduate thesis project in 1998 at my first internship with Ligon B. Flynn, FAIA. I arrived as a recent graduate and began my professional career with the final construction management and post occupancy evaluation for the Lower Cape Fear Hospice and Life Care Center in Wilmington, North Carolina. I was amazed how grateful the patients, families, and hospice staff were for the hospice philosophy, architecture, and landscape architecture.

Ligon designed the hospice center as a rectangle with two interior garden courtyards. The public circulation wrapped around the interior courts and had social alcoves for lounge chairs and game tables overlooking the garden water features. The twelve individual patient rooms were located on the perimeter with direct access to their own private garden. The simplicity of the design was very effective for both encouraging social support and private reflection. Each interior space had a direct visual or physical connection to the natural environment.

The design of the hospice center and people made a significant and enduring impact on me. A month out of theoretical architectural studies, I learned how important real architecture can actually be to people. The quality of space encouraged social community and also allowed for individual respite. A connection to nature is always important in architecture - and even more so during one’s last few days of life and for those loved ones trying to accept and grieve life’s ever changing cycle.
The everchanging cycle of life is closely linked to sustainable and environmental design. My interest in sustainable and environmental design began early in my undergraduate studies at the University of Virginia. During my four years, William McDonough served as Dean of the Architectural School. His teaching and philosophy of environmental design taught me that environmental and ecological ethics need to be inherent in every responsible design. It is not a specialty, style, or option. Rather, sustainable and environmental design must be at the core of every design for our world to thrive into the future.

We live in a closed system with finite resources. These resources must remain functional in the material and organic life cycle. This is the science of our planet. To be ethical and even simply logical, we must design and live accordingly.

As McDonough describes it in Cradle to Cradle, environmental design goals should not simply aim to be “less bad” or efficient, but rather should be eco-effective. This term reflects a new philosophy that considers the design and resources in their life cycle and future reincarnation into something else. In a closed system such as our planet, death is inevitable and rebirth is essential.

Consider the cherry tree. Thousands of blossoms create fruit for birds, humans, and other animals. In order that one pit might eventually fall onto the ground, take root, and grow... the tree makes copious blossoms and fruit without depleting its environment...

...Among its roots and branches and on its leaves, it harbors a diverse array of flora and fauna, all of which depend on it and on one another for the functions and flows that support life. And when the tree dies, it returns to the soil, re-releasing, as it decomposes, minerals that will fuel healthy new growth in the same place.

The tree is not an isolated entity cut off from the systems around it; it is inextricably and productively engaged with them.

McDonough and Braungart, Cradle to Cradle

Wind, waves, and vegetation: the planet is not inanimate. It is a living organism... every element is a constantly renewed resource.

... Fire on earth is entirely derived from a closed system into which nothing enters except energy from the sun. The sun through photosynthesis gives fire to vegetation and creates oxygen. Over thousands of millennia, decaying vegetation forms stocks of solar energy: fossil fuels like coal and oil... But the sun is the daily replenishing energy source that creates wind and rain, and these constantly 'renewed' energies can be harvested and consumed without polluting the environment.

Richard Rogers, Cities for a small planet

3. The Natural Ecosystem Cycle: A cyclic and dependent relationship between producers, consumers, and decomposers.

The Sun: our primary source of energy
The natural life cycle is also revealed globally in numerous cultures, religions, and environmental conditions. While working for the Department of State, I was fortunate to travel the world and experience things that enriched my life. I visited several undeveloped countries and was overwhelmed by the poverty and unhealthy living conditions the majority of the population lived. Witnessing how overcrowded, dirty, and resource poor so many cities were, reinforced the importance of quality environmental design and conservation of the world’s finite resources.

I was inspired with how joyful the children were who lived in these countries. It made me question the path of development and consumption in the United States over the last century. People in these countries maintain strong social connections with their families and community. They do not have material luxuries, but rather have fulfilling lives filled with love, happiness, traditions, and spirituality. Their faith in reincarnation and hope for enlightenment connects them to each other and the cycle of all life.

Realizing how large our world is and the impact of the billions of people, has helped me put my own life into perspective. Understanding this and our natural life cycle, stresses the importance of living and designing for future generations. We are only here for a short time, but our decisions and actions have a long lasting impact on the ecosystem.

We should celebrate birth and death as a natural cycle of life in a healthy ecosystem. We must do our best to maintain a healthy balance between life and natural resources.

All of this leads up to my thesis project -

Celebrating the Natural Cycle of Life:
A Birthing and Hospice Center

Kathmandu, Nepal

Fatehpur Sikri, India

Kathmandu, Nepal

Kathmandu, Nepal
OVERVIEW

Both the beginning and end of our life are extremely special events. Traditionally these events were celebrated at home with family and friends. Over the past century, these pivotal events transitioned out of the home and into institutional hospitals where they were stripped of their natural and social celebration only to be replaced by medical and institutional domination. People are now disconnected from life's natural life cycle and fear both birth and death. Families are forfeiting their intimacy with each other during two of life's most special moments.

Although the typical person does not make a connection between birth and death, several sociologists, historians, and nurses suggest the parallels and argue that both changed as they moved from home to hospital. Raymond De Vries argued that "even if medical control improved 'outcomes,' it was accompanied by institutionalization, which changed the experience of birthing and dying (Nickel)."

During the 1950's and 60's, medical domination grew to a point so absurd that pregnant women were drugged and restricted with ties and contraptions against their consent. A small backlash began with some doctors, such as Fedrick Leboyer, and social activists during the growing women's right movement. Although medical attitudes and birthing environments have improved, the underlying medical philosophy and domination is still prevalent. Most hospitals still view birth as pathogenic, a pregnant woman as a sick patient, and medicine as an art to overcome nature.

Hospitals also lack the compassionate relationship with terminally ill patients. The medical profession inherently wants to cure illness and will operate on a patient until death. They view death as a failure of medicine. This creates an unhealthy tension between the terminally ill and typical hospitals. Rather than enjoy the last few moments of life in a serene and loving environment with family and friends, some patients are continued to be operated on by doctors and unfortunately die alone in the sterile hospital operating room (Lindheim).

Although hospices originated in medieval Europe (Latin root hospes or Hostipium) and reemerged in the nineteenth century, birthing centers are a relatively new idea (Nickel). The natural connection of them as a single center representing our natural lifecycle has not been fully explored. My thesis explores this dynamic relationship through the architecture's site, landscape, interior space, materials, water, and connection to the natural environment. The Birthing and Hospice Center will celebrate the natural process and cycle of life while enabling the community to connect with the present, past, and future.

Oh no! This can't be true! This Mask of inexpressible agony, these hands clutching, clinging onto this head, like someone struck by lightning, shattered, who at any moment is going to fall to the ground, like a mortally wounded soldier.

This ... a birth? It's a murder.

And in the midst of all this suffering, the parents ... in rapture?

But it can't be true! No! It can't be true! And yet, it is true. Yes, this is birth for the child.

Frederick Leboyer,
Birth Without Violence

My own belief is that the use of heroic and experimental medical technology is often a moral outrage, showing callous disrespect for the sacredness of human life and a pathetic inability to face the reality of human death.

Peggy Stinson,
The Long Dying of Baby Andrew
from Handbook for Mortals

The nearer she came to death, the more, by some perversity of nature, did she enjoy living.

Ellen Glasgow,
Baren Ground
from Handbook for Mortals

Medical Domination of Childbirth and Female Body.

Birth Center's celebration of birth. Women are encouraged throughout the natural birthing process. Environment is nurturing and family oriented.

Hospice Center with a compassionate environment for patients and family.
Precedent

From the beginning of my thesis research, I imagined a holistic birth and hospice center that celebrated life in its entire cycle. I was creating an unexplored architectural program and had specific ideas I wanted to explore about public space, private space, and water.

Public Courtyards

First, I wanted the public space to have a civic and social connection to the urban environment, instead of being seen as a domineering institutional complex. Therefore, I wanted to keep the architectural building mass urban in scale, but porous to the natural and urban environment with defined social gathering spaces in the interior block. I researched famous courtyard buildings to analyze various scales, configurations, layering systems, and impact on social interactions and psychology.

Courtyard buildings have been a tradition in architecture for hundreds of years. Courtyards create a central core on a site for solitude, privacy, and even a religious inner sanctuary. They also have environmental benefits for the building and site. Porous building schemes allow natural daylight and cooling wind to penetrate more interior spaces. Furthermore, more interior rooms have direct access physically and a visual connection to the natural environment. Rain water may be collected for interior gardens or allowed to permeate through the soil sooner than if it were one large roof surface. Courtyards can be used to create a hierarchy of special spaces or even assist in wayfinding in large scale architecture.
Private Rooms

Second, I wanted the private spaces to have a comforting and adaptable environment, but not feel too domestic or New Age. I envisioned a serene spa-like environment that encourages relaxation, meditation, and self-reflection during life’s most intense events. I researched contemporary hospitality and spa interiors that have organic and sensual forms with clean lines and soothing colors.

Considering the amount of time individuals may lie in bed, I thought organic forms would be more visually interesting than linear shapes. A wrapping wall and ceiling plane creates a calming cocoon-like environment that embraces the bed area. Distinct ceiling planes and indirect lighting add visual interest and create a comforting and tranquil space.

I also wanted to promote a healthy and natural environment. The individual patient rooms all overlook a common green, lush garden courtyard that opens to the Potomac River. A flowing stream of water outside each room creates a visual and acoustical peace. All of the materials are eco-friendly products and are free of VOC’s to ensure healthy indoor air quality.

An adaptable interior environment for personal arrangement and comfort gives the patient more control over their individual rooms. Mobile furniture can be rearranged for various functions and social gatherings. Operable windows and shade devices for air and daylighting can be manipulated for personal comfort. Some interior spaces, such as the hospice rooms, can have their exterior wall dissolve with a stackable Nana glass wall to create a direct connection to the outside. Other spaces, such as the birthing rooms, maximize views to the outside while maintaining privacy. Above all, the private rooms are designed for the individual person’s maximum comfort and enjoyment.
Water

Third, I wanted the architecture to convey a sense of spirituality and connection to the natural environmental cycles. Although the center is a type of health care facility, I did not want the medical aspects to dominate the architecture. Furthermore, I did not want religion to dominate the program or architectural spaces. I tried to develop a general spirituality and celebration of life by using water throughout the architecture.

The use of water and its importance to my thesis grew throughout the design process. My initial design concepts all had water in the central courtyard. I also conceived of a feature water wall with cascading water down the atrium’s eastern face with a lower grotto-type space. However, my early schemes usually had the water simply flow from the main building down to the Potomac River. I finally connected the symbolism of the water cycle and life cycle in my final design. The flow of water from the heavens, down the birthing wing’s water tower into the lotus pool, around the center’s birthing and dying wings, and down to the Potomac River is the thread that ties the complete design and cycle together.

Water has been used for therapy and healing throughout the ages. Healing Places, by Wibert M. Gesler, explores the history of water in Epidaurus, Bath, and Lourdes. He describes four environments that have aspects of healing: Nature, Built, Symbolic, and Social. Water is the common thread that runs through these environments.

I investigated various ways water is used in architecture. It is used to site a building in the larger environment, to dissolve boundaries between planes, reflect images of facades and sky, and connect different spatial zones. Water is also used to create water gardens, to create environmental cooling with wind and evaporation, and to create calming sounds. Lastly, water has functional requirements in architecture and landscape design. It must be moved throughout the roofs, down to the ground, and moved or contained within the site. These functional requirements can be purely technical and hidden or they can be artistically celebrated and revealed.

Herman Hertzberger wrote, “Architecture can say something about certain phenomena such as time and water, which in turn make a statement about the architecture; they become mutually explanatory. By showing how things work, and so by bringing them to the surface, the world around us can be read, can be decoded, as it were; architecture must explain, unveil.”
Site

The site is located in Old Town Alexandria along the Potomac River. It is an entire block on South Union Street between Duke Street and Wolfe Street. The existing site has a large industrial warehouse named South Robinson Terminal. Located in an urban fabric of small to medium scale residential and commercial buildings, the site's current building and program are an inappropriate use of the urban site. The building's massing is an ineffective and insensitive use of the land - full lot coverage with low one to two story sprawl. Lastly, the building's security fence and shipping pier currently blocks community use of the waterfront and fragments the city's bike path.
Photo A. View down South Union Street showing canyon effect of warehouse's blank solid wall on right side.

13. Aerial photo of site looking west from above Potomac River.

Photo B. Panoramic photo montage of industrial brick and corrugated metal buildings. View straight ahead is towards Duke Street's dead end at the Potomac's river front.

Photo C. Panoramic photo montage of Potomac River front with fragmented bike paths, new townhomes with green space, Wolfe Street, and project site on right.
Design Studies

My early design studies focused on master planning the large urban waterfront site. As I developed the components of the program, I sketched building massing studies and program adjacencies. I looked at various ways the environment could influence and interact with the building's orientation, form, spaces, and technology. I tried to balance the natural open spaces with an urban building density. I struggled to create an elegant solution for parking and service functions in a permeable scheme with many public facades. Lastly, I tried to make a correlation between the meaning of our life cycle and the flow of water, air, and natural light.
Wellness Campus

- Several Smaller Buildings
- Reduced Scale & simpler

- Bring Parking Internally
  to allow building at urban
  edge for definition

- Three Garden Courts:
  1. Entry Court
  2. Life Cycle Court
  3. Solace Court

- Environmental Orientation
  West to East to maximize
  south and north elevations

- Shallow floor plans for solar,
  light, ventilation penetration

- Everyone will face south
  so rooms will open to
  Life Court at north
  - Even Northern MyLift

- Entry level at north so
  rooms will face south
  - Warm in sun, cool

- All rooms open to the
  Life Court w/ Maha Walls

- Southern Trombe Wall
  makes daily cycle of
  sun heat & cooling

- Photovoltaics on upper
  roofs

- Green planted roofs on lower levels
These are the first concept sketches where my building design evolved into three courtyards: a birthing wing court as a green roof play yard, the central life cycle court, and the hospice bereavement court. The parking and service functions remained troublesome since all the sides were public. I divided the parking between on grade and below grade. I kept the parking structure below the western half of the site to avoid water issues. Birthing and hospice rooms face inward towards the life court. This design has the rooms stepped and concrete towers angled to maximize the waterfront view from each bed. There is an open roof pavilion encircled by a green roof with vegetable gardens. Other roofs have photovoltaics and are sloped to shed water to the main court. Rain water cascades down the center atrium water wall into terraced pools, over a central grotto space by the lobby, and from each room roof into a stream representing life. It flows down to the Potomac River to continue the cycle.
The Cycle of Life

14. The Wheel of Rebirth, Image from Library of Congress. A Buddhist painting to explain the workings of karma (action and consequence) and the cyclical meaning of life.
Final Design

In addition to building on earlier design studies, the final design's urban massing utilizes several planning concepts from *A Pattern Language*.

- Multiple access points related to the urban fabric
- Positive outdoor space
- Courtyards scaled for people
- Wings of Light - narrow building plates for light and ventilation

- Connected Buildings - connect social fabric
- Entrance Transition - protective plaza that greets automobile, but then parks below grade
- Multiple courtyards with different functions, scale, and enclosures
- Layers of Access with hierarchy of open space - chapel in middle of inner sanctum
Rain water diagram: raining down, flowing along birthing raised aqueduct, sheeting down to life court, flowing along hospice wing, and returning to Potomac River.
Potomac River
The flow of water through the Life and Water Court symbolizes the cycle of life. The cycle begins with rain from the heavens collecting in the southern birthing wing's water tower. It collects in the upper pool platform until it cascades down to the lower koi and lotus pool. The lotus blooms represent the beginning of life. As the rain water rises, it crests the pool and flows to a raised aqueduct in front of the second floor birthing rooms. When it rains, the roofs funnel the water into the lower aqueduct. Rain water from the community and plaza buildings represents the middle of life. It collects at the plaza entrance and flows through an overhead aqueduct to the central glass atrium. A glass tube penetrates the atrium and empties the water on the east side. The water creates a water wall at the western end of the court where it cascades down several pools to the ground level. Lastly, the water symbolizes death as it flows down the northern side of the courtyard in front of the hospice rooms. As this life comes to an end, the water returns to the Potomac River. The transitional passage until the next rebirth, otherwise known by Buddhists as the Bardo, is symbolized by the flowing Potomac River and water evaporation back to the heavens (Thondup).
RADIANT HEAT CONCRETE PIERS
CONNECTING EARTH AND SKY WITH
CENTRAL AIR AND WATER CHASE

CASCADING WATER WALL

LIFE AND WATER COURT BELOW
SECTION THROUGH LIFE & WATER COURT, HOSPICE WING, AND CHAPEL
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Vita

Heidi Sue Blycker FitzHarris

Education
2001-2006 Master of Architecture
Virginia Polytechnic Institute and State University, WAAC
Alexandria, Virginia

University of Virginia
Charlottesville, Virginia
Magna Cum Laude

Experience
2005-2006 Ponte Mellor and Associates
Bethesda, Virginia
Residential and Commercial specializing in Design-build

2002-2006 FitzHarris Designs, LLC
Arlington, Virginia
Residential specializing in Historic Maywood and Historic State Tax credits
2005 Arlington HALRB Merit Award, Robinson Residence
2005 Arlington HALRB Honor Award, Gutman-Solino Robinson Residence
Designed and renovated my historical residence 2001-2004
Designed and constructing major addition for my residence 2004-2006

2002-2004 Department of State, Overseas Buildings Operations
Arlington, Virginia
Post Planner for Australia, India, Nepal, Fiji, Taiwan, Sierra Leone, Albania,
Ukraine, Belize, Barbados, Mexico, and Panama

2000-2003 Gensler
Arlington, Virginia
Corporate Workplace, Government, Strategic Planning

1999-2000 ACG Architects
McLean, Virginia
Retail

1998-1999 Ligon B. Flynn, FAIA
Wilmington, NC
Residential, Civic, Religious, Urban Planning