HEALING ARCHITECTURE FOR TROUBLED NIGHTOWLS:
RESTORING NATURAL RHYTHMS IN NOCTURNAL U STREET

by Abi Elena Kallushi
This thesis is an exploration of architecture as an active participant in human life, not just as a stage. When architecture is considered a participant it contributes to the improvement of our quality of life as well as aiding the healing process when we fall ill. As more people are diagnosed with anxiety and sleep disorders, the thesis considered questions of how the places in which we carry out our day-to-day lives improve the prognosis and, further, can architecture be used as a powerful tool for healing? It is possible that our disconnection from nature is partially responsible for our disrupted sleep patterns and misplaced anxieties. Perhaps natural elements and rhythms are too absent in our daily urban lives. But as more of us move into cities and our urban centers become denser, designers must find clever ways to help city owls reset their circadian rhythms. Architecture can help reestablish that bond with nature. This thesis explores an architecture of healing by proposing a program and design that follows the day and night circadian rhythms of our bodies, which in turn follow the sun and other natural phenomena. Located in a tricky triangular site in one of the busiest nighttime neighborhoods of Washington DC, a wellness center and sleep clinic would allow city dwellers to find a peaceful oasis for healing. In parallel, this thesis is also a study of collage as a design tool, as well as designing from details and the human scale.
This thesis is imbued with the advice, support, and encouragement of my WAAC faculty. Thank you:

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To mami, babi, and nona.
And to my wonderful friends, and the magical world of the WAAC.
But, as Hegel put it, only when it is dark does the night owl of Minerva begin its flight.

Walter Benjamin
I want to speak about bodies changed into new forms. - OVID

**BEGINNING:**

**COLLAGES**

mixed media collages (left-right):

- squares on my desk, glass and spheres, orange to my indigo blue, mrs. samsa, sushi, metamorphosis
- graphite, photographs by author, found images, Photoshop

**MOTIVATION:**

- the human mind and body is fascinating
- architecture as it affects our psychological and physiological well being is even more fascinating
- anxiety + sleep disorders are becoming increasingly prevalent in our culture
- we've got doctors, spiritual leaders, etc… entire systems in place to help us get better
- but what happens when we're left alone surrounded by four walls?

**THESIS:**

- it's possible that a myriad of factors of modern life are not in sync with our circadian rhythms and therefore we suffer
- connection to nature is key
- have you ever hugged a tree?
- ...but as city owls we're increasingly disconnected from nature
- architecture maybe isn't the answer? but it could be a facilitator…
- so can architects do anything about this? (yes!)
can architecture be good to us and maybe even gently guide us through a healing process? can architecture help connect us back to the natural rhythm?
“At either end of the long buildings were to be situated control booths, where technicians would command instruments to regulate the temperature, humidity, and air pressure, as well as to waft salubrious scents and “rarefied condensed air” through the halls. Nor would sound be left unorganized. Specialists working “according to scientific facts” would transmit from the central centers a range of sounds gauged to intensify the process of slumber. The rustle of leaves, the cooing of nightingales, or the soft murmur of waves would instantly relax the most overwrought veteran of the metropolis. Should these fail, the mechanized beds would then begin gently to rock until consciousness was lost.”

Sensits of Sleep, Melnikov

Douglas Darden’s proposed clinic for sleep disorders is designed to accommodate the patient through five stages:

“Initiation: descent to boat docked in interior canal, patient drawn upstream (low tide)
Suspension: patient lifted by crane to second level, ambulatory undulations downstream (mean tide)
Diagnosis: sleep and EEG monitoring (high tide)
Remission: prescription/therapy/surgery (flood tide)
Release: voluntary movement of patient back across canal; almost complete return (dry land)”

I was inspired by Darden’s approach to focus on the full cycle of a patient being admitted to, residing in, and eventually being released from the clinic. However, I focused on a different cycle: the day and night 24 hour cycle. The purpose of my clinic is to help restore the natural circadian rhythm, which I postulate is broken in our attempt to conform to a 9-5 job and staring at our computer or TV screens late into the night. Therefore, my program follows a different set of stages that revolve around the day and night of a patient:

1. Waking
2. Eating
3. Exercising (mind + body)
4. Bathing
5. Sleeping

I have used collage throughout this thesis as a powerful visualization tool. Collage helps me bridge the gap between concept and imagery. Here it allowed me to begin to understand sleep disorders in a visual way: the first step towards considering the spatial requirements these patients might have.

I spent some time looking at and cataloging sleep disorders:

- Insomnia
- Sleep Aprea
- Jet Lag
- Narcolepsy
- Restless Leg Syndrome
- Parasomnias
- Sleepwalking
- Circannual Rhythms
- Night Terrors
- REM Sleep Behavior Disorder
- Nightmare Disorder
- Sleep Paralysis
- Sleep Talking
- Bedwetting
- Sleep Related Groaning
- Exploding Head Syndrome
- Sleep Related Eating Disorder
- Shift Work
- Staring
- Nightmares

Digital collages for sleep disorders | photographs by author, found images, Photoshop
The site I chose to explore is a gas station located on Florida Avenue, Vermont Avenue, and V Street in NW Washington, DC - one block away from U Street. I was initially drawn to the U Street area in DC because of the significant metamorphosis that part of the city has undergone in the past few years in density, development typology, and demographics. Furthermore, this neighborhood, like the patients of the clinic, has a broken clock: it houses some of the most popular bars and music venues in the city and it usually comes alive at night as other parts of the city grow dark and quiet. It's much quieter during the day although more condos are being developed. While one of the goals of the design is to reconnect people with nature and their natural circadian rhythms, I welcomed the challenge of placing this program in a very busy and chaotic part of the city. In the initial stages of site research and analysis, I looked at the character of the neighborhood, and how the proposed clinic could benefit not only its narrower intended audience (the patients), but also the people that already live in the area. Another intention was to develop the ground floor programming of the building in a way that improves the safety of pedestrians in the site, especially at night.

Initial site research - looking at two potential sites in the intersection. Finally the gas station at 908 Florida was chosen.

site collage of noise levels with nyx and hemera

beginning: research

RESEARCH                      // SITE

site collage of building textures and colors

beginning: research

collage of a possibility of a building
INITIAL PROGRAM CONSIDERATIONS:

entrance / lobby / check-in room / place of entering the building for the first time

exit / check-out room

11 rooms
2 overnight rooms
9 stay rooms
+ balconies
shared bathrooms
personal bathrooms
shared kitchen
monitoring rooms
research labs
storage rooms
mechanical
3 doctor offices
staff offices
staff rec rooms
kitchen
staff bathrooms

small bulk house / suana
yoga studio / meditation space
series of vertical gardens
GONG HEALING!!!

library + reading rooms - (analog vs. digital)
tea room
night garden / star-gazing area
day dreaming pool / day garden
underground + sky areas for falling asleep or being awake
TWILIGHT SPACES

OTHER:

places to escape at night when you can’t sleep
places to fall asleep
places to wake up
places to cry
places to meet
places to smoke
room of nightmares
room of lucid dreaming
room of sleep paralysis

THE FIVE SENSES

scent - lavender, chamomile
touch - soft, clean, crisp bed sheets
taste - (saliva before you go to sleep - delicious yawn)

sound - white noise? silence

sight - comfortable darkness, light beyond the door

ARCHITECTURAL ELEMENTS:
pad
railing
landing
porch
door
hallway

wall

roof

These first drawings explore various sleep related rituals and habits through architectural elements.

room for sleeping under the stars

the thoughts that inhabit the ceiling (not finished)
WHAT NOW?

QUID TUM?
"Architecture, in the end, is nothing more, and nothing less than the gift of making places for some human purpose." – Spiro Kostof
A series of ten drawings were completed for a separate course (Bestiary) led by Berrin Terim and Jodi La Coe. Each drawing was completed in pairs: recto & verso, meant to be on each side of the paper. These drawings allowed me to focus on different aspects of program at a more detailed scale.
The ritual of the bathing became an important component of the program of this building. This speculative drawing explores the plan of the bathhouse as a sort of labyrinth in which first-time patients would have to make seven left turns before they reach the pool of water. The short and somewhat disorienting journey after a patient was admitted into the clinic would mark their separation from their previous life and the beginning of a healing process.

The sleeping rooms were an integral part of the design as well. The primary function of these rooms is to interact with sunrise and sunset while providing a comfortable space to sleep or be sleepless in. This drawing explores different arrangements for the sleeping rooms as a module.
A breakthrough: modeling with scrap materials allowed a Frankenstein building to emerge.
MODELING: MATERIALS STUDY

model collage on site, south facing courtyard | wood models, graphite, trace, paper, photographs by author, found images, Photoshop

scheme 1: V shaped building, south facing courtyard, patient rooms on east side | wood models, graphite, trace, paper, photographs by author, found images, Photoshop

scheme 2: V shaped building, south facing courtyard, patient rooms on west side | wood models, graphite, trace, paper, photographs by author, found images, Photoshop

MODELING

model collage on site showing corner library | wood models, graphite, trace, paper, photographs by author, found images, Photoshop

model collage on site, south facing courtyard | wood models, graphite, trace, paper, photographs by author, found images, Photoshop

scheme 1: V shaped building, south facing courtyard, patient rooms on east side | wood models, graphite, trace, paper, photographs by author, found images, Photoshop

scheme 2: V shaped building, south facing courtyard, patient rooms on west side | wood models, graphite, trace, paper, photographs by author, found images, Photoshop
all plans overlaid | graphite, trace, paper, Photoshop

DESIGN DEVELOPMENT

underground plan | graphite, trace, paper, Photoshop

second floor plan | graphite, trace, paper, Photoshop

ground floor plan | graphite, trace, paper, Photoshop

third floor plan | graphite, trace, paper, Photoshop

// BACK TO DRAWING PLANS
variations on a plan scheme
wood models, graphite, tracing, found photographs by author, Photoshop
DESIGN DEVELOPMENT

plan view of study model | wood, corrugated cardboard, plastic, graphite, paper

sketch of east-west patient rooms and library | graphite, trace, paper

west view of study model showing the patient rooms + balconies | wood, corrugated cardboard, plastic, graphite, paper
corner view of model: wood, corrugated cardboard, plastic, graphite, paper
DESIGN DEVELOPMENT

TACKLING THE PLAN + SECTIONS & ELEVATIONS

underground plan | graphite, trace, paper, Photoshop

ground floor plan | graphite, trace, paper, Photoshop

third floor plan | graphite, trace, paper, Photoshop

all plans overlaid | graphite, trace, paper, Photoshop

second floor plan | graphite, trace, paper, Photoshop

section sketch of bedroom with bathroom and balcony | graphite, trace, paper, Photoshop

north-south section sketch | graphite, trace, paper, photographs of model, found images, Photoshop

east-west section sketch | graphite, trace, paper, photographs of model, found images, Photoshop

florida avenue elevation sketch | graphite, trace, paper, photographs of model, found images, Photoshop

vermont avenue elevation sketch | graphite, trace, paper, photographs of model, found images, Photoshop

section and elevation hand drawings | graphite, trace, paper
PROGRAM

With a dose of personal bias, and intellectual curiosity, I set out to design a place where people troubled by sleep and anxiety disorders could come to heal within the chaos of the city. A sleep clinic not just for overnight patients, but for those looking for an escape where they could re-set their internal clock with the aid of both holistic and western medicine. The clinic would have doctors offices, therapy rooms, overnight monitoring rooms, continued stay rooms, an underground bath house, a small building dedicated to yoga and meditation, a tea shop, pharmacy, dining hall, and library, as well as public and private outdoor gardens.
Florida Ave & Vermont Avenue & V Street intersection

U Street during the day

U Street during the night

panorama of gas station site
HUNCH >> architecture can encourage a reconnection with the natural rhythm and be an active participant in the healing process

SITE >> a triangular gas station in downtown DC

PROGRAM >> a healing center combining western and holistic medicine

SUNRISE: WAKING
Bedroom: Balcony

MORNING: EXERCISE
- The Body: temple ground floor: vinyasa classes
- The Mind: corner building: library / workspace
- The Soul: temple second floor: meditation

DAY: EATING
- The Body: corner building: third floor eatery
- The Mind: corner building: library / workspace
- The Soul: hidden garden: soaking up the sun

AFTERNOON: EXERCISE

SUNSET & EVENING:
- Reflection: Gong Service
- Underground Bathhouse: Bathing

NIGHT: SLEEPING
Underground Bathhouse:
- grand pool
- mud pool with open showers
- changing rooms
- massage rooms
- staff rooms
- lobby and reception

mixed media collage: AutoCAD, found images, Photoshop

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GROUND FLOOR:
- Corner tea shop
- Open courtyard
- Yoga studio with front porch
- Private garden
- Clinic lobby
- Therapy rooms

MIXED MEDIA COLLAGE: AutoCAD, found images, Photoshop
DESIGN MANIFESTATION

SECOND FLOOR: PHARMACY, GONG ROOM, SLEEP CLINIC

Second Floor:
- Corner pharmacy
- Gong healing room
- Doctors’ offices with overnight rooms

// PROPOSED FLOOR PLAN: SECOND FLOOR: PHARMACY, GONG ROOM, SLEEP CLINIC

Mixed media collage
- AutoCAD, found images, Photoshop
Third Floor
- Corner dining hall for patients
- Gong Healing Room Mezzanine
- Open terrace for outdoor gatherings (with tea bar)
Fourth Floor
- Corner library (first level)
- Dormitory (first level of patient rooms)
- Rooftop of yoga studio

Mixed media collage
- AutoCAD, found images, Photoshop
Fifth Floor
corner library (second level)
dormitory (second level of patient rooms)
Sixth Floor

corner library (third level)
dormatorium (third level of patient rooms)
Seventh Floor

corner library (fourth and final level)
dormitorium (fourth and final level of patient rooms)
The following image shows the East elevation of the proposed building rising by Florida Avenue. As noted in the plans, the first two stories of the structure are oriented alongside the street to create a strong and consistent edge with the sidewalk. However, the larger dormitory tower (structure on the left) rising above the third story is oriented facing the East. The column structure supports and also divides each sleeping room for the patients. They are able to access their rooms through these east facing open corridors (a cross section of this is shown in the following pages.) The dormitory is connected to the corner building through an outdoor walkway, which continues to reinforce the notion that patients be exposed to the outside elements as they go about their day.
SUNRISE (& SUNSET)

(WAKING / FALLING ASLEEP)

Each bedroom in the dormitory tower - there are 20 total - is a place where patients can retreat from the chaos of the neighborhood while reconnecting with the cycles of the day and night. The bedrooms have east and west facing windows to catch the sunrise and sunset. Patients enter the rooms through a shared hallway which is meant to encourage them to get to know each other, however, each room also has a private bathroom with a shower, and a very private balcony which overlooks the secret garden below and the sunset.
The corner building hosts a tea shop, a pharmacy, a dining hall where patients can enjoy meals together, and a library dedicated to resources on sleeping and anxiety disorders. The tea shop at the very corner is not only for the patients to enjoy relaxing herbal concoctions but also for everyone from the neighborhood to stop by and interact with the building. As seen in the plan, the proposed buildings are separated from each other creating outdoor courtyards and places to sit and enjoy some tea, a book, or some company. Or simply allow pedestrians to walk through. The pharmacy is also accessible to all people who can enter it through the corner building, or through the clinic (on the right) after they have gotten a prescription. The two buildings shown are connected by outdoor walkways. The dining hall faces south and has a view toward the private garden. This is a place for patients to come together if they please. After waking up, they could start their day by getting breakfast at the dining hall and continue with their day. Above, is the library with a large north facing reading room, which could be a working space for patients as well as neighborhood folk working from home, or needing a place to be in peace.
This quick illustration omits the dividing wall between the bathroom and bedroom to show the shower connected to the balcony. While one of the lesser polished drawings in this book, the image shows the process of collage as instrumental to this thesis not just as a representation style, but a means of designing from seemingly separate parts to make a new whole. This collage uses images to create...
DAYTIME: WORKING OWLS

(Exercising :: The Mind)

Another view of the teashop, pharmacy, and library stacked on top of each other at the northern corner of the site: the intersection of Florida Ave, Vermont Ave, and V St. This is the most publicly accessible branch of the building complex. The corner tea shop at the ground floor and pharmacy above could support the needs of the neighborhood at large as well as the patients. Everyone would be encouraged to also make use of the library. While the print collection could focus on medical topics, the digital resources of the library could be of use to anyone. It could also be a great place to get tea downstairs and go upstairs in the library area to sit down and work from your laptop. The large north-facing windows would provide ample and diffused light and one could work uninterrupted. At night, the library would be reserved for the night-owls of the building, who perhaps can’t sleep and want to escape the confines of their room for a little while. Meanwhile the tea shop and pharmacy could stay open late. Pedestrians currently use the corner to cross from Florida Ave to Vermont and V; however the current gas station is not very well lit and it doesn’t always feel safe. Activating the street with a tea shop that stays open after hours, and provides lights and eyes on the street could be a way to make the area safer for night-owls in the streets.
It was important to provide a place – however small – to escape within the city, and within the building complex itself. A place where patients could be outside, surrounded by nature and away from the noise of the neighborhood. The south private garden is only accessible to patients and staff of the building and connects the yoga studios with the clinic. A weeping cherry blossom sits in a bed of gravel and grass, and there are benches where people can sit. The weight of the structure that hosts the sleeping rooms above comes down through a colonnade that also defines this private garden space. Through a metal gate on the north side, pedestrians may get glimpses of the secret garden but they won’t be able to access it.
The west side of the building complex is located alongside Vermont Avenue. This is the more residential part of the triangle site populated by older typical DC row houses. To continue their language, the smallest of the three buildings (the yoga studio/ Temple of Nemo) was located next to the row houses. The yoga studio is separated from the corner building and east building with public and private courtyards. It was also significant to locate the yoga building towards the west because it houses the gong healing room on the second floor (shown a few pages ahead) as the gong is played every day at sunset to mark the day’s end.
Portrayed next are the yoga studio (structure on the left), the private garden, the clinic and the dormitorium (structures on the right). Underground is shown the bath house and sauna rooms. Throughout the day-night cycle, patients can use different rooms in the building for a variety of healing practices as part of a healthy routine. While yoga and meditation classes can be offered throughout the day in the west studios to patients and visitors, in the afternoon, the studio will be specifically reserved for patients. Before sunset, this healing space could provide therapeutic yoga and meditation practices specifically catered to people with sleep and anxiety disorders. The muted colors of natural materials such as bring and wood help promote a calm environment. The east and west walls of the ground floor yoga studio are comprised of sliding glass doors which provide visual continuity between the open “front yard” and the back private garden. The first two floors of the right structure are the therapy rooms and the sleep clinic that is staffed 24/7 for the patients, but also serve the larger neighborhood through their outpatient services.
AFTERNOON: LIBRARY READING ROOM

(E X E R C I S I N G :: T H E M I N D)

During the day the library of the building is open to the rest of the public, however, after-hours the library is only accessible to the patients. This drawing shows the stacks and the north-facing reading room beyond at night. The top floor of the library is the tallest reading room with a timber pitched roof, an appropriate grand atric for our sleepless night owls.
EVENING: GONG HEALING ROOM

EXERCISING :: THE MIND

The gong healing room is a double height space with exposed brick walls and an end grain wood floor. The gong sits on a raised podium in front of a window screen at the head of the room. It is used in yoga and meditation traditions as a therapeutic instrument. When played the gong creates immersive sounds and vibrations which envelop the body, and that is why it is often referred to as a gong “bath.” Bathing as integral part of relaxation and healing in this sleep clinic. As a daily ritual, the gong is played after sunset every day to mark the end of the sun cycle and start the cozy journey toward dreamland.

DESIGN MANIFESTATION

PERSPECTIVE: gong healing room

mixed media collage | wood board, graphite, oil, watercolour, found images, Photoshop
EVENING: BATH TIME

(BATHING)
The sleep disorders clinic is an architecture with the mission to connect you back to nature and our circadian rhythm. It should really be titled the sleep re-order clinic. As a part of this re-order, I imagine that the tired inhabitants of this clinic can go through a series of daily activities, one of which is bathing before sleep. Because we are upright animals, we may forget that the earth is constantly supporting us. What we perceive though is the constant tiresome pull down. We feel and carry our own weight and build architecture and props to support us or to defy gravity. However, bathing is an experience where we can be completely supported. Our bodies are allowed to float. The slight pressure of the water comfortably hugs our skin. We’re being held up instead of pulled down. We can let our thoughts float too. To access the bathhouse, the patient would first check in with a nurse on the ground floor and descend underground through a narrow staircase. The air feels damp and the grey stone is a bit serious but friendly. You walk through a dim lit hallway, seeing through the stained glass glimpses of water glistening under the full moon from the skylights above. You can smell water and hear it lapping the sides of the great pool. On the right is a wooden door to the changing area. In many years, the wood will swell up a bit and the door will always be jammed. But for now you walk through, and the floor is now rough. You won’t slip here, don’t worry. It smells like lavender for it was ground up and hidden in the mortar. You didn’t realize it maybe, but it’s taken 7 turns to get to the bathhouse. A kind of labyrinth to help you forget where you came from, and now you can descend into the lukewarm water.
As the night gets darker, the patients have the opportunity to descend into the underground bath chambers to continue to relax and unwind. The underbelly of the building is shown in the next image, with the grand pool of the bathhouse located directly below the outside courtyard. Built mainly with stone and wooden accents, the bath house is one of the darkest parts of the building complex. However, the grand pool room has 26’ ceilings which are lit with three circular skylights (shown in the previous image). The ceiling is also perforated with valves, which allow the steam that accumulates in the bathhouse to escape and be released into the courtyard. As random passers-by walk through the courtyard to bar-hop in the busy street level, they may stumble upon the steam and the comforting aromas of the bath house below.

mixed media collage | graphite, AutoCAD, found images, Photoshop
GOODNIGHT

(sleeping)

Each room sits within a concrete structure and is separated by double lined brick walls. The brick walls remain exposed and provide a warm atmosphere along with the aromatic cedar wood floor and the room furniture. The murphy beds are set against a wooden screen, which becomes a head rest and continues overhead to filter the light coming from the top windows. The patients can neatly stake the murphy beds into the wall freeing up more space. The wish for these rooms is that they are cozy but not cramped. Bamboo shutters in the background can block the east of west light if the patients need more rest.
BIBLIOGRAPHY


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Images

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Melnikov’s “Green City” competition entry, Communal Room in Melnikov House, “Sonata of Sleep” model
Source: Cabinet Magazine
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Page 7, 8, 11, 12

Map of Washington, DC
Source: Sanborn Database, Virginia Tech Libraries, November 2015

Map of Washington, DC
Source: Google Earth, November 2015

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Map of Washington, DC
Source: Google Earth, November 2015

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Map of Washington, DC
Source: Sanborn Database, Virginia Tech Libraries, November 2015

Map of Washington, DC
Source: Google Maps, November 2015

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Scale Figures
Source: www.skalgubbar.se

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