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Spring 2012 Architectural Healing Environments

Brian Schaller

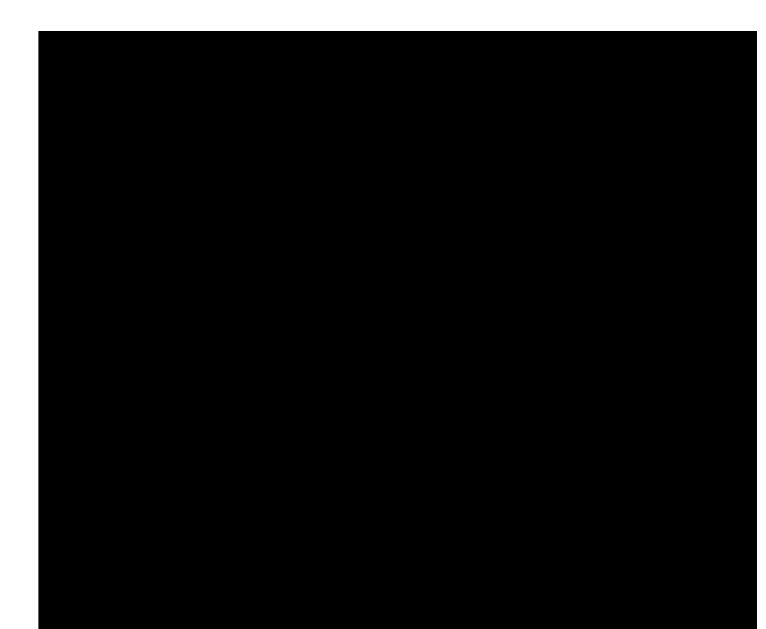
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#### architectural healing environments

Brian Schaller Advisor: Randall Korman Secondary Advisor: Anne Munly

Spring 2012 | Completion of Undergraduate Architectural Thesis

01 Title Page

# <sup>1</sup>. Statement

08 Introduction History of healing, therapy, healthcare 13 Contention Evidence-based design and phenomonology 14 Intentions What will be done?

# 2. Methodology

20 Evidence-based Design: Interviews, Experiements 45 Phenomenonology Interactive, Senses, Color

# 3. Site

58 Manhattan Natural Landcape, Statistics 62 Historical Reference "The Getaway" 64 Manhattan Psychology Statistics 67 Why a skyscraper? Positives and Negatives 72 Site Documentation Photos and Analysis 84 Physical Site Analysis Sun Exposure, Prevailing Wind Patterns, etc. 4. Program

96 Relationships Mind, Body, and Spirit 98 Program Analysis Calculations 100 Analyze Program Connecting to concept

# 4. Precedents

105

106 Typological Precedents Building/Programmatic 116 Non-typological Precedents Comparisons/Analogies

# 129 4. **Projection**

130 Materiality Natural vs. Artificial 133 Visioning Perspectival Analysis of Garden 138 Concept Massing Diagrams 141 Conclusion What is it?

# 4. Project

142

#### 144 Model Views 150 Drawings Plans, Exploded Axon 156 3D Visualizations Perspectives 160 Drawings Sections, Elevations 155 Glossary

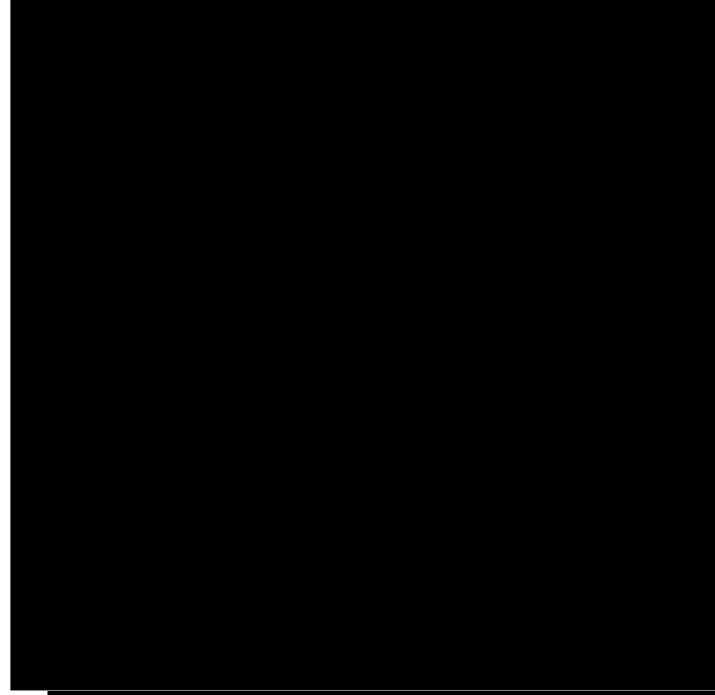
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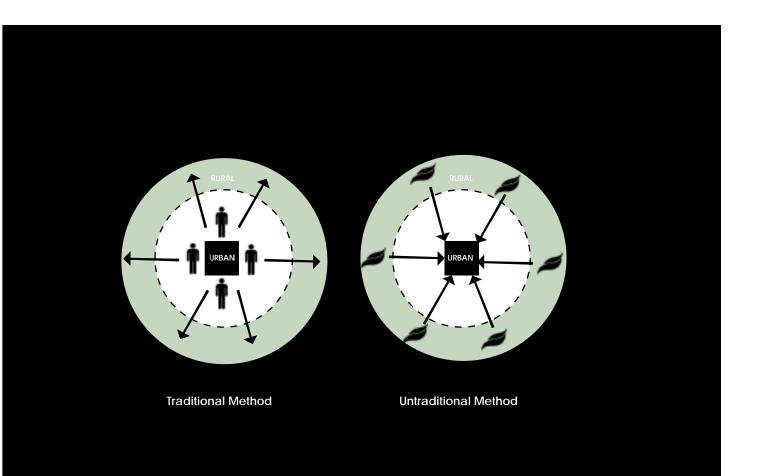
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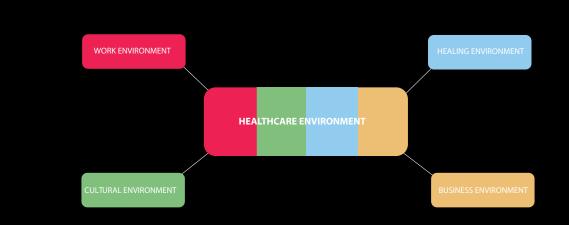
Spaces for healing represent some of the most personal and complex services provided: intimate personal information must be shared with strangers; complex and often frightening situations might occur; difficult decisions are constantly made; and the staff speaks an entirely different language. The building itself can help to reduce the stress experienced by patients, their families, and the teams caring for them.

The rehabilitation environment is a work environment for the staff, a healing environment for

patients and families, a business environment for the provision of healthcare, and a cultural environment for the organization to fulfill its mission and vision. In order to realize these environments, facility designs must be linked to the organization's goals and objectives (Kellert).

Traditional models of rehabilitation centers bring the people out of their environment in urban areas to the rural areas. The belief is that by taking the patients away from the negative distractions of urban environments and into the

"The US health system is perfectly designed to produce the results we are achieving." -Leland R. Kaiser



positive distractions of rural environments, the lenge to the longevity of the success the indihealing process will occur quicker and more vidual has made in rehab. The environment effectively. An untraditional approach is to of the rehabilitation center and the patient's bring these natural elements, from the tradihome is comparatively a dramatic difference. Mentally one begins to associate their "healed tional approach, into the urban environment. self" with the facility and their "old self" with Historically, areas for rehabilitation are placed outside of the urban fabric. This focus demontheir home. The shift sets a possibility of imbalstrates the effort to disengage sufferers from ance and even relapse of the issues treated. the physical complexity and stimuli of an urban habitat. The removal sets a distance between the urban patient and their everyday life. Arguably, this displacement provides a chal-

9

#### "We build the buildings that end up shaping us"- Winston Churchill

architectural healing environments

10

"As the baby boomers age, they are going to ask for better hospital environments and expect to see features that make them more friendly and less institutional." says Anjali Joseph, the center's director of research.



Why is it important right now in today's society to hone into this problem? With the growing population and increased employment of medicine to treat illness, it is important to consider natural remedies that are clearly being looked over because a lack in awareness of its successful properties. I strongly believe that if we were to present the evidence of the affect architecture has on healing people and its quality to promote healthy lifestyles, there would be a drastic change in the mindset the world has on architecture and health.

Over the past decade, new attitudes toward health and healing have begun to dictate an increasing number of decisions about how people choose to live (Kellert,). As a result, the commercial, medical, and industrial worlds are slowly being asked to adapt to these new trends. The field of architecture is also being asked to change. How can the built environment support the new directions toward a healthy lifestyle?

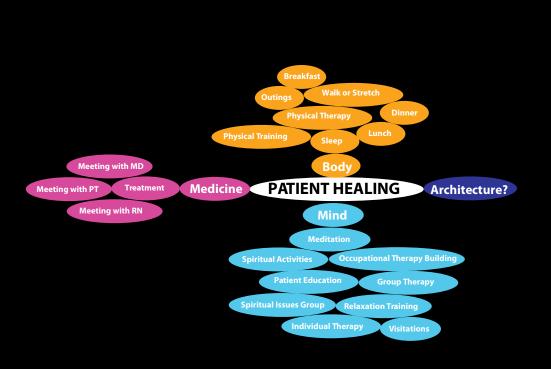


It is the contention of this thesis that a study of the phenomenological approach to how one experiences space and by incorporating evi-dence-based design criteria that are acknowl-edged for improving wellbeing, quality of life, and reducing distress in people, a healing environment will emerge. The experienced environment will facilitate a temporal awareness of one's self and the design criteria's attention to the experienced setting will allow for a healing environment to emerge within the architecture. I am not proposing that architecture can heal, but rather the architecture can stimulate a healing environment.

The hope is that phenomenology will allow for spatial awareness, an awareness of one's own experience, an awareness of oneself, kinesthetic awareness of one's movement, an empathy with other people, and social interaction to occur. Through all of this, the phenomenology will lead to a conscious experience into conditions that help to give the experience its intentionality; to heal.

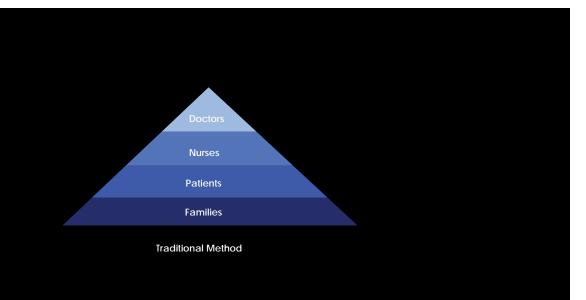
The project is to introduce a wellness center into the middle of Manhattan. The idea is to take over an under-utilized rooftop of a skyscraper in a location that is unexpected. I do not want to make a medical complex, but create an environment that forms its own identity as a place where one goes to rebalance their in-balances. The intended users are people recovering from depression, alcoholism, and drug abuse. The program will be an outpatient center treating people with psychological issues.

The philosophy that guides this concept of healing is rooted in research in the neurosciences, environmental psychology, psychoneuroimmunology, and evolutionary biology (Mchale). The common thread linking these bodies of research is the physiological effect of stress on the individual and the ability to heal. The goal of all healing environments is to engage patients in the conscious process of self-healing and spiritual growth. Spaces are designed to be nurturing and therapeutic and, most important, to reduce stress. This is a research-based approach to design, aimed at eliminating environmental stressors and putting patients in contact with nature in the treatment setting. The idea behind bringing the wellness center into the most urban of environments in the country is to prove healing can be achieved in a notoriously unhealthy environment. The disparity between the designed space and city is quite evident. However, I believe that treating the subject under two very extreme habitats will



works like an appointment, fit into their schedtest their success and ability to integrate their recovery to their everyday life. ule, so that they can sustain their lifestyle while rebalancing their life. This also gives the pa-The premise of the center is that the subject tients a chance to test out the different techniques and principles they have been taught can be treated and then allowed back home repeated over a period of time. It's under the at the center to rebalance their life. The prophilosophy that slow and steady wins the race. cess also gives the patient a since of indepen-Small repeated intervals of treatment over dence placing their personal choices and lives time have the ability to create healthy habits first. to emerge in one's life. The justification behind this structure is that the individual should not Often in healthcare facilities, the healers are

feel like they are being treated. The program in power and the patients are aware and feel



Doctors
Nurses
Patients
Families

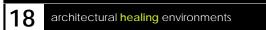
Untraditional Method

that authority. The control is present in every aspect of the center, including the architecture. I am not saying that the dominance isn't necessary, but the patient's awareness of its influence subconsciously impedes them from reaching their highest potentials of comfort level. This discomfort is a problem because it increases the risk that the patient won't return. The outpatient treatment facility must ensure a high level of comfort because it is their responsibility to return for continued treatment in the future. One way in which the individuals

"Patients want to feel in control of their health, to make their own choices while in a health care facility, and to not feel so dependent on staff for help," says Cynthia Leibrock, a designer who has written several books on the topic including Design Details for Health

can see themselves as an equal occupant of and heal faster. This can also be achieved by making the patients feel like they are in an environment where they are not being viewed, but rather viewing other things. It tries to stay away from the institutional feeling of many othments of self-awareness in the space (Ulrich). er wellness centers. For instance healing environments should stimulate positive awareness distraction to engage the patients mind off of ture, culture, and people; allow for privacy; do the facility. It is proven that if someone feels to interact with them productively; balance

the building is through the concept of framing. Forced perspectives that engage the patient with a framed view of elements like trees or water provide the individual independent mo-The isolated moments provide a pause and of ourselves, enhance our connection with natheir own suffering. It is also gives them a re- no physical harm; provide meaningful, varying minder that they are an active participant in stimuli; encourage times of relaxation; allow us comfortable and relaxed, they can rest easier constancy and flexibility; and be beautiful.



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architectural healing environments 19

#### Evidence-based Design:

The use of knowledge on psychologically supportive environments is defined as evidence-based design. Evidencebased design, based on its medical equivalent, evidencebased medicine, refers to guiding design decisions by scientific evidence in order to promote health and well being (Mchale). For example, use of the evidence-based design on healthcare environments might impact healthrelated outcomes such as length of stay, pain, medication intake, stress, arousal, mood, or environmental appraisals. These variables are all considered to be relevant outcome measures in assessing the effects of the physical healthcare environment, but most research in this field still needs to be discovered. One example of a subject tested in evidencebased design is stress. Stress can result in more pain and slower wound healing, but it also impacts the immune system. Stress can many times be triggered from the environments we live in (Norman). The breadth of the many statistics that demonstrate how one can begin to design healthy environemnts, are convincing reasons to design spaces that reduce stress and address things like patients' needs for relaxation and comfort.

The pages that follow will show some of the research that can be used to help design healthy settings for people to heal.

#### Sunlight and Patient Satisfaction

Patients were asked to answer these questions each day throughout the course of their stay Surveys conducted by BMAssociation over a year with several Mental Institutions in UK

(Conducted with Depression Patients)									
Avg. of Patient's Satisfaction Surveys									
(1 to 100 being extremely satisfied)									
	Little to no Sun Moderate to Ample Sun								
Sleep Performance	80.78	92.35							
Activity Level	51.79	69.23							
Control of Stress	35.46	48.84							
Tolerance of Pain	56.34	61.96							
Contentedness	67.78	74.26							
Willingness to return89.6093.09									
(Conducted with BiPolar Patients)									
Avg. of Patient's Satisfaction Surveys									
(1 to 100 being extremely satisfied)									
	Little to no Sun	Moderate to Ample Sun							
Sleep Performance	75.09	76.98							
Activity Level	67.89	71.78							
Control of Stress	56.97	59.09							
Tolerance of Pain	86.09	89.21							
Contentedness	46.92	57.89							
Willingness to return	78.08	80.42							

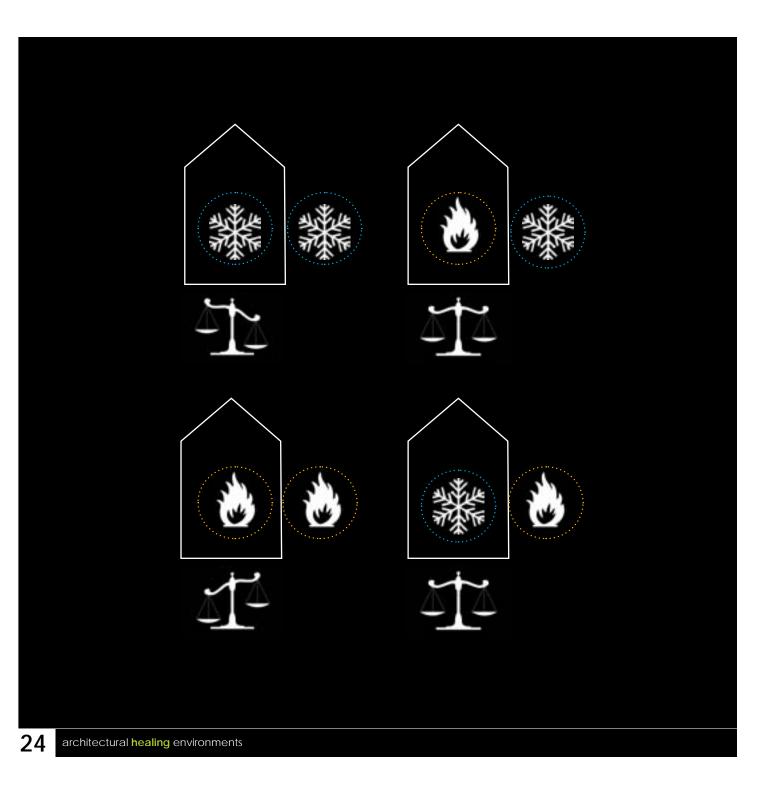
(Beauchemin), K. M. and P. Hays (1996). Sunny hospital rooms expedite recovery from severe and refractory depressions. Journal of Affective Disorders, 40: 49-51.)

		<b>—</b> •• •	· · · ·
Sunli	ght and	Patient	Satista
	Sile alla	I delette	341310

(Conducted with Alcoho	lic Patients)		
	Avg. of Patient's Satisfaction	Surveys	
	(1 to 100 being extremely sa	tisfied)	
	Little to no Sun	Moderate to Ample Sun	
Sleep Performance	89.09	91.90	
Activity Level	69.36	78.04	
Control of Stress	47.08	57.08	
Tolerance of Pain	35.08	39.59	
Contentedness	36.91	45.39	
Willingness to return	69.56	80.25	
(Conducted with Schizop	ohrenic Patients)		
	Avg. of Patient's Satisfaction	Surveys	
	(1 to 100 being extremely sa	tisfied)	
	Little to no Sun	Moderate to Ample Sun	
Sleep Performance	69.09	68.32	
Activity Level	68.53	73.47	
Control of Stress	54.79	59.12	
Tolerance of Pain	65.79	67.24	
Surveys conducted by BMAssociation over a year with several Mental Institutions in UK (Conducted with Alcoholic Patients) Avg. of Patient's Satisfaction Surveys (1 to 100 being extremely satisfied) Little to no Sun Moderate to Ample Sun Sleep Performance 89.09 91.90 Activity Level 69.36 78.04 Control of Stress 47.08 57.08 Tolerance of Pain 35.08 39.59 Contentedness 36.91 45.39 Willingness to return 69.56 80.25 (Conducted with Schizophrenic Patients) Avg. of Patient's Satisfaction Surveys (1 to 100 being extremely satisfied) Little to no Sun Sleep Performance Conducted with Schizophrenic Patients) Little to no Sun Sleep Performance 69.09 68.32 Activity Level 68.53 73.47 Control of Stress 54.79 59.12			
Willingness to return	56.75	65.90	
	onducted with Alcoholic Patients)         Avg. of Patient's Satisfaction Surveys (1 to 100 being extremely satisfied)         Little to no Sun       Moderate to Ample Sun         Beep Performance       89.09       91.90         ctivity Level       69.36       78.04         bontrol of Stress       47.08       57.08         belerance of Pain       35.08       39.59         ontentedness       36.91       45.39         illingness to return       69.56       80.25         onducted with Schizophrenic Patients)       Avg. of Patient's Satisfaction Surveys (1 to 100 being extremely satisfied)         Little to no Sun       Moderate to Ample Sun         eep Performance       69.09       68.32         ctivity Level       68.53       73.47         ontrol of Stress       54.79       59.12         ontrol of Stress       54.79       67.24         ontrol of Stress       45.54       52.98		

(Beauchemin), K. M. and P. Hays (1996). Sunny hospital rooms expedite recovery from severe and refractory depressions. Journal of Affective Disorders, 40: 49-51.)

#### action



Interview (Therapist point of view)
In-depth Interview with a therapist from CP
(an outpatient facility for mental health eme
Question: What would you like to see in a r
She talked most about the internal environm
• the main entrances and reception areas sh
• the internal appearance should be calming
<ul> <li>the building should have good acoustics</li> </ul>
• temperatures should be comfortable in all
<ul> <li>the air quality should be fresh.</li> </ul>
Question: What about the kind of material
Materials, finishes, textures :
<ul> <li>materials and finishes should work with th</li> </ul>
degrees of privacy
<ul> <li>finishes, fittings, furniture and notices sho</li> </ul>
clutter
<ul> <li>selection of finishes and materials needs to</li> </ul>
Question: What else do you see helping eas
Use of art to enhance the healing environme
<ul> <li>art should be an integral part of the design</li> </ul>
• the design should make provision for chan
<ul> <li>the design could make provision for prese</li> </ul>
• the design could allow for art activities to
and staff.

Question: Any concluding remarks concerning this topic based on your experience?

Irrespective of the size of the building the scale should be considered from the point of view of patients, visitors and staff so as to make them welcome.

PEP conducted by Brian Schaller ergencies (Syracyuse, NY))

mental health facility to focus on healing?

nent: hould be pleasant and welcoming ng and non-intimidating

seasons

Is and textures you find work best?

he layout to create a set of varied places with

build be well coordinated and designed to reduce

to take account of infection control issues.

#### se the stress of the patients?

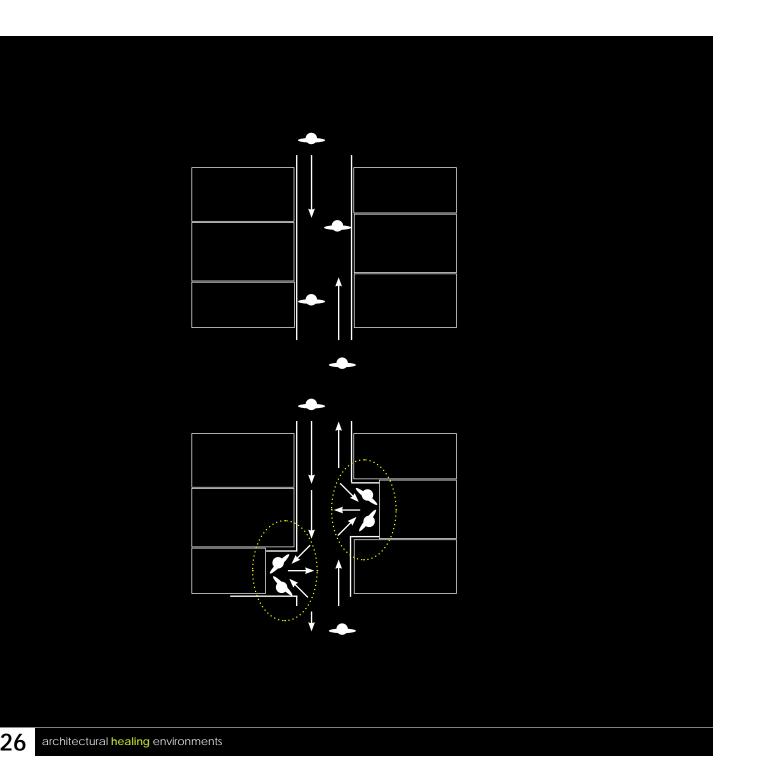
ent :

n of the interior

nging art displays

entations of the performing arts

take place for patients



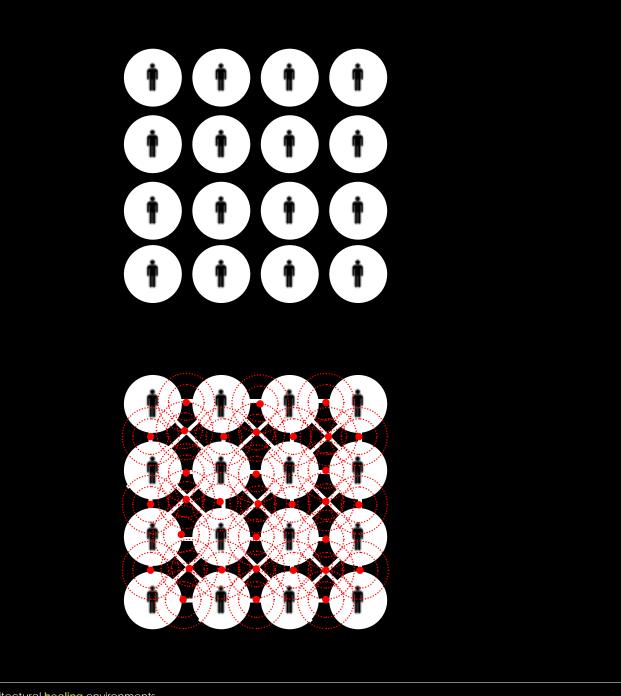
#### **Interview** (Psychologist point of view) Interview with psychologist from BINGHAMTON PSYCHIATRIC conducted by B.Schaller (an facility for most mental health disorders (Binghamton, NY)) Question: What would you like to see in a mental health facility for the future? She began by talking about spaces that Lift spirits and help recovery: • the design of the building should aid therapeutic objectives • the building should engender wellbeing and raise patients' and visitors' spirit Question: What do you hope the design would do? Express excellence • the design should express a strong positive image of the health service • the building should raise staff morale. the design should embody a clear and coherent vision confidently communicating its function and aspirations through its physical elements. Question: What areas of the healing environment should be focussed on? Set out requirements for functional content and space standards • public and entrance areas • social spaces for patients, staff and public • children's areas • scope for external franchises and other add-ons plant and servicing • exterior terraces, play areas, etc. She began talking about Space utilization territory

association and gathering.

Question: Is there any other thoughts you have on this topic based on your experience?

• spaces should be capable of being shared where appropriate – seen as a resource, not personal

• dual use of circulation space should be exploited where effective to encourage informal



#### Interview (Consoler point of view)

Interview with Consoler from Syr. Behavioral Healthcare conducted by B.Schaller (Inpatient substance abuse facility (Syracuse, NY)) Question: What is one aspect of the built environment you work in that could be changed to help promote the care for patients?

The efficiency of the place and how it runs: the inter-departmental relationships should be convenient and help efficient functioning • there should be clarity about the priority of key relationships • internal relationship within departments (main rooms, bays, storage, service rooms) should be convenient and help efficient functioning.

For the Privacy, isolation and communality: • requirements of visual and acoustic privacy requirements for gender segregation • infection control regimes including isolation rooms and beds. She added additional issues to consider: • reception areas should enable confidential conversations without embarrassment • the design should help avoid unintended isolation, allowing patients to communicate with staff when needed.

Question: Do you have any thoughts about the use of color, natural light vs. artifical light, shading, etc. based on the patient's responses you have witnessed?

#### Color:

• the contribution of color to providing continuity and variety, stimulation and calmness should be thought through • color schemes should assist way-finding. Daylight : • daylight should be fully exploited to enhance the experience of patients, staff and public • internal spaces and courtyards should be orientated for optimum sunlight penetration Artificial light : • lighting should be used creatively and sensitively to enhance the use and experience of the interiors.

Question: Do you have any thoughts about the private vs. public spaces in your facility

#### Ward layouts and way-finding

Ward layouts in older hospitals generally provide long corridors organized around a central nursing station, where medication and charts are located. Research has shown that nurses spend much of their time (*more than 40 per cent in older UK NHS hospitals*) walking up and down halls increasing fatigue and stress and sharply cutting the time available for observing patients and delivering direct care.

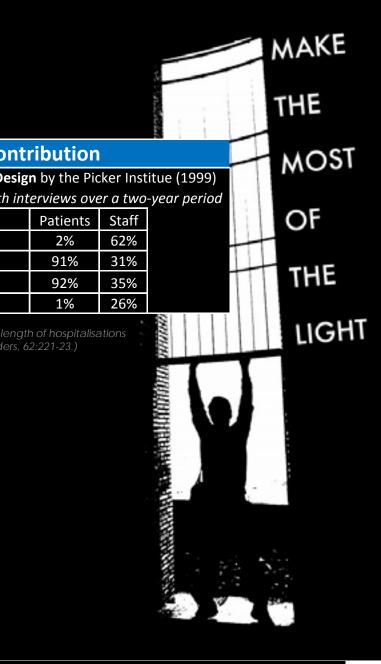
(Birren, Faber. Light Color and Environment, New York: Reinhold Company, 1969.)

40% of a nurses day is spent walking up and down halls



# Perceptions of sunshine contributionStudy done for the Center for Health Design by the Picker Institue (1999)Included both focus groups and in-depth interviews over a two-year periodSurvey QuestionsPatientsStaffStaffConsidered sunlight to be a nuisance2%62%62%Considered sunlight to be pleasurable91%91%31%Considered sunlight to be unfavorable1%26%

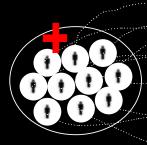
(Benedetti et al (2001) Morning sunlight reduces length of hospit in bipolar depression. Journal of Affective Disorders, 62:221-23.)



architectural healing environments 31

Importance of the Built Enviro	onment
Study done for the Center for Health Desig	
Included both focus groups and in-depth int	erviews over a two-year period
What mattered most to People: Space	
1 Promotes connections to staff:	visual access to caregivers
	quick access in emergencies
	an effective communication system
2 Is conductive to well-being:	focus on noise reduction
	patient control of room temperature, TV, lighting
	negative distractions minimized
	accommodation for family
	adequate space for grooming and daily tasks
	Interent access
	adequate lighting
	storage for personal belongings
	adequate electrical outlets
3 Is convenient and accessible:	clarity of wayfinding on the campus
	privcay at admitting and registration
	visible wayfinding directories & visitor info near entry
	short travel distances between destinations
	clearly markedentrance and drop-off areas
4 Is confidential and private:	quiet areas where patients can be alone
	privacy for bathing and dressing
	privacy when treatment options/financial issues discussed

(Evans, G. W. and S. Cohen (1987). Environmental stress. Chapter in D. Stokols and I. Altman (Eds.), Handbook of Environ mental Psychology. New York: John Wiley, 571-610.)



5       Shows caring for family:       a         6       V       V         6       Is considerate of impairments:       c         7       Facilitiy's connection to outside world:       e         7       Facilitiy's connection to outside world:       e         8       Is safe and secure       v         8       Is safe and secure       v         8       Is safe and secure       s			
Is considerate of impairments:       v         Is considerate of impairments:       v         Facilitiy's connection to outside world:       e         K       v         Is safe and secure       v	5	Shows caring for family:	а
Is considerate of impairments:       0         V       V         a       V         a       b         7       Facilitiy's connection to outside world:         a       v         b       v         b       Is safe and secure         v       v			
Is considerate of impairments:       0         V       V         a       V         a       b         7       Facilitiy's connection to outside world:         a       v         b       v         b       Is safe and secure         v       v			р
Is considerate of impairments:       0         V       V         a       V         a       b         7       Facilitiy's connection to outside world:         a       v         b       v         b       Is safe and secure         v       v			٧
Is considerate of impairments:       0         V       V         a       V         a       b         7       Facilitiy's connection to outside world:         a       v         b       v         b       Is safe and secure         v       v			С
7 Facilitiy's connection to outside world: 6 v 7 Facilitiy's connection to outside world: 6 v 7 k 8 Is safe and secure 8 v 8 v 8 v 8 v 8 v 8 v 8 v 8 v			p
7 Facilitiy's connection to outside world: k k t B Is safe and secure	õ	Is considerate of impairments:	С
7 Facilitiy's connection to outside world: k k t B Is safe and secure			v
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(Evans, G. W. and S. Cohen (1987). Environmental stress. Chapter in D. Stokols and I. Altman (Eds.), Handbook of Environmental Psychology. New York: John Wiley, 571-610.)



access to telephones

visiting areas for family with seating in privacy groupings

play space for children

variation in seating to accommodate a wide range of users

overnight accommodations

private grieving space

consideration for persons using assistive devices

wheelchair access at information desks and elsewhere

adequate space to move around room using wheelchair

bathrooms large enough for wheelchair

exterior gardens and opportunities to connect with nature

views from the bed

keeping in touch via Internet

television

well-lit parking lot

safe path from public transportation

adequate handrails within facility

clearly -marked fire exits

slip-proof bathrooms

#### "The Ecology of the Patient Experience"

Weill Cornell medical Center

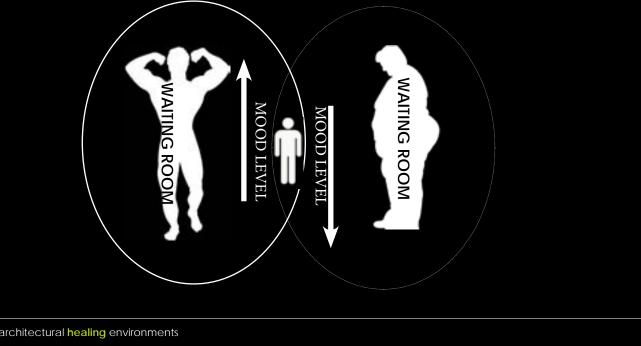
Research hypothesis:	the design of the environment impacts the
	perceived time spent waiting in a doctor's office
	the perceived quality of care provided

The more attractive the environment the higher the perceived quality of the medical care and the lower the anxiety.

#### **Perceived Experience of Patient:** (based on average comparisons)

Environment	Staff interaction	Wait time	Quality of Care
Attractive	Positive	Less	Positive
Unattractive	Negative	More	Negative

(Eds.), Handbook of Environmental Psychology. New York: John Wiley, 571-610.)



Single versus Multiple Occup	anc
Study conducted by the Coalition for Healt	th Er
First costs and operating costs	Sin
Thist costs and operating costs	roo
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Infection control and falls prevention	Inf
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#### cy Room Design

nvironments Research (CHER)

ngle occupancy can match the perdiem cost of multibed oms due to higher occupancy rates

perating costs are reduced in single patient rooms due to duction in transfer costs

tients' length of stay is shorter in private rooms

edication erros are reduced in single occupancy rooms

fection rates are lowerin private rooms with proper design d vetilation systems

ivate rooms make it easier to isolate infected patients or

tients requiring constant supervision do better in a private om due to increased surveillance

tients in private rooms use less pain medication

ore private conversations with healthcare professionals n occur in private rooms

tients prefer single bed rooms because of greater privacy, ss noise, reduced embarassment, better sleep, and not

iving to be concerned about disturbing the other patient

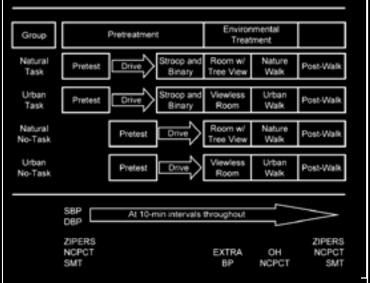
tient stressors in the hospitalinclude perceived lack of ntrol, lack of privacy, noise and crowding

rception

owding can contribute to higher blood pressure

35

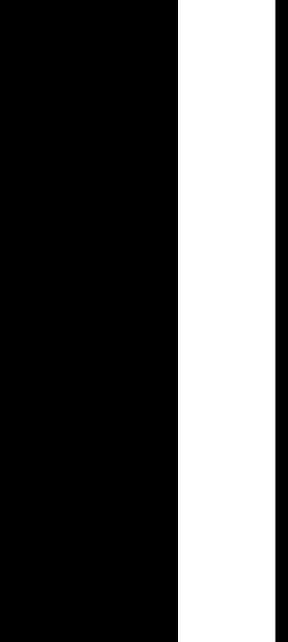


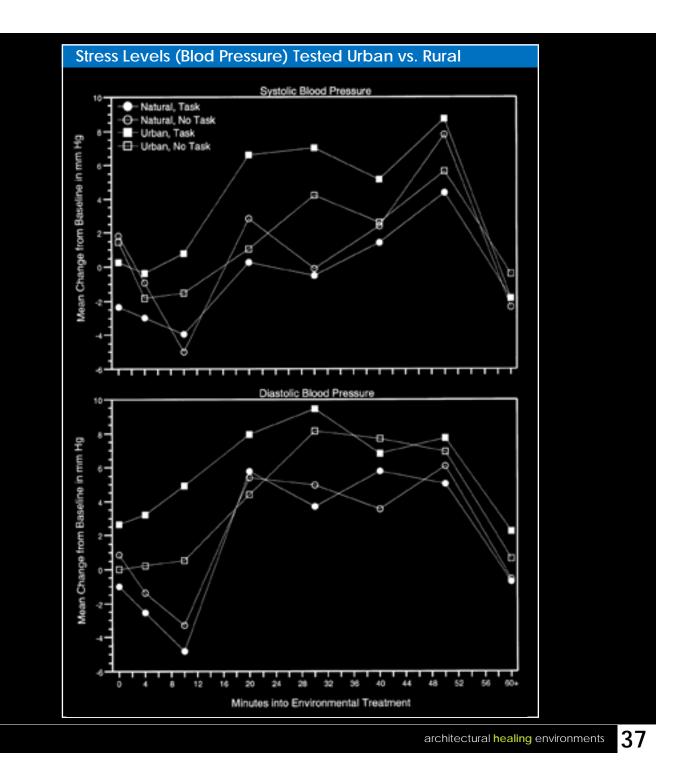


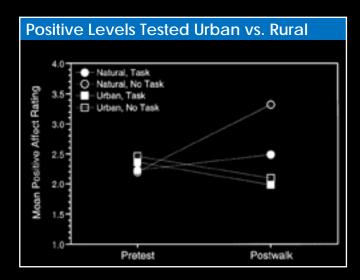
This study assigned patients either a walk through a rural setting or an urban landscape. While they were in these environments the blood pressure levels were measured. The study showed that the blood pressure on average was reduced while walking through the natural landscape as opposed to the urban environment



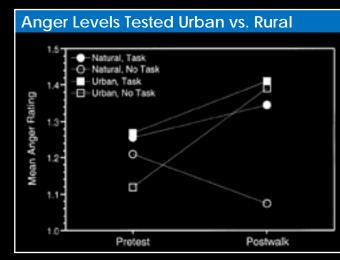
(Ruga W (1989) Designing for the Six Senses. Journal of Health Care Interior Design 1: 29-34)



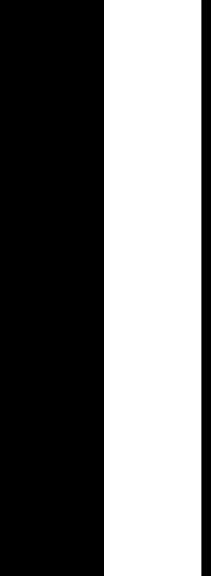




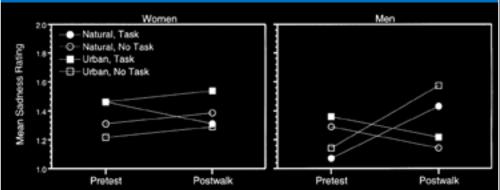
Another important aspect of the study was analyzing their emotions while integrated in their assigned surrounding. On average the rural landscape had positive affects on the human being while the urban landscape had negative affects on the person.



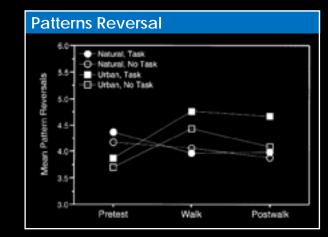
(Ruga W (1989) Designing for the Six Senses. Journal of Health Care Interior Design 1: 29-34)



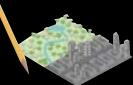
#### Sadness Levels Tested Urban vs. Rural



The study actually found a difference in the sadness recorded between males to females. Many times the mood is triggered by associations made in the built environment. This could be the result for the difference in moods. On average the men might have different perspectives on the built environment when the emotion of sadness is experienced.



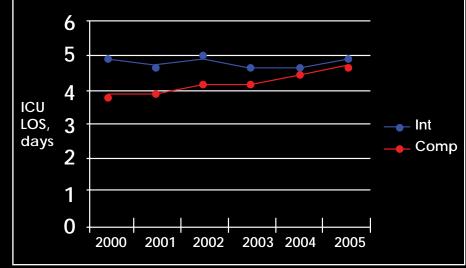
(Ruga W (1989) Designing for the Six Senses. Journal of Health Care Interior Design 1: 29-34)



39 architectural healing environments

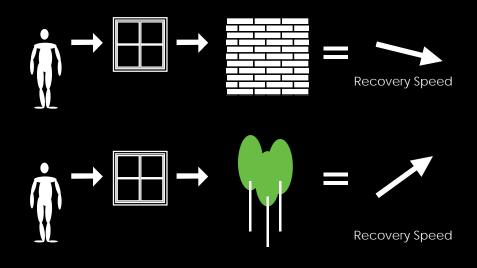
#### Importance of window

The length of stay in the ICU was tested based on whether there was a window or not for the patient. The study came back with results showing that the paients that were left in a room with a window recovered faster and left the hospital quicker.



(Ulrich, R. S. (1984). View through a window may influence recovery from surgery. Science, 224: 420-421)

The integration of natural physical environments into treatment for human sufferers has always proven to be an effective course of action. Elements in nature emulate qualities of calmness and serenity that are necessary for a healing environment. Studies have shown that simple changes like a view to a green landscape becomes a mental focusing tool of distraction allowing recovery to manifest quickly. The capacity of the mind to heal suffering is overwhelming neglected in modern facilities in America. Generally, American healthcare facilities are designed to hold the tools to heal, not be the tool to heal. If one were to begin to think of architecture as just important as the medicine, there could be a major shift in how people are treated for the future.



Roger Ulrich (1984) began to change this line of thinking with his pioneering study of the effects of hospital window views on recovery from abdominal cholecystectomy surgery. Ulrich's study focused on patients who could see trees, rather than a brick wall through their patient-room window. The study found that these patients subsequently required less narcotic pain medication, experienced a shorter hospital stay, and had fewer negative evaluative comments in nurses' notes.

Ulrich, R. S. (1999). Effects of gardens on health outcomes: Theory and research. Chapter in C. C. Marcus and M. Barnes (Eds.), Healing Gardens: Therapeutic Benefits and Design Recommendations. New York: John Wiley, 27-86.

Noise Level Impact on Patient									
Study performed outpatient psychiatric ward Data obtained from patient surveys									
(ACC) in Sweden									
Level 1 Patient	Healthy le	vel avg.		Level 3 Patient	Healthy lev	Healthy level avg.			
(Addiction)	(1 out of 1	0 being the	e best)	(Sev. Depression)	(1 out of 10	0 being the	best)		
Symptoms	40-50 dB	50-60 dB	60-65 dB	Symptoms	40-50 dB	50-60 dB	60-65 dB		
Heart Rate	8	7	5	Heart Rate	6	6	4		
Respiration	8	8	6	Respiration	7	5	3		
Sleep	9	7	5	Sleep	7	4	4		
Stress	8	8	5	Stress	6	5	4		
Blood Pressure	9	7	6	<b>Blood Pressure</b>	8	6	3		
Oxygen Sat.	8 6 5		Oxygen Sat.	7	5	4			
Level 2 Patient	Healthy le	vel avg.		Level 4 Patient	Healthy lev	vel avg.			
(Depression)	(1 out of 1	0 being the	e best)	(Critical Disorder)	(1 out of 10 being the best)				
Symptoms	40-50 dB	50-60 dB	60-65 dB	Symptoms	40-50 dB	50-60 dB	60-65 dB		
Heart Rate	7	7	5	Heart Rate	5	4	3		
Respiration	8	7	5	Respiration	5	3	3		
Sleep	7	6	4	Sleep	5	2	2		
Stress	8	6	4	Stress	4	4	2		
Blood Pressure	8	6	5	<b>Blood Pressure</b>	6	4	3		
Oxygen Sat.	9	7	5	Oxygen Sat.	6	4	3		

HEALTH HEALTH

42 architectural healing environments

#### Exposure to Daylight on Depression

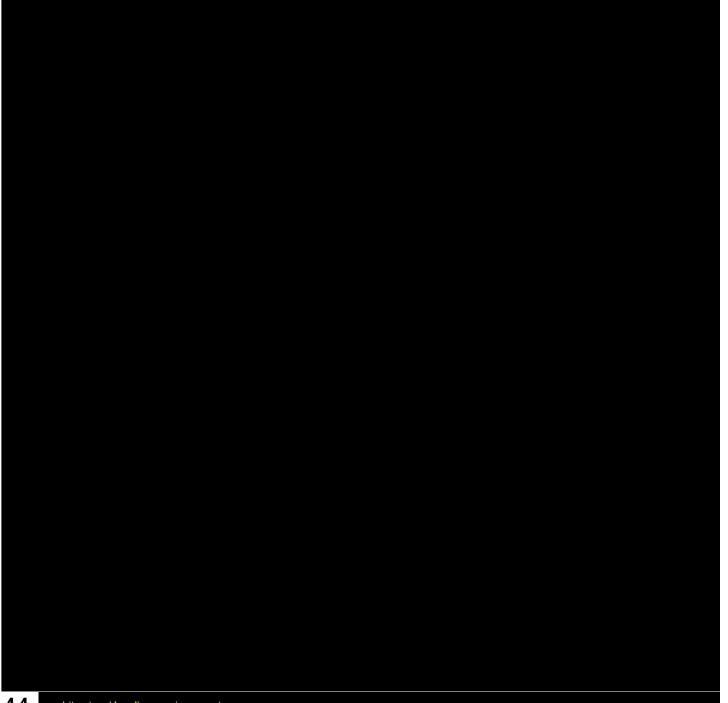
Solar Orientation	Num	Number of days spent in the facility								
East Facing	10	7	12	14	12	14	8	10	7	6
	8	9	8	8	11	13	7	14	9	9
	11 9	10 14	7 9	6 9	10 9	7 8	9 8	13	8 7	13
	9 14	13	9 8	9 13	9 7	° 9	。 7	8	13	/ 11
	13	7	7	7	8	16	, 13	9	13	10
	12	8	13	, 11	6	7	10	16	12	11
	7	9	11	10	10	13	13	13	10	12
	, 14	16	12	11	13	11	11	15	8	11
	13	13	10	12	11	12	9	9	12	9
	8	15	8	11	9	10	8	8	16	13
	7	9	12	9	8	11	9	6	7	10
	Mear	n: 10.1								
West Facing	13	11	8	16	12	14	8	12	11	11
	10	16	12	12	11	13	11	16	12	15
	12	12	14	11	10	9	11	14	12	16
	11	13	10	12	10	11	13	14	11	18
	15	15	10	13	12	9	11	10	12	12
	15	16	10	13	8	16	13	11	14	10
	12	11	11	12	13	11	8	16	12	11
	16	12	15	17	10	16	12	12	10	12
	14	12	16	9	12	12	14	11	11	11
	14	11	18	11	11	13	10	12	12	9
	9	12	12	13	15	15	10	13	16	13
	11	14	10	11	15	16	10	13	12	10
	Mean: 13.8 days									
Calculations:Found that patients hospitalised for depressionWest Facing 13.8 daysstayed an average of 3.7 fewer days if they were										
	assigned east-facing rooms exposed to morning									

Wes East Facing - 10.1 days 3.7 days

(Hendrich A (2003) Optimizing physical space for improved outcomes: Satisfaction and the bottom line. Paper presented at the Impact Conference, Institute for Healthcare Improvement and The Centre for Health Design, Atlanta, GA.)

#### A 2001 study by Benedetti et al with patients treated for depression

assigned east-facing rooms exposed to morning light, compared to patients in west-facing rooms with less sunlight.



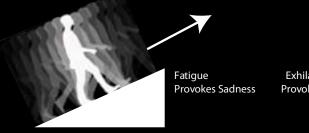
#### Phenomenology :

In phenomenology, the environment is concretely defined as "the place", and the things which occur there "take place". The place is not so simple as the locality, but comprises of concrete things which have physical substance, shape, texture, and color, and together join to form the environment's personality, or setting. It is this setting which allows certain spaces, with similar or even matching purposes, to embody very diverse properties, in accord with the unique cultural and environmental situations of the place which they exist (Bachelard). Phenomenology is considered as a "return to things", maneuvering away from the abstractions of science and its unbiased objectivity. Phenomenology engages the concept of partiality, making the thing and its unique conversations with its place the pertinent topic and not the object itself. The man-made constituents of the setting become the settlements of opposing scales, some large - like cities, and some small - like the house. The trails between these settlements and the many features which make the cultural environment develop the secondary defining characteristics of the place. The difference of natural and manmade offers one the principal stage in the phenomenological approach. The second is to succeed inside and outside, or the connection of earth-sky. The third and final step is to measure character, or how things are complete and occur as participants in their environment (Pallasmaa,).

The pages that follow describe the way in which Phenomenology can be used to help design healthy settings for

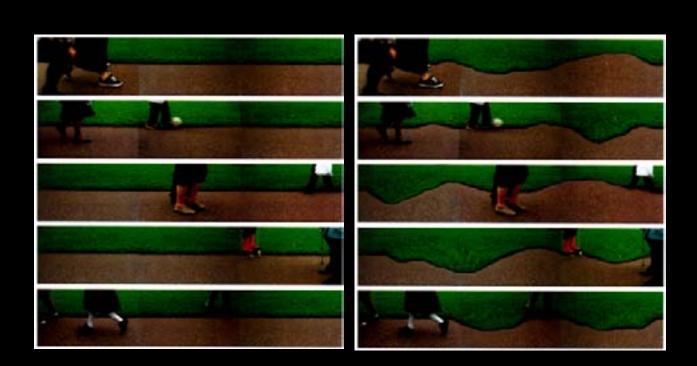


(Ruga W (1989) Designing for the Six Senses. Journal of Health Care Interior Design 1: 29-34.)



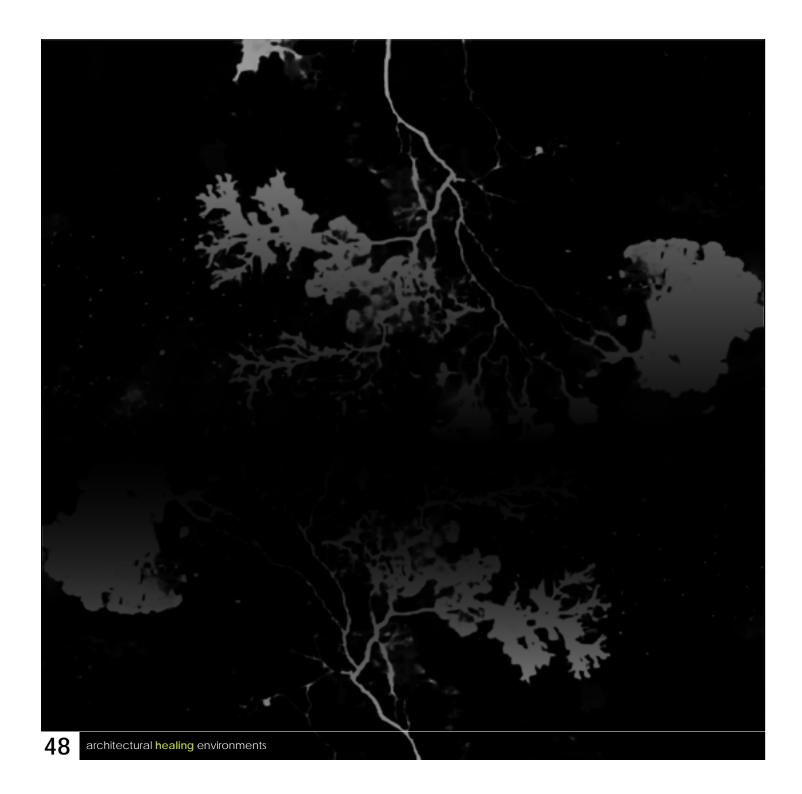


Spaces that must be learned activate the mind and become challenging for the occupant to occupy. The nature of this type of environment also makes it atypical to the average spaces one occupies on a regular basis in the real world. Thus the person arranges their own mental construct of the space giving them the opportunity to engage with the built environment and utilize their mind. Exercising the mind in this way is an important way to stay mentally sharp and healthy, while also giving a distraction to their ailment. These diagrams



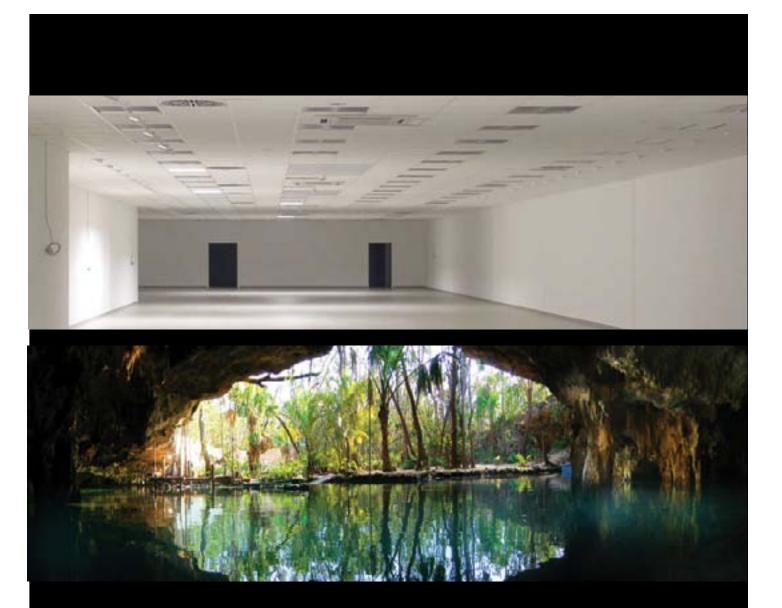
acceleration will be negative if the body atillustrate the effect of the tilted surface on the tempts to climb up the surface and it will be body. One can observe that the first mode of perception is necessarily occurring as gravity positive if the same body attempts to go down forces the bodies' parts to interact with the arthe slope. A negative acceleration imposed chitectural surface's parts. However, in the difon the body creates a fatigue on the body ference of architectures which proceed only whereas a positive one triggers an exhilarawith flat floors, in the Oblique Function, gravity tion. One could thus argue that only half of the potential movements on this surface provide a imposes an additional effect on the bodies, a joy when the other half provokes sadness. The directionality. slope is expressing its power of existence.

Any movement of the body in any direction will exercise on it, a degree of acceleration. This



"... It is not the rectangle which is the problem, but its life-sapping characteristics. Where materials, textures, colours, light, living line and human activity can reinvest such forms and spaces with life, the materially practical and culturally normal characteristics of rectangles can be used to advantage. None the less, in general, one feels on much safer ground with non-rectangular, or shape-moderated spaces." -Roger Ulrich

The language of forms in architecture also has a correlation to the feeling one obtains from the space. For example the natural environment has soft edges, but no right angles (Redstone). However, the right angles in our everyday life are endless in the built environment. The architecture of a healing environment can take on the qualities of natural conditions through imitation in form. While one might feel constrained and boxed in rectilinear spaces, the fluidity of an organic space creates no such feeling. Without right angles, the spaces become seemingly less harmful and comforting to the human eye.



(http://static.howstuffworks.com/gif/adam/images/en/tongue-picture.jpg)

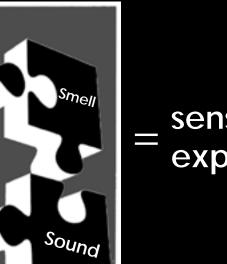
# responsive

52 architectural healing environments

the integration of all the senses helps concernent to allow for healing to emerge. For example sound of moving water is one aspect of pace that can elicit emotions for relayed

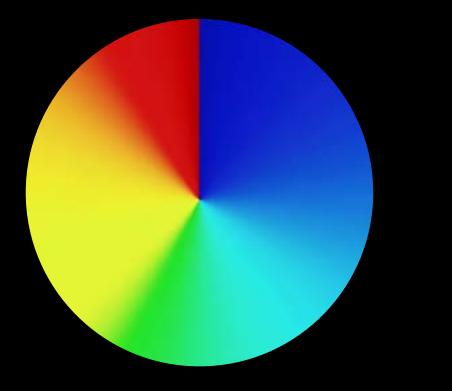
Jouch

healthier lives. When patients are sick, and sur-The integration of all the senses helps complete the highest potential of an environment rounded by medical equipment and white to allow for healing to emerge. For example, walls, the last thing they need is a dark, stuffy the sound of moving water is one aspect of a room. These is why it is important for every room space that can elicit emotions for relaxation to have a window for natural light to come into and help create a healing environment for and tranquility. Thus, the architecture can integrate the water as an aspect of the design the patient (Tyson). Also by bringing nature to allow for a healing environment to emerge. indoors, it has many psychological benefits. Lighting design in healthcare environments is Plants are soothing and restful. Plants reprea major factor in creating healing situations. sent life, growth, and hope. They can provide It is proven that people who are surrounded interest and diversion. Plants are used as a by natural light are more productive and live therapeutic tool.



## sensory experience

#### (http://poshsurfside.com/wp-content/uploads/2009/08/color\_wheel.jpg.)



Colors in architecture provide visual stimuli for the occupant that can elicit positive and negative emotions based on its environment. Whether the emotions one experiences are through acquired knowledge and/or personal history, there is evidence that colors provoke emotions on average in the same way with few exceptions. Whether these associations were learned in childhood or not, our culture transcends these messages of color associations early in one's life. Sometimes colors guide us through life both literally and figuratively. For

example, in our country a stoplight on green means go. In most cases the green light is associated with positive emotions because of the action that follows. Very rarely would a green provoke negative emotions. A red light can sometimes elicit frustration and anger. This proves the power of color to guide actions and emotional responses. It gives some insight at how colors become engraved in or minds to manifest reactions. Why do these associations occur with colors? An example to explain this answer is the concept of warm and cool col-

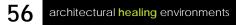
#### Healing Environments should...

stimulate positive awareness of ourselves; allow for privacy; do no physical harm; provide meaningful, varying stimuli; encourage times of relaxation; allow us to interact with them productively balance constancy and flexibility

### be beautiful.



color can also set the tone for spaces as well, ors. Some might answer that cool and warm colors are the way they are because it just is. eliciting certain emotion were necessary. Ac-However, this concept can be traced back to cording to color therapy, colors are capable of nature. The associated properties describing influencing many aspects of our lives, including the colors relates back to the physical environour mood, mental state and energy level. Each ment in which we live in. How does color becolor is thought to be associated with one of come integrated into the design? Due to the seven energy centers, or chakras. If a person's is thought to be out of balance or weak, the power of color to evoke emotion, it can become a tool integrated in the architecture to color it's associated with is believed to help highlight and instigate the individual through strengthen it. The concept of color therapy is a sequential experience in the architectural based on the fact that our physiologic funchealing environment. The properties of the tions respond in predictable manner to colors.

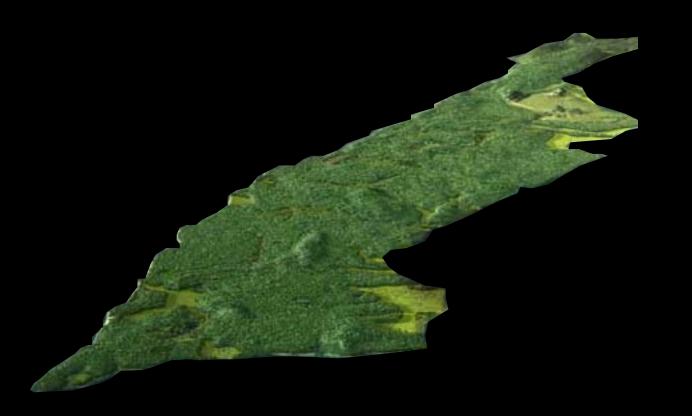


ω Site

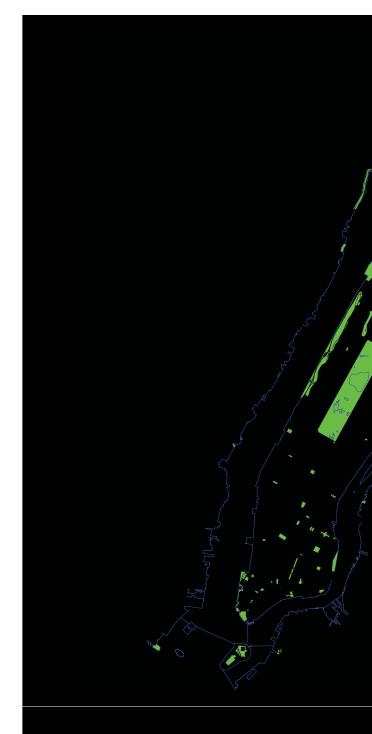
architectural healing environments 57



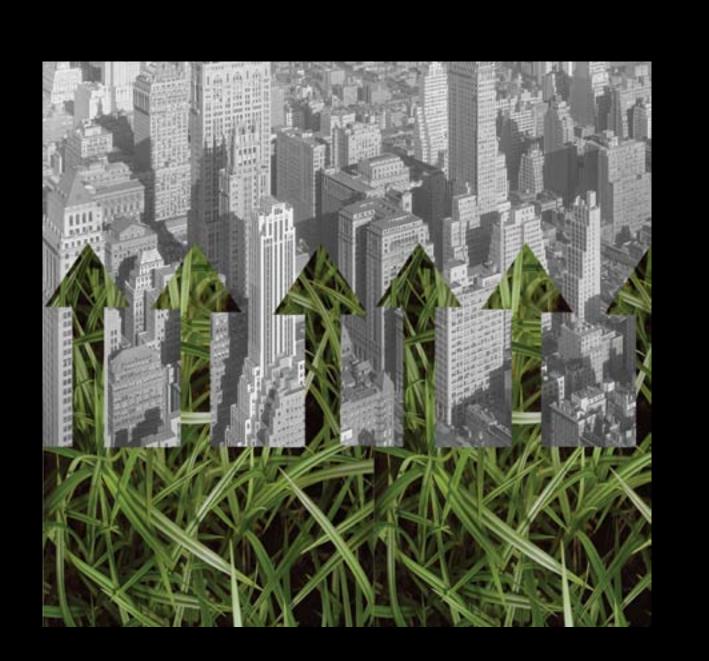
(http://static.danielquinn.org/ugc/blog/2005/11/24/667-nyc.jpg)



Originally, the island of Manhattan was a haven for all sorts of vegetation and a wonderful habitat for an assortment of wildlife. Since the urban sprawl, the natural habitat has been greatly reduced.



Every small effort that is made to bring back the natural elements lost from the construction of the city is crucial to the recovery of a habitat. The hope is that this rooftop can become one more green spot on the map that highlights green spaces in Manhattan.





#### COMMON ELDERBERRY

The blue and purple Elderbernies are edible and high in Vitamin C, though the red berries of other species are toxic. Native Americans made juice and too from elderberry flowers for babim. The berries and flowers were also used for medicine and dyes. The stem itself was used as a twirling stick for starting fire.

#### "THREE SISTERS"



The Lenape people practiced multicropping with the traditional "three sisters" garden, growing maize (com) in combination with bears and squash. Beginning in late April, Lenape men cleared a plot of land by felling the large trees and burning the vegetation. Burning fertilized the soil with ash, which promoted plant growth by changing the soil chemistry from acidic to skaline, releasing more nutrients.

#### COMMON MILKWEED

in the spring, some Native American peoples cooked the young shoots, eating them as an asparagus-like food. Common milkweed was also had medicinal uses, as a root tea for a number of respiratory medical, digestive, and joint conditions. The high destrose content of the sector led to milkweed's use as a source of sweetener. This plant, especially the root is considered toxic

The natural elements that were lost from the original habitat on the island range from ferns to flowers that sometimes hold very beneficial qualities. For instance the common elderberry is high in Vitamin C and could be used for its nutritional value. Other plants were edible and were high in nutrients.

These plants and others could integrate themselves back into habitat while also provide healing properties for the center.

#### (http://static.danielquinn.org/ugc/blog/2005/11/24/667-nyc.jpg)

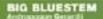


#### SOLOMON'S SEAL

The miscine, or rootstock, of this plant served many functions. It was: enten as a source of starch after being cooked exernight in lye water to remove the bitterness; pround into a flour to make bread; steamed and inhaled to treat headaches; burned for the fragrance; made into a medicinal tea; and was poulticed to treat skin ailmonts.

In early May the women created mounds. and planted maize karnels saved from the year before. A few weeks later, they planted beans along the sides of the mounds and aquash between.

Over the course of the summer, the beans climited up the maize stalks, using the steloot stems as a ladder to reach the sun; in the meantime, the beans, which have nitrogen-fixing



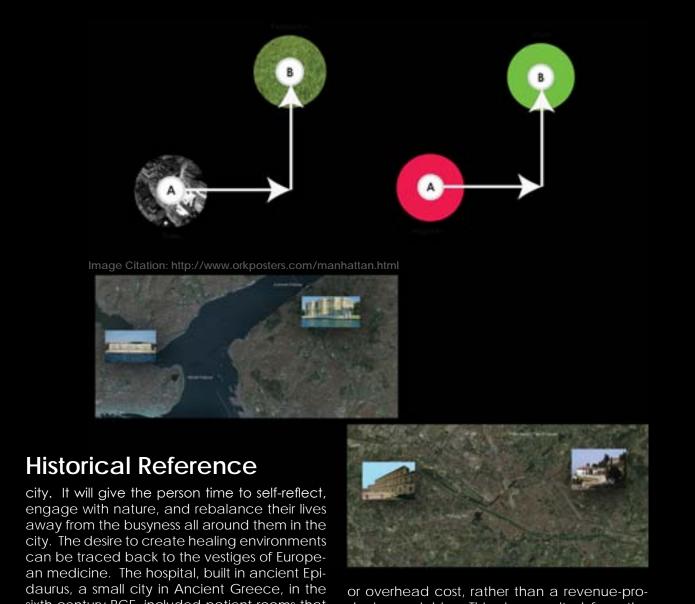


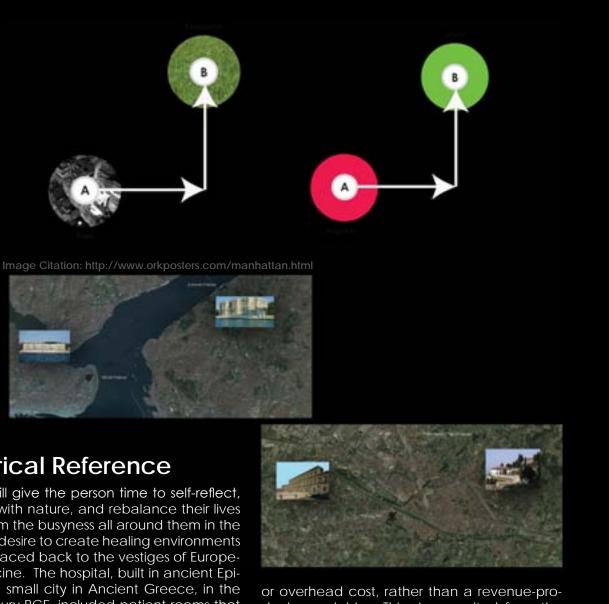
Bluesters grass was valued for its moldresistant properties; it was used to line beds and storage pits dug in the soll. A tea was made from the leaves used as a wash to rolleve fevera. Big bluestern once dominated the tall-grass prairies of North America, but most of the prairie was plowed under so European settlers could row corn and wheat.



The quest for getaways from the urban life was a concept realized many years ago for the people that could afford it. For instance, the Turkish royal family had their palace in the city. Yet, during the summer months they would cross the river to their other palace in the country that employed views of the landscape and natural environment. It was their time to rest and rejuvenate their health. It was a time of relaxation and self-meditation. In Italy, the in on their lives to rebalance. The wellness cen-Medici family also had a similar concept. The ter will act similarly as a retreat for the patients Palazzo Piti was their main home for the cooler to obtain these qualities of a getaway from the

months. Then, during the summer months they would retreat to their villa in the countryside for the beautiful landscapes and serenity away from the hustle and bustle of the city. Still to this day there are families that have their house in the city, but a summer place outside of it. The desire for relaxation and relief from the city life has always been sought over. It gives a personal retreat for their minds to relax and focus





sixth century BCE, included patient rooms that faced eastward (toward the sun) to promote healing and was the most celebrated healing center of the Classical world. Until recently, building infrastructure was regarded as a sunk

ducing variable. This view resulted from the inability to link facility resources with the heart of healthcare business; providing safe, quality patient care and family support, and a positive and safe work environment for staff.



#### Image Citation: http://www.orkposters.com/manhattan.html

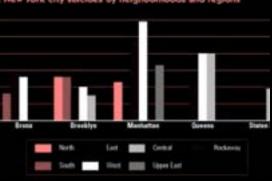


Why choose a site in a city besides creating a new and untraditional model for wellness centers to exist? It is proven that mental illnesses like depression and suicide rates are statistically higher in urban areas as opposed to rural areas. Why choose New York as the urban area to test the thesis? Compared to the rest of the country, New York's population is the highest. This creates the perfect binary to stage the wellness center in. It was crucial that the city was densely populated to show how that the concept could work anywhere. Staten island

Image Citation: http://www.orkposters.com/manhattan.html

Manhattan was chosen out of the other boroughs because it has the most issues with mental illness. For instance, Manhattan has the highest suicide rates comparatively to the other boroughs. Also based on density per square foot, Manhattan ranks the highest. This once again is the ideal situation to test the thesis.





#### Manhattan was chosen out soos new york City suicides by neighborhoods and regions

architectural healing environments

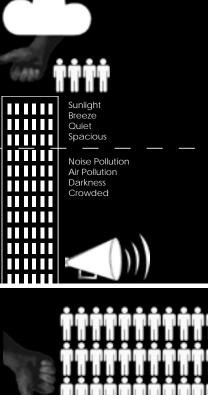
#### Manhattan Grid

From the beginning, the issue was finding a site in an urban environment. The obvious choice was to construct this architectural healing environment in a rural area where the light and views of the landscape would be optimal. Traditionally, this is where one would find rehabilitation centers for people dealing with depression, alcoholism, drug-abuse due to the fact that it was removed from society so that they could just focus on themselves and their issues. However, to create this healing environment in a place where it was unexpected and accessible to the patient's everyday life, proved to be difficult. The next obvious choice would be to create a new center in an unoccupied space somewhere in the urban context. Nonetheless, I wanted the site to have even more of an impact on society, making its presence known.



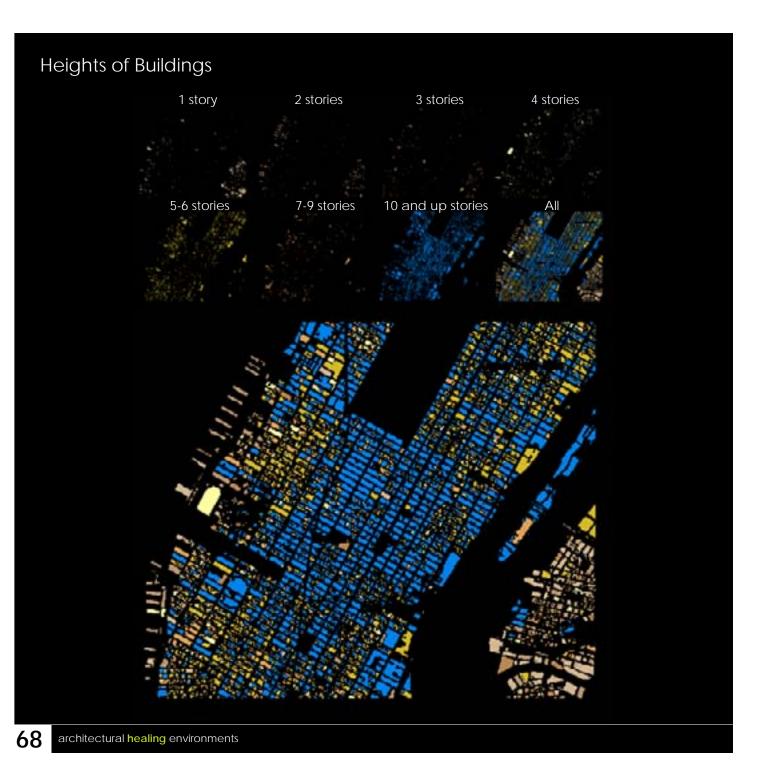
Why a Skyscraper?

The solution then became to go up rather down. The site then would become ope light and views, no longer obstructed by buildings. The underutilization of skysc rooftops became the launch for why it w become important to place a wellness ter on top of a building. Not only would green elements integrated in the center heal the occupants; it would now give ba the lost natural habitat of NYC. The hope that the concept could now become a m for other city's to employ into their urban fab-



than
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ric. Additionally, the rooftop of a skyscraper performs many healthy aspects that cater towards a healthy environment because it travels up and away from the noise pollution, air pollution and overcrowding in the streets. The green roof concept also has the ability to become a sustainable feature for the rest of the building, too. Sustainable features like rainwater collection and thermal mass cooling.



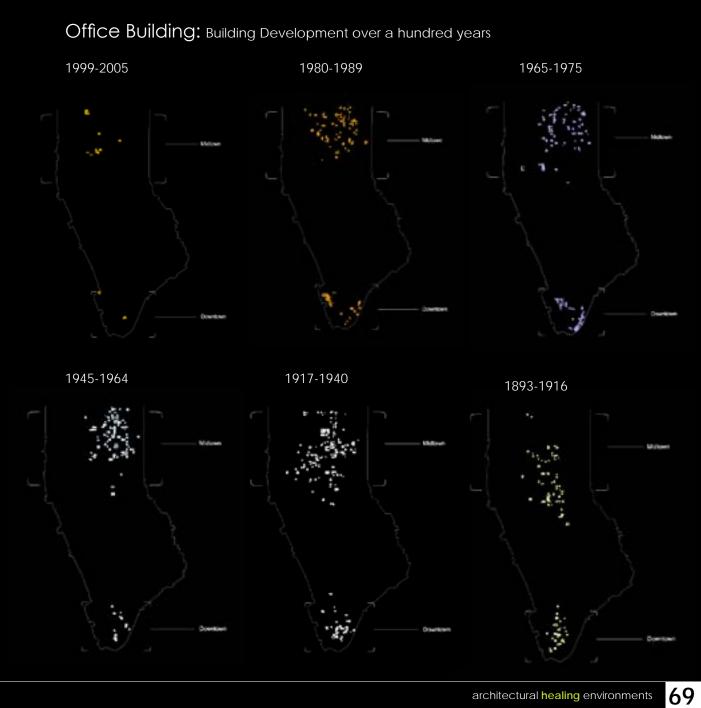


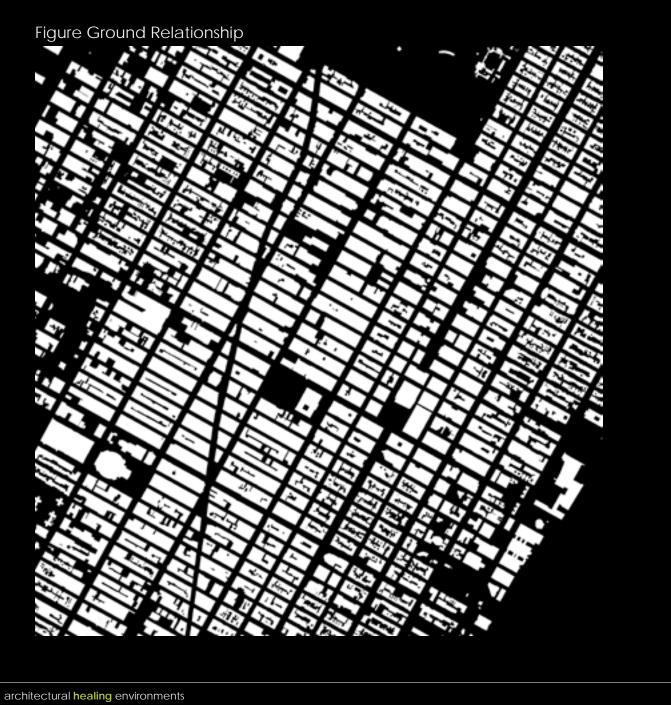


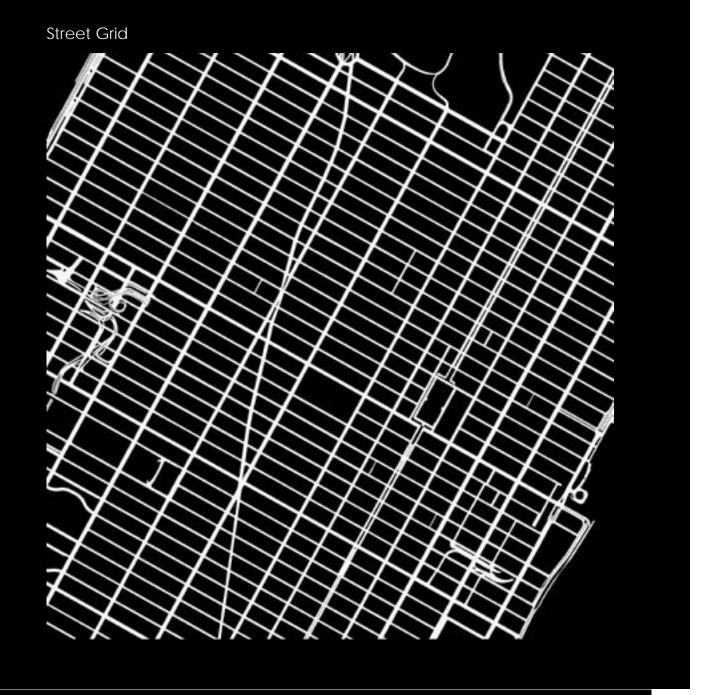
Image Citation: http://www.orkposters.com/manhattan.html

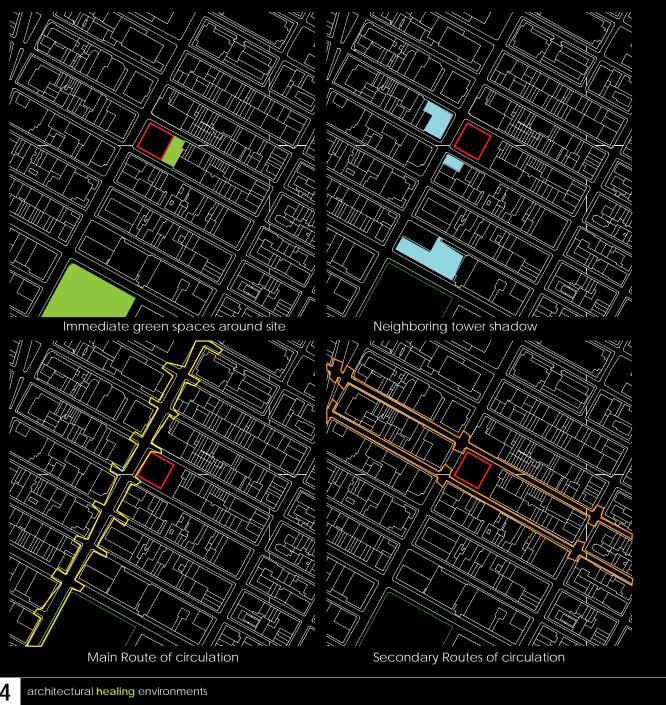


Site: 1166 Avenue of the Americas District: Southern Midtown Intersection: 6th and 45th

71



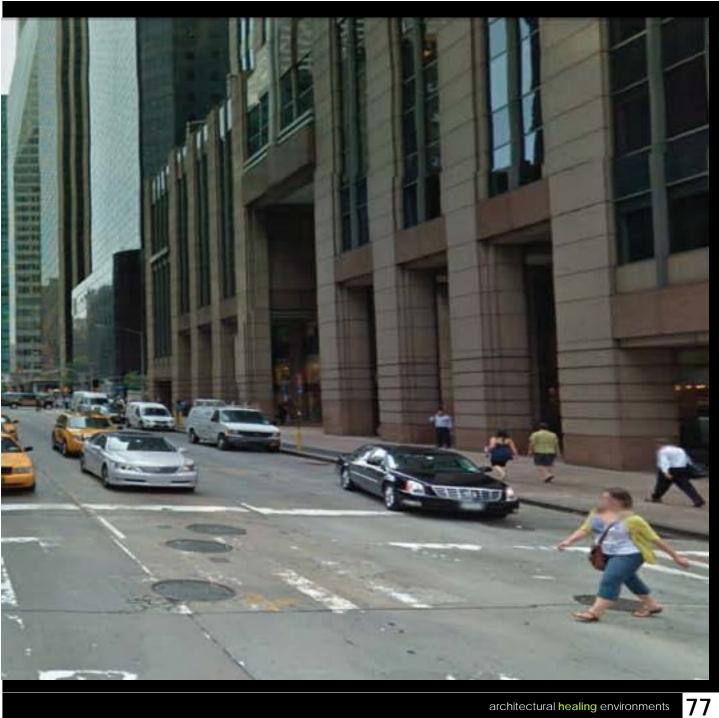






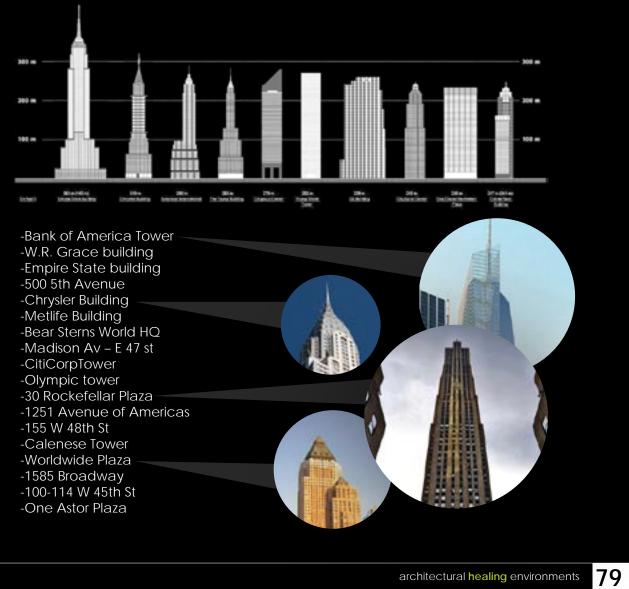
74







### Monumental Structures of Height in Manhattan as seen from site.



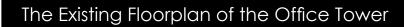
### Views from within the skyscraper...



...to the East River...



### ...and Central Park.



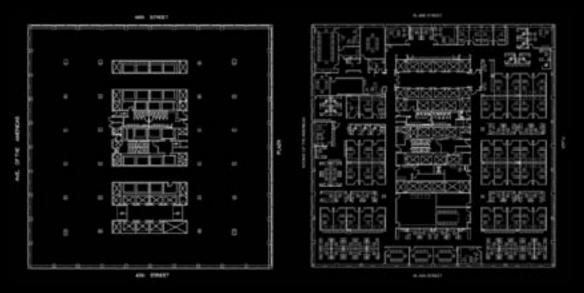
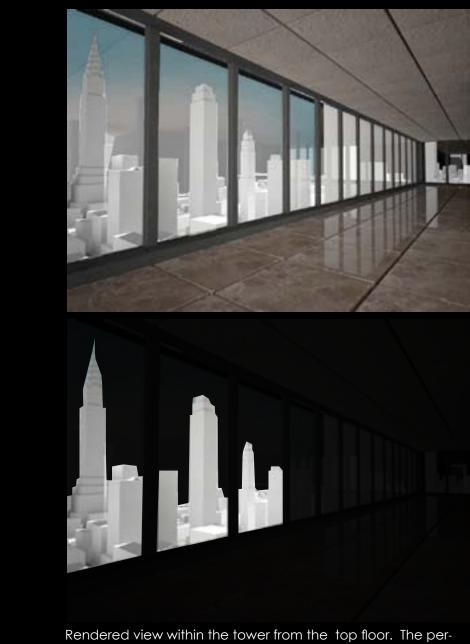
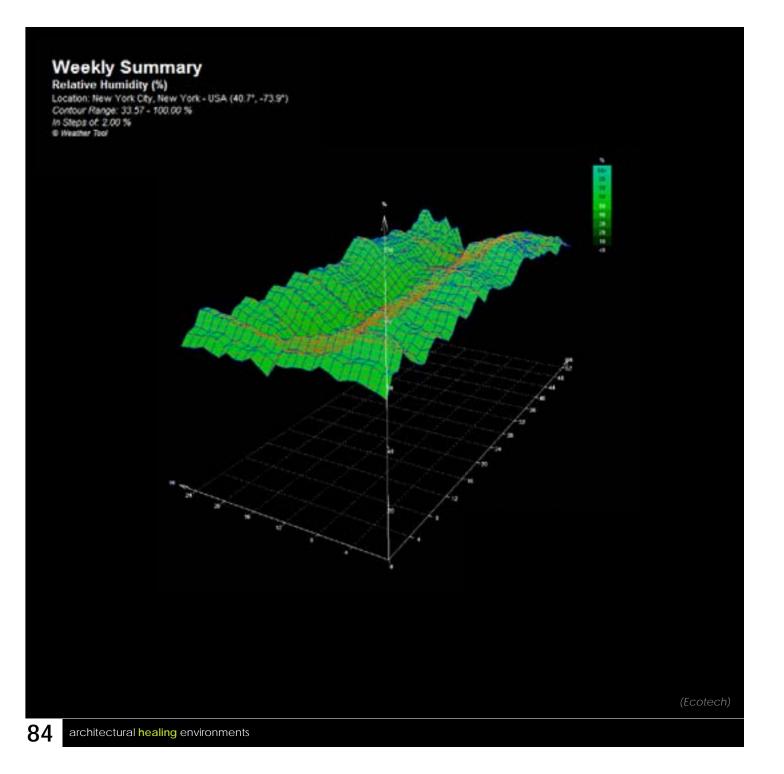


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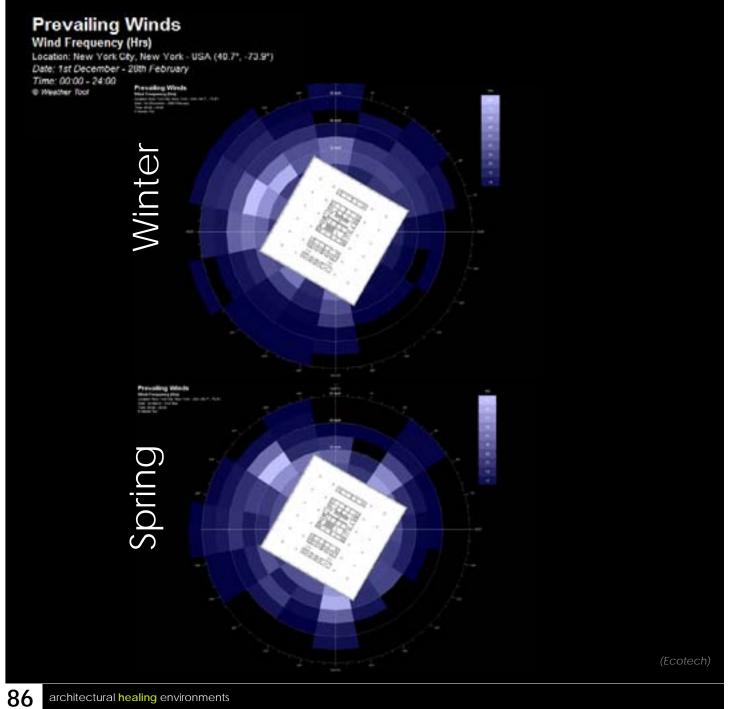
82 architectural healing environments



Rendered view within the tower from the top floor. The perspective shows the importance of the skyline for the perspectives looking out of the building

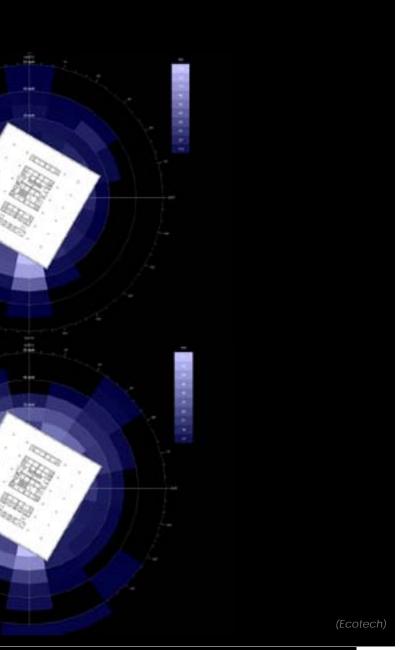


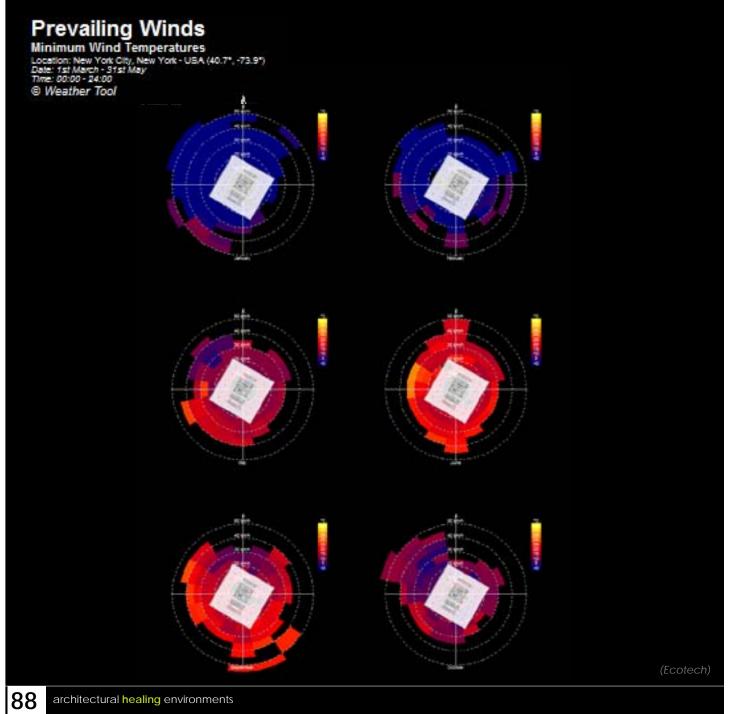
The integration of the natural world into the design is paramount in order to successfully develop a healing environment. Thus, the site's environmental conditions need to be addressed in order to fully understand the complete natural character of the site. Aspects like the sun exposure, prevailing wind patterns, Fall and Spring equinox, winter and summer solstice, average monthly temperatures, etc. The contrast of New York from summer to winter is large, so it is important to understnad the diversity within the weather in order to design a success yearround business.

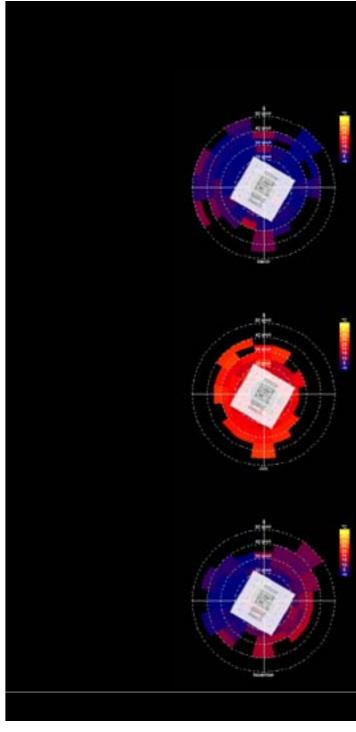


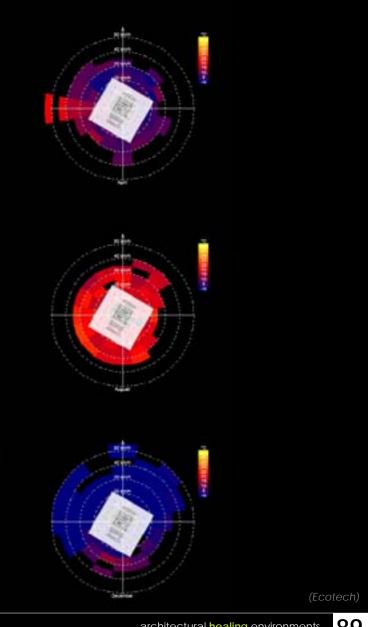
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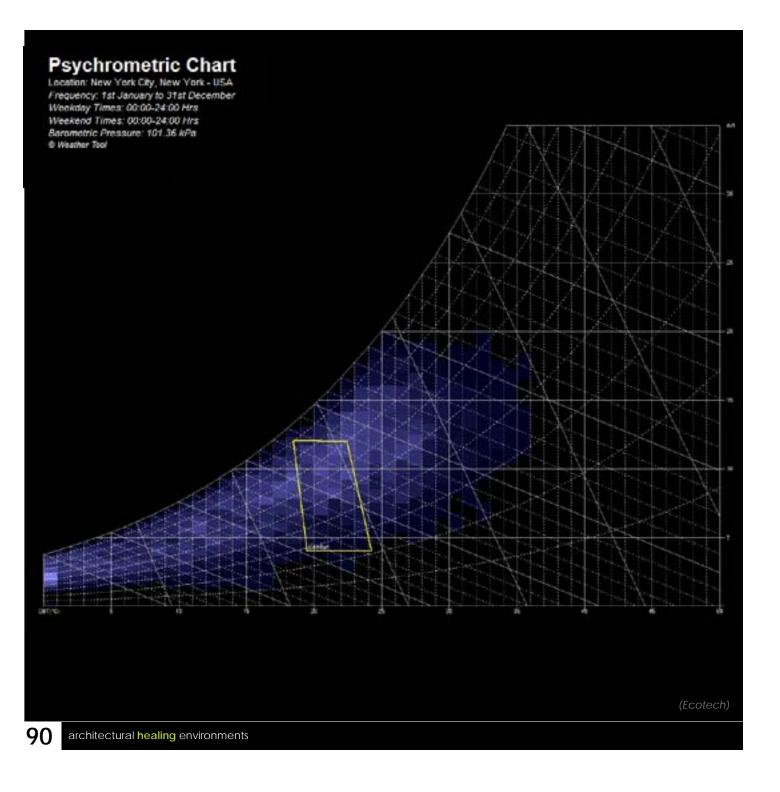






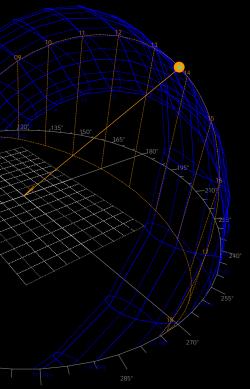
architectural healing environments

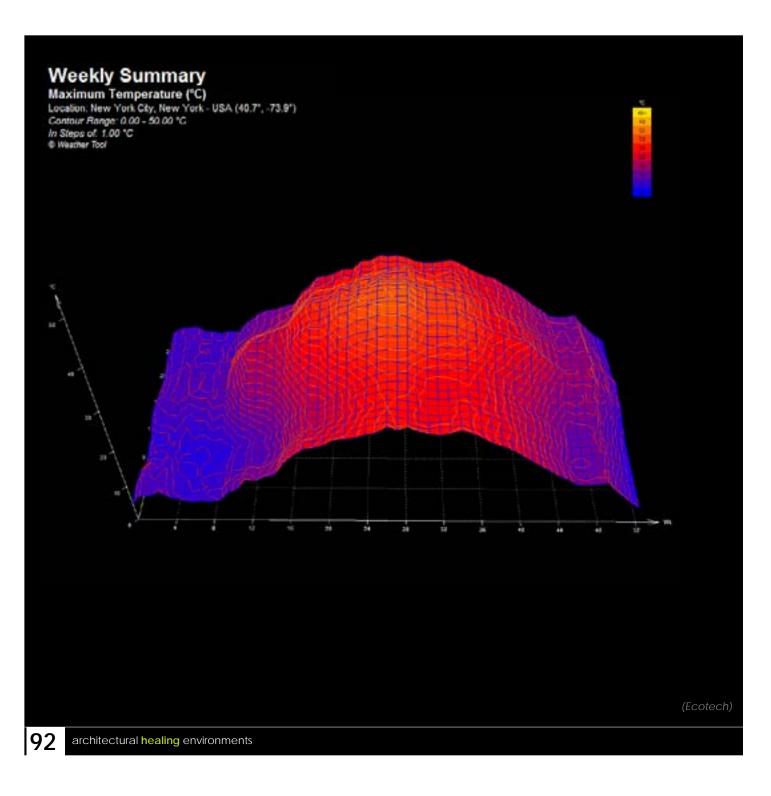
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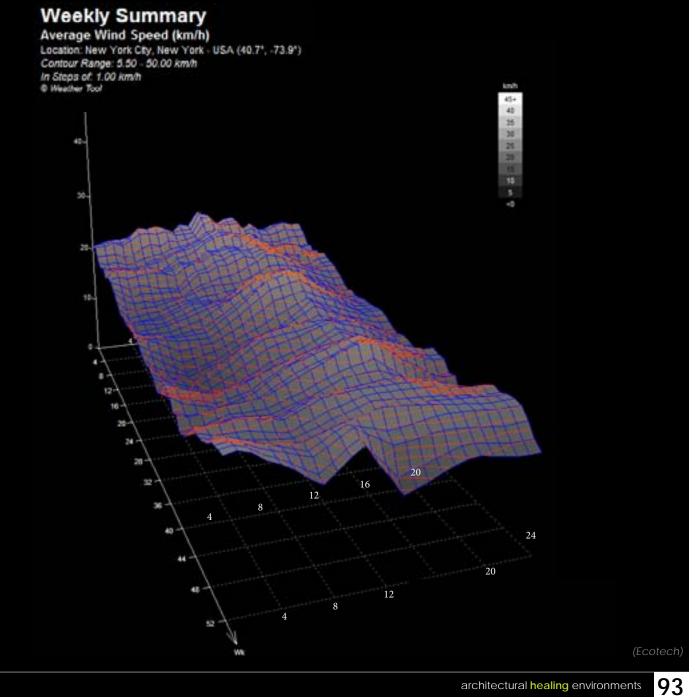


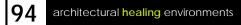
### Sun Chart

Location: New York City, New York - USA Frequency: 1st January to 31st December Weekday Times: 00:00-24:00 Hrs Weekend Times: 00:00-24:00 Hrs Barametric Pressure: 101.36 kPa @ Weather Tool









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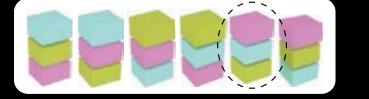
## HEALTH: A dynamic state of complete physical, mental, and spiritual wellbeing



CHURCH, RELIGIOUS FACILITIES, SWIM-MING POOL, SPA

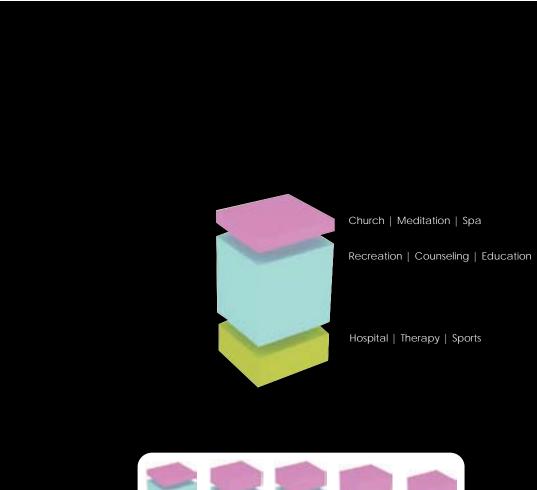
EDUCATION FACILITIES, LIBRARY, WORK-SHOP

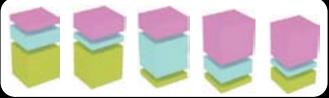




RESTAURANT, BAR, HOSPITAL, RECRE-ATION, GYM, SPORTS FACILITIES

Program is a crucial aspect in architectural healing environments. The different programs the center provides for its patients determines the success of its healing environment. In order to ensure a setting that encompasses all of one's health, there must be stimulation to the mind, body, and spirit. Consequently, the center will be split between the overarching program titles of Body, Mind, and Spirit.





The associated spaces under these titles will have programmatic relationships with the other spaces in order to form a complete stimulation to the body, mind, and spirit.

			Calculatio			Senses Involved					
Category	Program Type		Quant.	Sq. ft.	# of Persons	Sight	Smell	Touch	Taste	Hear	
Spirit											
	Spa Programs										
		Spa Pool	1	600	10			Х	Х	Х	
		Steam Room	2	250	3			Х	Х	Х	
		Sauna	2	250	3		х		х	х	
	<b>Religious Facilities</b>										
Mind											
	<b>Education Facilities</b>										
		Classrooms	4	400	10	Х				Х	
	Psycho and Emotional Rest										
		Music Therapy	1	400	4					Х	
		Light Therapy	1	450	2	Х					
		Artificial Sun Therapy	1	400	2	Х		Х			
		Vichy Shower	1	400	1			Х		Х	
		Sleep Therapy	1	400	2		Х			Х	
	Library		1	800	20	Х				Х	
	Workshop		1	500	12	Х		Х			
	Counseling Room		1	300	7	Х		Х			
Body							1			•	
	Clinical Programs				Ì		İ	Ī			
		Physical Therapy	1	500	3	Х		Х			
		Occupational Therapy	1	450	3	Х		Х			
		Performance Testing	1	450	3	Х		Х			
		Examination/Treating Rooms	4	350	3		х			Х	
		Rest Room/Changing Area	2	450	4	Х				х	
		Stress Testing	1	450	3	Х	х	Х	Х	х	
		Consultation Room	1	450	3	Х			Х		
		Waiting Area	1	600	4	Х	х	х	Х	х	
		Office	1	200	3	Х					
		Staff Lounge	1	450	5	Х	х	Х	Х	х	
		Therapy Pool	1	800	6		х	х	х	х	

				ons		Senses Involved				
Category	Program Type		Quant.	Sq. ft.	# of Persons		ā.	Touch	Taste	Hear
	Fitness Programs					0				
	Ŭ	Aerobics	1	300	7	ĺ		х	х	i – – –
		Exercise machines	1	200	6		Х	х		
		Free Weights	1	500	6		Х	х		
		Basketball/Volleyball Court	1	600	8	Х		х		х
		Racquetball/handball Court	1	500	8	Х		х		х
		Lap Pool	1	600	4	Х	Х	х	Х	х
		Indr Running/Walking Track	1	1000	10	Х	Х	Х	Х	Х
		Mn's & Wmn's Lckr Rms/Fam	1	600	3	Х				Х
		Changing Area	1	400	4	Х				Х
	Adminstration									
		Program Director Office	1	250	2	Х		х		
		Facility Director Office	1	250	2	Х		х		
		Accounting Office	1	200	2	Х		Х		
		Sales Office	1	200	2	Х		Х		
	Conf./Comm. Mtg Rms		3	400	4	Х	Х	Х	Х	х
	Lobby/Waiting Area		1	1000	8	Х	Х	Х	Х	х
	Nursery		1	400	4	Х	Х	х	Х	х
	Children's Activity Area		1	350	4	Х	Х	Х	Х	х
Other			%'s							
	Circulation		40%			Х	Х	х	Х	х
	Garden Space		15%			Х	Х	х	х	х

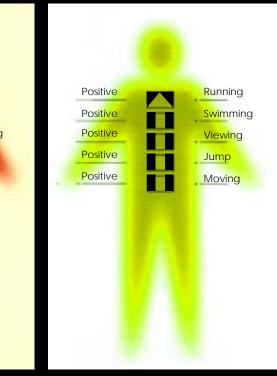
(http://i654.photobucket.com/albums/uu269/olishea/Picture41-1.png)

# Body

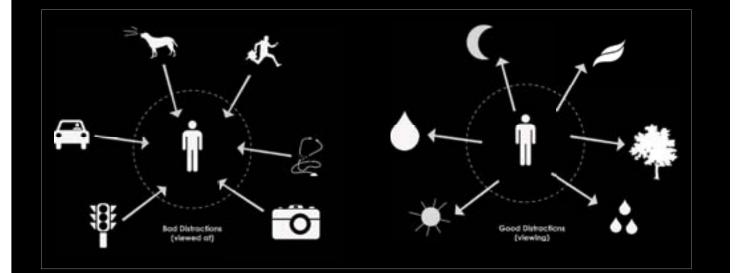
The body plays an important role to the recovarian expects of physical movement should become ery or sustained balance of a patient's well be-integrated to centers that care for the entirety ing. Studies have shown that exercise increases of an individual's well being. the ability of the body to produce chemicals to reduce the likelihood of depression and other Individual physical activity is one way of releasmental illnesses (Waxman). Not only is physical ing endorphins into the body (Zeisel). Howexercise important for recovering patients, but ever, group physical activity is another form of also for healthy individuals as well. The positive physical activity that can force the interaction

Negative Negativ Nega

between other patients inside a comfortable the program must integrate spaces where inand social common space. Social interaction dividuals can choose nutritious meals to feed and physical exercise together create an extheir physical form. Spaces focused on teachcellent combination for an optimal healing ing people how to cook and eat nutritiously environment engaging physical activity (Waxbalanced diets should also be integrated. man). The body must be fed in order to survive Their knowledge of how to cook for themselves the world. Through proper nutrition the person healthy meals at home provides them the can balance their health and feel good. Thus, power to help treat themselves outside of the center as well.

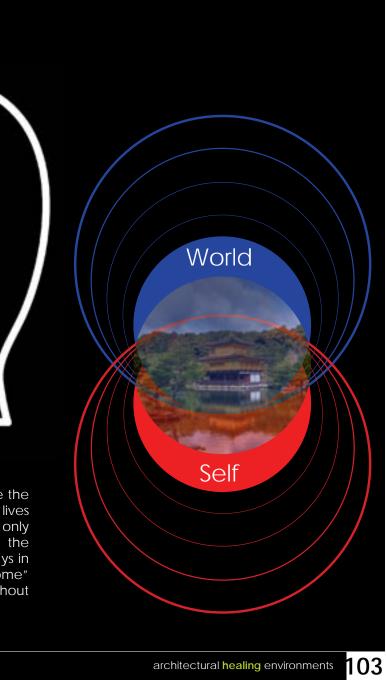


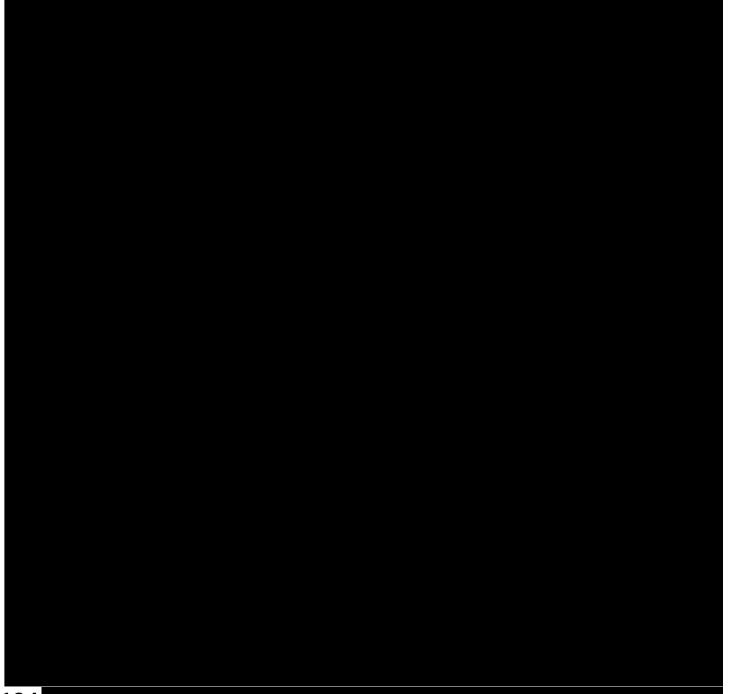
# Mind



Spaces that allow the individual to connect with their spirituality are a crucial part of treating the person's overall wellness. First, it gives them the education of personal meditation to employ in their own lives outside of the center. Second, it engages the awareness of their body and mind, making them present in the moment. The process of centering one's self helps the person shift their focus on the importance of their health and simplicity of life. Thirdly, it is a way to strip the mind of all the unnecessary thoughts that confuses the mind into oblivion. The spiritual programs should be both intimate and collective, defined fluidly with natural elements that transcend peacefulness to the solitude of the space (Ulrich). Spirit

All aspects of each program must provide the individual the tools to integrate into their lives to sustain their equilibrium in life. This can only be completely achieved by educating the people. Thus, each space must have ways in which the individual can have "take-home" knowledge in order to improve their life without the center's presence in their life.





**104** architectural healing environments

# С D $\square$ ents



Morphosis Team | Cedars Sinai Comprehensive Cancer Center | Los Angeles

A half-barrel-vault skylight illuminates the whole of the main patient floor, while layered and curved walls further diffuse light into the space. Rooms are designed with views oriented from the perspective of the patient, lying down and looking up. Key to the concept for the center was incorporating family into the treatment environment. Thus, individual rooms in the chemotherapy atrium open onto main social spaces for gathering and interacting with relatives, allowing patients to determine their own level of privacy. As a whole, the project represented a profound exploration of architecture's potential for communicating compassion and instilling confidence in patients' ability to fight a life-threatening disease.

Morphosis Team | Cedars Sinai Comprehensive Cancer Center | Los Angeles

106 architectural healing environments

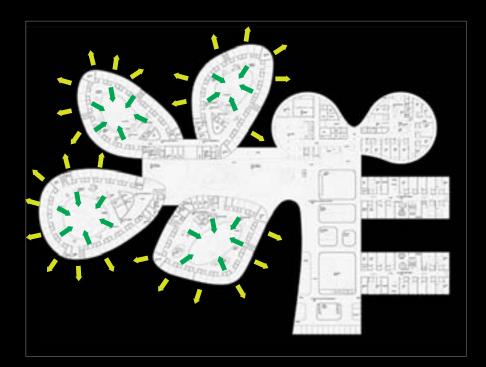
(http://www.morphopedia.com/uploads/CCC-01-XX-GM-02\_CCC\_GM-128.jpg)





"a centre of vitality and well-being without a trace of institutional feeling"

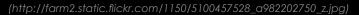
(http://www.lewism.org/2009/01/13/espoo-hospital/)



The design consists of a number of free-form units in which rooms are arranged around internal courtyards. the rooms face the outside of the building, while the spoce around the inner gardens functions both as circulation space and common living space.

Design: K2S Architects | Espoo Hospital | West of Helsinki, Finland









White Arkitekter AB | Östra Hospital – Psychiatry Building | Gothenburg, Sweden



Normality has been the keyword when the architects tried to work their way away from institutionalisation. The possibility to choose between solitude and social interaction has been made possible by single bedrooms and small patient units with adjoining common rooms. The patients can gradually increase their personal space. All the care units have direct contact with a courtyard garden space which contributes to an increased sense of freedom and offers the recreational powers of nature.

White Arkitekter AB | Östra Hospital – Psychiatry Building | Gothenburg, Sweden

110 architectural healing environments

(http://farm2.static.flickr.com/1150/5100457528\_a982202750\_z.jpg)

(http://www.decodir.com/wp-content/uploads/2010/04/OMA-Model-2.jpg)









### Maggie Center, OMA, LA

Maggie's Centres rely on the fundamental precept, often overlooked, that exceptional architecture and innovative spaces can make people feel better - thereby kindling the curiosity and imagination fundamental to feeling alive. Grand in their ambitions, but designed on a small scale, Maggie's Centres provide a welcome respite from typical institutional hospitals, but serves as a haven

OMA | Maggie Center | Los Angeles



112 architectural healing environments





place to connect and learn from others who The plan has been organized for the spaces are going through similar experiences.

sense of confidence and resourcefulness. Instead of a series isolated rooms, the build- At the same time the design also provides ing is designed as a sequence of intercon-spaces for more personal moments - either nected L-shaped figures in plan that create in the intimate setting of the counseling. clearly distinguished areas - an arrangement that minimises the need for corridors

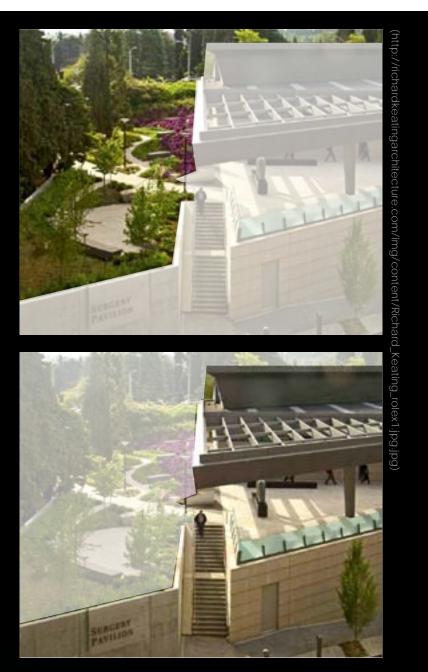
Maggie's help patients to develop their pathetic community of people.





for those receiving treatment. In creating a and hallways and allows the rooms to flow. to feel casual, almost carefree, allowing one to feel at ease and at home, part of an em-

OMA | Maggie Center | Los Angeles



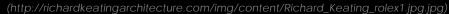
Richard Keating Architecture | JACOBSUniversity of Washington Surgery Pavilion | Seattle, Washington

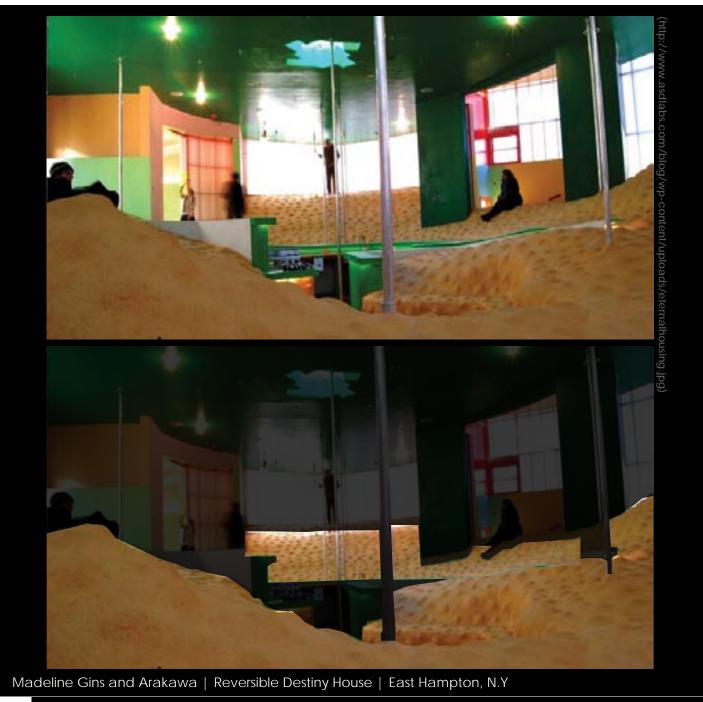


The pavillion incorporates the natural landscape and built landscape as a way of mediating between the two in a spcae of healing. The formal moves within the interior spaces such as the stairwell, begin to dictate natural forms as a way of referencing nature. The literalness of theis translation is not what I am interested in, but rather the notion of generating form derived from a more humanistic form.

Richard Keating Architecture | JACOBSUniversity of Washington Surgery Pavilion | Seattle, Washington

114 architectural healing environments







The design of this house is an interactive experience between the user and the built environment. the floor of the house is almost like a hilly terrain that requires the user to go up and down, constantly recognizing their body with the ground floor plane. The house is also said to oppose death by making the user actively participate in the understanding of the space. It is unconvential on purpose in order for the occupant to think and memorize the space in which they live.

Madeline Gins and Arakawa | Reversible Destiny House | East Hampton, N.Y

116 architectural healing environments

(http://www.asdlabs.com/blog/wp-content/uploads/eternalhousing.jpg)



Madeline Gins and Arakawa | Site of Reversible Destiny | Yōrō, Japan

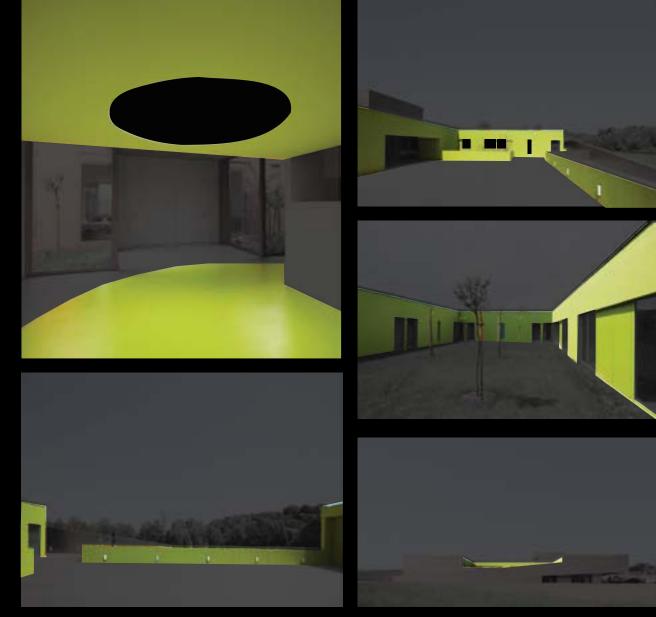


This project sets up a very distinctive environment in which the user begins to navigate the space through the series of walls and curves that push one in and out. The space is integrated with the landscape to stimulate the senses while experiencing this designed environment of mutiple stimuli to activate the mind.

Madeline Gins and Arakawa | Site of Reversible Destiny | Yōrō, Japan

(http://www.asdlabs.com/blog/wp-content/uploads/eternalhousing.jpg)

(http://www.kazeo.com/sites/fr/photos/222/Jean-Coulon-belge-e-de-Jean-Pierre-Petit,2225109-M.jpg)



D. Coulon et Associes | MAS de Mattaincourt Development | Mirecourt, France



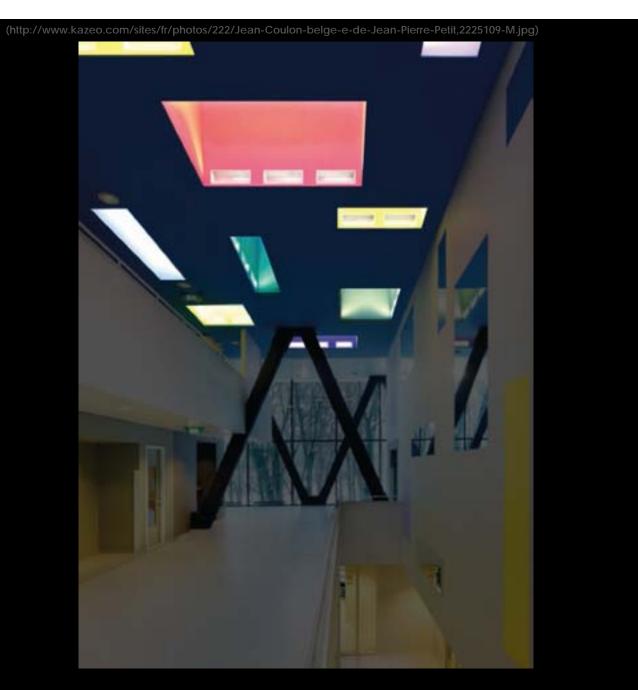


The building incorporates color as a way of directing people throughout the building and generat-ing interest. The combination of the light with the color becomes a integeral part of the materiality that is addressed. The strategically placed color applications also provide a means of distraction, bringing the viewer into the built environment.

D. Coulon et Associes | MAS de Mattaincourt Development | Mirecourt, France

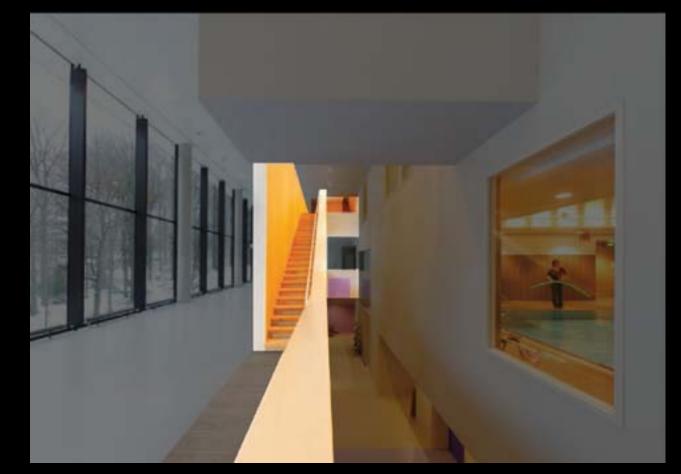
120 architectural healing environments

### (http://www.kazeo.com/sites/fr/photos/222/Jean-Coulon-belge-e-de-Jean-Pierre-Petit,2225109-M.jpg)



D. Coulon et Associes | MAS de Mattaincourt Development | Mirecourt, France





D. Coulon et Associes | MAS de Mattaincourt Development | Mirecourt, France

122 architectural healing environments



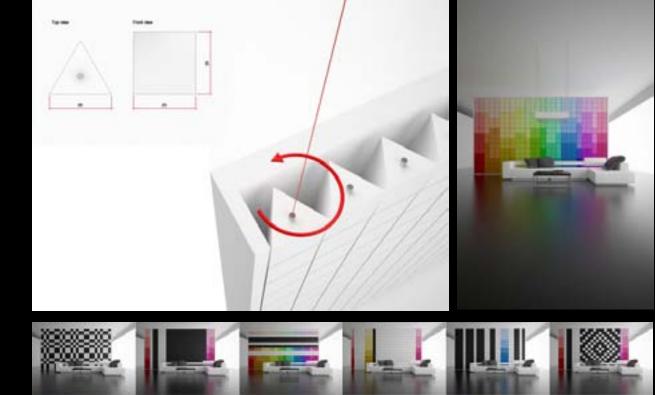
(http://www.kazeo.com/sites/fr/photos/222/Jean-Coulon-belge-e-de-Jean-Pierre-Petit,2225109-M.jpg)

(http://www.japanmylove.com/images/japanese-architecture-katsura-1.jpg)



The designed uinternal public space surrounded by program is extermely effective. Part of the healing process for patients dealing with psychological illness is the interacion between peers. Spaces like this, activated by the dynamic architecture, are critical to the patients healing treatment.

Akihisa Hirata | Commercial building in Daikanyama | Tokyo



The design of this wall, as an interactive feature within the built environment, becomes an interesting diversion from the typical wall with paint. The user begins to design the wall with their own personality, and it changes the face of the space just by the touch of a finger. The role of the user is now an active participant within the space.

Image Citation: http://www.orkposters.com/manhattan.html





Light becomes a material in this setting. The strategic planning of all the openings to the outside, and the angles of these cutouts to force the light in the desired angle is stunning. The space has an ethereal quality about it that is only achieved by the light.

(http://www.detnk.com/files/node\_images/692dcceddae45bb0\_6.png)



Le Corbusier | Notre Dame du Haut Ronchamp | France

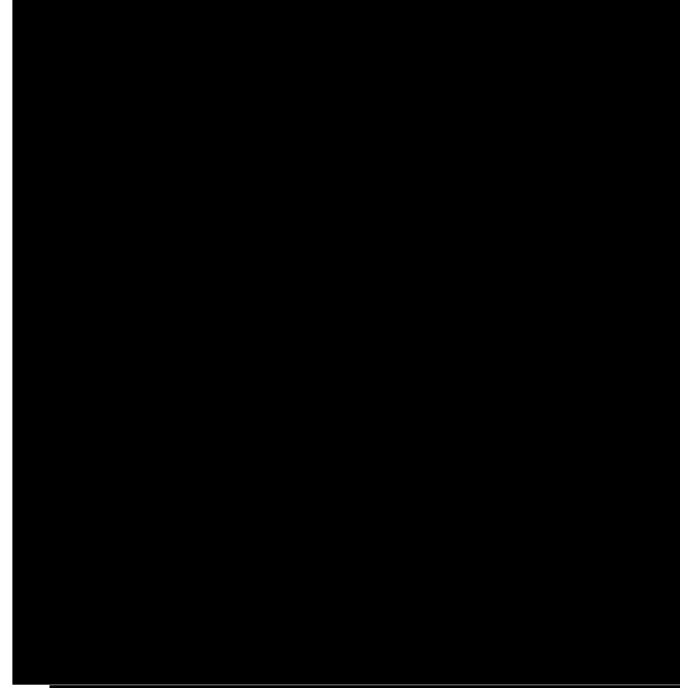


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Le Corbusier | Notre Dame du Haut Ronchamp | France

architectural healing environments

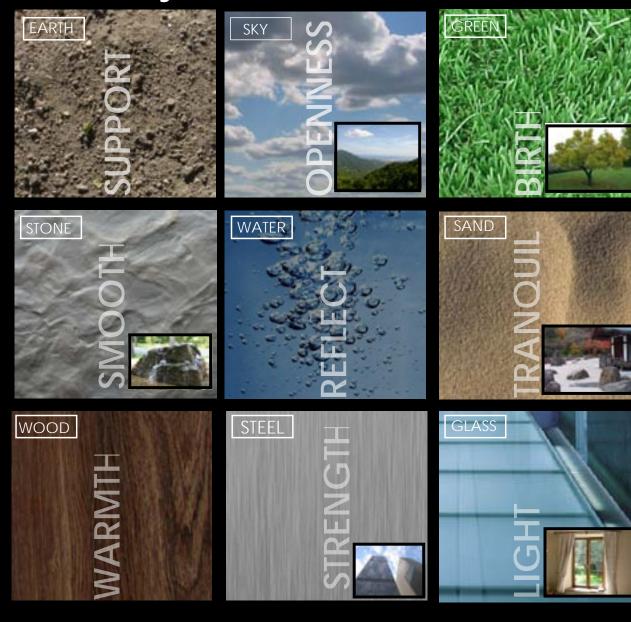
127



128 architectural healing environments

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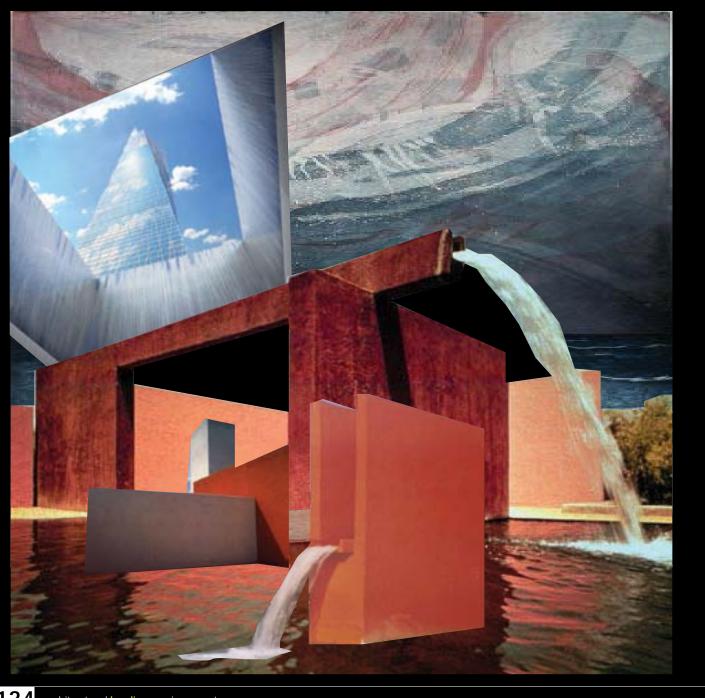
### Materiality and its affects on the healing environment

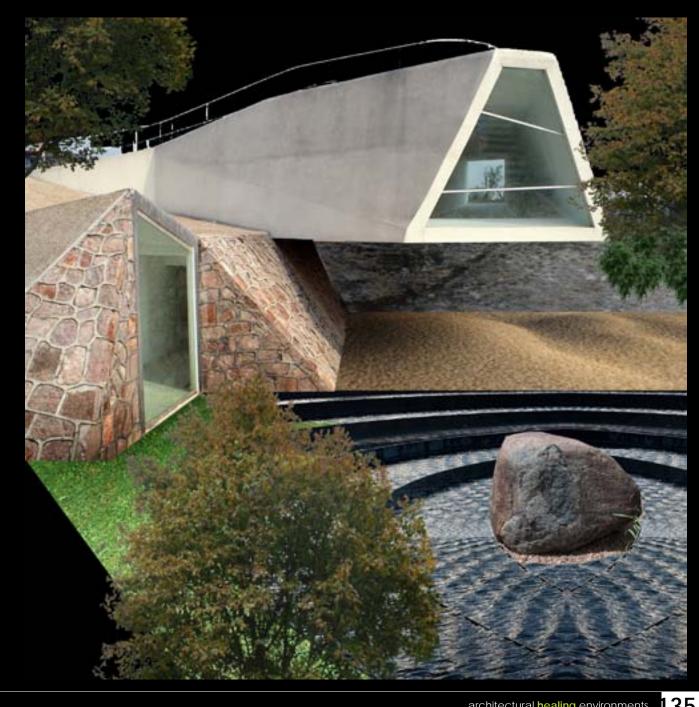


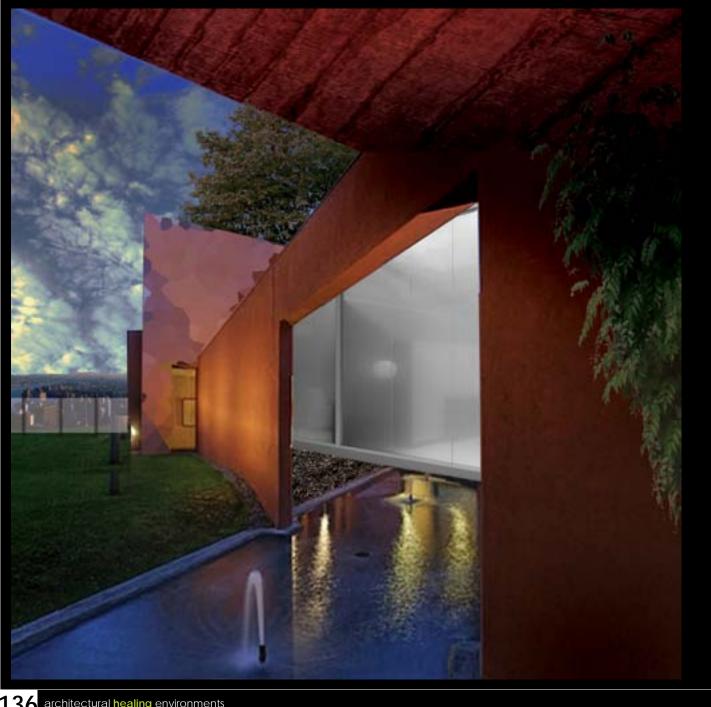
Materiality has a direct influence on the overall sense of the environment. Materials have the ability to affect the sound environment, circulate movement, increase /decrease comfort, and various other actions. With this, the form in which the material becomes a part of will also determine the powers of its placement. The associated dimensions of the material also will play a factor in the design. For instance, wood is a material that retains heat, is soft and comforting, and can be associated with the concept of natural environments. Another material like sand has a therapeutic value to it, soft to touch, and gentle on feet. However, stone is cool and smooth to touch, but hard on feet. When the materials become integrated in the program, the quality of the materials will embody the vision of the space and become another dimension in the healing environment. Other, not usually thought to be materials, like light, sky, water, and vegetation will be manipulated with the built environment to evoke specific responses in order to stimulate the mind and its perceptual visioning of a space.



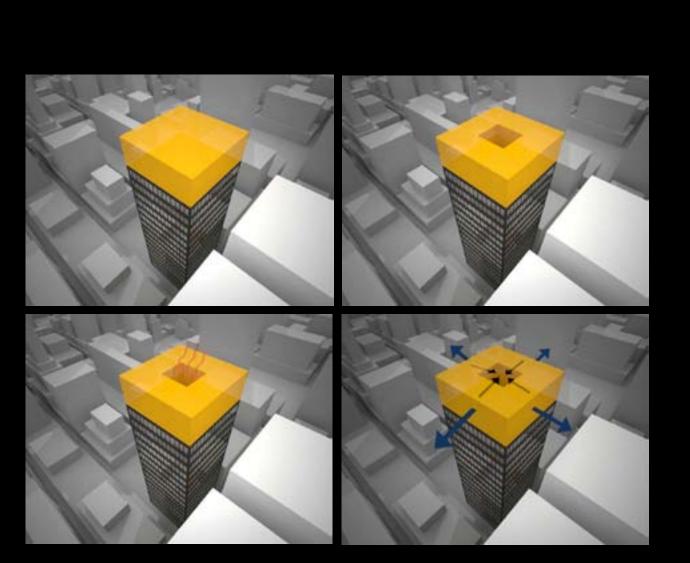
The following perspectives provide a vision for the "garden." These are intended to be spaces that integrate all the senses; vision, taste, smell, hearing, and touch. The study is done through a phenomonological lense, designing with a multiplicity of textures, materials, and interests to engage the mind in a playful manner of distraction. The awareness of these physical things in the space and their properites provides the necessary information for the occupant to draw their own conclusions. This awareness of one's self is the beginning to any healing process in the mind.



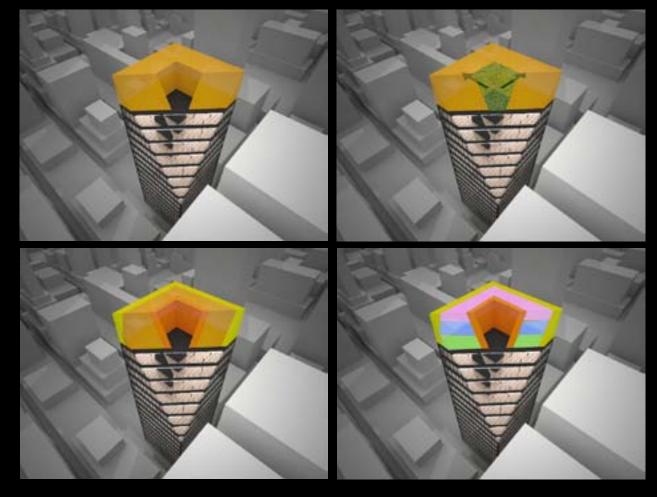








This massing studies begin to discover the possibilities of the site with the principles from the contention. Major moves, like the central courtyard, begin to open up many possibilities for internal views towards a natural landscape and internal natural daylight for the interior spaces.



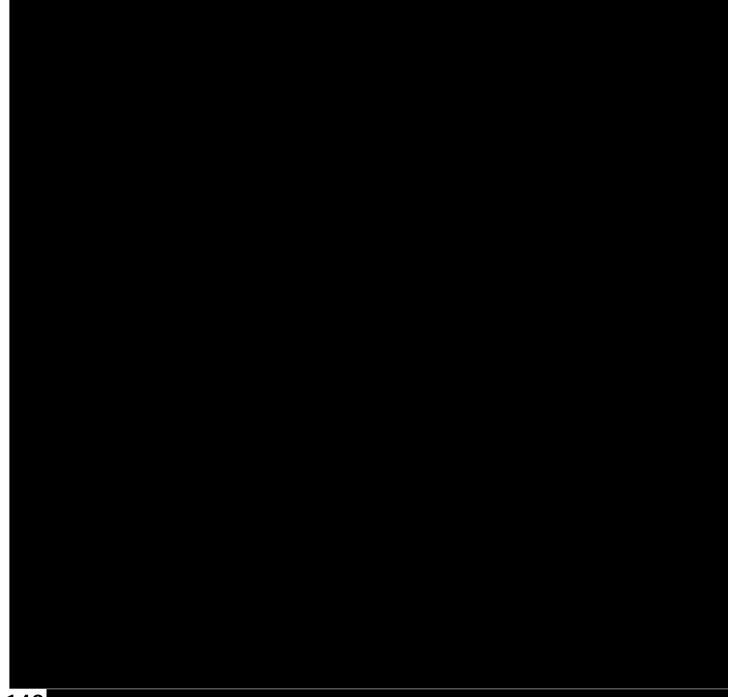
internally to a designed environment.

Cutting away the tower to see the connection of the addition to the rest of the tower. The attention of the internal and external surfaces will prove to be important. The disparity between the two zones is abundant. For example the exterior zone looks out to the city while the other looks





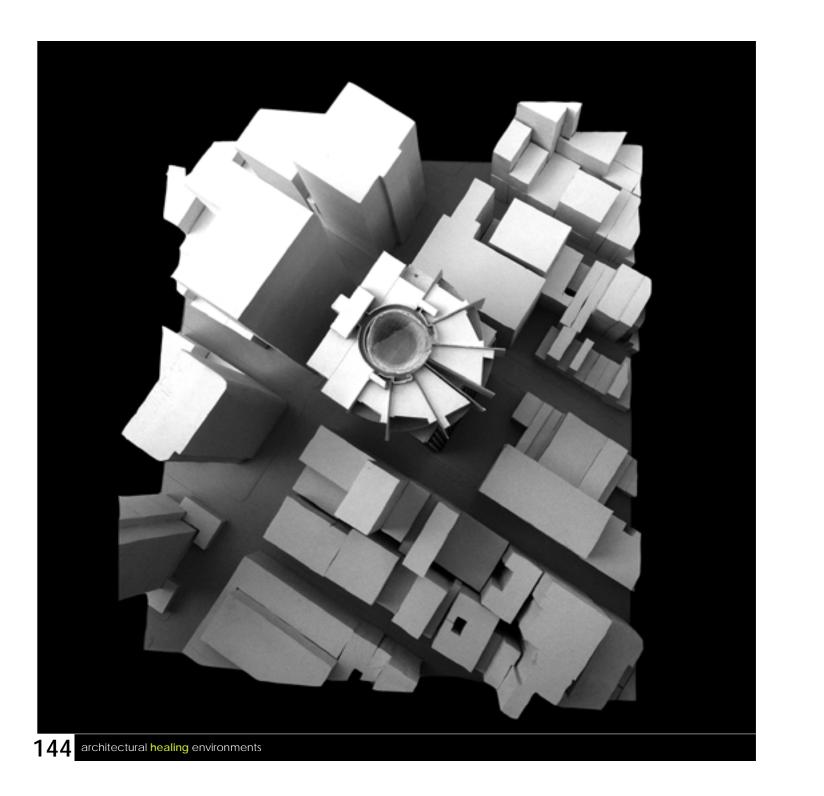
The site will be become a beacon and destination visible from multiple views all over the city. The potential of the project is to impact other cities, becoming a model of how architecture can be utilized as a tool to create architecture that helps sustain the healthy lifestyles everyone strives for. An environment constructed through architecture that has a positive passive effects on our health and lives is an extraordinary leap in the way people can begin to see buildings.



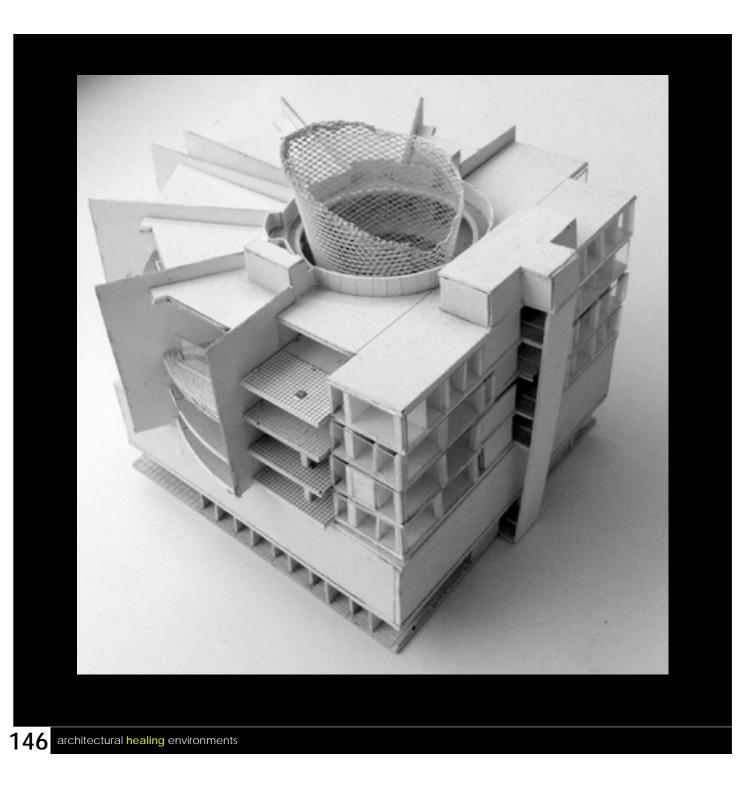
architectural healing environments 143

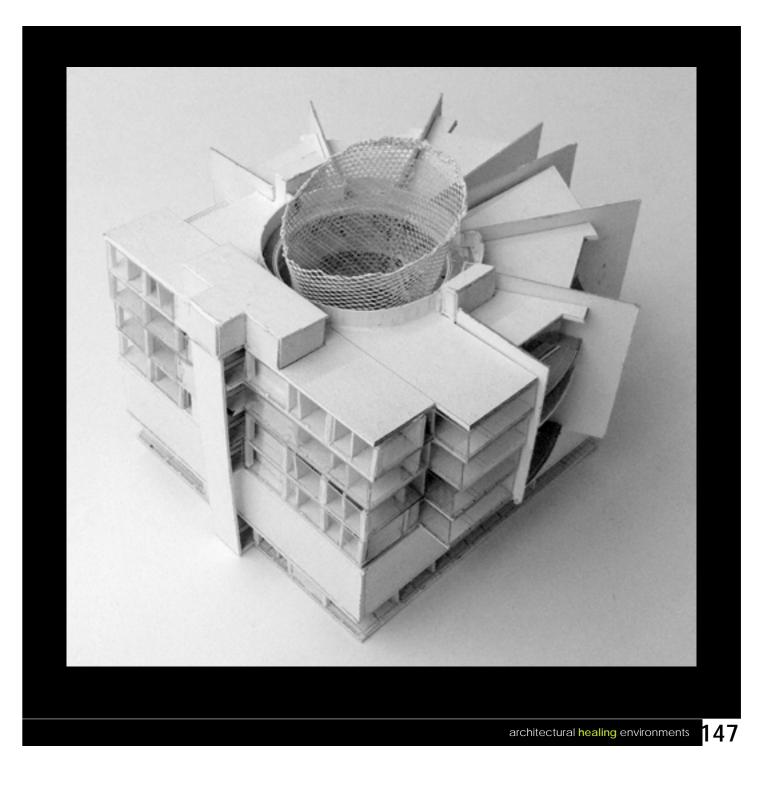
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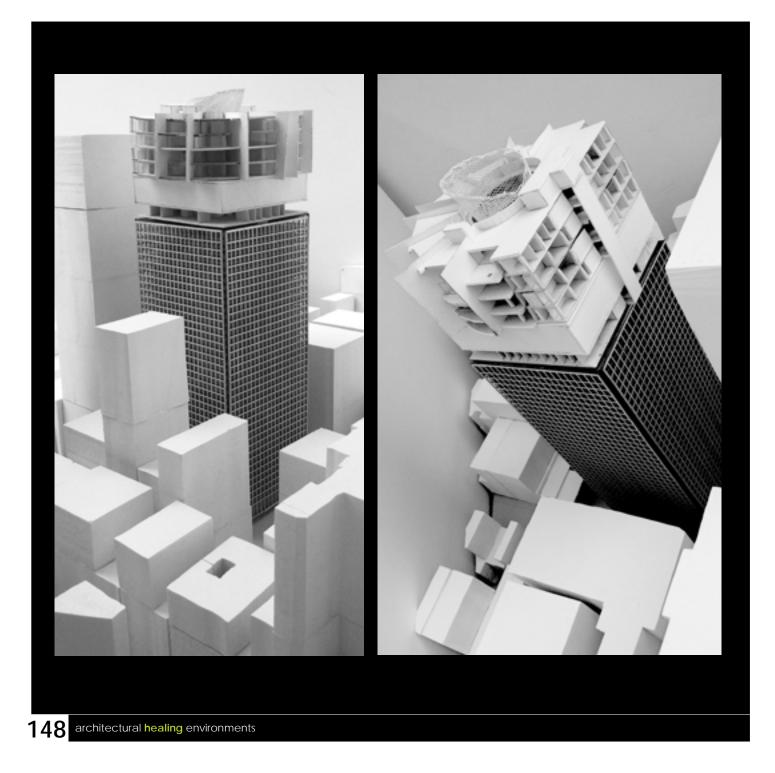
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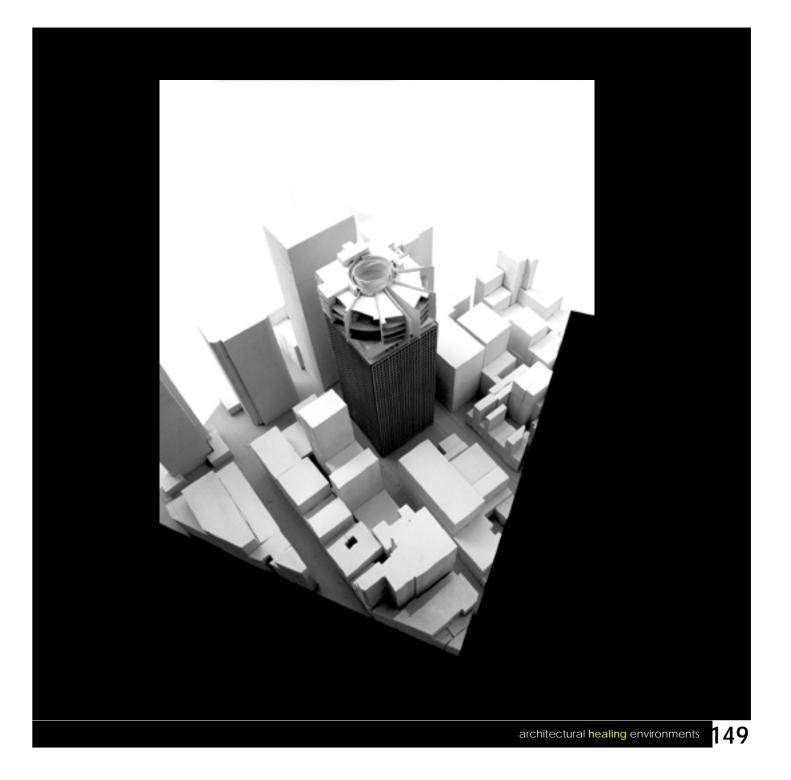


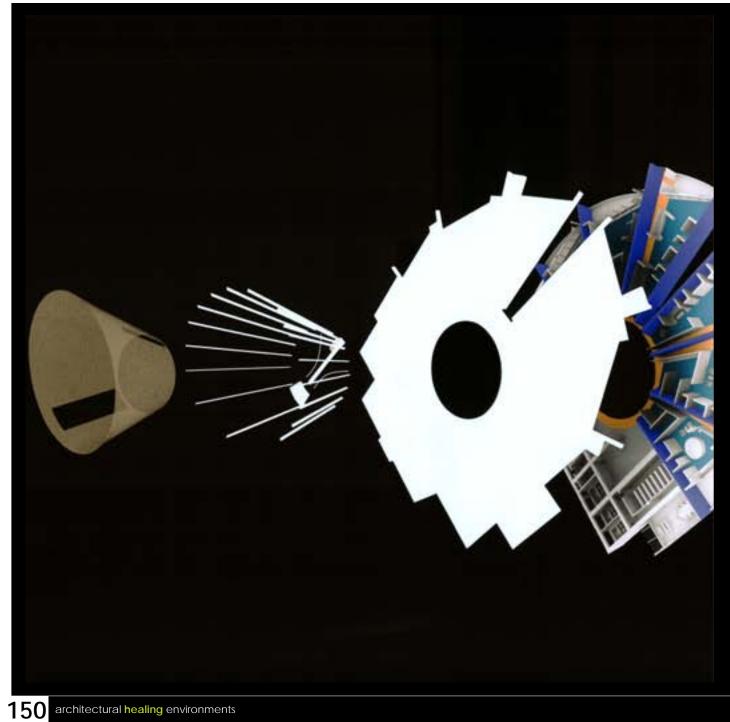




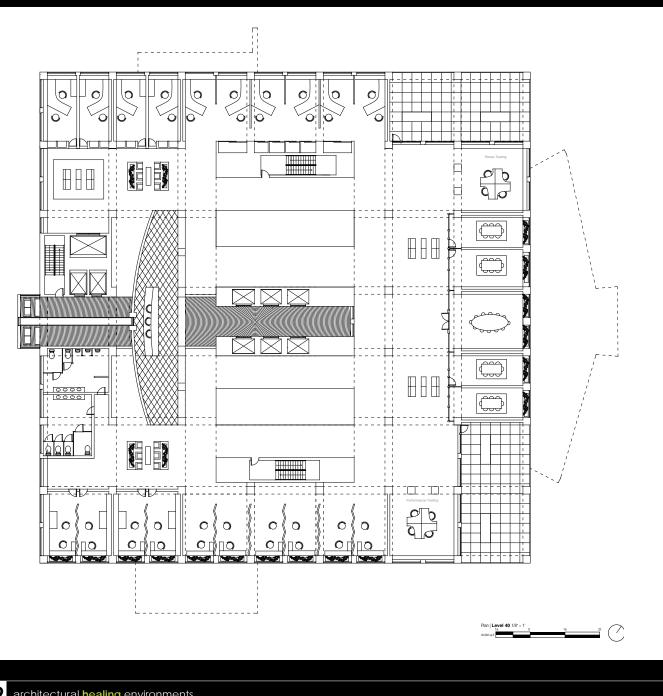


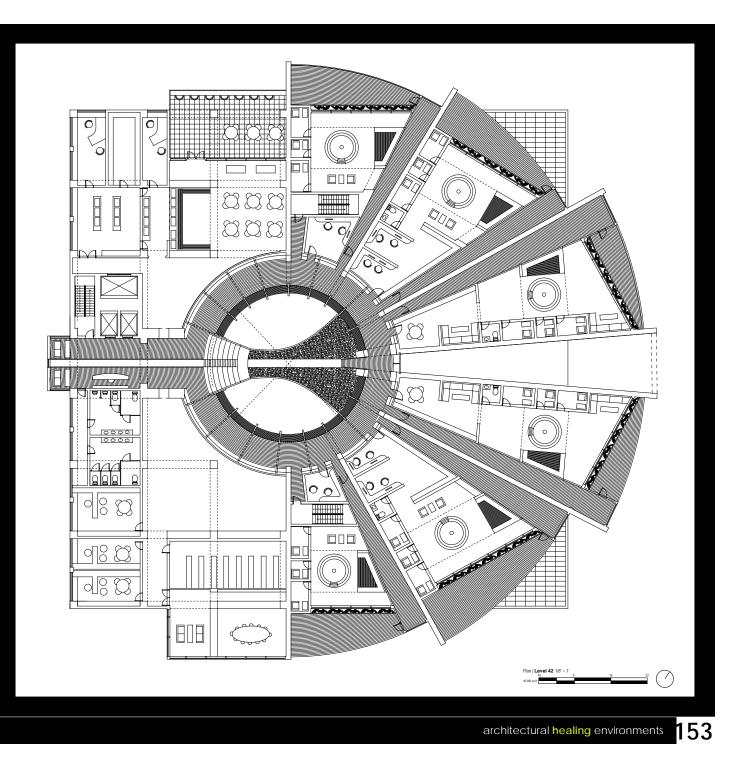


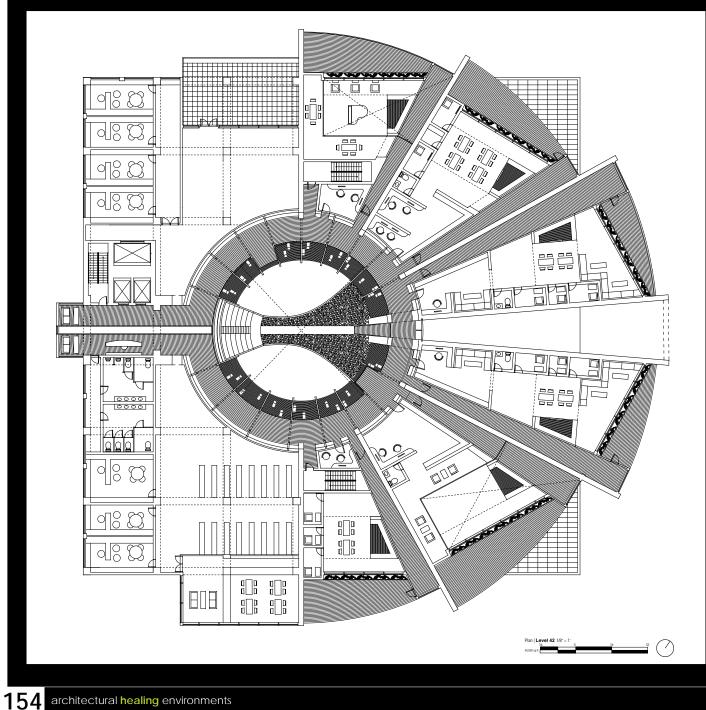


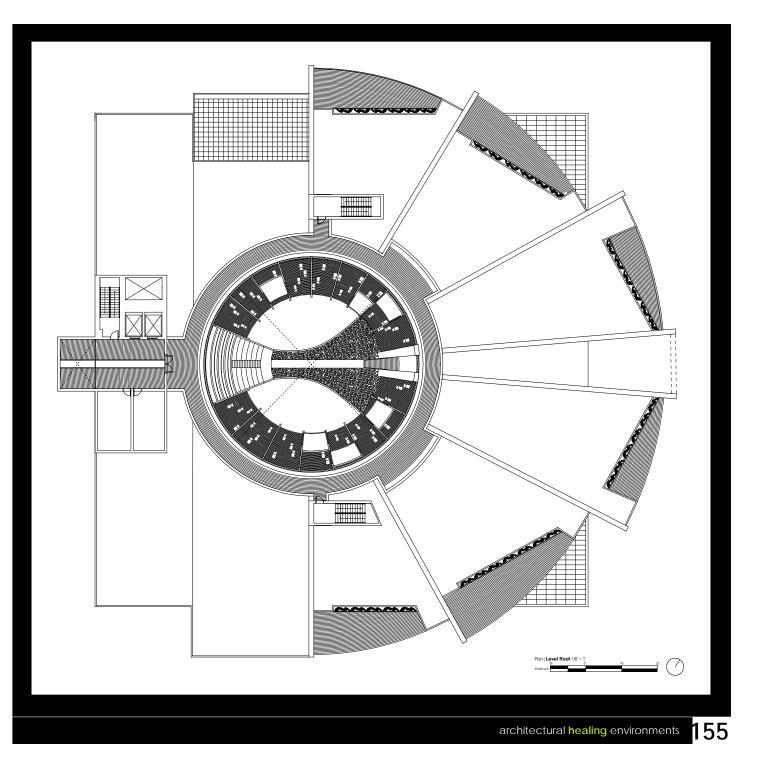




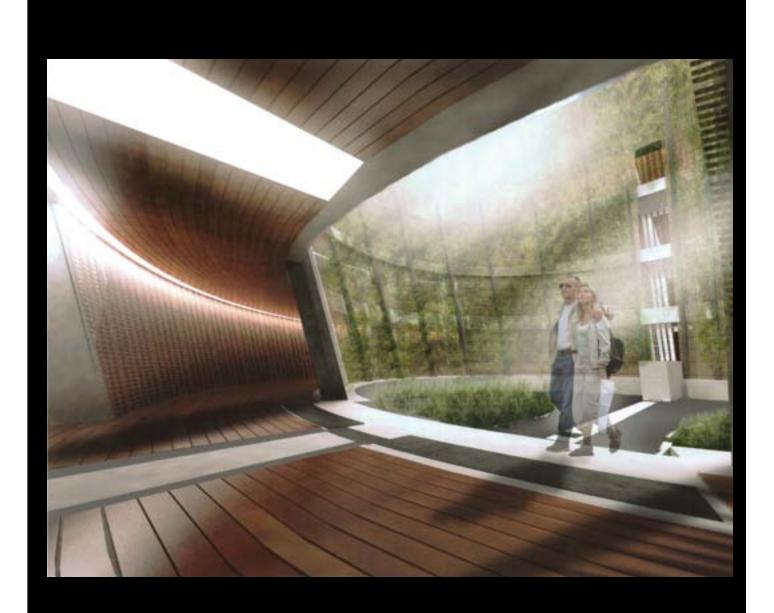




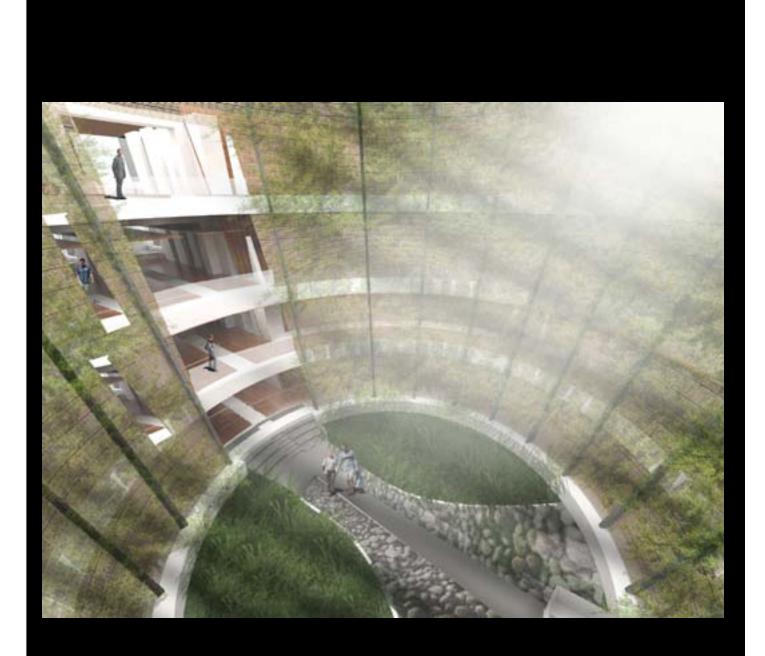














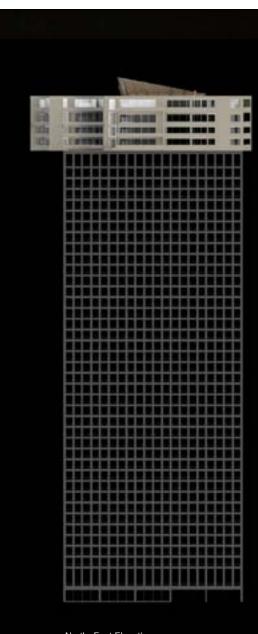


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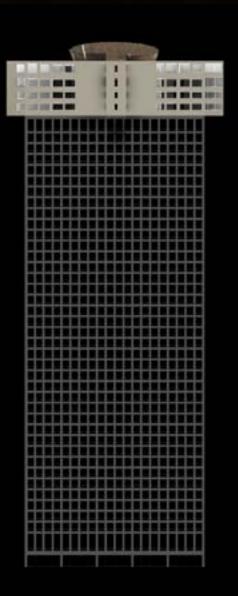
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#### South-West Elevation

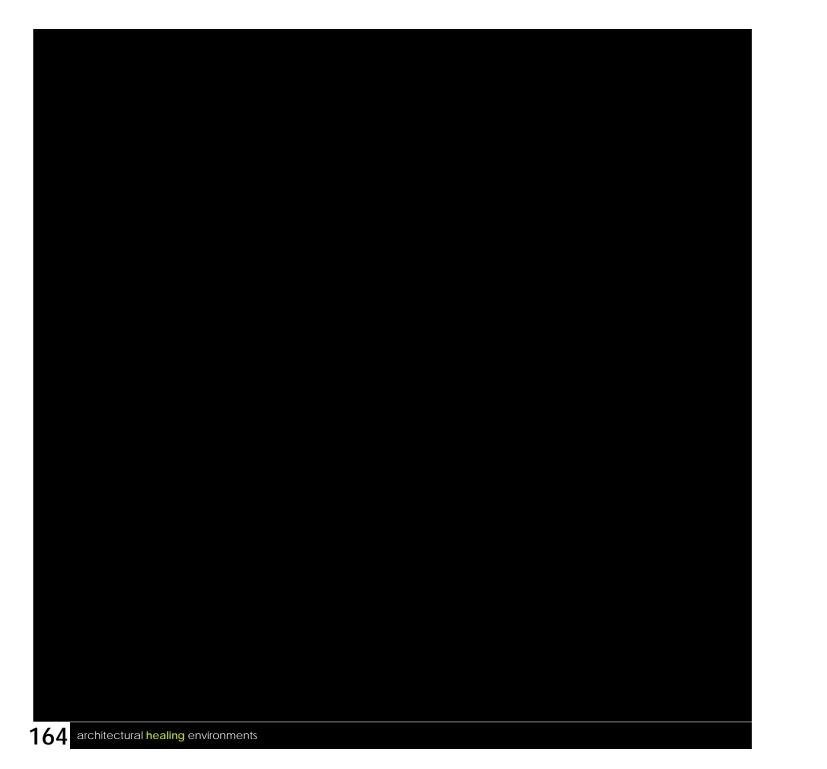
South-East Elevation



North- East Elevation



North-West Elevation



architectural healing environments 165



# Glossary

Environment: that which environs or surrounds; surrounding conditions, influences, or forces, by which living forms are influenced and modified in their growth and development.

Heal: to restore or be restored to health

Health: the general condition of the body or mind with reference to soundness and vigor

Well-being: a good or satisfactory condition of existence; a state characterized by health, happiness, and prosperity

**Psychology:** the scientific study of the human mind and its functions, esp. those affecting behavior in a given context.

Flexibility: responsive to change; adaptable

Meditation: a stylized mental technique... repetitively practiced for the purpose of attaining a subjective experience that is frequently described as very restful, silent, and of heightened alertness, often characterized as blissful

Urban: Characteristic of the city or city life.

Evidence-based: entails making decisions about how to promote health or provide care by integrating the best available evidence

Therapeutic: having or exhibiting healing powers

Spirit: the principle of conscious life; the vital principle in humans, animating the body or mediating between body and soul.

Body: the physical part of a person

Mind: the element of a person that enables them to be aware of the world and their experiences, to think, and to feel; the faculty of consciousness and thought

Habitat: the natural home or environment of an animal, plant, or other organism

Sequence: a set of related events, movements, or things that follow each other in a particular order

Sequence: a set of related events, movements, or things that follow each other in a particular order



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### architectural healing environments 173



