

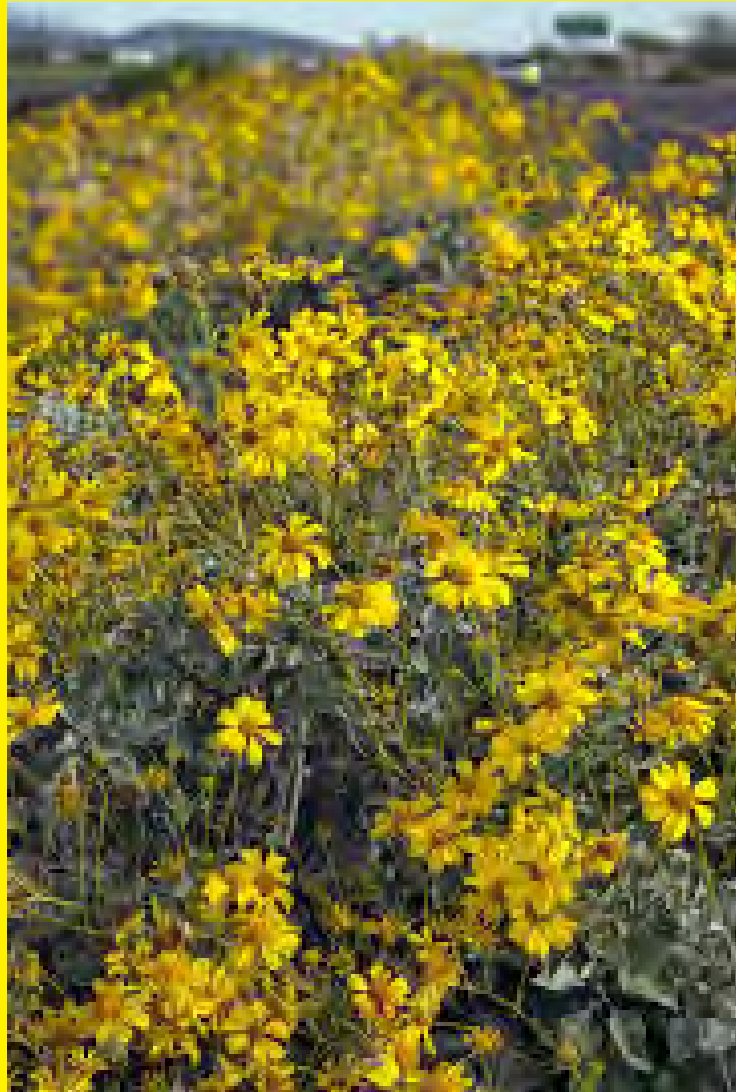
Estrella Mountain Regional Park

Healing Garden

Traci Arellano | Spring 2014



SPECIAL THANKS TO PROF. REBECCA FISH-EWAN | PROF. KEN BROOKS | PROF. DENISE BATES Phd



Therapeutic Landscapes
Network defines a healing
garden as, “any landscape,
designed or wild, that
facilitates human health and
well-being.”



Estrella Mountain Regional Park Nature Center
14805 West Vineyard Avenue
Goodyear, AZ 85338

PRELIMINARY TIMELINE

THOUGHTS

- Officially received approval for EMRP Sensory Garden to be my Applied Project ☺
What that means...
Start January 13, 2013; Ends May 4, 2013 (16 weeks)
Must answer: How does this project advance Landscape Architecture as a profession?
20-25hrs/week; Meet with Rebecca and Denise each 1x/week
- Deliverables
Daily Project logbook (printed & bound)
Construction documents (2'x3')
Overall Site Plan
Dimensioning Plan
Preliminary Design Plan / Planting Plan
Hardscape Plan
Irrigation Plan
Lighting Plan
Conceptual documents (2'x3')
Site Transects (N-S; E-W)
PS renderings
Cost Estimate
Sensory Garden*
Level of completion depends on funding, staffing, in-kind services, etc.
- Miscellaneous
Exteriors by Chad Robert
Ken Brook – survey; statistical data; etc
Case Studies of the area

Preliminary Timeline

Week of...

- Jan 13 (1) Semester begins ☺
Meet w/ Ken Brooks re: important dates; pin-ups
Meet w/ Ted Cook re: strengths & weaknesses of proposal
Meet w/ Rebecca Fish-Ewan re: deliverables; requirements
Meet w/ Denise re: important dates; deliverables; timeline
- Jan 20 (2) Overall Site Plan (existing & proposed)
Aerials
AutoCAD line drawing
Get ¼ sections from county?
- Jan 27 (3) Dimensioning Plan
- Feb 3 (4) Preliminary Design Plan
Irrigation Plan
- Feb 10 (5) Planting Plan
Cost Estimate
- Feb 17 (6) Lighting Plan
- Feb 24 (7) Hardscape Plan (construction drawing & details)
- Mar 3 (8) Site Transects (N-S; E-W)
Photoshop renderings
- Mar 10 (9) Spring Break
- Mar 17 (10) Construction begins...
- Mar 24 (11) TBD
- Apr 7 (12) TBD
- Apr 14 (13) TBD
- Apr 21 (14) TBD
- Apr 28 (15) Last day of classes 5/02/14
- May 5 (16) Week of Finals
- May 12 Graduation

Additional To Do's

- 1.03.14
Met w/EMRP park supervisor Don Harris & Ranger Amy for irrigation and ideas
- Meet w/Todd Briggs
- Meet w/Kris Floor
- Visit sensory gardens:
- Banner Estrella Hospital
- Banner Good Samaritan
- Desert Botanical Gardens
- Tucson Desert Museum
- Project logbook
- Midterm Boards



CONTEXT MAP



VINEYARD AVENUE

TORTOISE
PEN

NATURE CENTER

MEMORIAL TREE

PROPOSED CENTENNIAL TRAIL

Week of January 20, 2014



Maricopa County
Parks and Recreation Department
Estrella Mountain Regional Park

West Valley
ARTS
Council



- Maricopa County Parks & Recreation Department
- West Valley Arts Council
- Three Rivers Historical Society (3RHS)

CLIENTS

- Healing garden
- Centennial trailhead
- School desert awareness
- Environmental programs
- Special events
- Picnic area
- Community volunteer site



SITE PROGRAM

Statement of Intent

If there is public access to visitors and staff to a healing garden in close proximity to the publically visited Nature Center at Estrella Mountain Regional Park then there will be a substantial increase in benefit to well-being of the participants by engaging human senses through natural stimuli and observation of wildlife.







EXISTING SITE





Week of January 20, 2014

SITE PANORAMA: *Future site of the healing garden*



CONTEXT

- Estrella Mt Regional Park is 19,840 sq acres in Goodyear, AZ
- Located near the meeting of the Gila and Agua Fria rivers
- First park in county system established in 1954
- Site is directly southwest of the park's Nature Center



Healing/sensory gardens are fast becoming a place of refuge for urbanites from the daily grind and the stressors that accompany our fast-paced world. Gardens are often green places of respite and solitude that can help to recharge our mental capacity to cope. This healing garden's purpose will be to help re-acknowledging the healing powers of nature that have been known and used for centuries, but have gone by the wayside as western medical advances moves toward technology and pharmacology and farther from the view of treating mind-body-spirit as a whole.

GOALS

The main area of interest is the recessed area to the SW of the nature center which is already a retention area where water is directed away from the building. The garden design will...

- Be reflective of the low-land Sonoran desert species
- Create a microhabitat for birds and butterflies
- Support vegetation that is lush versus just surviving
- Have seasonal color/textural interest
- Incorporate plants that represent the native culture (edible/medicinal)

SITE FACTS

- Estrella Mt Regional Park is 19,840 sq acres in Goodyear, AZ
- Located near the meeting of the Gila and Agua Fria rivers
- First park in Maricopa County system established in 1954
- Part of a larger portfolio which is the Centennial Trail



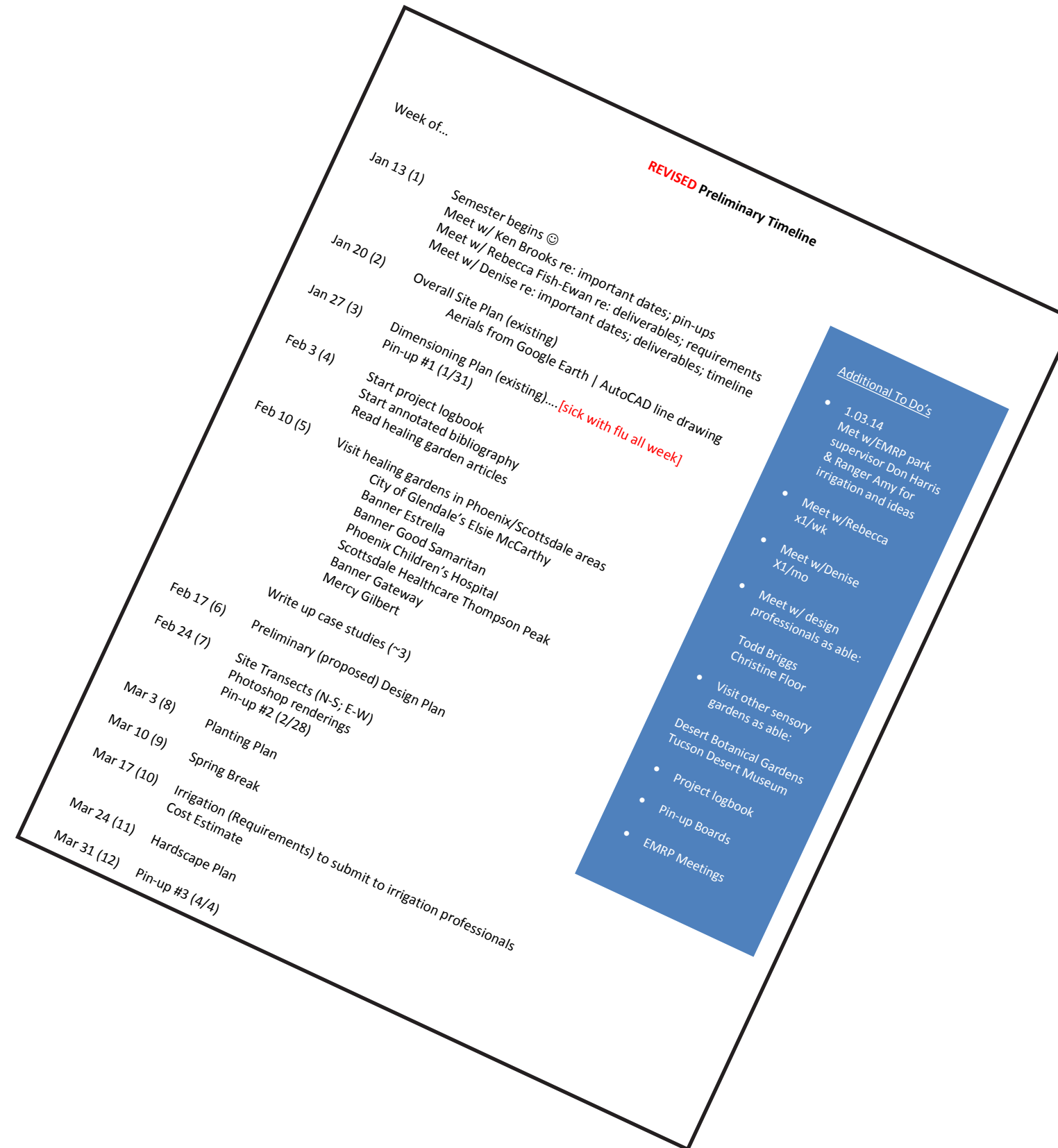
PROJECT NARRATIVE

CENTENNIAL TRAIL PORTFOLIO: *Part of the whole*

- Part of a larger portfolio which is the Centennial Trail
- Trailhead with half-mile looped barrier-free trail
- 11 exhibit area nodes
- Community-led/grassroots project
- Official Arizona Centennial Legacy status by the Arizona Historical Advisory Commission.



REVISED TIMELINE





“A garden at your workplace may reduce stress”

Ulrika Stigsdotter

U. Stigsdotter found there was “a significant connection between access to a garden and decrease in levels of stress at the workplace” and “gardens at workplaces play an important part in offering a more stress-free environment, irrespective of sex, age or socio-economic background.”

“Natural versus urban scenes: Some psychophysiological effects”

Roger Ulrich

R. Ulrich found that landscapes can be restorative by “reducing negative emotions, holding a person’s attention and blocking stressful thoughts.”

“Healing Gardens and Cognitive Behavioral Units in the Management of Alzheimer’s Disease Patients: The Nancy Experience”

Therese Rivasseau Jonveaux, et al

This study states that healing gardens provide a definite reduction in behavioral disorders such as irritableness, aggression and overall improved health, nutritional status and sleep patterns for Alzheimer’s patient which is measurable in the patient’s well-being.

PRECEDENCE

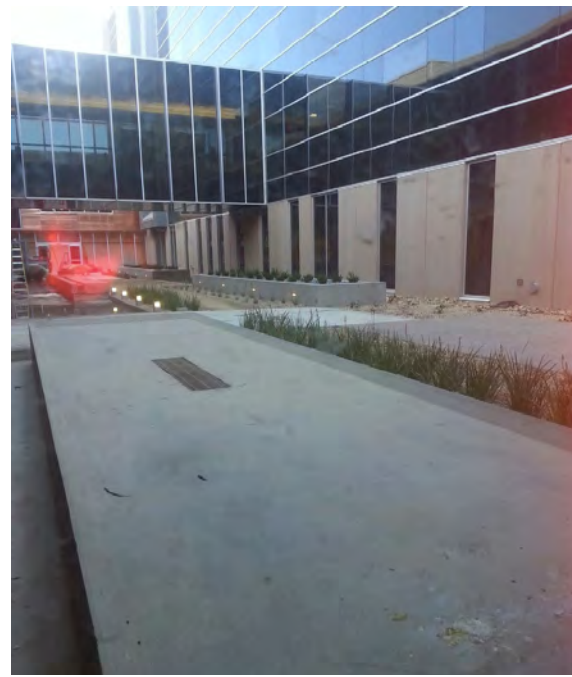
CASE STUDIES

BANNER ESTRELLA HOSPITAL | 2005 | COURTYARD | WEST PHOENIX
SITE YEAR TYPOLOGY CITY



The Banner Estrella courtyard has very straight geometric shapes placed asymmetrically in thirds. It has a very modernist feel with the concrete planters and clean lines. The water feature, “running along the outside face of the glass curtain wall spanning the length of the garden along the north side, this feature was a well-placed and welcome transitional element, tying the interior and exterior spaces together.” (Bradley, 2010)

The site has a lot of concrete. The paving, raised planters and water feature is concrete. There looks to be a portion of the linear walkway that is stabilized granite; however, the predominant material is concrete. There is elegance to the simplistic lines but it also makes the atmosphere very sterile and clinical. The plants were aesthetically pleasing and their ‘tight’ look complemented the concrete material; however, they did not evoke a “cozy” or informal feeling.





Banner Gateway Medical Center is a general medical and surgical hospital in Gilbert, AZ. It performed nearly at the level of nationally ranked U.S. News Best Hospitals in 2 adult specialties, as shown below. Banner Gateway Medical Center has 177 beds.

The healing garden is located in the maternity unit and has restricted access to the patients and their families. On one end is a courtyard which is a special event/seating area which the patient rooms in the 3-story high wing can look down upon. The space is bisected with a wall-water feature that obstructs your view to the play/eating area which invites you over with sounds of water and child laughter. The area is spacious yet cozy. It has abundant shade and a state-of-the-art play equipment with cool loungers for the parents.



CASE STUDIES

BANNER GOOD SAMARITAN HOSPITAL | 2010 | COURTYARD | PHOENIX
SITE YEAR TYPOLOGY CITY

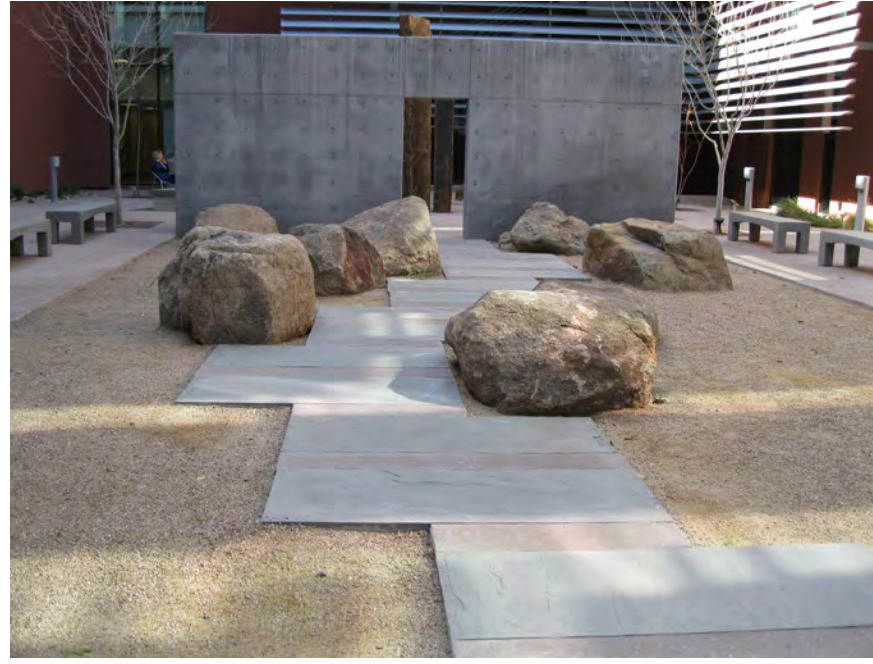


Dedicated to healing the whole person—mind, body and soul—Banner Good Samaritan offers an enhanced healing environment for patients and their families. There are six gardens, including the award-winning Healing Garden, provide an atmosphere for reflection and relaxation. To ensure your spiritual and emotional needs are met, interfaith hospital chaplains are available around the clock to meet with families. The healing garden is has multiple topographies and water features. It has inviting alcoves which allow visitors to have quiet conversations or sit among planters of blooming flowers and succulents and other friendly visitors. The garden also sports amazing mosaic pillars that are colorful and the tiles that are used were a community project that was created by patients with inspirational sayings and words.



BANNER MDANDERSON HOSPITAL | 2011 | COURTYARD | GILBERT CITY

TPOLOGY



The Banner MD Anderson Cancer Center *Togetherhness Garden* is reached by entering through a narrow doorway that symbolizes hope and victory at the conclusion of treatment. The facilities were built to heal; Along the way there are wildflowers, water features and stepping stones which all carry a metaphorical message of hope for cancer patients to live a fulfilling life.

YEAR

BANNER MDANDERSON HOSPITAL | SITE



Week of February 10, 2014

CASE STUDIES

CANCER SURVIVOR'S PARK | 2005 | PARK | PHOENIX
YEAR TYPOLGY CITY

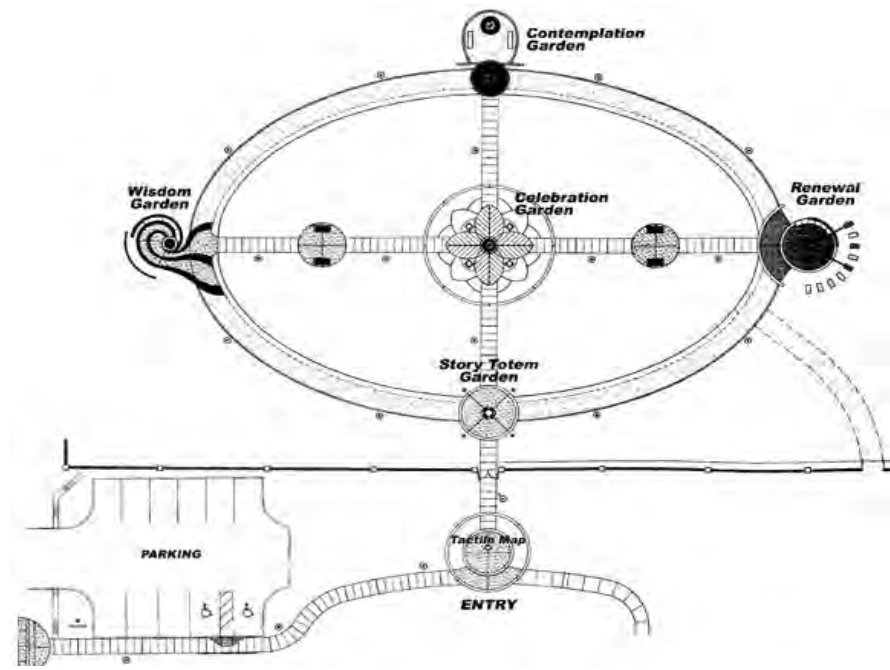


The Richard and Annette Bloch Cancer Survivors Park stretches a full block on First Street, from Willetta to McDowell. There's a nice shaded gazebo surrounded by cactuses, and a colorful obelisk in the center.

The highlight of the park are the bronze sculptures by artist Victor Salmones. The piece is called "Cancer...There's Hope," and it depicts eight people in various stages of fighting cancer. At the back are five figures meant to represent cancer patients and their supporters as they enter treatment. Treatment is represented by a large bronze maze, and there's a figure of a young woman working her way through the maze.

There are now 24 Richard and Annette Bloch Cancer Survivors Parks throughout U.S. and Canada. "Cancer Survivor Parks promote survivorship and provide common sense information that will guide and support the patient through his or her cancer journey."





Elsie McCarthy Sensory Garden is one of the few sensory gardens in the Phoenix area that are owned and maintained in a non-healthcare public space. It is located in the heart of Glendale, Arizona. Funds were donated from the Elsie McCarthy estate and it is maintained by the Glendale Parks and Recreation Department. The garden was developed to stimulate the senses of sight, sound, smell and touch through the use of specific plants and trees for texture and scent, water features for sound, touch and sight and evening lighting for dramatic visuals.



CASE STUDIES

MERCY GILBERT HOSPITAL
SITE

MERCY GILBERT HOSPITAL

2010
YEAR

PARK
TYPOLOGY

GILBERT
CITY



Mercy Gilbert partnered with the Gila River Indian Community to construct the Healing Garden. The components of the garden were designed to work in harmony, providing the community with a place of serenity. The landscape incorporates plants with medicinal uses or qualities. Mercy Gilbert is built on the ancient tradition that love can help heal. Within that framework, the Golden Thread of Compassionate Care is used as a symbol to illustrate the balance between the science and the human spirit.



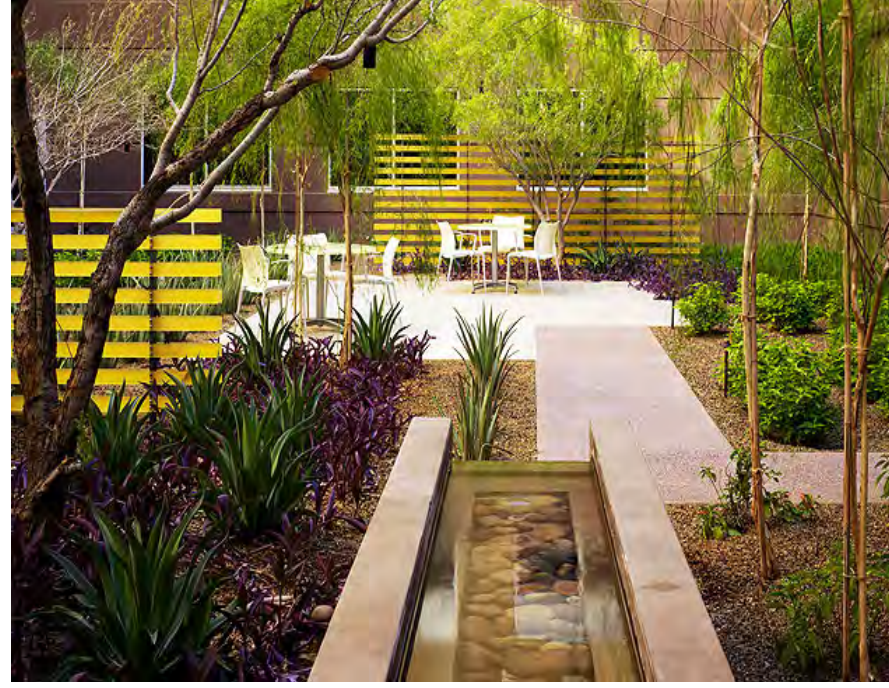
Phoenix Children's Hospital in Phoenix, Arizona is ranked nationally in 5 pediatric specialties. Phoenix Children's Hospital is a 425-bed children's general facility with 13,404 admissions in the most recent year reported.

The healing garden is located on the facility's rooftop and is restricted to the patients and their families. This creates a very secure-feeling environment. There are over-sized brightly painted flowerpots that adorn the garden and add whimsy to the area. Additionally there is a lot of funky seating and plenty of shade to encourage users to enjoy the glorious outdoors and incredible views.



CASE STUDIES

THOMPSON PEAK HOSPITAL | 2007 | COURTYARD | SCOTTSDALE
SITE YEAR TYPOLOGY CITY



The Thompson Peak healing garden was designed “to evoke feelings of well-being, provide places for serenity and rejuvenation, and impart visitors with a sense of connectedness to the natural world.” (Gensler, 2014) Made possible through community philanthropy, the garden offers shaded outdoor gathering spaces, paths interwoven with drought-tolerant plantings, hummingbird and butterfly gardens, and water features. In addition to being visible from many patient rooms, lobby walls and doors were replaced with floor-to-ceiling glass to create a clear connection to other areas of the hospital and to draw in patients and visitors.

ARTICLES

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Healthy nature healthy people: 'contact with nature' as an upstream health promotion intervention for populations
CECILY MALLER, MARDIE TOWNSEND, ANITA PRYOR*, PETER BROWN and LAWRENCE ST LEGER
 Affiliated with the NiCHE Research Team (Nature in Community, Health and Environment) of the School of Health and Social Development, Deakin University, Melbourne, Australia

SUMMARY
 Whilst urban-dwelling individuals who seek out parks and gardens appear to intuitively understand the personal health and well-being benefits, strategies are yet to maximize the nature resource as an upstream health promotion intervention for populations. This paper presents a summary of empirical, theoretical and anecdotal evidence drawn from literature reviews of the human health benefits of contact with nature in human health and well-being, and the vital role in human health and well-being that parks and gardens play. It also presents a summary of the best practice strategies for health promotion and prevention that incorporate nature, and discusses the implications for public health practice.

Key words: nature; health promotion; mental health; ecological health

Whilst urban-dwelling individuals who seek out parks and gardens appear to intuitively understand the personal health and well-being benefits, strategies are yet to maximize the nature resource as an upstream health promotion intervention for populations. This paper presents a summary of empirical, theoretical and anecdotal evidence drawn from literature reviews of the human health benefits of contact with nature in human health and well-being, and the vital role in human health and well-being that parks and gardens play. It also presents a summary of the best practice strategies for health promotion and prevention that incorporate nature, and discusses the implications for public health practice.

ASLA THERAPEUTIC GARDEN DESIGN AN ASLA PROFESSIONAL INTEREST GROUP

JCAHO Commends Therapeutic Gardens
 In July 2010, the Joint Commission on Accreditation of Healthcare Organizations (JCAHO) spent the week-long "Healthy Living in the Community" (HLIC) program in Philadelphia, Pa., and demonstrated that their interest in the practical well-being of patients through such aspects of care as the patient garden, therapy and a safe practice in health care organizations.

This is the first time JCAHO has recognized therapeutic gardens as a practice in health care organizations.

The Joint Commission's validation and accreditation of health care organizations in the United States. An independent, the accreditation body in the United States, JCAHO's recognition of health care organizations as a model of quality care for patients, staff and the community at large. JCAHO's recognition of health care organizations as a model of quality care for patients, staff and the community at large. JCAHO's recognition of health care organizations as a model of quality care for patients, staff and the community at large.

contact
 Jack Connor, ASLA, Co-Chair
 (610) 212-2881
 jack@therapeuticgardens.com

HEALTH CARE DESIGN
 Nancy Gerlach-Spriggs, Richard Church Kaufman, Pam Busek
 Members \$90.00
 Nonmembers \$125.00
 Stock Number 2193

Healthy Parks Healthy People Central

Nature therapy and ADHD
 Home / Articles & Research / Nature therapy and ADHD

Recent studies have shown that regular doses of nature can be an effective tool in managing the symptoms of ADHD.

Many parents naturally know the calming effect that time spent in nature can have on their kids. It's common for children to be urged to go outside to "top off" some excess energy.

ADHD is a neurobehavioral developmental disorder that affects an estimated 3 to 5 per cent of children worldwide. Symptoms include chronic inattention, hyperactivity, impulsivity and disruptive behavior. It is often diagnosed in early childhood, but can persist into adulthood.

Dr Taylor says that while more research is needed to measure how long the benefits of nature last, he says it is likely that regular exposure to nature will have a positive effect on children with ADHD.

Submit Articles & Research
 Contribute an article or research paper to the journal. You are invited to submit. You are invited to submit. You are invited to submit.

Healing Gardens
 Betsy Severtsen

Gardens

"Garden of Saint Paul Hospital" - Vincent van Gogh
 The artist painted the asylum garden while he was a patient.
 Credit: zalka bollosta.com

Healing landscapes have long been an important aspect of human life. When people first began erasing dwellings, healing places could be found within nature through sacred groves, special rocks and caves. In the Western world, monastic communities supported infirmaries that were based in the use of herbs and prayer, and almost always included a clustered garden. Modern advances in technology towards healing has largely diminished the importance of nature in the healing process and this has been one unfortunate result of the "cure over care" phenomenon found within many aspects of the healthcare field.

More recently, there has been a growing interest in the healing effects of nature. The Kaplans and Ulrich have provided much of the literature on how a landscape can be restorative. Providing restorative landscapes as well as a greater extent of attention, and blocking distractions, Ulrich (Ulrich, 1981) have all been shown to be effective in post-operative stay times, fewer negative comments from patients, and improved patient satisfaction. Research has also shown that nursing homes with access to nature have significantly greater longevity of their residents.

"Nature is but another name for health."
 Henry David Thoreau

"We long ago, operating rooms and windows. It is not of the occasional fly that maddens to strain through the screen, nor is it the hair of the patient who is not do have Heaven looking over his doctor's shoulder. I have not more than the bricks up our windows, but we have severed a celestial connection."
 Richard Seiver

1 HEALING GARDENS

TLN Blog: Exploring the connection between nature and health


"Gardening is one of the most healing, beautiful things..."
 "Make it Pretty and They Will Come: The Role of Aesthetics in Patient Satisfaction"

"Therapy in the Desert" - Guest post by Brice Bradley: Three healing gardens in the Phoenix, AZ area

Banner Good Samaritan healing garden, photo by Brice Bradley

This past winter, Brice Bradley, a landscape architect and member of the Therapeutic Landscapes Network, posted a query on the TLN group page at Land1 Lounge (the social networking site for Landscape Architects) asking for recommendations of healing gardens to visit in the Phoenix, AZ area. He got some good suggestions.

Alex Stark



Guidelines for Healing Gardens

By Alex Stark. Copyright and all rights reserved.

The following set of guidelines outlines basic considerations for the design and evaluation of Healing Gardens and other Outdoor Healing Environments. These are to be taken only as a guide, as the practice of Feng Shui involves many analytical tools which are beyond the scope of this document. For optimal results, always consult with a professional practitioner.

GENERAL CONSIDERATIONS

- Nature does not depend on gardens. Humans, on the other hand, can use gardens to bring us closer to the nurturing and healing power of Nature.
- All creation and transformation requires a container. A garden is a sacred enclosure where the healing and recuperative process can unfold.

PSYCHOLOGICAL BENEFITS OF NATURE: AN OUTLINE OF RESEARCH AND THEORY
 With Special Reference to Transpersonal Psychology
 John Davis, Ph.D.
 Naropa University and School of Lost Borders
 July 2004

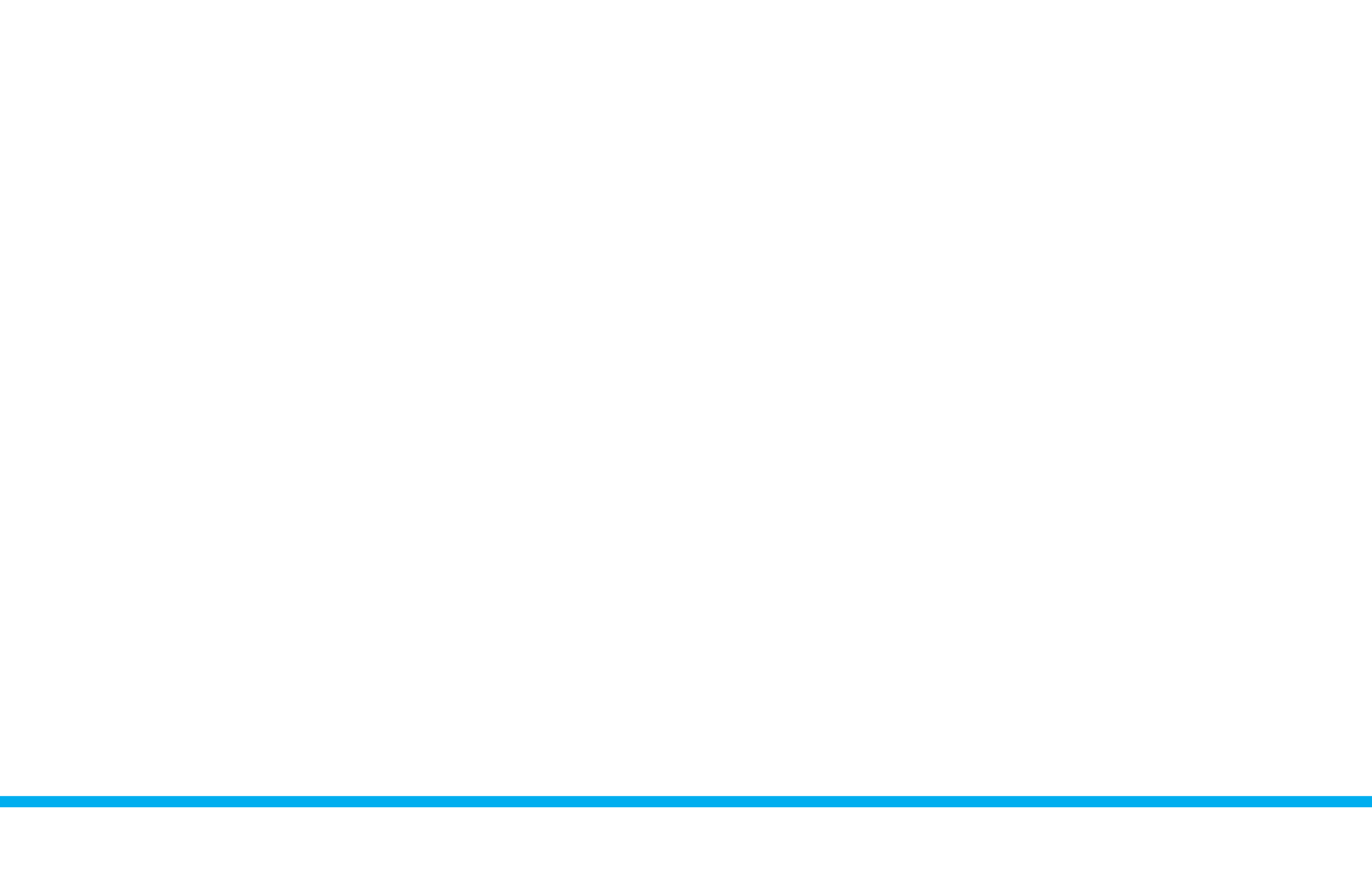
A strong body of psychological research, supported by widespread anecdotal evidence, confirms the hypothesis that direct contact with nature leads to increased mental health and psychological development. This research helps explain the attraction of nature for city-dwellers and supports the value of increasing contact with nature for children and adults.

Research settings include a full range of encounters with nature -- extended wilderness excursions, hiking in open space, strolling through a city park ecosystem, and even watching nature scenes on TV. While different psychosystems, humanistic, and transpersonal focus on behavioral, cognitive, psychodynamic systems of nature experiences, all have shown that different aspects of the psychological benefits of nature experiences are based on strong nature experiences are desirable and healthy. This is phenomenal agreement! There is also limited, but suggestive, research that these findings are cross-cultural and universal.

The degree of empirical support cited here varies. In addition to the research which has been conducted and confirmed directly on nature experiences, some findings from related literature, both empirical and theoretical, bears directly on this question. Those research which have not been conducted on nature experiences are based on strong evidence that it covers a broad, and representative, sample of the research.

strong e... Relaxatio... ambiguity, Re...

A. Relaxatio... ambiguity, Re...



PREMISE

- 1. Does nature plays a vital role in human health & wellbeing?**
 - 2. Do humans have a deep emotional connection with nature?**
 - 3. Do healing gardens provide nature in our urban environment?**
-

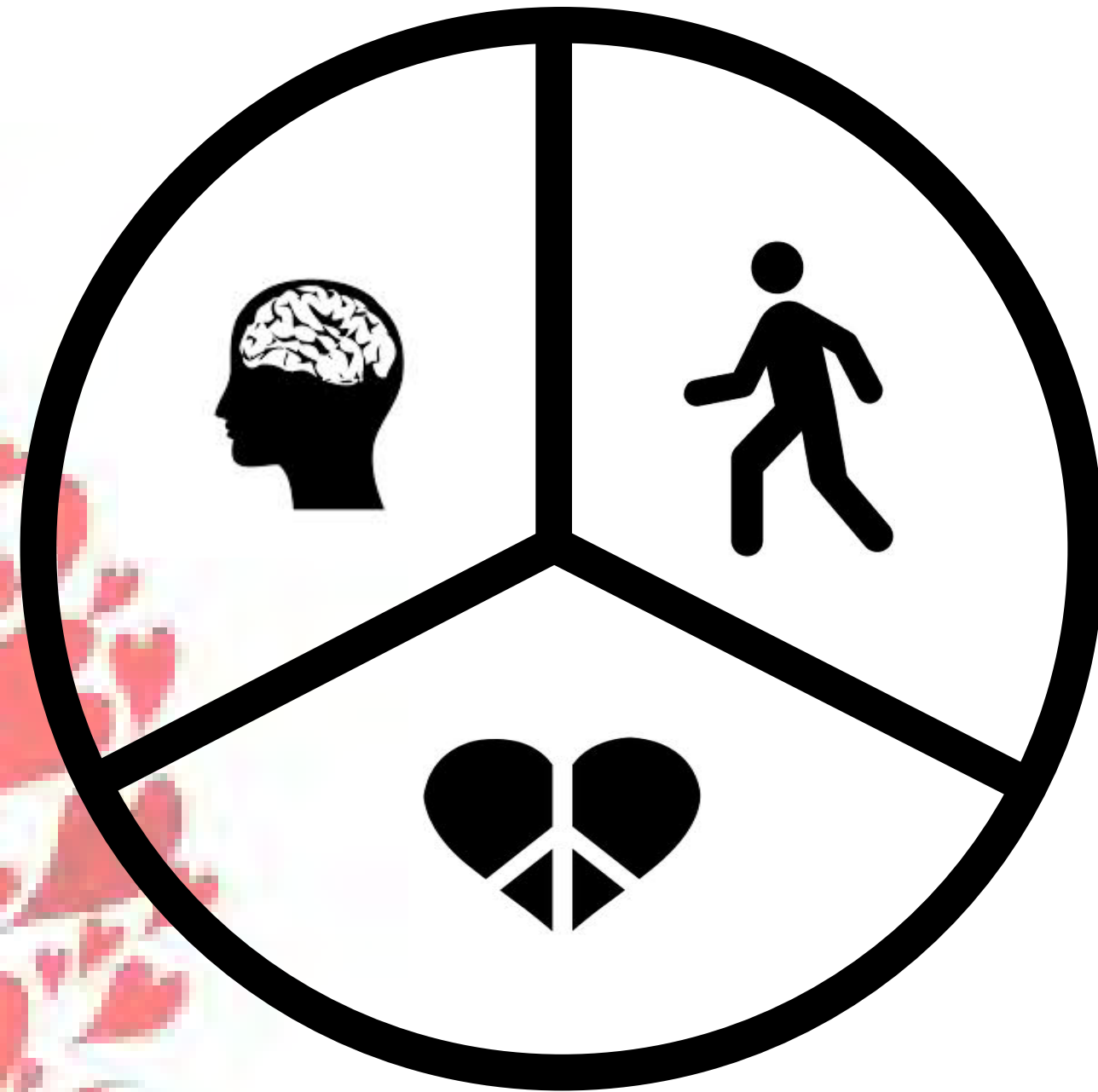
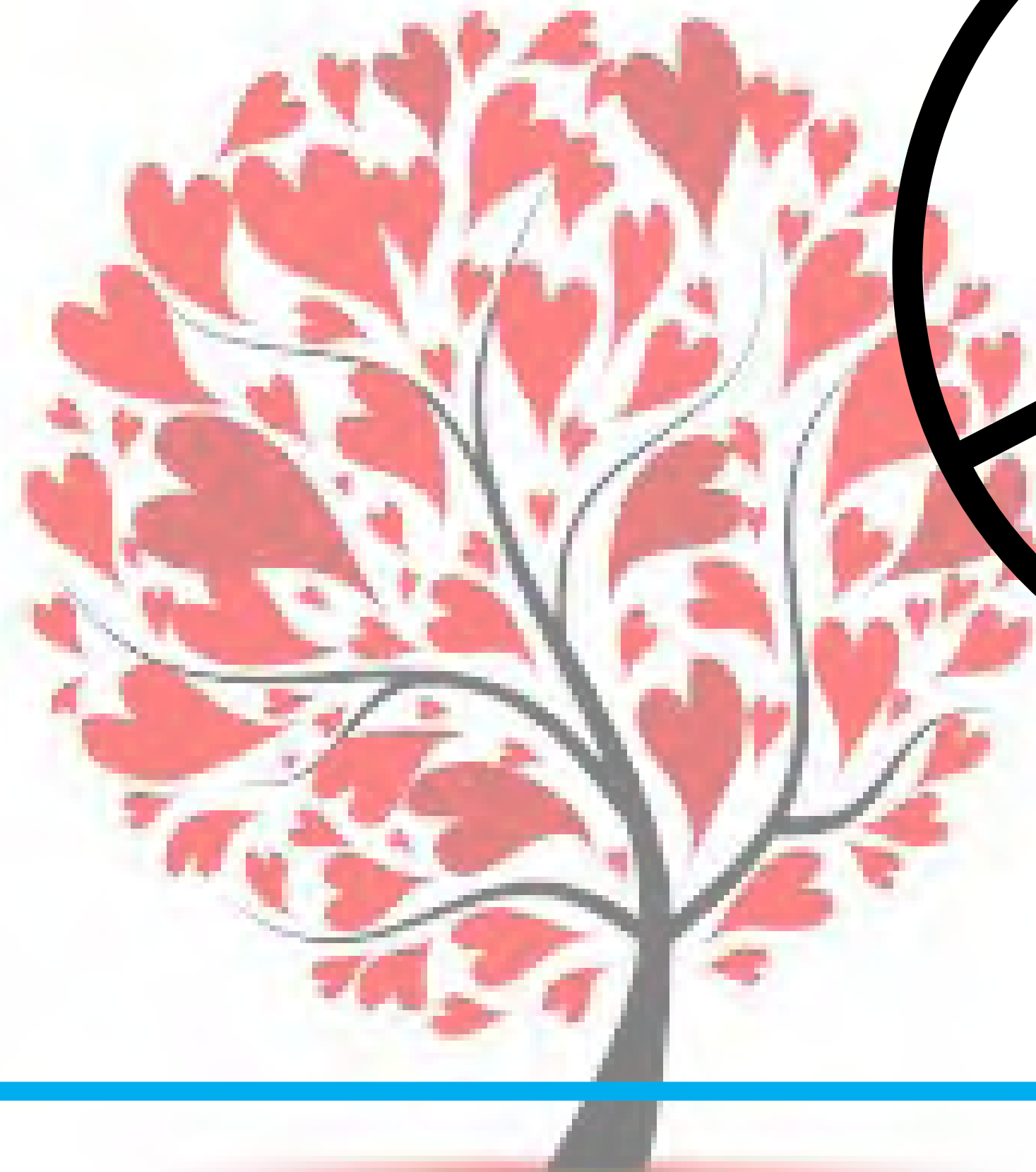
nature

instinctual
physiological
societal

individual human needs

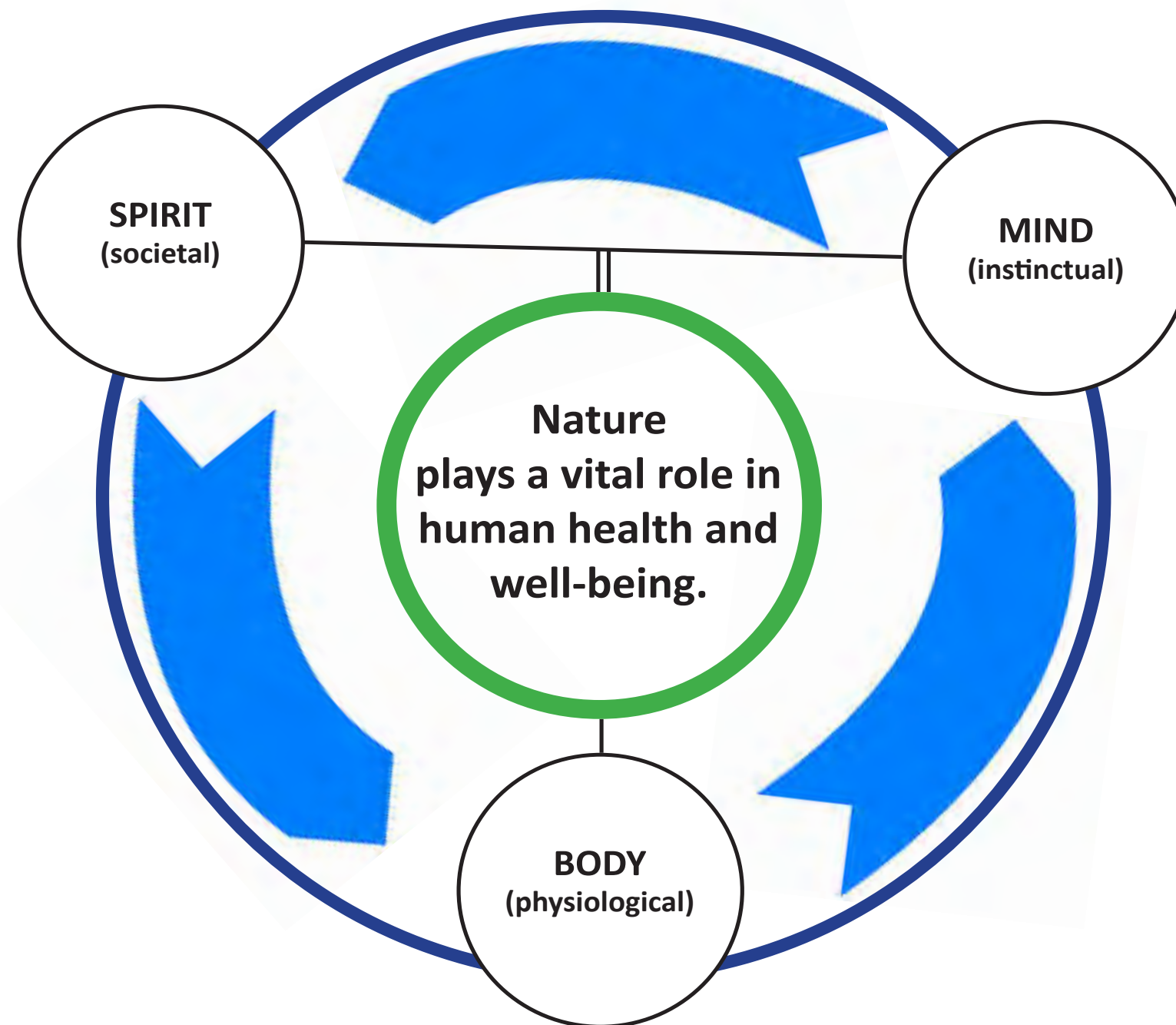
urban living





instinctual = mind
physiological = body
societal = spirit

ACCESS TO NATURE FOR INDIVIDUAL'S Role in Human Health & Wellbeing



BENEFITS TO MIND (Healthy Parks, 2014)

- >Cope & recover from stress
- >Restore concentration
- >Improve productivity
- >Calming, restorative effect on children and adolescents with ADHD

BENEFITS TO BODY

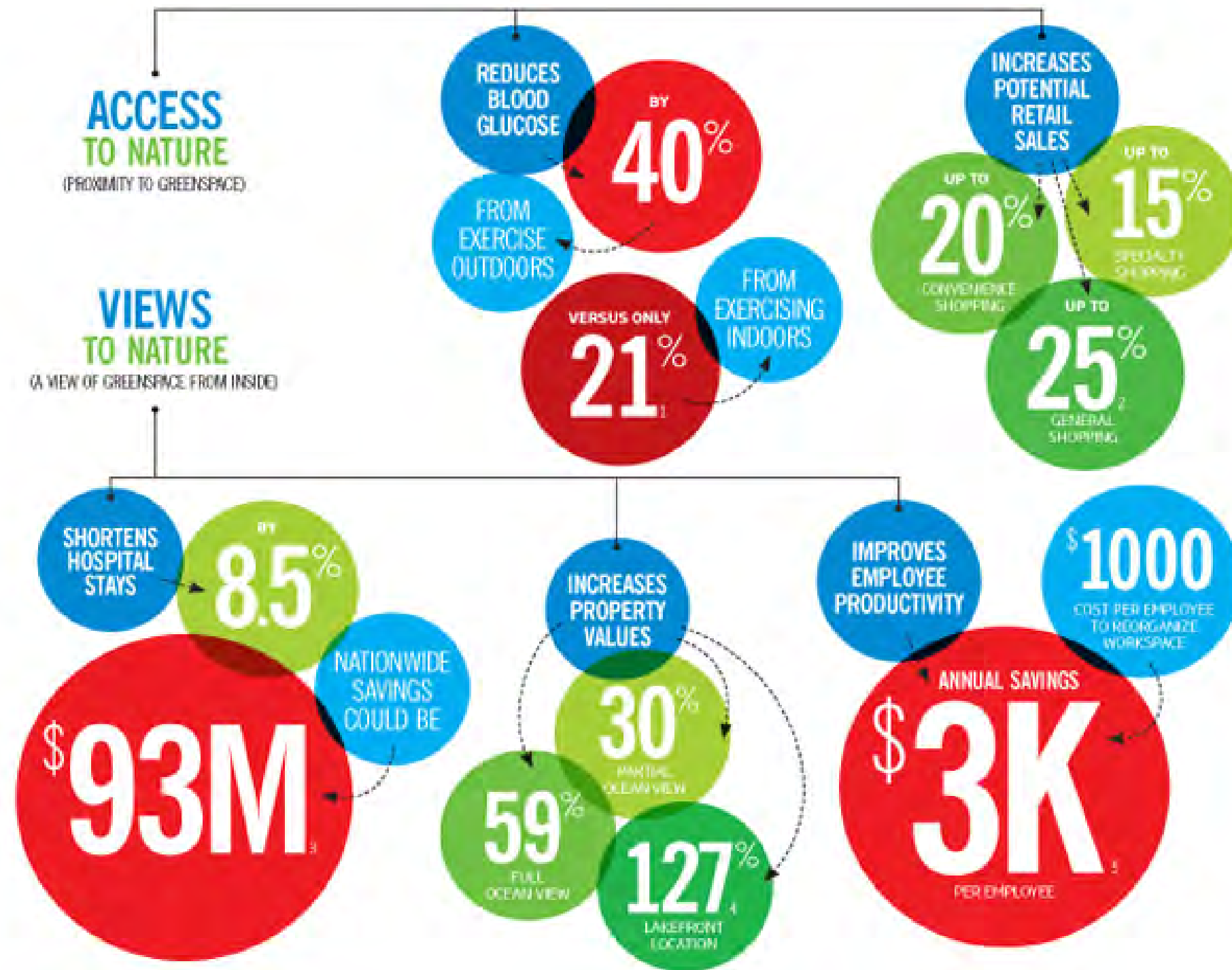
(Therese Rivasseau Jonveaux, et al)

- >Recovery from illness quicker
- >Fewer amount of pain medications
- >Fosters recovery from mental fatigue
- >Boosts immune system
- >Increases life expectancy

BENEFITS TO SPIRIT (Maller, et al, 2005)

- >Reduces depression
- >Positive outlook on life
- >Higher life satisfaction
- >Beneficial physiological effects (ie increased happiness) when humans interact with animals, plants, & landscapes

1. Nature does play a vital role in human health and wellbeing!



PREMISE

1. Does nature plays a vital role in human health & wellbeing?
 - 2. Do humans have a deep emotional connection with nature?**
 3. Do healing gardens provide nature in our urban environment?
-

BIOPHILIA



“...the innately emotional affiliation of human beings to other living organisms. Innate means hereditary and hence part of ultimate human nature.”

E. O. Wilson
Author of Biophilia, 1984

Cross-disciplinary research

1. Horticulturist, research fellow and author of *Green Nature Human Nature* in 1996 explains the evolutionary basis of people-plant relationships and human responses to the environment. "People and plants are entwined by threads that reach back to the beginning of a species"..."emotional responses to nature setting are the psychic equivalent of body knowledge."

Charles A. Lewis, "Green Nature Human Nature: The Meaning of Plants in Our Lives," University of Illinois Press (Urbana and Chicago, 1996): 10-24.

2. Environmental Psychologists Rachel Kaplan and Steven Kaplan study human preferences for specific landscape configurations and identified 4 qualities humans use to determine preference: Coherence, Legibility, Complexity, Mystery.

Stephen Kaplan, Rachel Kaplan, and John S. Wendt, "Rated Preference and Complexity for Natural and Urban Visual Material," *Perception and Psychophysics* 12, no.14 (1972): 354-56.

3. Robert Ulrich, Ph.D., professor of architecture and landscape architecture at Texas A&M University and a pioneer of evidence-based design, measures physiological and psychophysiological responses (heart rate, blood pressure, muscle tension & brain waves) to preferred settings. Ulrich found 6 variables in qualities of landscape preference: Focality, Complexity, Depth, Ground Texture, Deflected Vistas, Appraised Threat.

Roger Ulrich, "Aesthetic and Affective Responses to Natural Environments," *Behavior and the Natural Environment*, ed. Irwin Altman and Joachim E. Wohlwill (New York: Plenum, 1983): 86-125.

2. Humans have a deep emotional connection with nature and is attracted to all that is alive and vital.



PREMISE

1. Does nature plays a vital role in human health & wellbeing?
 2. Do humans have a deep emotional connection with nature?
 - 3. Do healing gardens provide nature in our urban environment?**
-

ACCESS TO NATURE

Individual's Role with Local Community in Health & Wellbeing



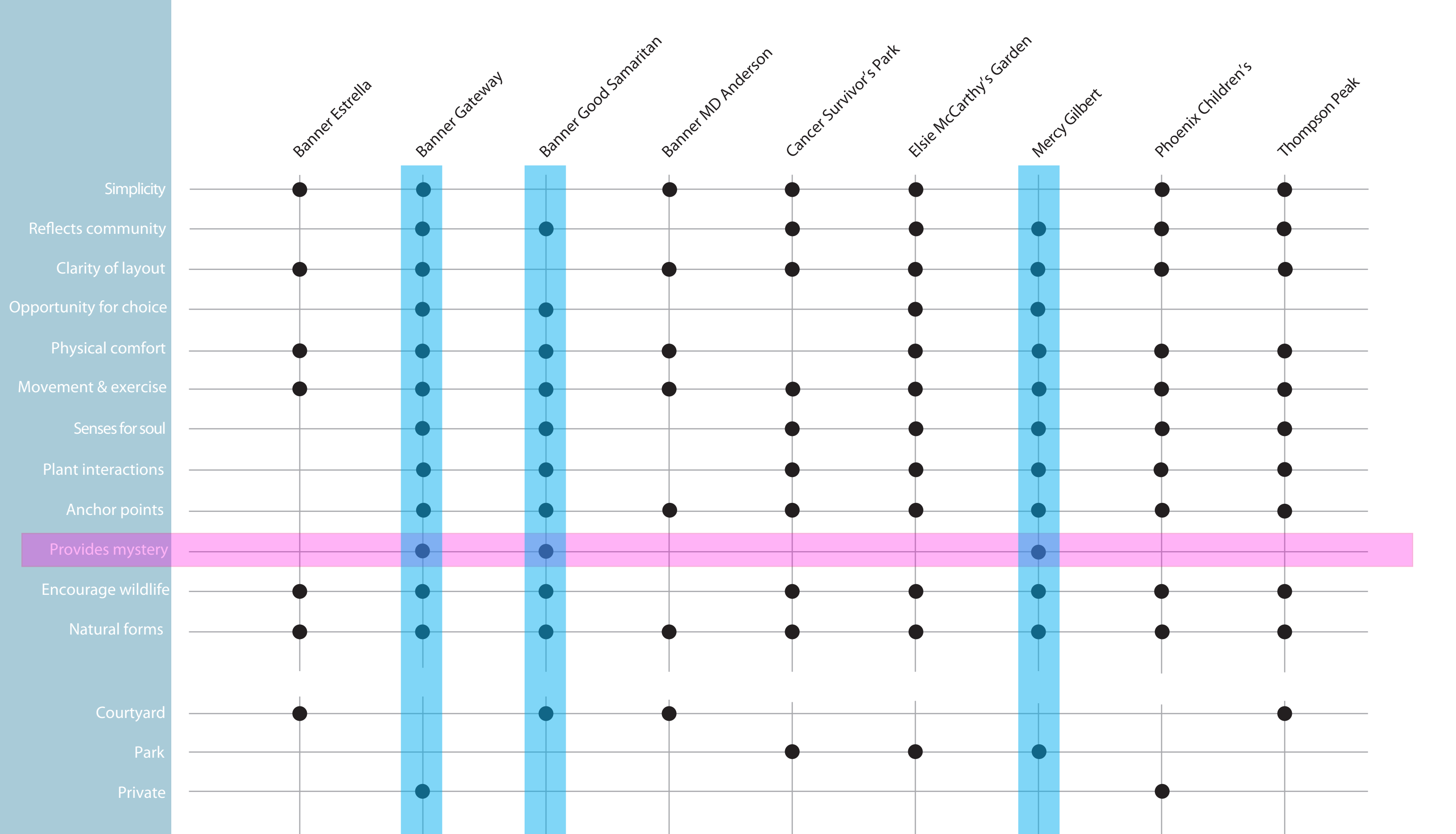
BENEFITS TO SOCIAL-SELF

(The Health and Social Benefits, 2005)

- Strengthens community ties
- Reduces crime
- Encourages volunteerism
- Promotes stewardship
- Promotes social bonds

3. Healing Gardens do provide nature in our urban environment.





Design Principles vs Hospital Healing Gardens



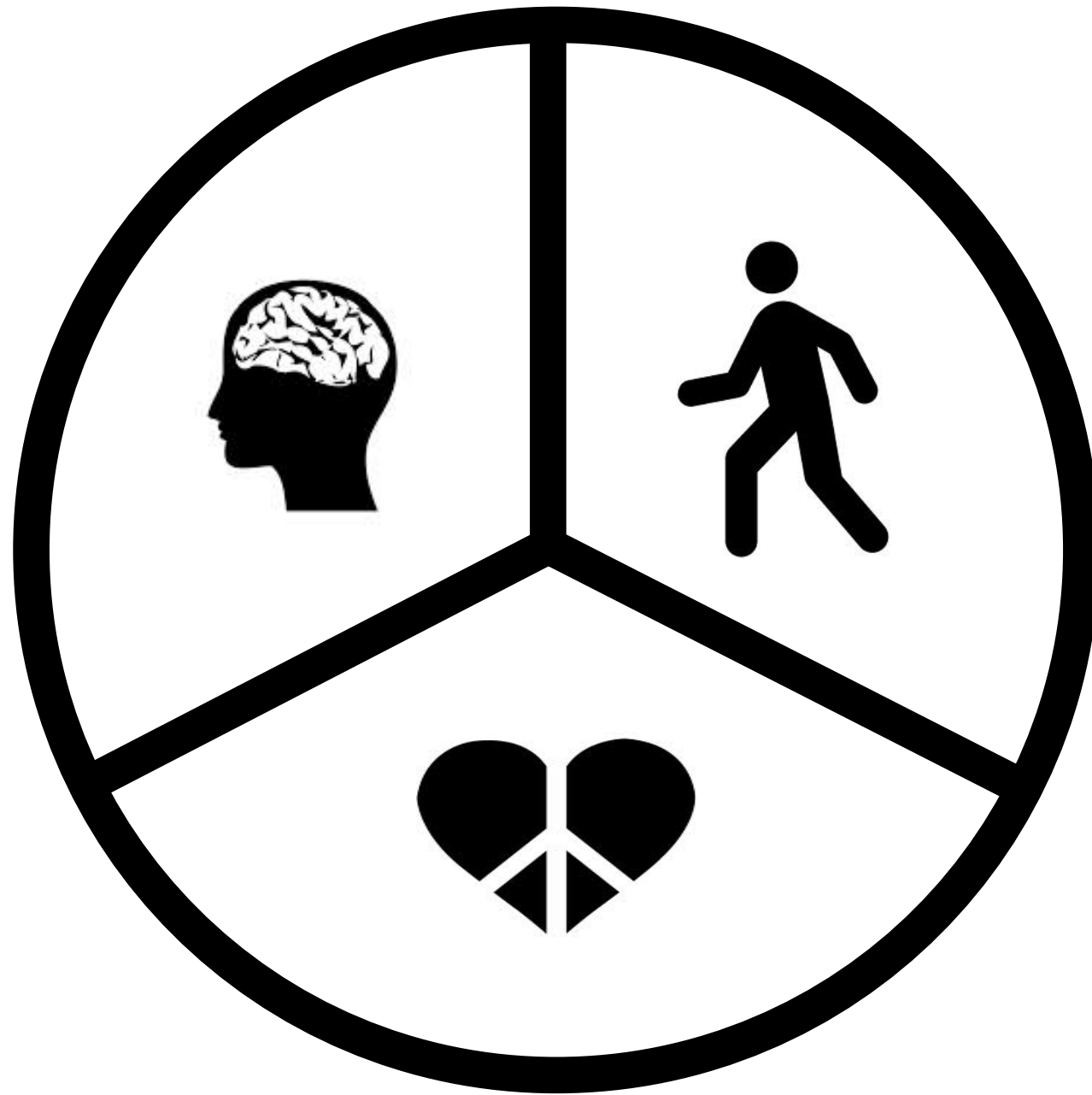
PHASE DEVELOPMENT MAP



PRELIMINARY DESIGN

Week of February 17, 2014

MIND



BODY

SPIRIT

instinctual = mind
physiological = body
societal = spirit

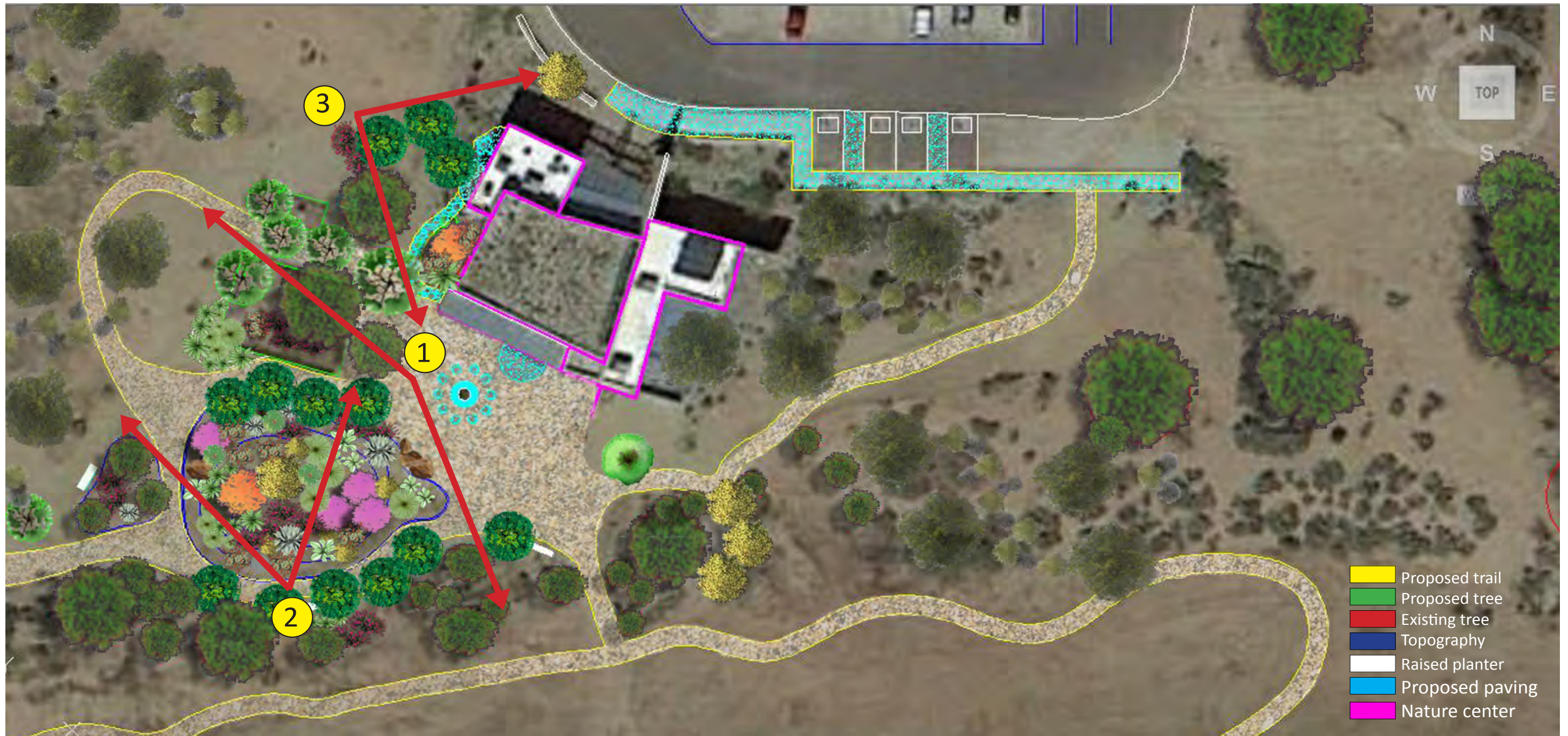
12 BEST DESIGN PRINCIPLES

1. Simplicity is important | [Empathize with the user's need for clear pathways and intuitive cues](#).....
2. Design should be reflective of the larger community | [Holistic modeling; represent a larger feature in the landscape](#).....
3. Design should encourage clarity of layout and movement | [Avoid dead end paths and complex formations](#)..... 
4. Design needs to have opportunities to make choices | [Encourage interaction, offer contemplation or people watching areas](#).....  
5. Design should provide physiological comfort and psychological security | [Create options of sun or shade, protection from breezes and others' view](#)..... 
6. Design needs to create physical opportunities for movement and exercise | [This brings physical and emotional benefits and helps to combat depression](#).....
7. Design should provide pleasing senses for the soul | [Include elements of surprise, whimsy, variety in color, texture, size and massing](#)..... 
8. Use the healing power of nature through sight, smell, touch and hearing | [Increased plant-human interactions](#).....
9. Provide carefully defined anchor points | [Contemplative situations require a full sense of involvement with the surroundings](#).....
10. Design should provide mystery and urge the visitor to explore | [Garden elements should be revealed one at a time to not diminish the sense of discovery](#)..... 
11. Design should encourage wildlife | [Provide habitat and diversity of food in berries, seeds, nuts and nectars with seasons in mind](#).....  
12. Design should work with nature and natural forms | [Avoid straight lines & planes, or excessive symmetry; Healing power of water as feminine energy](#).....





VIEWS MAP



- ① Looking southeast to southwest; Panorama outside EMRP Nature Center
- ② Looking north across healing garden, toward tortoise pen
- ③ Looking east at EMRP Nature Center west facade

DESIGN PRINCIPLES ACHIEVED

- p³ Clarity of layout and movement
- p⁴ Opportunity to make choices
- p⁷ Pleasing senses for spirit
- p⁸ Healing power of nature
- p¹⁰ Provides mystery
- p¹¹ Encourage wildlife
- p¹² Nature and natural forms



VIEW 1



Looking southeast to southwest; Panorama outside EMRP Nature Center



DESIGN PRINCIPLES ACHIEVED

- P⁷ Pleasing senses for spirit
- P⁸ Healing power of nature
- p¹¹ Encourage wildlife
- p¹² Nature and natural forms

Looking north across healing garden,
toward the tortoise pen

VIEW 2

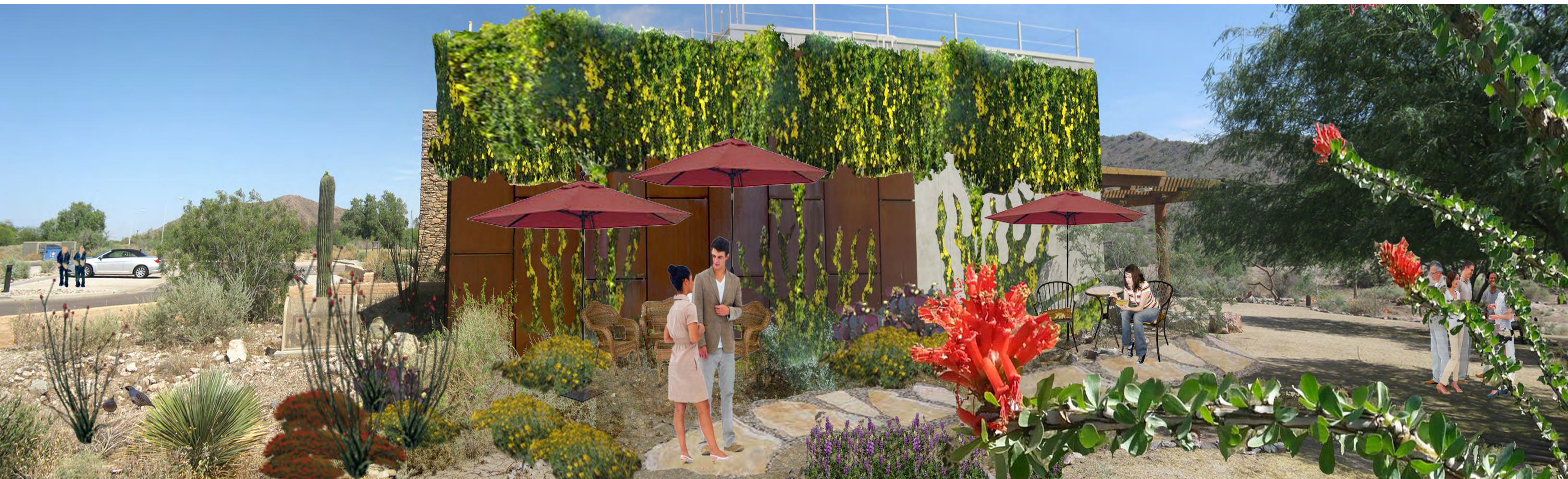


DESIGN PRINCIPLES ACHIEVED

- P³ Clarity of layout and movement
- P⁴ Opportunity to make choices
- P⁵ Physiological comfort and psychological security
- P⁹ Provides anchor point
- P¹¹ Encourage wildlife interactions



VIEW 3



Looking east at EMRP Nature Center west facade

12 Design Principles vs EMRP Site Plan

	CIRCULATION	PLANT LIST	SEATING	SPACE	VIEWS
SIMPLICITY					
REFLECTIVE OF COMMUNITY					
CLARITY OF LAYOUT					
OPPORTUNITY FOR CHOICES					
PHYSIOLOGICAL COMFORT					
OPPORTUNITY FOR EXERCISE					
PLEASING SENSES FOR SOUL					
HEALING POWER OF NATURE					
DEFINED ANCHOR POINTS					
PROVIDE MYSTERY					
ENCOURAGE WILDLIFE					
NATURE & NATURAL FORMS					



WILDLIFE HABITAT

FOOD
SHELTER
CAMOUFLAGE



NATIVE PEOPLES

MEDICINE
MATERIAL RESOURCE
CEMERMONIAL

ECOLOGICAL

NATIVE SPECIES
ELEVATION
HARDINESS



ATTRACTORS

BLOOMS
FRAGRANCE
AESTHETICS



**ESTRELLA MOUNTAIN REGIONAL PARK
Healing Garden Plant List**

Botanical Name	Common Name	Mature Size	Blooming Season	Reason for Selection
Trees				
Acacia constricta	White Thorn Acacia	10x15	spring to summer	Attracts birds
Chilopsis linearis	Desert Willow	25x20	spring to fall	Attracts hummers
Parkinsonia florida	Blue Palo Verde	30x30	spring	Good for nesting
Prosopis pubescens	Screwbean Mesquite	15x20	spring to fall	Attracts wildlife
Shrubs				
Calliandra eriophylla	Pink Fairy duster	3x4	spring to fall	Attracts hummers
Celtis pallida	Desert Hackberry	8x10	summer	Birds love orange berries
Encelia farinosa	Brittlebush	3x4	winter to spring	Attracts wildlife
Ericameria laricifolia	Turpentine Bush	2x3	late summer to fall	Attracts wildlife; fragrant
Justicia californica	Chuparosa	4x4	winter to spring	Attracts hummers
Larrea tridentate	Creosote	6x6	spring to fall	Attracts wildlife; fragrant
Lycium pallidum	Wolfberry	8x8	spring to fall	Attracts wildlife; fragrant
Simmondsia chinensis	Jojoba	6x6	spring	Attracts wildflower; medicinal
Tecoma stans	Arizona Yellow Bells	6x6	spring to fall	Attracts hummers & butterflies
Groundcover/Annuals/Perennials				
Baileya multiradiata	Desert Marigold	1x1	year-round	Beautiful flowers year-round
Daucus pusillus	Rattlesnake Weed	2x1	spring	Attracts wildlife, medicinal, edible
Eriogonum fasciculatum	Wild Buckwheat	1x2	spring	Attracts birds, medicinal
Lupinus arizonicus	Arizona Lupine	3x3	spring	Beautiful flowers; sun-tracking

**ESTRELLA MOUNTAIN REGIONAL PARK
Healing Garden Plant List**

Botanical Name	Common Name	Mature Size	Blooming Season	Reason for Selection
Cactus/Succulents/Accent				
Agave murpheyi	Murphey's Agave	5x4	Late winter to spring	Edible; material resource
Asclepias subulata	Desert Milkweed	3x3	spring to fall	Attracts butterflies
Dasyliirion wheeleri	Desert Spoon	4x4	summer	Attracts wildlife; material resource
Fouquieria splendens	Ocotillo	24x18	spring	Attracts hummers
Lophocereus schottii	Senita	10x10	spring to summer	Edible fruit; material resource; spiritual
Opuntia acanthocarpa	Buckhorn Cholla	4x5	spring	Edible fruit
Opuntia basilaris	Beavertail Prickly Pear	1x3	spring	Beautiful flowers; edible fruit
Yucca elata	Soaptree Yucca	10x4	spring to summer	Attracts wildlife, medicinal, edible

[Type Note: Estrella Mountain Regional park “ris[es] gradually from approximately 900 feet above sea level to the highest point in the park of 4,512 feet.” (D. Bates) This locates the park in the *Lower Sonoran Zone* which is 0-4500’. These plants endure extreme temperatures that exceed 110°F in the summer and 25°F during the winter, as well as, precipitation of 6 inches or less annually.

Blue Palo Verde



Desert Willow



Screwbean Mesquite



White Thorn Acacia



Desert Marigold



Rattlesnake Weed



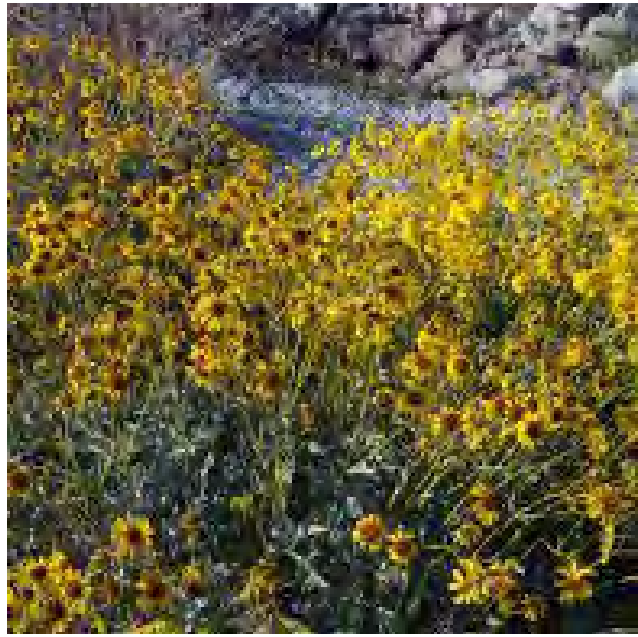
Wild Buckwheat



Arizona Lupine

PLANT PALETTE

Brittlebush



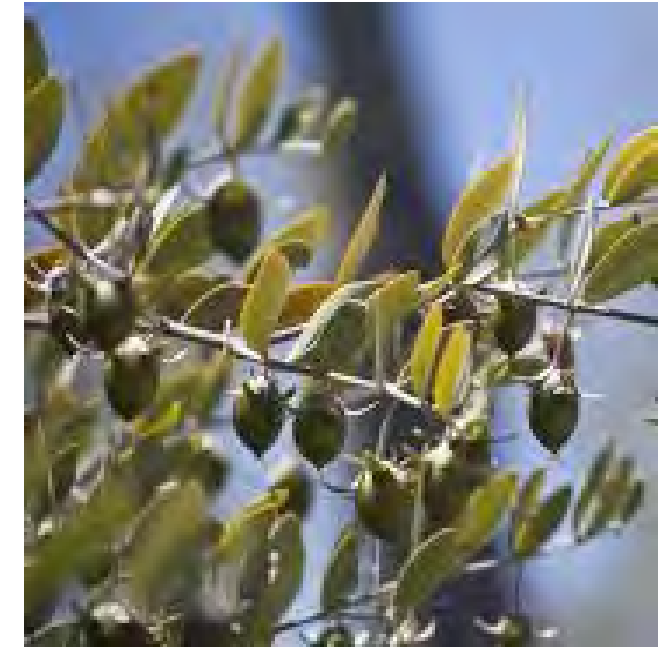
Chuparosa



Desert Hackberry



Jojoba



Parry's Penstemon



Pink Fairy Duster



Wolf Berry



AZ Yellow Bells

Buckhorn Cholla



Desert Milkweed



Desert Spoon



Ocotillo



Parry's Agave



Purple Prickly Pear



Senita



Soaptree Yucca

PLANT PALETTE (cont)

TAKE-AWAYS



1. Nature **IS** vital to our health and wellbeing...and should be designed into our lives.
2. There are multiple **BENEFITS** to the **mind-body-spirit** of individuals that spend time in and around Healing Gardens.
3. Healing Gardens are a **BEST PRACTICE** for anyone that wants health & happiness.
4. Healing Gardens can be created **ANYWHERE** and be **ANY SIZE**.

“Everybody needs beauty as well as bread, places to play in and pray in, where nature may heal and give strength to body and soul.”

~John Muir~