

A Place for Healing

FOX CHASE CANCER CENTER

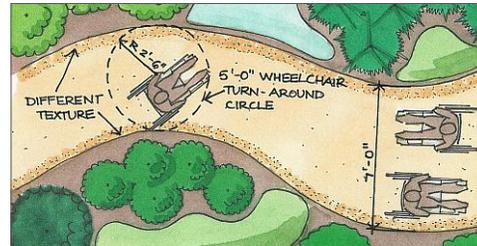
TEMPLE UNIVERSITY AMBLER

Graduate and Senior Design Studio Fall 2017
Department of Landscape Architecture and Horticulture
Tyler School of Art - Temple University

ACADEMIC RESEARCH

KEY RESEARCH REFERENCES

- 1984** Roger Ulrich, PhD, EDAC
“View from a window may influence recovery from surgery,” *Science*, 224: 420-1.
- 1989** Rachel Kaplan and Stephen Kaplan
The Experience of Nature: A Psychological Perspective. Cambridge: Cambridge University Press.
- 1994** Margaret Ayer Barnes
A Study of the Process of Emotional Healing in Outdoor Spaces and the Concomitant Landscape Design Implications. Thesis (Master of Landscape Architecture): University of California, Berkeley.
- 1995** Stephen Kaplan
“The Restorative Benefits of Nature: Toward an Integrative Framework,” *Journal of Environmental Psychology*, 15: 169-182.
- 1999** Clare Cooper Marcus and Marni Barnes
Healing Gardens: Therapeutic Benefits and Design Recommendations. New York: Wiley.
- 2005** Ulrika A. Stigsdotter
Landscape Architecture and Health: Evidence-based Health-promoting Design and Planning. Alnarp: Department of Landscape Planning, Swedish University of Agricultural Sciences.
- 2007** Qing Li, K Morimoto, A Nakadai, et al.
“Forest Bathing Enhances Human Natural Killer Activity and Expression of Anti-cancer Proteins,” *International Journal of Immunopathology and Pharmacology*, 20 (2).
- 2014** Clare Cooper Marcus and Naomi Sachs
Therapeutic Landscape: An Evidence-based Approach to Designing Healing Gardens and Restorative Outdoor Spaces. Hoboken: Wiley.



Guidelines for accessible path width and design. (M. Furgeson)



Staff relaxing in the sun in the Jacqueline Fiske Healing Garden at the Jupiter Medical Center in Jupiter, Florida. (Studio Sprout)

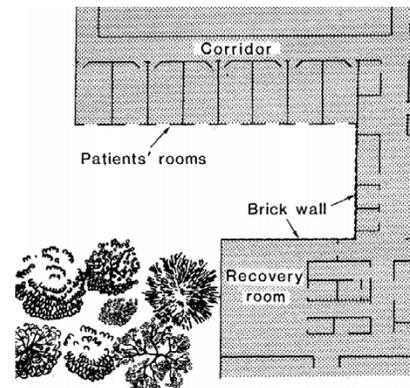


An outdoor infusion treatment space at the Park Avenue Medical Center in Boston, Massachusetts. (Shepley Bulfinch)

SUMMARY OF BENEFITS

When a hospital provides therapeutic outdoor spaces:

- Stress is reduced for patients, families, and staff through:
 - Opportunities for exercise
 - Spaces for privacy, with a sense of control over surroundings
 - Settings for social interaction and support
 - Engagement with nature
- Pain is reduced, requiring less medication
- Healing times and complications are reduced
- Time and money is saved through:
 - Shorter hospital stays
 - Improved staff productivity and retention
 - Increased patient satisfaction



In Roger Ulrich's 1984 study, outcomes were found to be linked to the view from patients' rooms of either a brick wall or trees. (R. Ulrich)

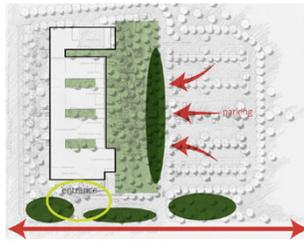
Evidence-based design in therapeutic landscapes is a rapidly evolving field. Dr. Roger Ulrich's seminal study, which demonstrated reduced healing time in patients with window views of nature, laid the groundwork, and almost half a century of research since has shown that the landscape can provide positive psychological and physical effects for patients, their families, and staff.

CASE STUDIES

University of Arizona Cancer Center - North Campus

Location: Tucson, Arizona

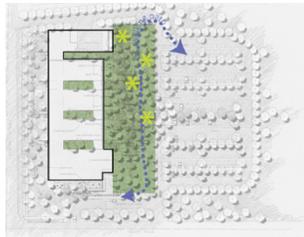
Designer: Ten Eyck Landscape Architecture (Austin, TX)



Entry and Visual Buffers



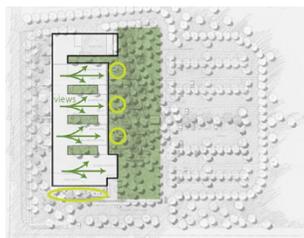
Valet service and patient drop-off improves efficiency and relieves stress. A water-harvesting arroyo, a landform, and plant material buffer unwanted views of the parking area, and footbridges provide a gateway into the garden area.



Accessibility and Destinations



All garden spaces and pathways throughout the facility are wheelchair accessible, with passing and resting areas included along the path.



Privacy and Sound Buffers



Multiple small gathering spaces provide opportunities for privacy, and nearby fountains help to disguise unwanted sound. Views of the gardens from infusion rooms and waiting rooms allow visual access to those who can't get outside.

(All photos: University of Arizona Cancer Center)

Elizabeth & Nona Evans Restorative Garden, Cleveland Botanical Garden

Location: Cleveland, Ohio

Designer: Dirtworks, PC (New York, NY)



SITE PLAN
Site plan
(All images: K. Duteil)



Accessible sensory experiences



Private seating near points of interest

The garden equally emphasizes comfort, accessibility, and beauty for all visitors. Three distinct spaces serve programming needs: a contemplative garden, a demonstration/exploration garden, and a horticultural therapy garden.

Path gradients and materials are easy to navigate, and paths lead visitors past interesting things to touch and explore. Movable furniture allows for flexible private spaces. Plants were chosen for texture and fragrance, and water trickling over a stone wall can be experienced by visually impaired visitors through sound, temperature, and humidity.

DESIGN RECOMMENDATIONS

Research and case studies have led us to understand that successful healing gardens should have the following characteristics.

Horatio's Garden, Duke of Cornwall Spinal Treatment Centre, Salisbury Hospital

Location: Salisbury, England

Designer: Cleve West

Wide pathways are accessible for exercise or for practice using a wheelchair. Low limestone walls echo the shape of the spine and provide seating for garden visitors. Lush garden plantings, realistic sculptures, and a water feature create a pleasing and therapeutic setting for mental relief during long stays in the hospital.



Layout of garden (horatiosgarden.org.uk)



Accessible to users in wheelchairs and gurneys (Telegraph)



Naturalistic sculptures
(Olivia Chapple)



Water feature borders an arbor walkway
(Olivia Chapple)

Accessible

- Wide, smooth pathways
- Few or no steps or steep grades
- Resting areas
- Inviting and accessible entrances
- Space for therapeutic activities
- Easy-to-navigate layout
- Views out from indoors

Sociable

- Gathering spaces
- Movable seating

Private

- Screened views
- Small seating areas
- Noise-filtering water features

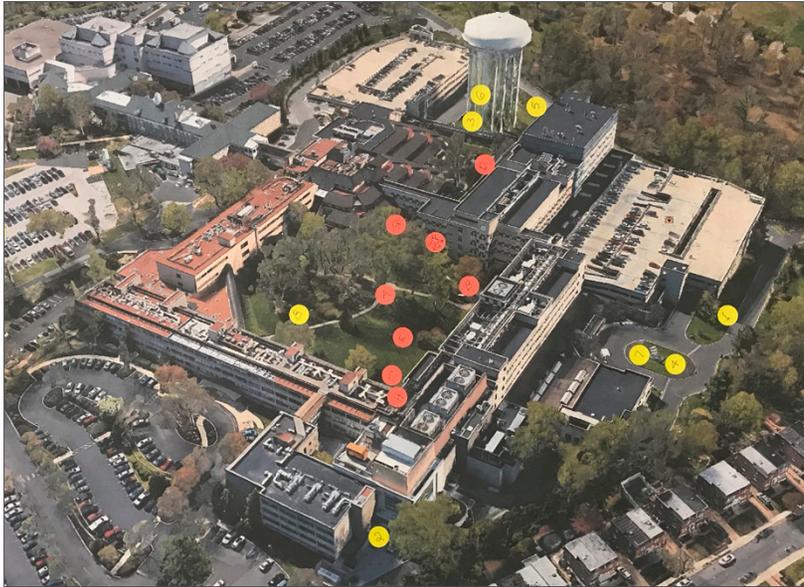
Engaging

- Destinations and focal points
- Plantings for wildlife
- Sensory experiences of touch, sound, sight
- Seasonal variation

Restorative

- Access to sun and shade
- Naturalistic or realistic art
- Buffers from unappealing noises or sights
- Lush and well-maintained plantings

CAMPUS IMPRESSIONS



FCCC GARDEN COMMITTEE

In the kickoff meeting, Fox Chase healing garden committee members placed orange stickers on an aerial photograph to indicate positive features of their campus and yellow stickers to mark negative features. In general, users like the open green space of the courtyards, but find that some built elements detract from the experience.

Positive

“The terrace combines sitting, eating, and overlooks the inner courtyard which is very enjoyable.”

“Even if we cannot go out into the garden, we feel it when traveling through the hallways.”

“Water feature, when working, is enjoyed by many.”

Negative

“All of the art in the courtyard is broken in some way.”

“People coming to Fox Chase are often stressed, having difficulty finding entrance adds to the stress.”

“The water tower is visually overwhelming.”



STUDIO

The identity of the Fox Chase Cancer Center is a place that is nurturing and supportive at every level, bringing cutting-edge research, clinical expertise, and compassionate care together to support patients through a very painful illness. Students' first impressions at Fox Chase, however, did not see this mission and identity reflected in the outdoor landscape.

The landscape lacks a “sense of place,” in which aspects of the physical environment contribute to its character. While there are many nice elements within the courtyards, they are disparate and do not add up to a unified whole. As a result, much of the landscape is unremarkable, or at worst confusing. The outdoor spaces are underused and underdesigned and do not reflect the latest thinking in landscapes for healing. The opportunities are vast for Fox Chase to expand its mission to its campus.



An exercise in creating visual representations of first impressions



The inventory and analysis stage began with a meeting between the studio and the healing garden committee. Committee members explained what they liked and didn't like about their campus and their goals and desires for a healing garden. After a tour of the site, studio members created visual representations of their first impressions.

SITE HISTORY



< In the Beginning

An aerial view of Jeanes Hospital in 1928, the year it opened, shows some of the land that the Fox Chase Cancer Center would eventually occupy. (FCCC)

Current Aerial View >
Fox Chase Cancer Center and Jeanes Hospital.
(Google Earth)



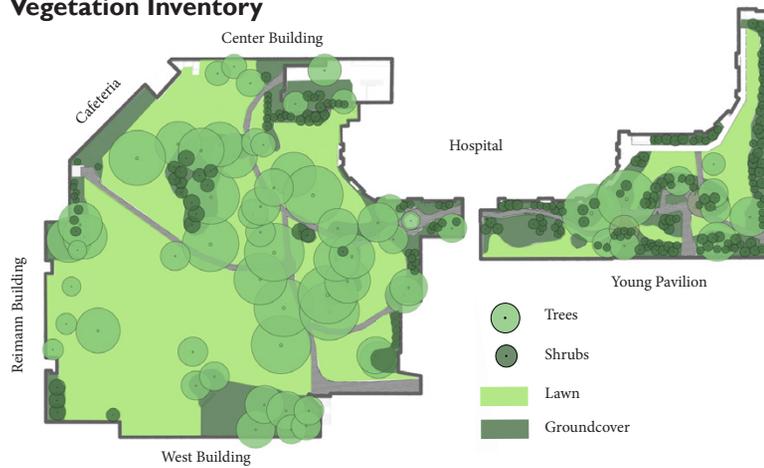
SITE CONTEXT



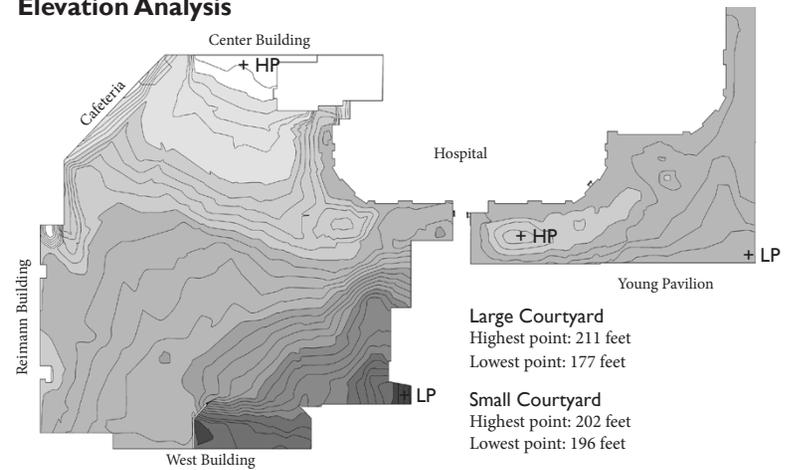
Fox Chase Cancer Center and Jeanes Hospital are located in the Fox Chase neighborhood of Philadelphia near the border with Cheltenham and Abington. It is served by two nearby SEPTA regional rail stations and by buses, which stop near the campus. Cottman Avenue runs along the southern edge of Burholme Park, and the main Fox Chase Cancer Center campus entrance runs from Cottman through the park.

SITE INVENTORY

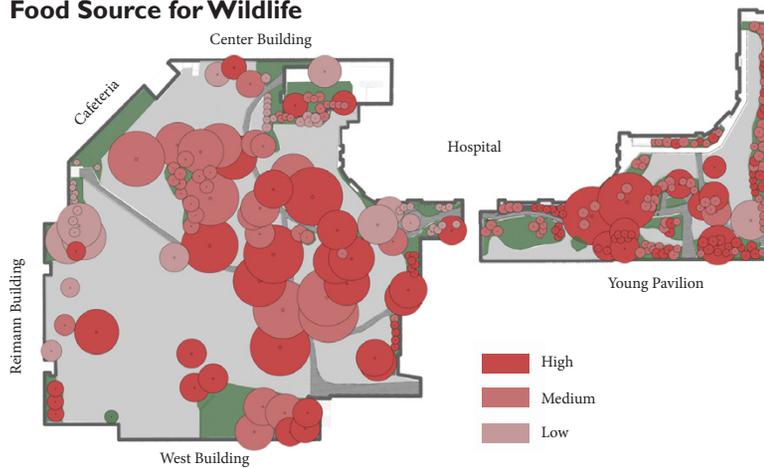
Vegetation Inventory



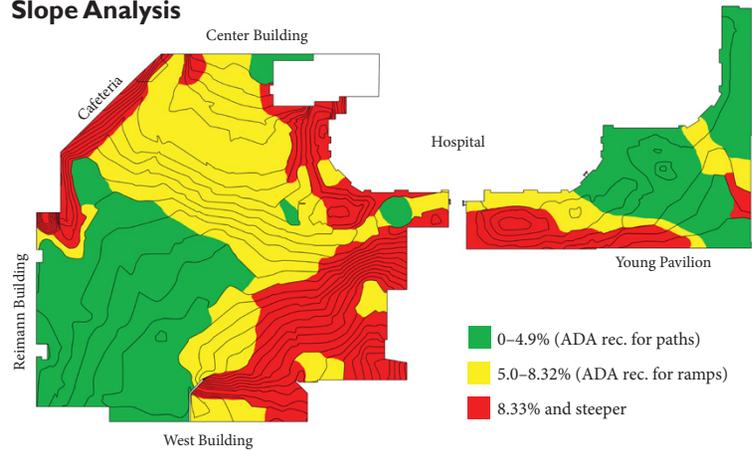
Elevation Analysis



Food Source for Wildlife



Slope Analysis



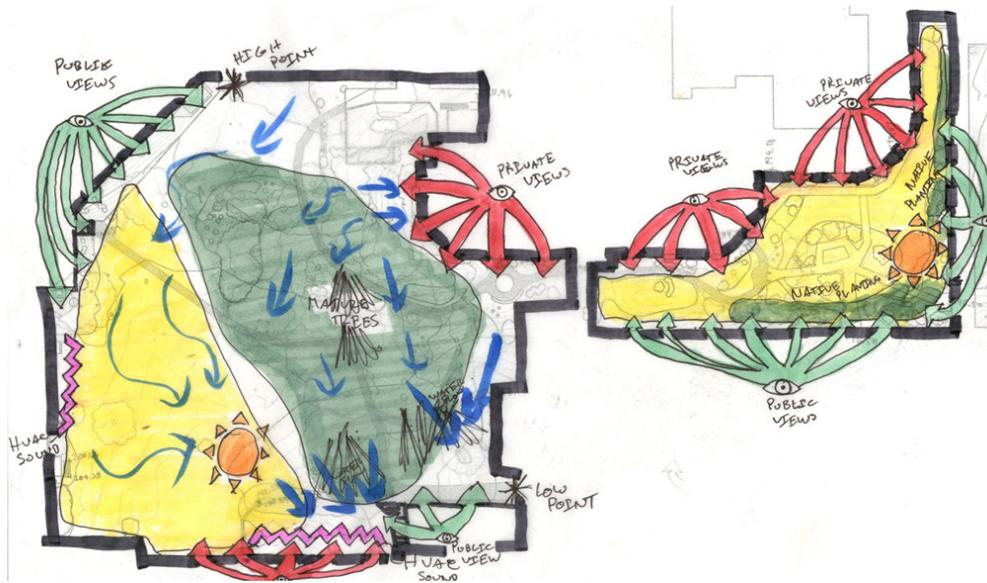
The two courtyards are home to a diversity of canopy trees, shrubs, and plantings, many of which are native species. The predominant ground cover is turf grass. The existing trees are in generally good condition, though some should be removed because of their age, safety, and aesthetics. Trees and shrubs were also evaluated for value to wildlife and sensory appeal to garden users.

The topography of the site offers challenges and opportunity. An elevation change of 34 feet in the large courtyard creates dramatic topography and allows for many different spaces and views in the garden. The small courtyard is relatively flat by comparison, and users can easily see across it.

Per ADA guidelines, a gentle slope under 1:20 (5%) is comfortable for most users, and most can traverse a ramp of up to 1:12 (8.33%) for shorter distances. The existing topography creates some steep slopes that do not grant access to all users.

SYNTHESIS

COURTYARDS: CONSTRAINTS AND OPPORTUNITIES



Constraints

- Significant topographic change
- Conflict with private interior spaces
- HVAC noise
- Abstract sculptures
- Visual dominance of water tower
- Limited connection to building interiors
- Many users with mobility challenges

Opportunities

- Large open space (2.5 acres)
- Existing mature trees
- Windows with views out
- Well-used cafe patios

PROGRAM

In summary, carry these program elements into the design.

Make the courtyards accessible to all users

Entrances should be easy to find and navigate. Consider grade changes and materials when creating pathways for users with mobility constraints. Use ramps instead of steps to connect areas.

Bring nature into the courtyards

Design beautiful plantings to create constantly changing scenes as the weather shifts, as flowers bloom and fade, as the seasons change, and as years pass. Give users access to sun and shade, and provide a variety of sensory experiences. Invite pollinators and birds into the courtyards with native plants. Manage storm water in rain gardens.

Provide public and private gathering spaces

Accommodate users' emotional and social needs by creating both small, private sitting areas and larger, more public spaces. Movable seating gives users the freedom to control their surroundings. Block or disguise undesirable views and noise.

Design attractive scenes to be viewed from inside

Many users will only experience the courtyards by looking out of windows, so vistas should be planned from this perspective.

Protect private areas from public view

Hospital rooms, the planned infusion rooms, and other private interior spaces need to be shielded from view, but also provided with their own pleasant views out.

Extend the courtyard program to the campus

Provide safe, accessible paths to all users around the exterior of the campus, clarify wayfinding, and design functional and beautiful places.

DESIGN TEAM I

GOALS

- Improve patient experience of the campus.
- Connect patients to nature.
- Create programmed spaces with enhanced seasonal interest and ecological function, which helps patients enjoy the campus.

OBJECTIVES

- Create movement through the campus spaces by encouraging users to wander and explore.
- Enable purposeful movement, as users traverse between spaces.
- Provide seating, meditative spaces, and resting spaces.
- Provide a labyrinth or walking meditation.
- Create focal points or areas featuring calming elements (water, plantings)
- Create a variety of gathering spaces (large/public as well as small/private)



Illustrative Campus Master Plan

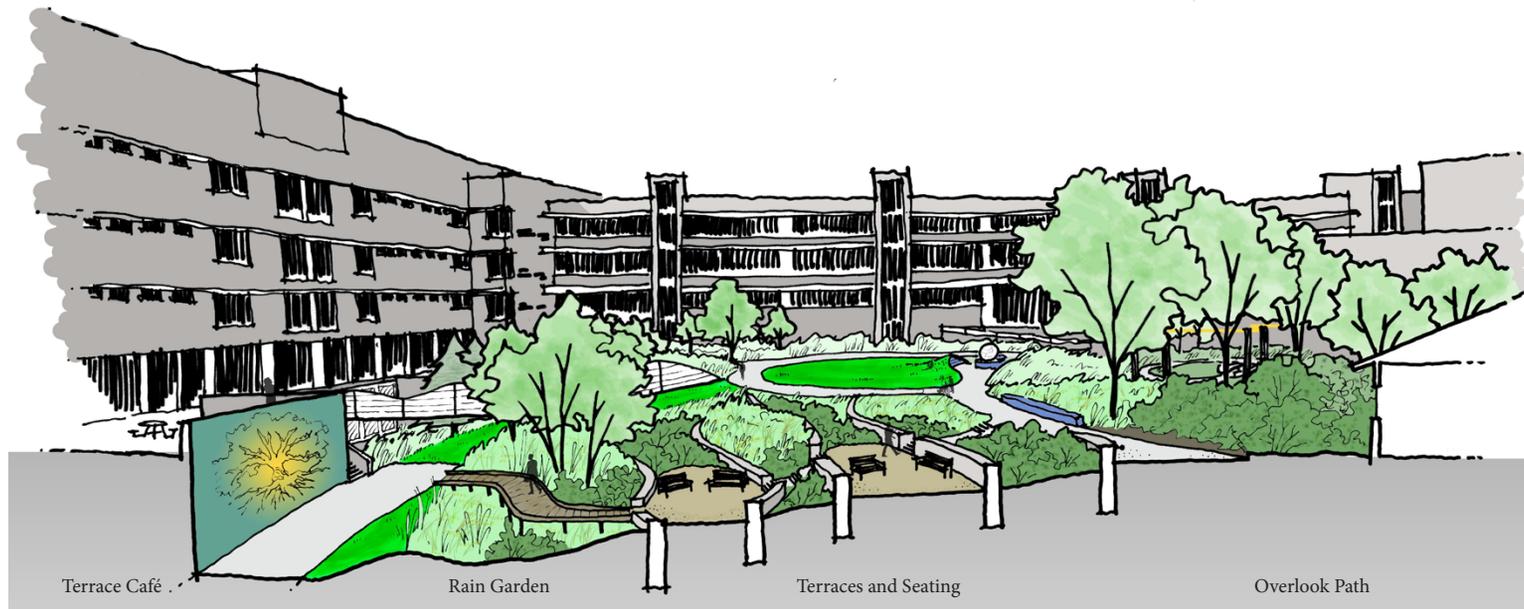
The public entrances to the hospital have been redesigned, while new sidewalks improve pedestrian circulation. Parking lots and retention basins are renovated to capture and filter storm water.

LARGE COURTYARD



- 1 GARDEN PATIO**
Recessed patio that provides additional, more intimate outdoor seating.
- 2 MEADOW AND BLUEWAVE**
The colorful, all-season meadow provides seasonal interest and attracts wildlife. A wave of blue is a thematic ribbon, tying together the courtyards.
- 3 GATHERING LAWN**
Along the path the blue wave emerges the form of in-ground lighting in the lawn that will provide a soft blue light at night, moving through the center focal point, a sculptural water feature.
- 4 LABYRINTH AND SENSORY GARDEN**
A labyrinth invites you to explore its winding paths. The plants here have a mix of fragrance, texture, color, and edibles to attract wildlife and appeal to our senses.
- 5 CONTEMPLATIVE WALK**
Inspired by historic cloister gardens, the path follows wooden posts spaced in a rhythmic pattern. A joyful yellow ribbon twists and bends above the path and among the posts, creating a contrast to the dark green of this shady area.
- 6 TERRACES**
Terraces create seating areas and an overlook path with views down to the rain garden. Small trees provide a sense of seclusion. The Terrace Café's retaining wall is enhanced with a Tree of Life mural.
- 7 TREE WALK**
A pleasant ADA-compliant walk through the treetops to the Terrace Café. The trees serve as a visual screen for the windows of the planned infusion rooms while providing an appealing view for patients inside.
- 8 RAIN GARDEN**
Storm water is collected from the courtyard and travels through runnels into a rain garden, crossed by a boardwalk.

LARGE COURTYARD RENDERINGS



The steep terrain is divided by terraces (6) leading from the main path down towards the “Tree of Life” mural and rain garden (8).



A spherical water feature between the meadow (2) and gathering lawn (3) provides soothing sounds. The contemplative walk (5) is visible in the background.



Sensory garden (4) with ample seating provides rest among vegetation that appeals to the senses, while other visitors experience the labyrinth.

In presenting renderings, the team used numbered labels to refer readers back to specific elements of the site plan, in a style that is easier to grasp quickly for people without experience reading plan view or section cut lines.

SMALL COURTYARD



1 VIEWING GARDENS

Gardens surrounding the Hospital in both courtyards screen views from outside while providing attractive scenes to be viewed from patient rooms.

2 MEADOW

Native grasses and wildflowers allow expansive views out of the Young Pavilion, echoing the larger meadow plantings in the large courtyard. To protect wildlife, the Pavilion windows are treated with an anti-bird strike pattern.

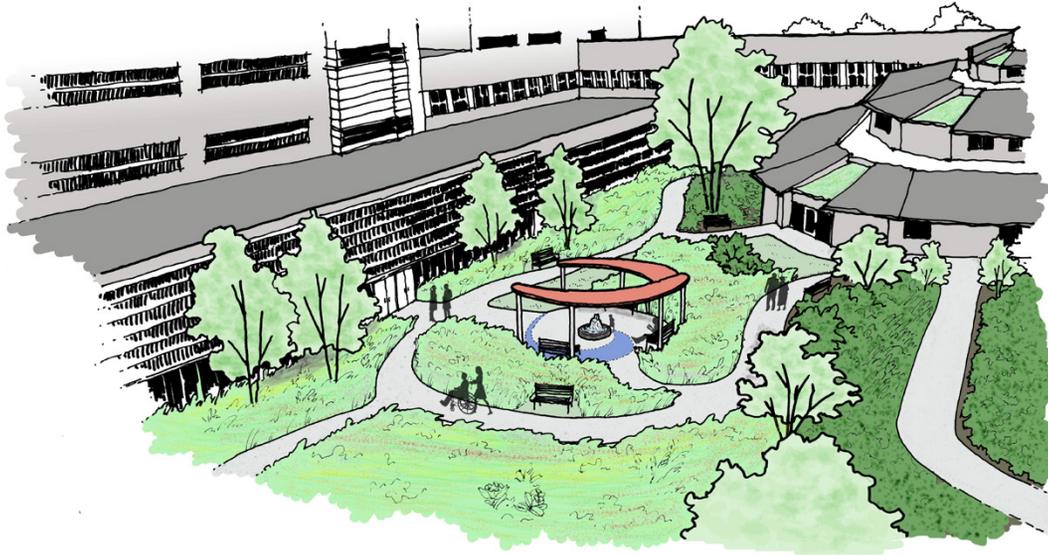
3 GATHERING SPACE

Central paved space provides focus for visitors, made more comfortable with a shade structure.

4 WATER FEATURE

The blue wave continues through the small courtyard and joins the central focal point, a stone water feature.

SMALL COURTYARD PERSPECTIVES



Surrounded by meadows (2), the gathering space (3) and fountain (4) provide a shaded seating area. Green roofs on the Hospital absorb storm water and cool the building.



Privacy of Hospital rooms is protected by the viewing gardens (1) from those traveling through the courtyard and the windows of the Young Pavilion, while patients have pleasing views out.

Again, numbered labels indicate locations on the site plan, while section-elevation cuts show user experiences—both in the courtyard and inside buildings. The studio members determined that many users would only experience the gardens from inside, by viewing them through windows.



The Tanglin Core, Singapore Botanic Gardens. (NOW Travel Asia)

NEXT STEPS

Through the process of documenting and analyzing existing conditions on the Fox Chase Cancer Center campus, researching design precedents for healing landscapes, and developing goals for the use and design of the site, the student design teams were guided by the idea that the new Fox Chase landscape should be restorative, engaging, and accessible. These ideals manifested themselves very differently in each team's designs, but they run as a theme through each plan.

This report documents the many benefits of healing gardens, such as alleviating stress for staff, patients, and visitors, reducing patient pain and healing times, providing opportunities for fresh air and exercise, and increasing employee retention and morale. Each design team sought to bring these benefits to the proposed healing gardens at Fox Chase Cancer Center.

We hope that these design proposals serve to begin a conversation, sparking ideas and inspiring creative action. The Fox Chase mission to provide compassionate care for its patients would find a beautiful expression in a therapeutic landscape designed to restore the minds and bodies of all its users.

Just as the studio had summarized its research and analysis findings, here the whole design process is encapsulated in a forward-looking conclusion: what ideals guided this process and what inspiration should the audience take away from it as they pursue their goal of a healing campus.