

PARKLAND BREAST CENTER

Comprehensive therapy tools integrated into one single facility, give the patient best support to help their life back.

PARKLAND
BREAST CENTER



**Parkland
Simmons Ambulatory Surgery Center**

In an effort to bring additional capacity to Parkland Women's Services, and to consolidate the service scope of contemporary breast cancer care. An architecture expansion program is introduced in the book.

The associated program was provided by Parkland Hospital and HKS Architect.

Cooperation:



I would like to thank HKS's architects for providing me the opportunity to participate in the project. I appreciate all the information and documents that HKS Inc. shared with me and I also want to express my gratitude to their several visits to A&M campus to offer me generous advice.

BACKGROUND INFO. | Parkland Hospital

Parkland Hospital System

Opened in 1894, the Parkland Health & Hospital System first is now one of the largest public hospital systems in the United States of America. The hospital averages more than 1 million patient visits annually. Services include a Level I Trauma Center, the second largest civilian burn center in the U.S. and a Level III Neonatal Intensive Care Unit. The system also includes 20 community-based clinics, including primary care and women's clinics, 12 school-based clinics and numerous outreach and education programs.

The Parkland Breast Center is Parkland's facility for caring for patients who need screenings as well as treatment for breast health issues. The center will be the main breast imaging clinic for Parkland after finished.

Parkland Culture

Parkland Hospital is committed to creating an inspiring and supportive environment that fosters high quality and compassionate care for patients and achieves recognition as a great place to work, train and practice. To create the desired "Parkland culture," Parkland is starting with a clear shared purpose: meeting the needs of patients, improving outcomes, and being accountable public stewards.

Demands of the New Breast Center

Parkland Treats 20% of Breast Cancer Patients in Dallas County. Before the New Breast Center is planed, the doctors and nurses at Parkland experienced rising numbers of patients in need of breast healthcare at the hospital. Staff first had to take care of the most critical patients – those in need of lifesaving care due to aggressive breast cancer conditions. That meant patients with less acute care needs often had to wait long periods of time – sometimes months – in order to receive treatment. It is very necessary to design a New Breast Center to help to alleviates the problem.

Limited Space

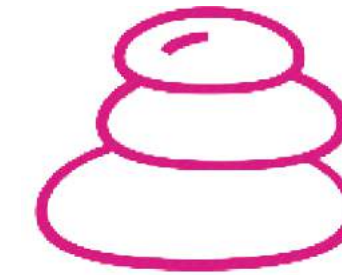
- 4 screening/diagnostic rooms
- 1 stationary mobile unit
- 1 stereotactic biopsy room
- 3 ultrasound rooms
- 1 MRI unit
- 1 mobile unit servicing 8 community health centers

Annual Volume

- 442,576 exams to screen, diagnose and treat
- 30,000 patients served
- 800 visits for genetic counseling
- 400 patients diagnosed and treated
- 52% increase in patient volume from 2011 to 2015

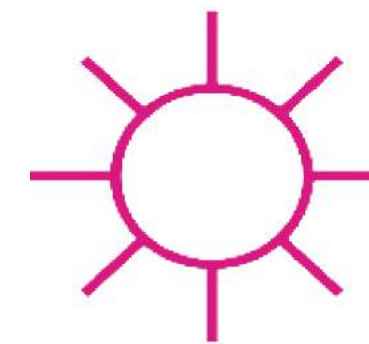
KEY ISSUE IN THE PROJECT:
HOW TO REDUCE PATIENTS' STRESS IN A BREAST
CANCER FACILITY?

INSPIRATIONAL IDEAS | Essential Concept



Hospitality:

The comfort and hospitality of this facility is to be more of a "homey" like feeling to decrease anxiety and stress.



Natural Daylight:

The use of natural daylighting is prominent in the design. Natural light may improve mood, and it decreases eyestrain and headaches.



Biophilic Design:

Biophilic design can reduce stress, enhance creativity and clarity of thought, improve our well-being and expedite healing.

FINAL STUDY PROJECT

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Texas A&M University, USA
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CONTENTS

- 01 Findings & Researchs
literature reviews and case studies to accommodate the key issue and essential concept p.8
- 02 Site & Program
intelligence based on site analysis p.16
space list and cost estimate p.28
- 03 Challenges & Opportunity
initial thinking and reasons for not adopting project development p.32
p.34
- 04 The New Breast Center Design
design solution p.36



findings & researchs



ACCESS TO NATURE | Literature Review

Researches show that:

I. Human has a partly **genetic tendency** to pay attention to, affiliated with, and otherwise respond positively to nature.

(Wilson's biophilia theory, 1984)

II. Views to nature can help to **release physical pain**, as well as to **reduce emotional anxiety**.

(Ulrich 1991: Van den Berg, Koole and Van der Wulp 2003)

III. Treatment space with window providing view towards nature contribute to

- Enhance quick recovery.

- Shorter stays in hospitals.

(Ulrich, 1984)



ACCESS TO NATURE | Case Study - Oasis Cancer Care Center *(WE Architecture)*

The case shows that:

I. The building materializes as a four sided polygon covered by a **soft landscape** of explosive greenery.

II. From the interior, the building appears as a **transparent** yet intimate space where the green gardens are incorporated in the indoor spaces.

III. Spacious courtyards in order to provide **daylight** to all functions and provide opportunity to stay in the green surroundings.



PRIVACY | Literature Review

The fact that:

- I. Women are **more sensitive** than men in terms of losing privacy.
- II. Also protect patient's health **information that identifies you**, includes your medical record and other information relating to your care or payment for care. *(HIPPA, 1996)*

Studies suggest that:

- I. Single patient room
 - II. Dedicated changing space
 - III. Control of daylighting
 - IV. Control of noise
- (Ulrich, 1991; Benedetti, Colombo, Barbi)*



PRIVACY | Case Study - University of Arizona Cancer Center *(ZGF Architects)*

The case shows that:

- I. Perforated metal sunshades provide privacy for the patients, allowing for **views out**.
- II. A layering of materials is evident in **waiting area**. Waiting area are both peaceful and elegant.
- III. **Registration** is located on the second floor of the main waiting area, yet offers privacy.



SOCIAL INTERACTION | Literature Review

The fact that:

Many women experience **alone** and **helpless** after they diagnosed with breast cancer, particularly if they can not to engage in reconstructive surgery after a mastectomy or lumpectomy or fear of other temporary or permanent signs of illness
(Bahar, 2003; Bell, 2002; Lorde, 1980; Schultz, 2009).

Studies suggest that:

I. Balance the private and social space
(Sue Baier, Mary Zimmeth, 1986)

II. **Family support** in patient rooms

III. Flexible exam rooms



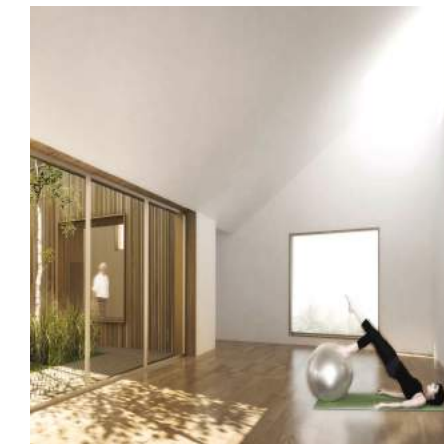
SOCIAL INTERACTION | Case Study - Cancer Counseling Center (EFFEKT)

The case shows that:

I. The house will feel **homely** and comfortable and provide room for all forms of activities.

II. The center is designed as a cluster of seven small houses around two green **outdoor spaces**.

III. Each house has its own specific function and together they form a **coherent sequence** of different spaces and functions such as a library, kitchen, conversation rooms, lounge, shops, gym, and wellness facilities.



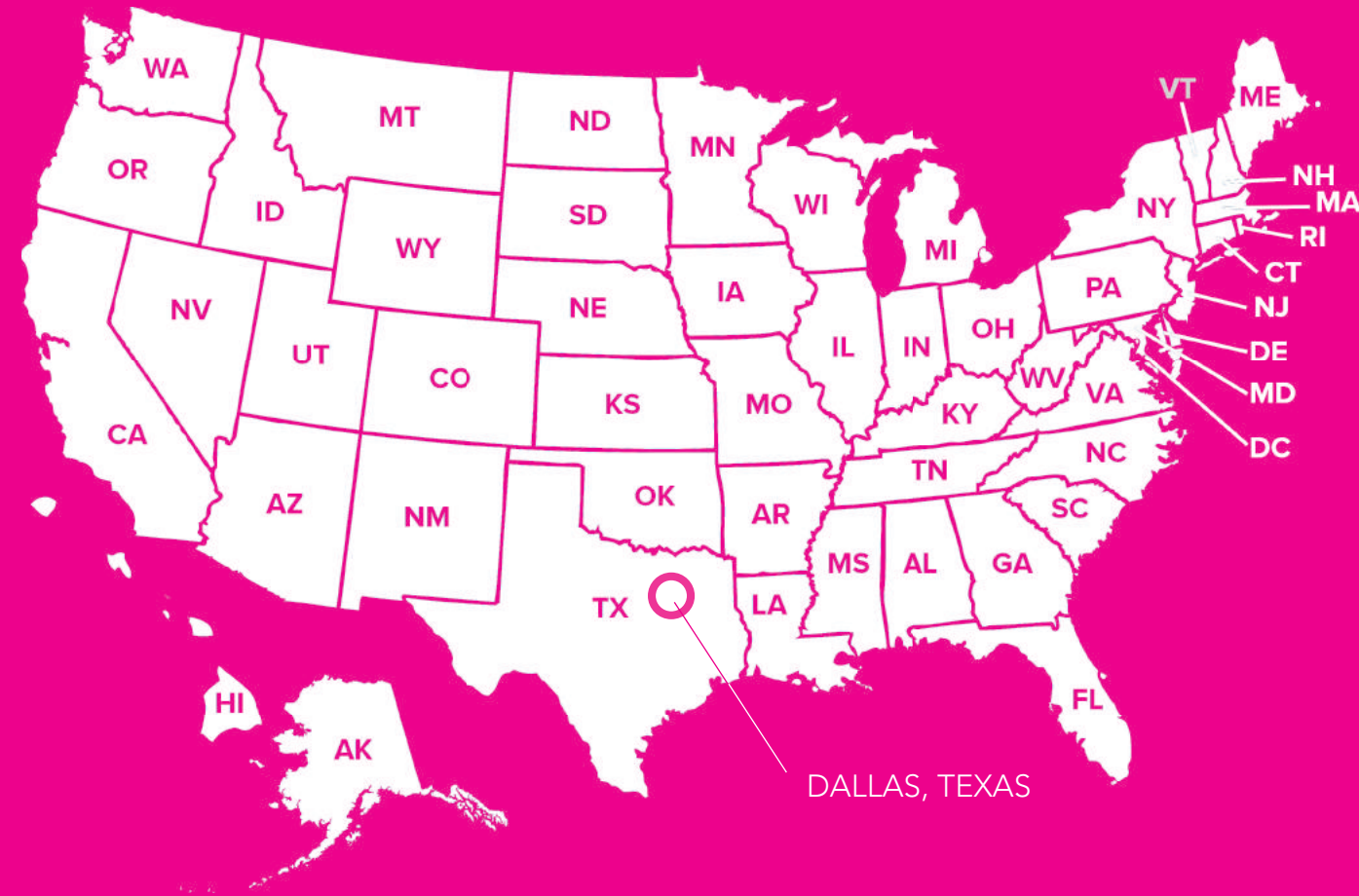
site & program



CITY OF DALLAS | Geography

The fact that:

Dallas is a city in the U.S. state of Texas. It is the most populous city in the Dallas–Fort Worth metroplex, which is the fourth most populous metropolitan area in the United States. The city's population ranks 9th in the U.S. and 3rd in Texas.



CITY OF DALLAS | Climate

The city of Dallas has a humid subtropical climate that is characteristic of the Southern Plains of the United States. Dallas experiences distinct four seasons with mild winters and hot summers.

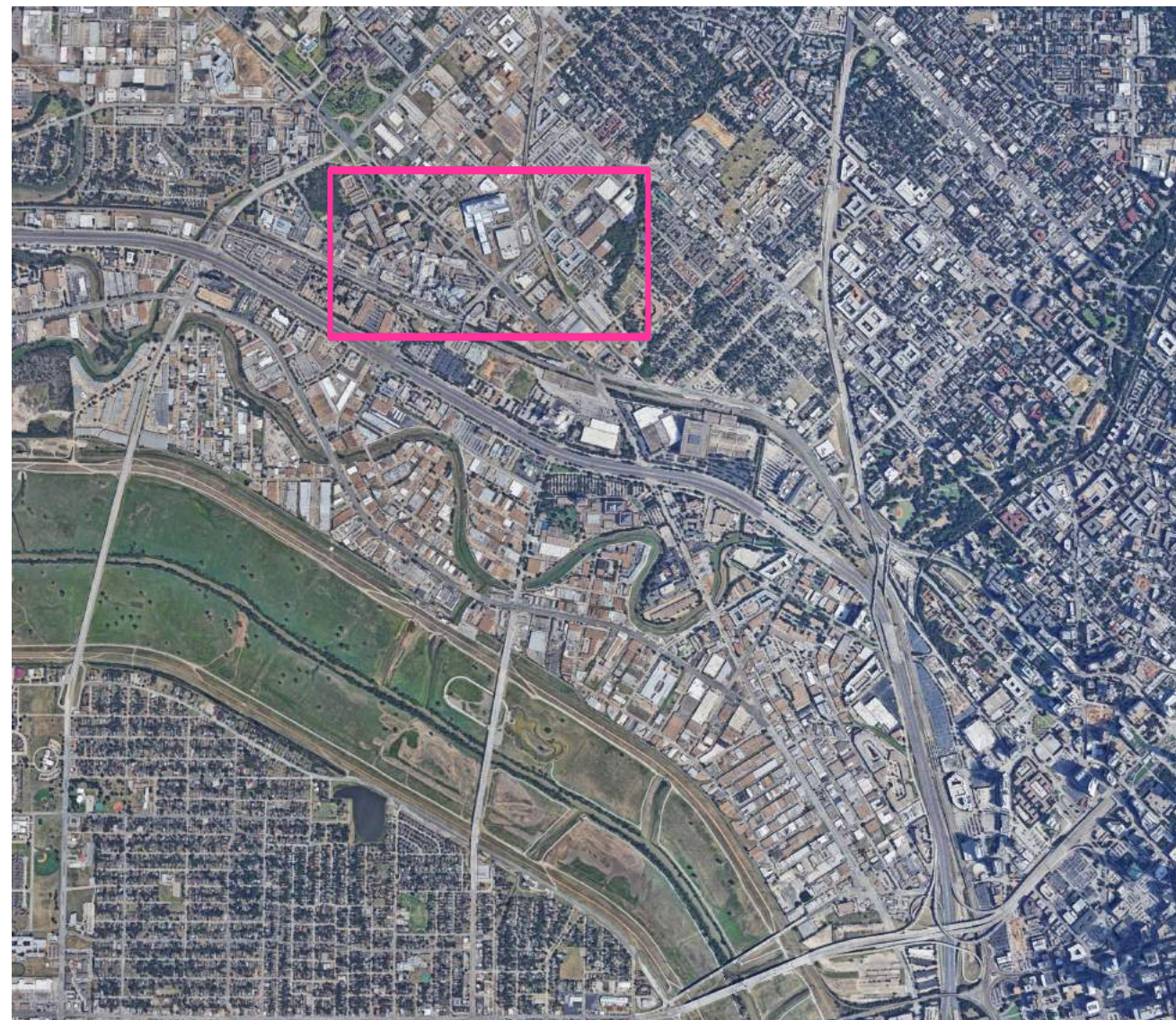
	Jan	Feb	Mar	Apr	May	Jun
Average high in °F:	57	61	69	77	84	91
Average low in °F:	30	35	42	51	60	67
Av. precipitation in inch:	2.32	2.99	3.7	3.43	4.61	4.65
	Jul	Aug	Sep	Oct	Nov	Dec
Average high in °F:	95	96	89	80	68	58
Average low in °F:	71	71	64	52	43	32
Av. precipitation in inch:	2.8	2.13	3.35	4.88	3.31	2.8

Annual high temperature:	77.1°F
Annual low temperature:	51.5°F
Average temperature:	64.3°F
Average annual precipitation - rainfall:	40.97 inch

DALLAS MEDICAL DISTRICT | General Map

The Dallas's Southwestern Medical District delivers renowned health care in partnership with innovative, world-class research and education.

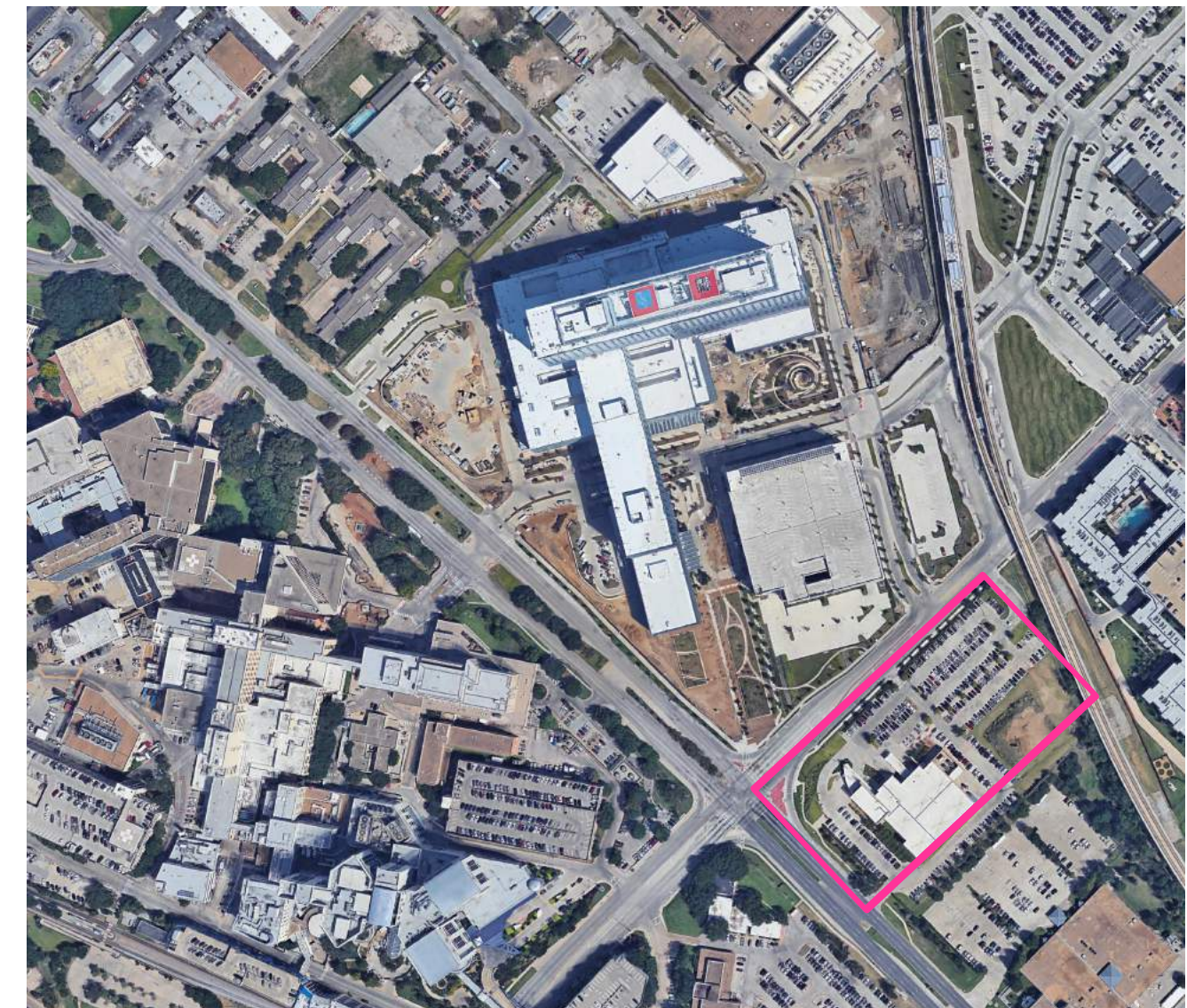
The District - bordered by West Mockingbird Lane, Medical District Drive, Stemmons Freeway (I-35E), and Maple Avenue covers more than 1,000 acres. It is the home to several of Dallas' most important hospitals and research institutions, including UT Southwestern Medical Center, Parkland Memorial Hospital, and Children's Medical Center Dallas.



4900 HARRY HINES BOULEVARD | Site

The location for the Breast Center has been determined to share the land with the Simmons Ambulatory Surgery Center (ASC) at 4900 Harry Hines Blvd, Dallas TX, 75235.

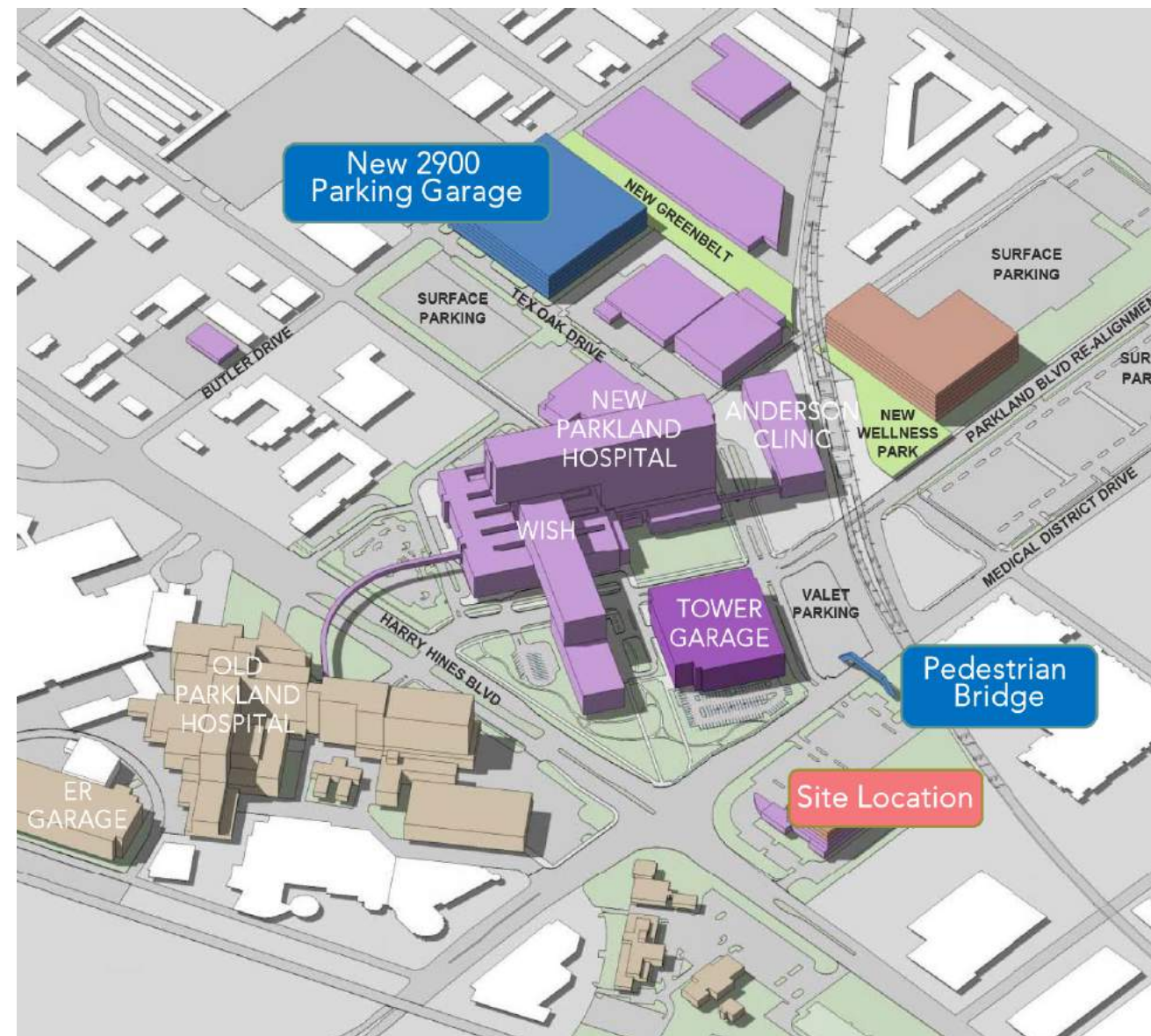
The ASC has a close relationship with other Parkland facilities in this area. Located across the street from Parkland Memorial Hospital and with its own parking lot. At present, the ASC in the site is Parkland's main location for outpatient surgical and orthopedic procedures.



MASTER PLAN PRIORITY BUILD OUT | Axonometric

The fact that:

It is very important to keep the ASC remain opening during the construction of the New Breast Center, and also keep it runs independently after the New Breast Center is built on this site.



THE EXISTING BUILDING ON SITE | Photos

Images of the Simmons Ambulatory Surgery Center, photos were taken during the field trip to Parkland Hospital.



SITE INFORMATION | North Aerial View

Texas Children's Hospital

Old Parkland Hospital

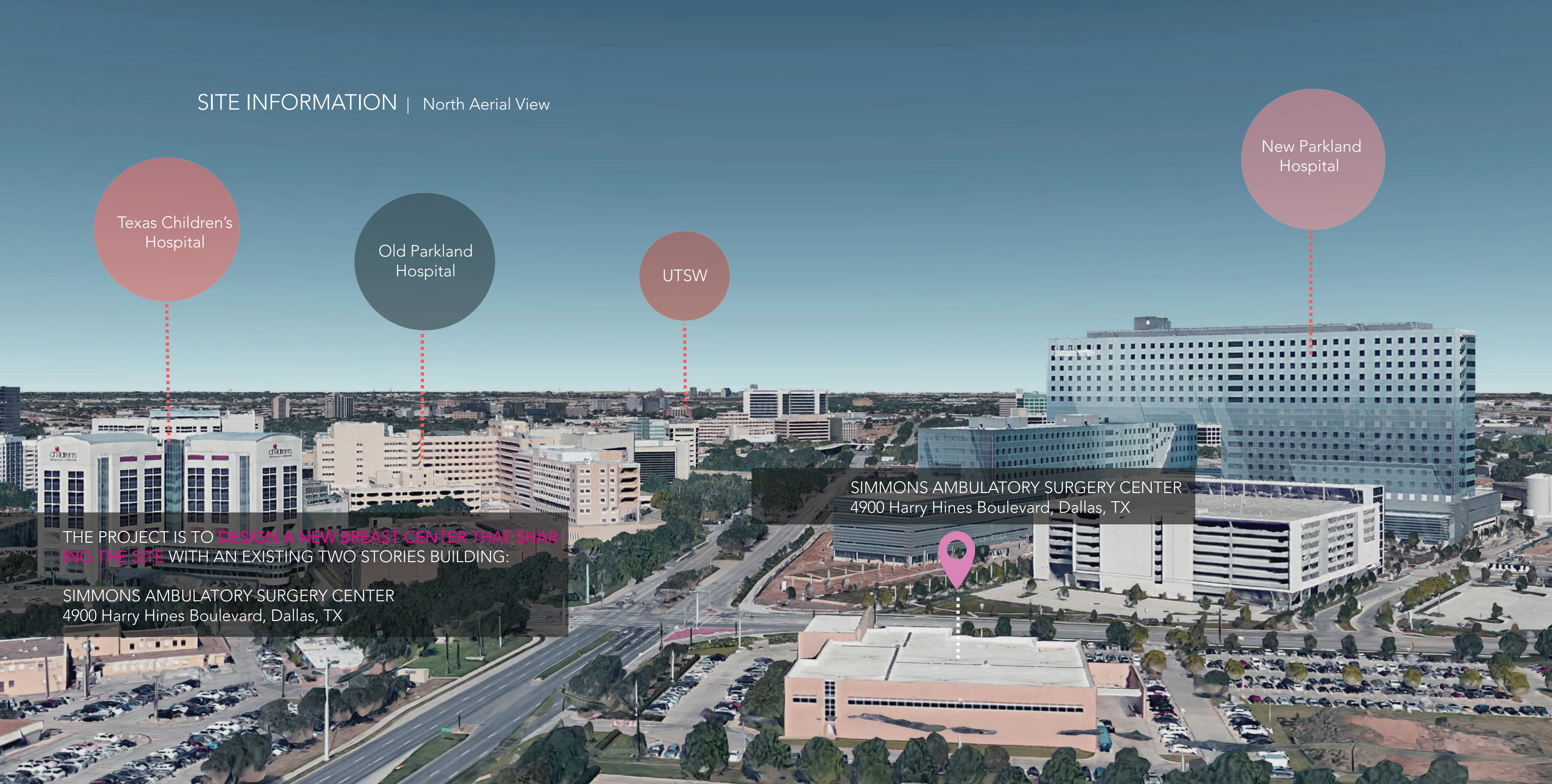
UTSW

New Parkland Hospital

SIMMONS AMBULATORY SURGERY CENTER
4900 Harry Hines Boulevard, Dallas, TX

THE PROJECT IS TO DESIGN A NEW BREAST CENTER THAT SHARING THE SITE WITH AN EXISTING TWO STORIES BUILDING:

SIMMONS AMBULATORY SURGERY CENTER
4900 Harry Hines Boulevard, Dallas, TX



SITE INFORMATION | South Aerial View

Local
Community

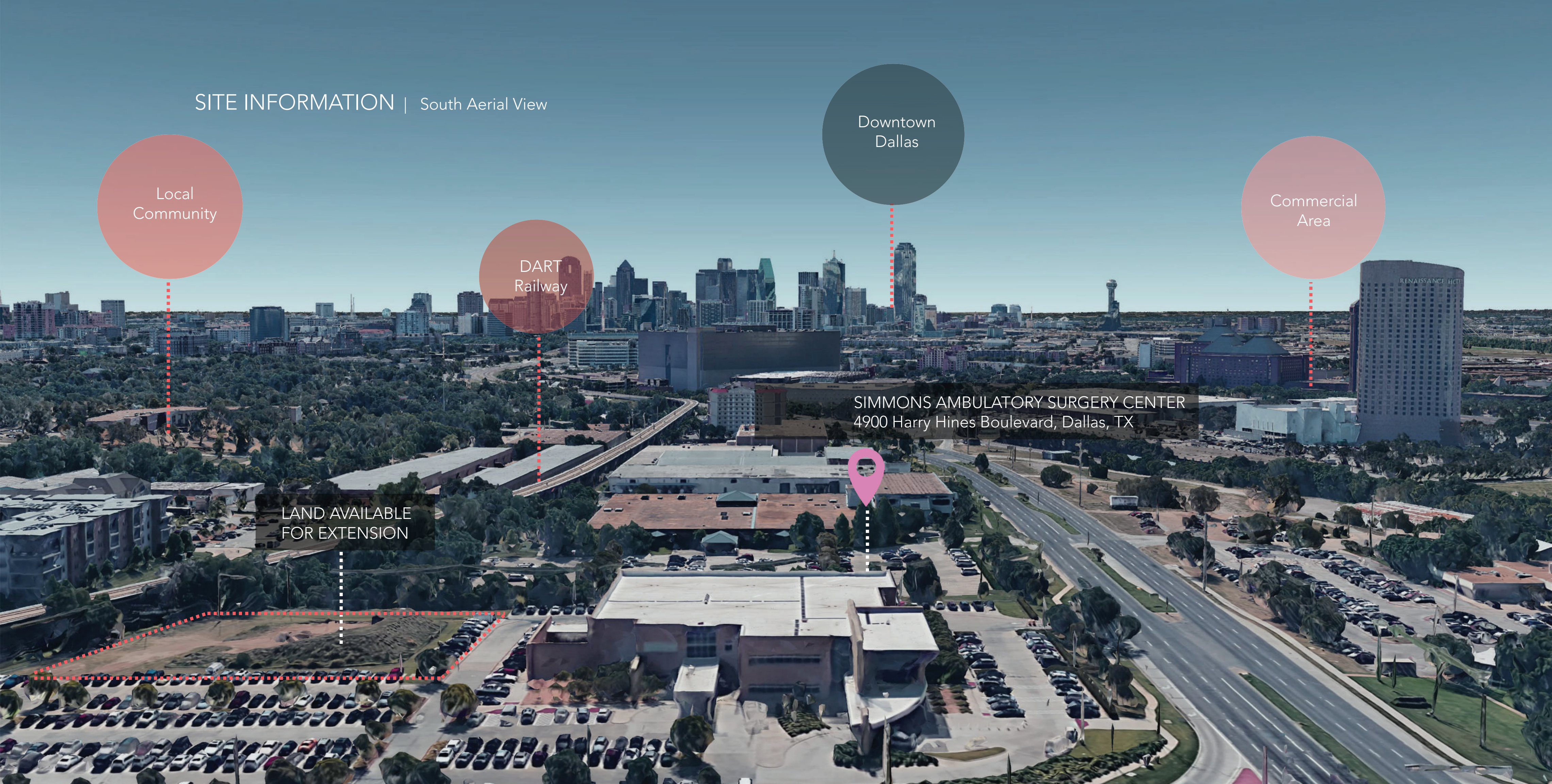
DART
Railway

Downtown
Dallas

Commercial
Area

LAND AVAILABLE
FOR EXTENSION

SIMMONS AMBULATORY SURGERY CENTER
4900 Harry Hines Boulevard, Dallas, TX

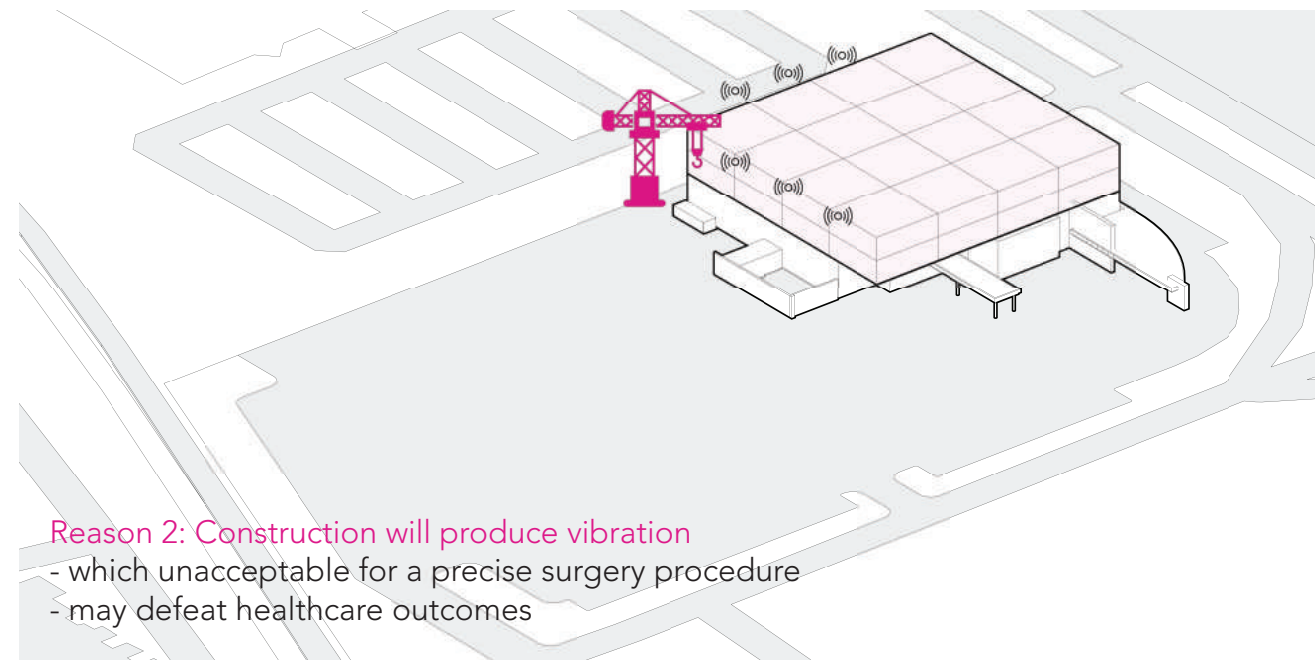
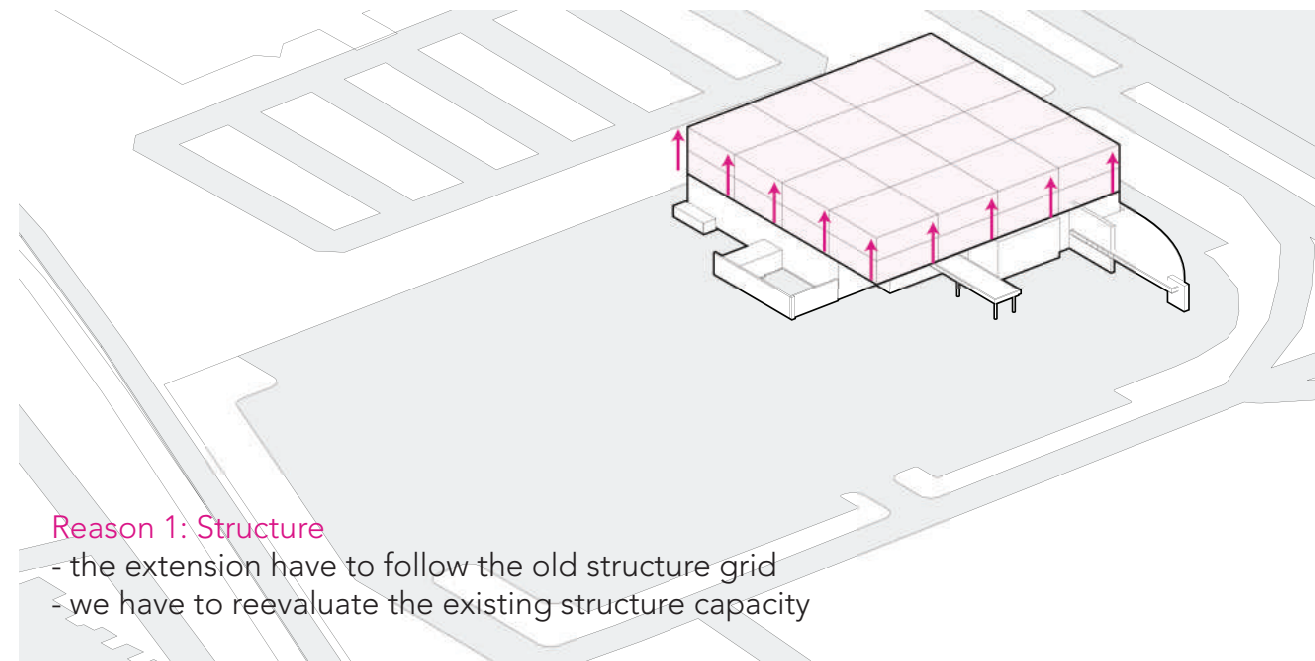


challenges & opportunity

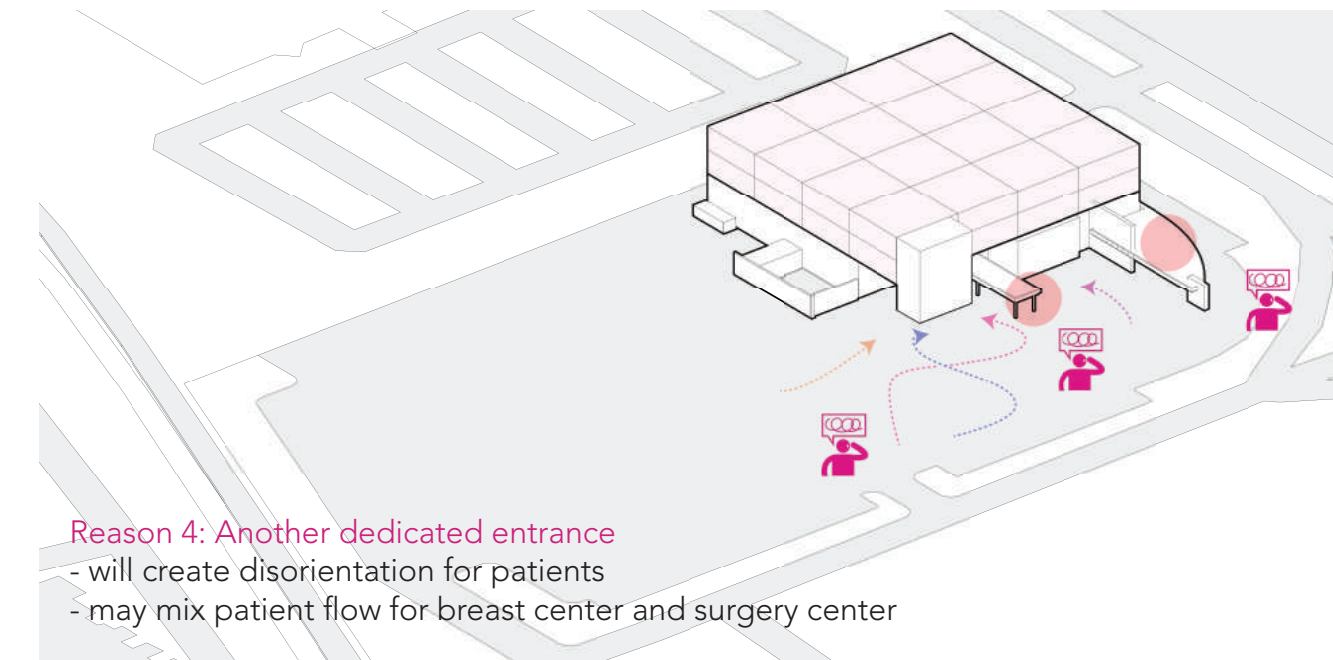
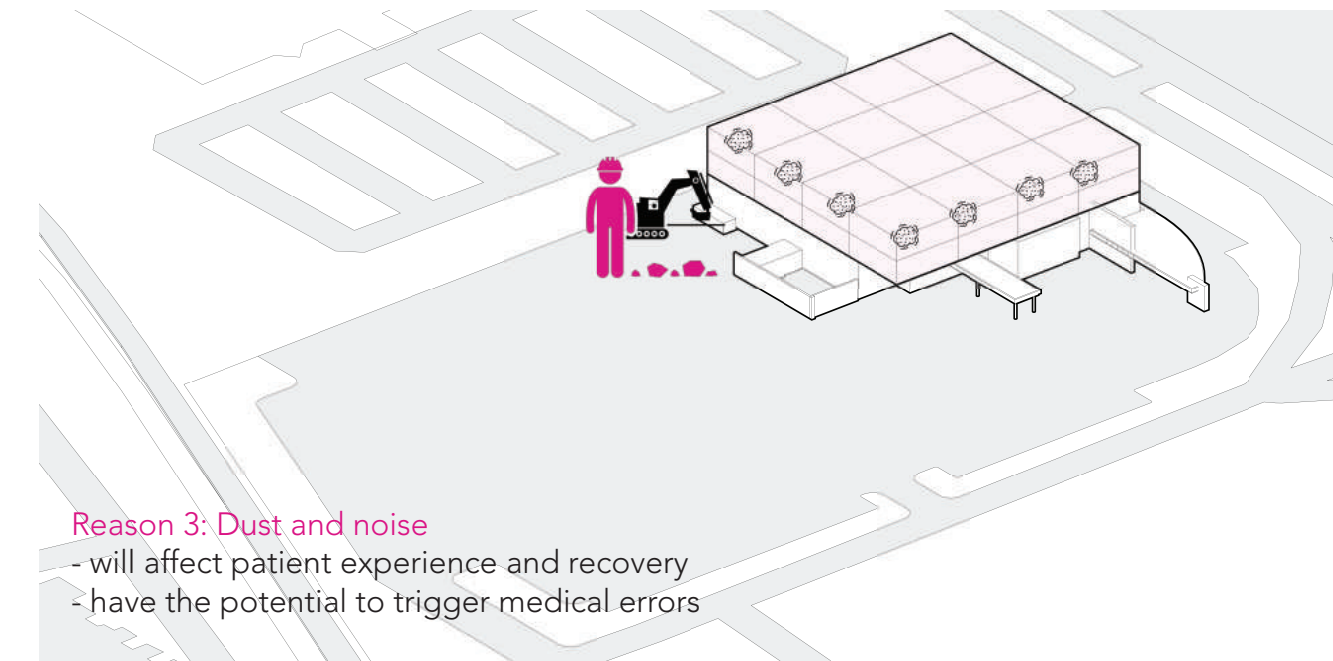


THE CHALLENGES | Initial Thinking: Building on the top? No.

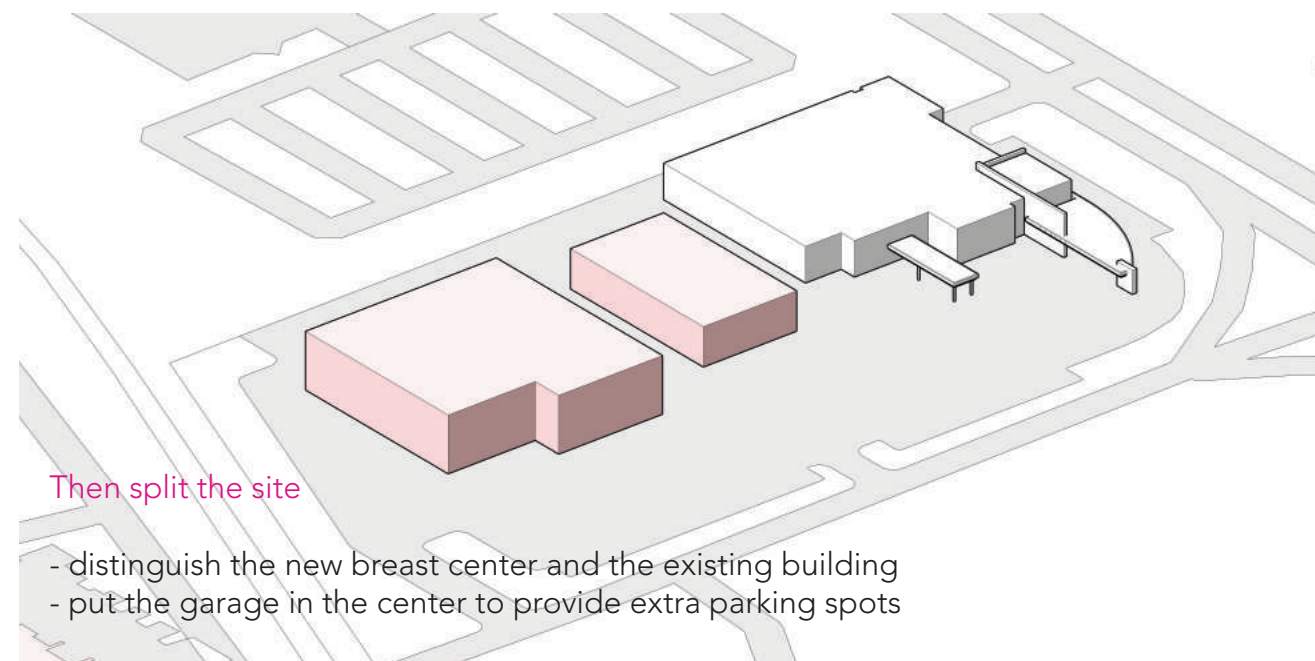
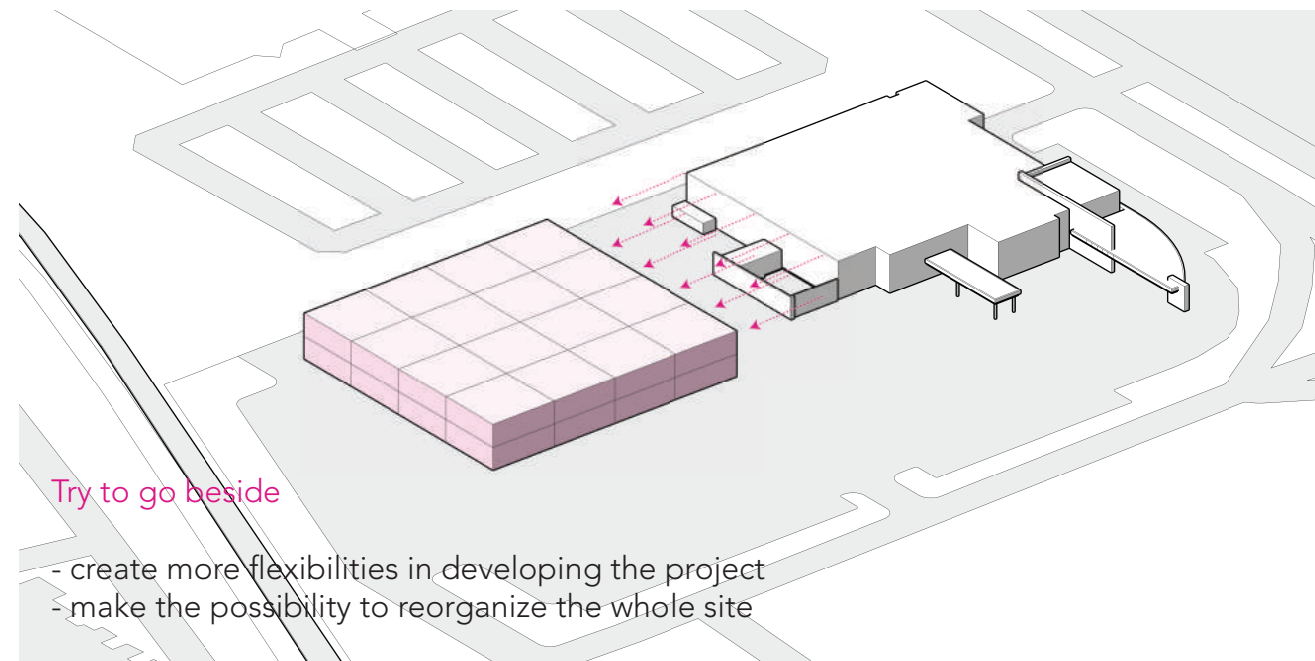
There are some reasons:



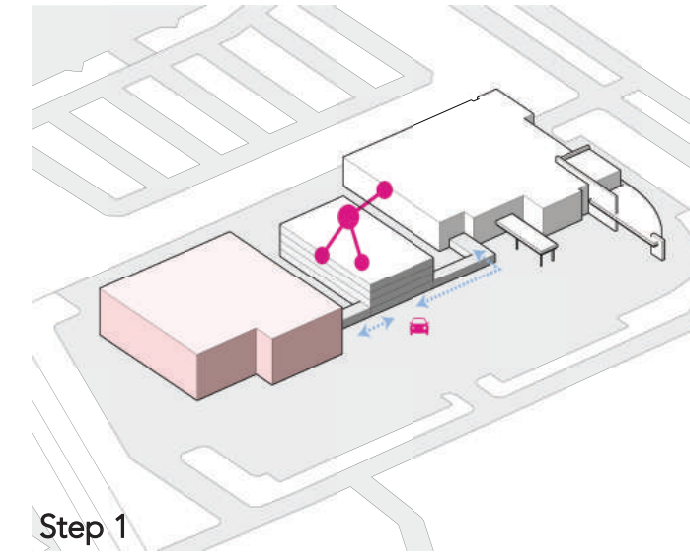
THE CHALLENGES | Initial Thinking: Building on the top? No.



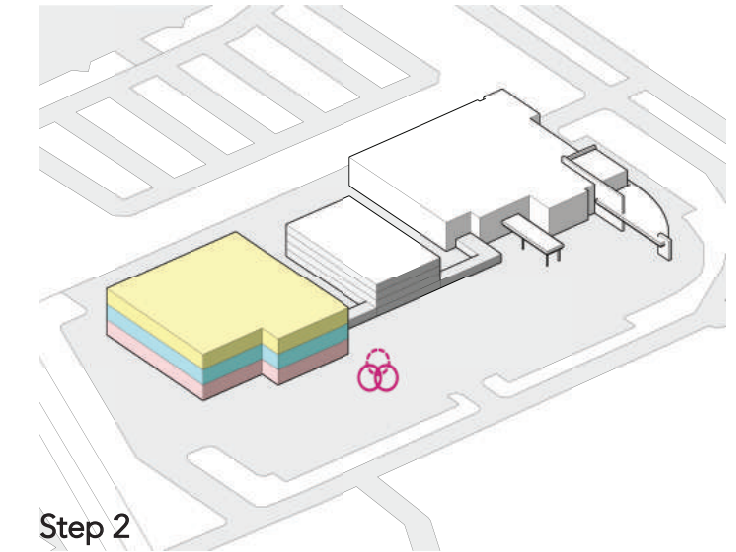
THE OPPORTUNITY | Try to build on the side



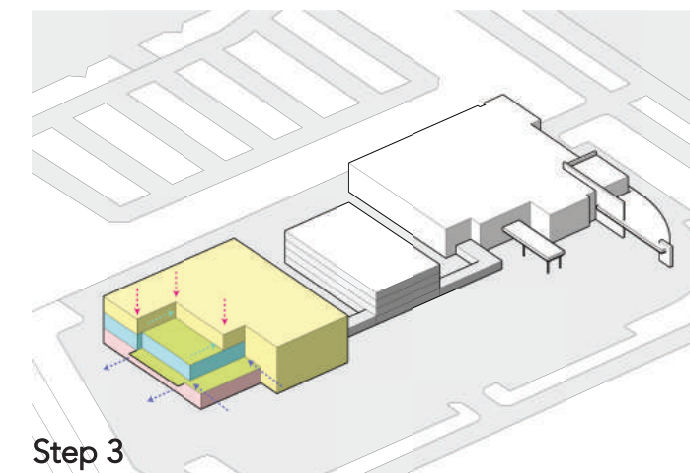
THE ARCHITECTURE | Development



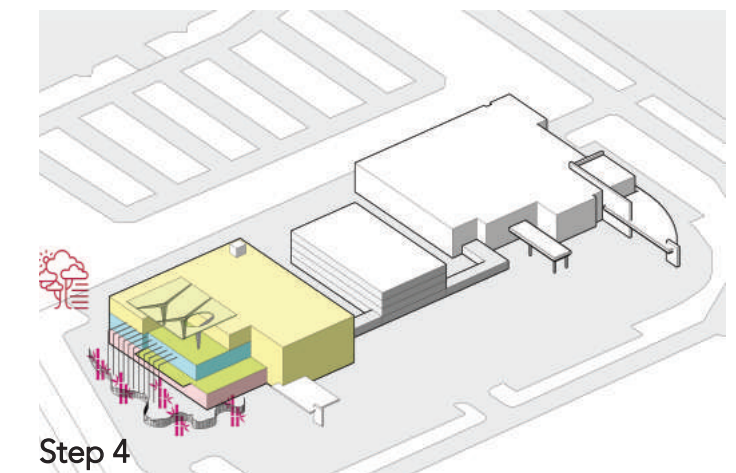
Organic Connection
build a passage bridge between the three part



Program Stacking
mark pink as clinic, blue as imaging, yellow as rehab.



Program Shift
create distinctive patient and staff zones, maximize nature view and outdoor spaces



Reconfigure Components
provide shading, landscape and optimize the landscape performance

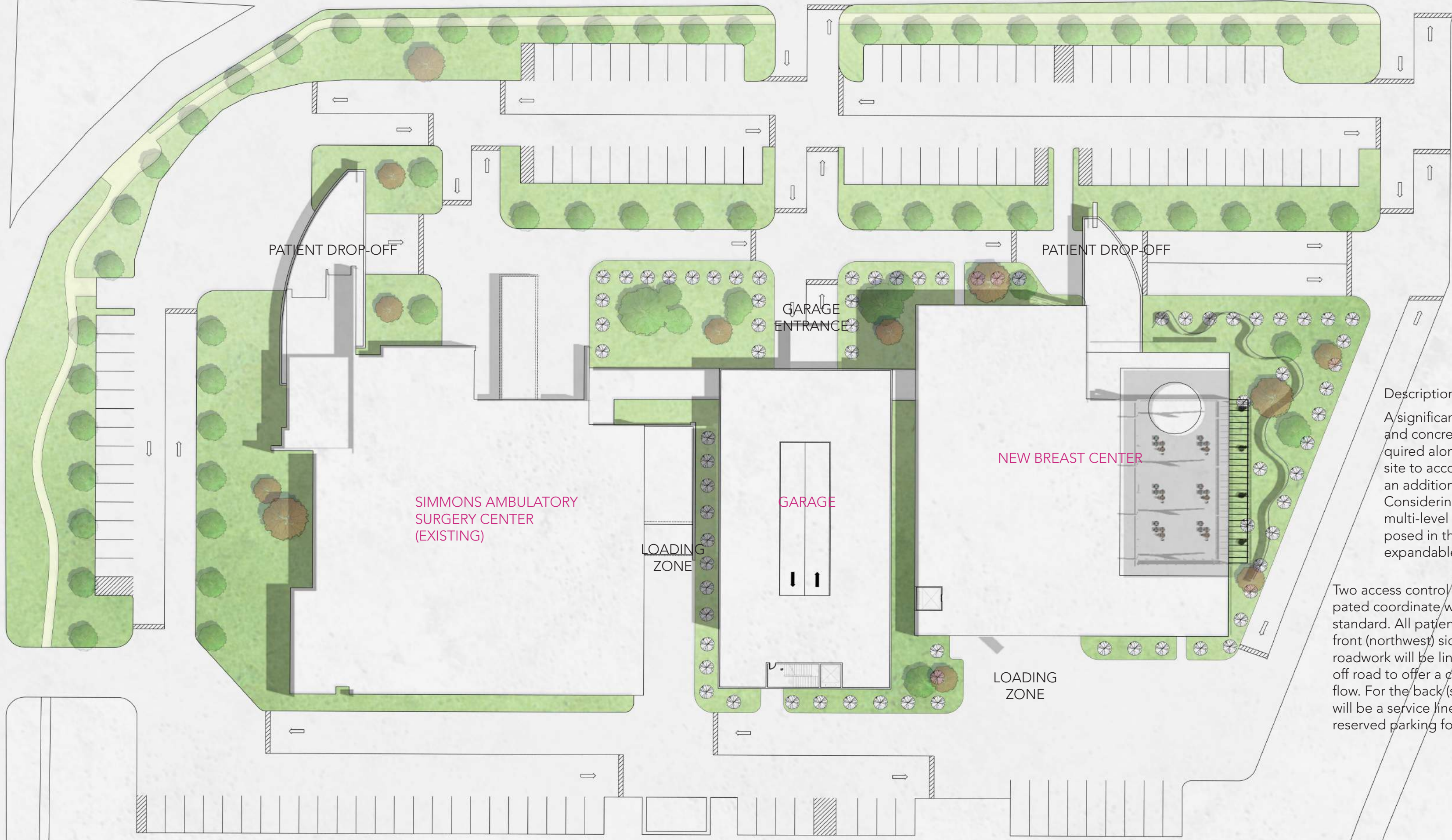
the new
breast center



Breast Center Main Entrance



SITE PLAN



Description:
A significant amount of site work and concrete paving will be required along the eastern half of the site to accommodate approximately an additional 150 parking spaces. Considering the limited land, a multi-level parking garage proposed in the project and has to be expandable if needed.

Two access control gate stations are anticipated coordinate with Parkland for campus standard. All patient activities will be on the front (northwest) side of the site and the new roadwork will be lined-up with the old drop-off road to offer a clean patient transport flow. For the back (southwest) part, there will be a service line for loading goods and reserved parking for staff.

Landscape Barrier:

A vine plant frame accompanies with bamboo to interrupt negative sight to the railway and help to block the noise.

Outdoor Spaces:

A cafeteria on the top platform is to help peoples relax and enjoy the meal. The low-E glazed canopy can provide protection and it is supported by a special steel frame structure.

Open Atrium:

An open space in the lobby surrounded by a transparent curtain wall, it can maximize natural light and increase energy efficiency.

Parking Garage:

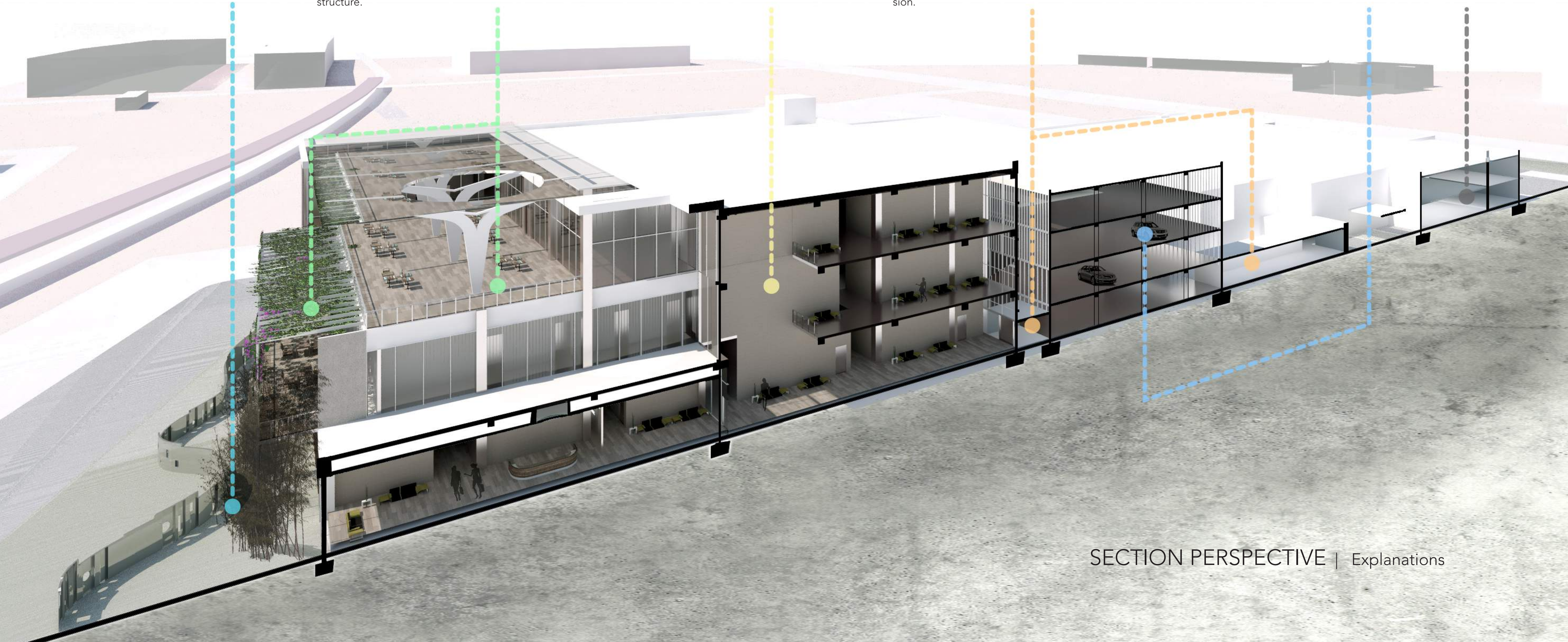
This is a four stories one-way parking garage with a ramp in the center. It can provide 100 parking space and has the capability for a future expansion.

Connections:

The aisle that connecting the ASC and Breast Center. Patients are able to directly get access to the buildings they want after they parked.

Surgery Center:

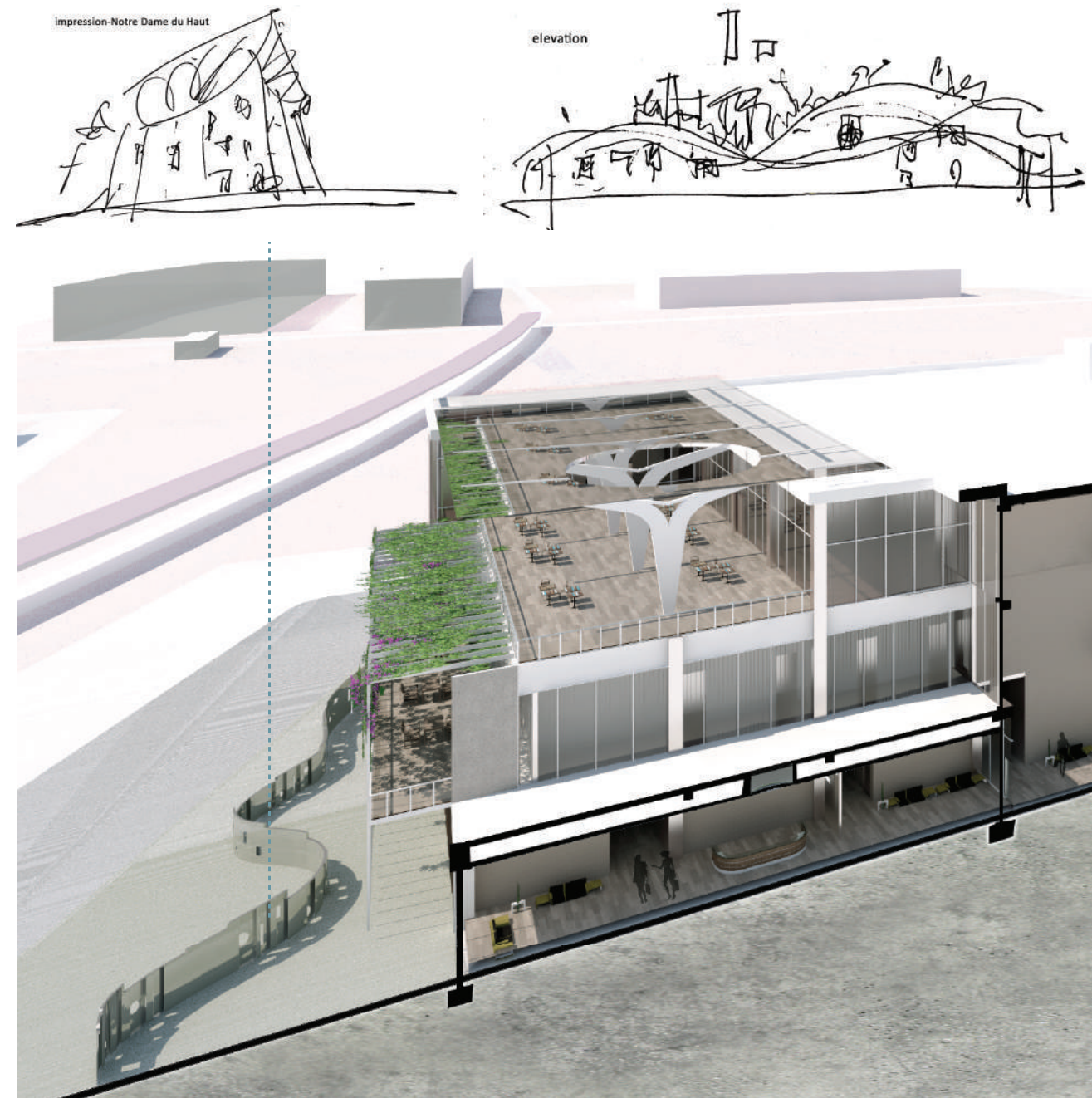
This is the existing 59,470 SF Simmons Surgery Center, it will remain open during the construction and renovation.



SECTION PERSPECTIVE | Explanations

LANDSCAPE DESIGN | Healing Garden

The healing garden's fence that inspired by Le Corbusier's "Notre Dame du Haut" has many openings and curved in a beautiful way, it is to protect the privacy of the exam room on the first floor.



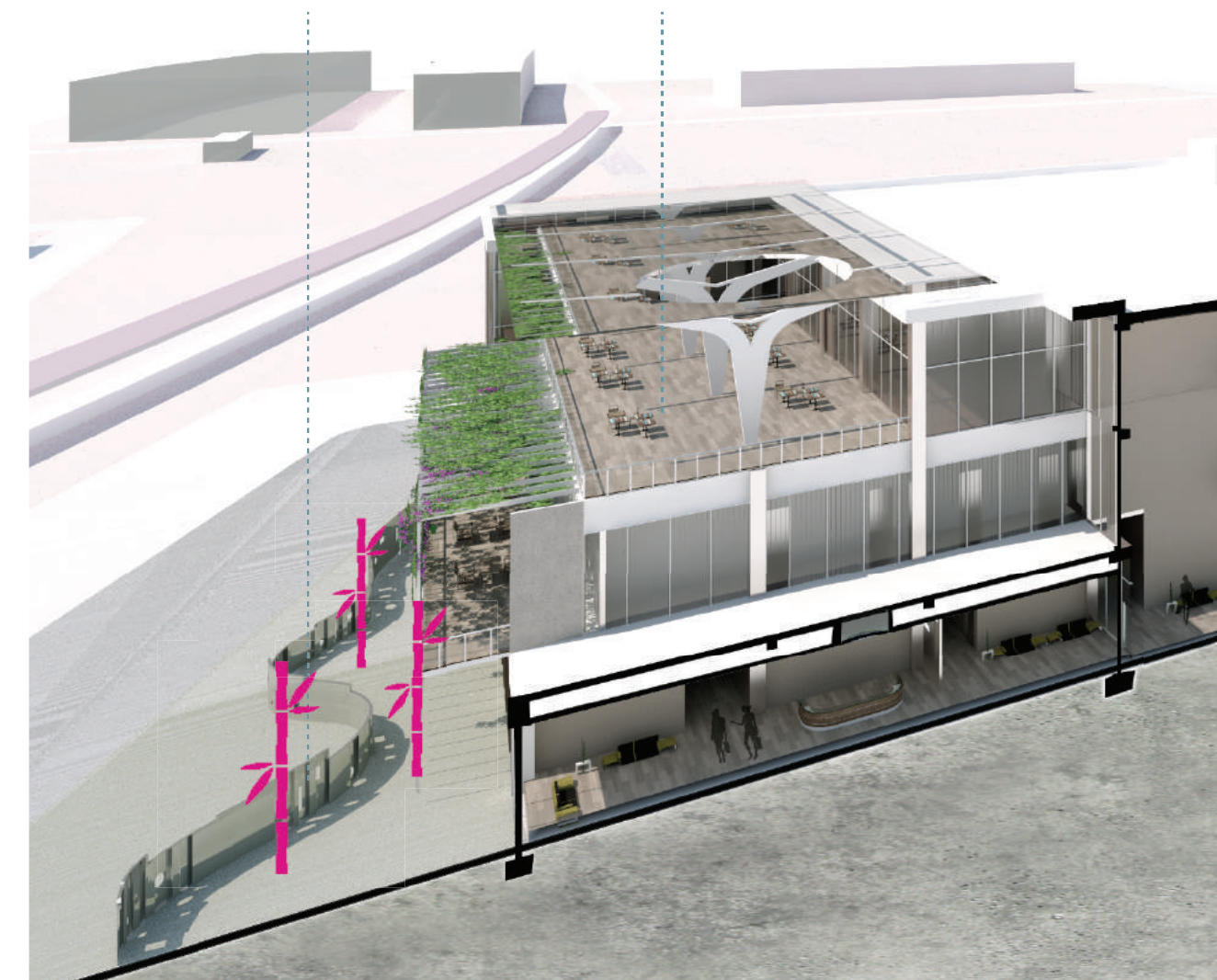
VEGETATION | Plant Selection

Bamboos:

A space adjacent to bamboo can be a good place for reducing patient stress. The sound of wind moving through the stems of bamboo plants has a calming, meditative effect, the movement of bamboo's tall stems in the breeze is also very pleasurable to observe.

Vines:

The frame planted with clinging vines, it is an attractive and effective partition that may serve as a resting area for the patients and doctors. And it also doubles as a sound barrier to block the noise from the DART railway.



Healing Garden



Vine Terrace



FLOOR PLAN | Ground Level



Ground FLOOR LEGEND *Public + Clinic*

- | | | |
|---------------------|-------------------------|--------------------------------|
| 1. Vestibule | 11. Chapel | 21. Medication Room |
| 2. Reception | 12. Care Coordinator | 22. Workstation |
| 3. Restroom | 13. Family Waiting | 23. POC Testing/Pneumatic Tube |
| 4. Housekeeping | 14. Exam Room | 24. Clean Storage |
| 5. General Storage | 15. Procedure Room | 25. Soiled Holding |
| 6. Janitor | 16. Prep/Recovery/Obse. | 26. Mechanical Room |
| 7. Check-in | 17. M.D. Office | 27. Electric Supply |
| 8. Check-out | 18. Clean Supply | 28. Loading Zone |
| 9. Women's Boutique | 19. Soiled Supply | |
| 10. Education | 20. Equipment | |

GROUND(1st) FLOOR PLAN

FLOOR PLAN | Second Floor



SECOND FLOOR LEGEND

Imaging + Offices

1. Open to Below
2. Waiting
3. Restroom
4. Housekeeping
5. General Storage
6. Navigation Desk
7. Bone Density
8. Stereotactic
9. MBI
10. Waiting-Locker

11. Dressing-Unisex
12. Ultrasound
13. MRI
14. Mammography-3D
15. Diagnostic Team
16. Image Reading
17. M.D. Office
18. Consultation Room
19. Healing Balcony
20. Sub-waiting
21. Dressing-Locker
22. Central Tech
23. IT Server
24. Soiled Holding

FLOOR PLAN | Third Floor



THIRD FLOOR LEGEND

Rehab. + Roof Garden

1. Open to Below
2. Waiting
3. Restroom
4. Housekeeping
5. General Storage
6. Navigation Desk
7. Sub-waiting
8. Dressing-Locker
9. Multi. Team Confe.
10. Staff Nourishment

11. A.C.S.
12. Ambulatory Service
13. Rehab. Office
14. Therapy Gym
15. Yoga Room
16. Cafe Room
17. Top Terrace
18. Manager Office
19. Business Ops Spr
20. Grant Writer
21. Staff Lounge-Locker
22. Soiled Holding

Clinic Lobby

PARKLAND
BREAST CENTER
CLINIC

Parkland Breast Center is committed to giving you a comfortable and relaxing feeling in your visit.





ELEVATION | Northwest & Northeast

NORTHWEST ELEVATION

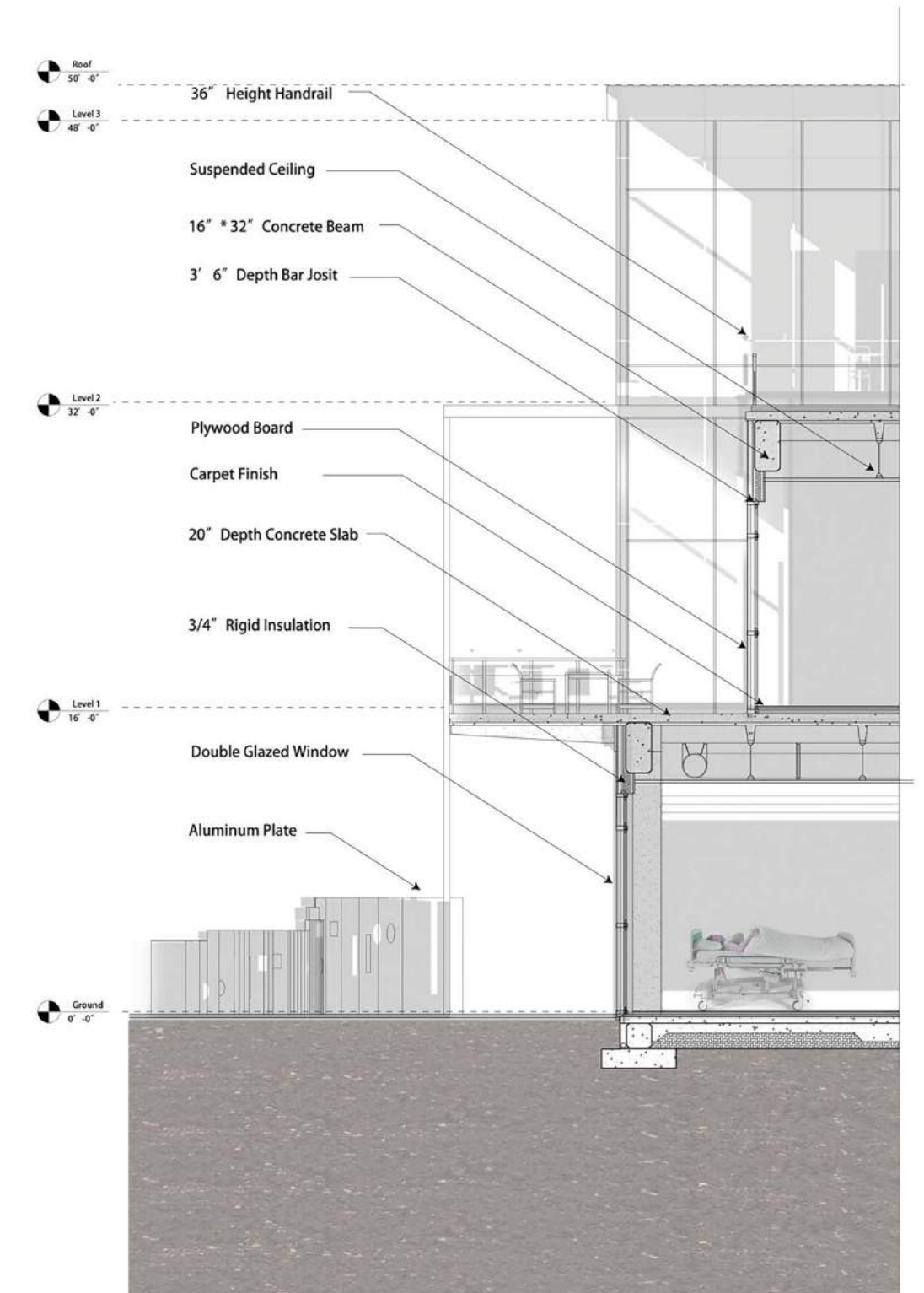


NORTHEAST ELEVATION



DETAIL DESIGN | Wall Section

1 WALL SECTION
PBC



BUILDING SECTION

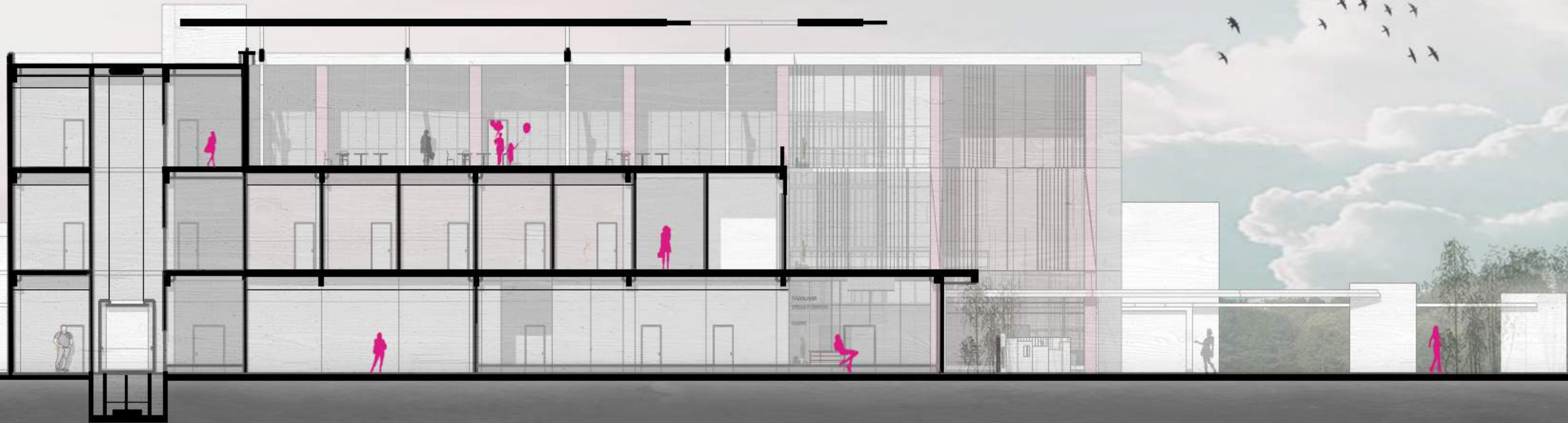
Top
58' -0"

Level 3
50' -0"

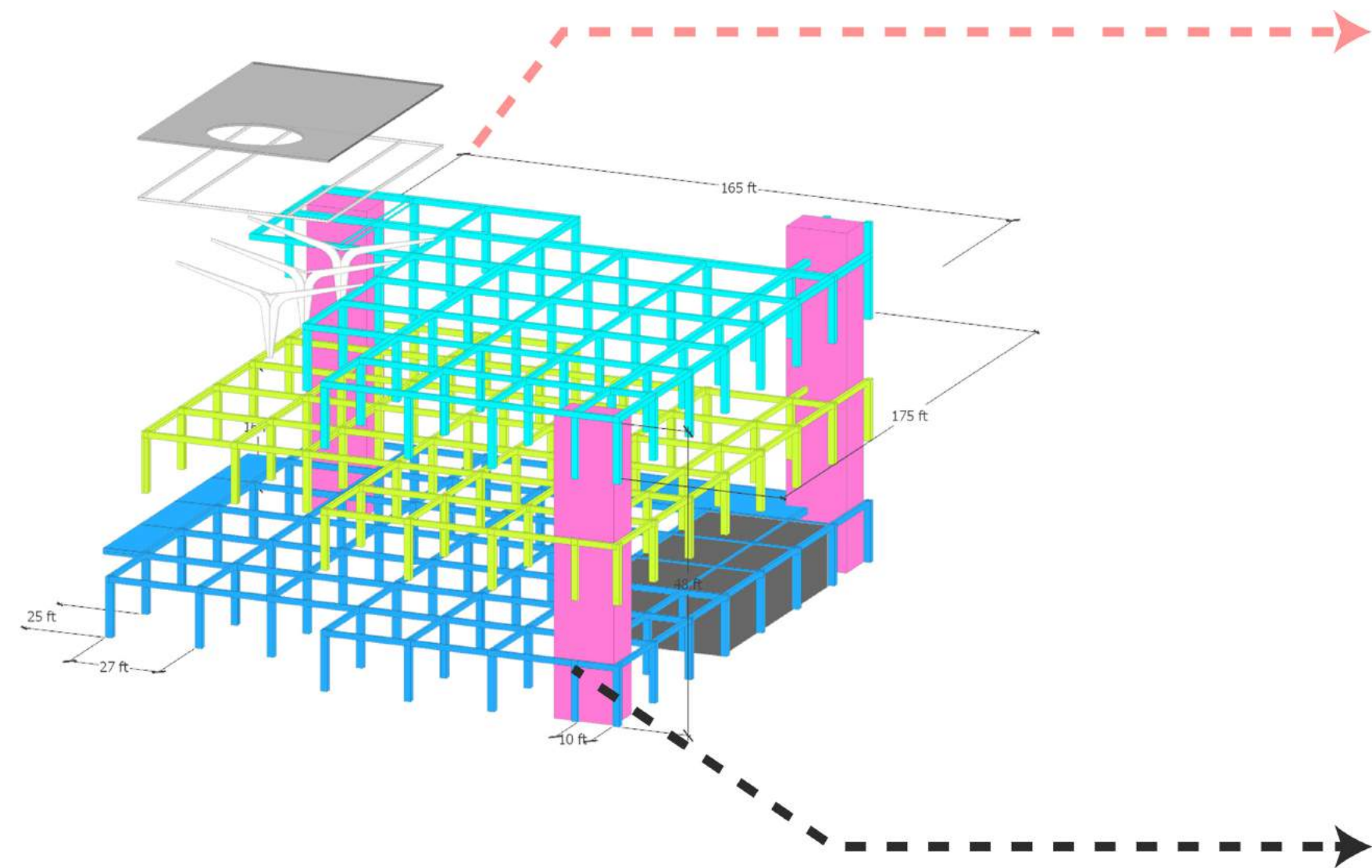
Level 2
32' -0"

Level 1
16' -0"

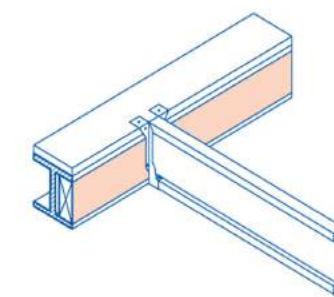
Ground
00' -0"



STRUCTURAL SYSTEM | Technologies

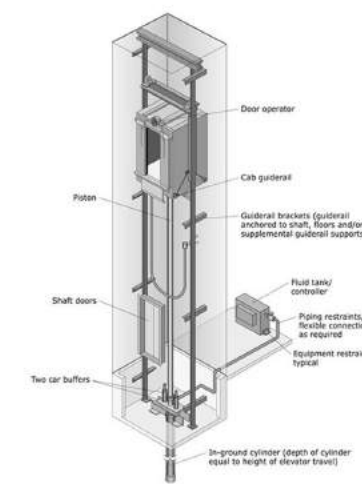


STRUCTURAL SYSTEM | Transportation



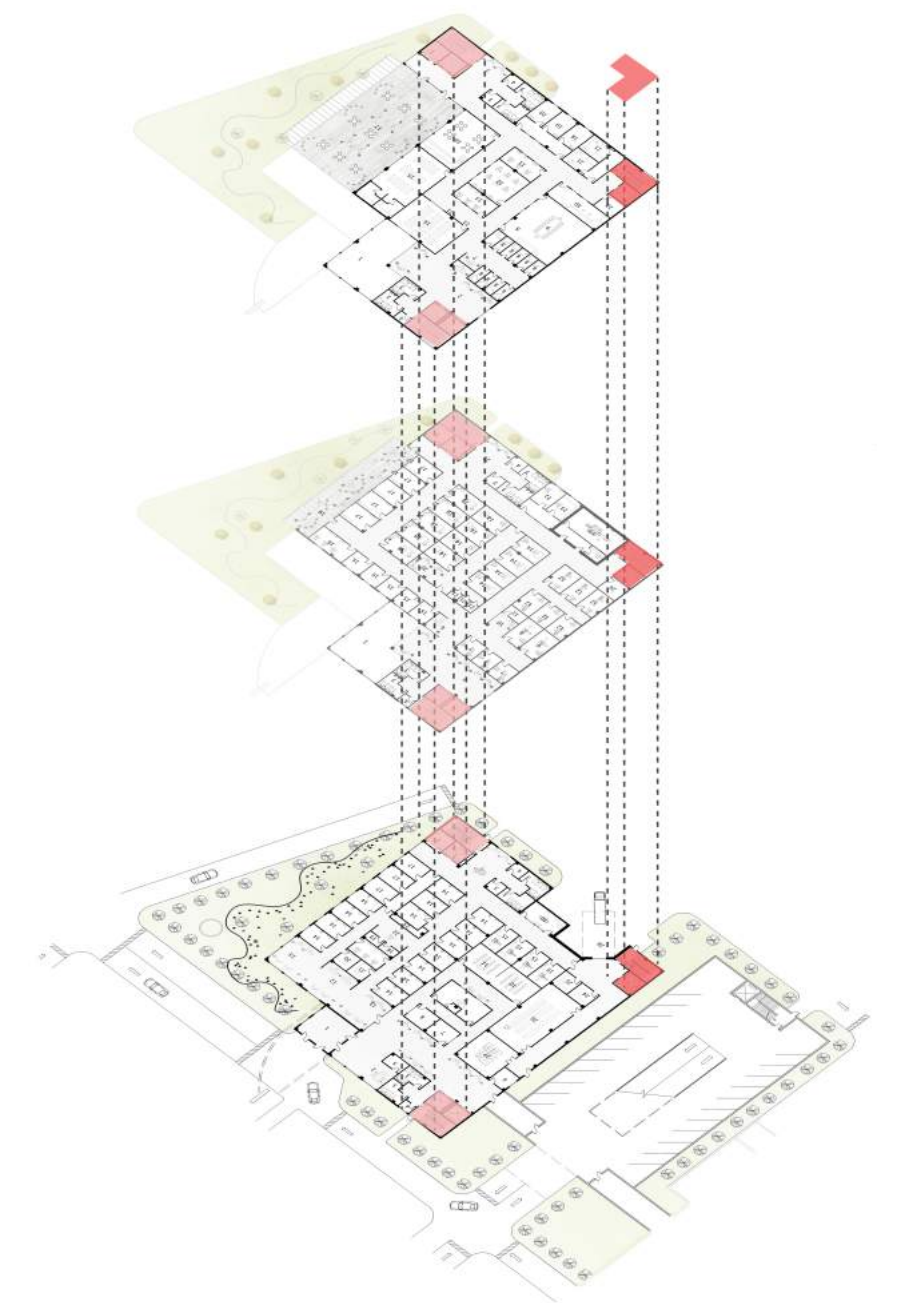
Steel Frame Joist:

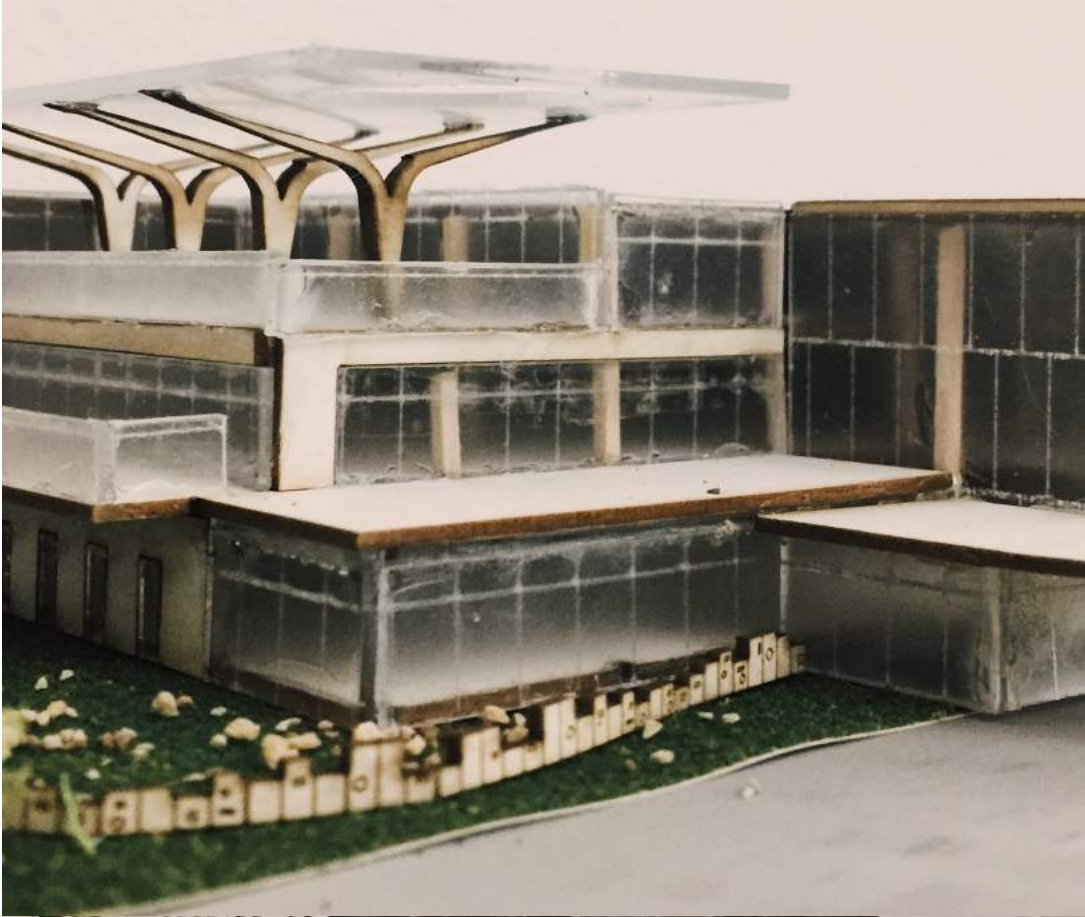
I-beam joist is able to hold the glazed light weight canopy, it is easy to install and maintain. The Y-shape vertical web will resist shear forces, while the flanges can resist most of the bending moment experienced by the I-beam.



Hydraulic Elevator:

Hydraulic elevators do not use the large overhead hoisting machinery the way geared and gearless traction systems do. Especially for low-rise buildings like this, the use of hydraulic design has its aesthetic value.





This book is the result of my final study work and contains intelligence from my committee members, the interaction between the HKS Inc. design team, Parkland Design and Construction, and the representatives from the Women's Center.

The outcome of the project illustrates my effort at determining the overall development of the facility and the optimized healthcare environment.

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(Roger S. Ulrich, PhD; Craig Zimring, PhD; Xuemei Zhu, BArch, PhD Candidate; Jennifer DuBose, MS; Hyun-Bo Seo, MArch; Young-Seon Choi, MArch; Xiaobo Quan, PhD; and Anjali Joseph, PhD)

Coping with cancer stress (Roger S. Ulrich, Ph.D.; Craig Zimring, Ph.D.; Xiaobo Quan, and Anjali Joseph)

Analysis of circadian stimulus allowed by daylighting in hospital rooms (I Acosta PhD, RP Leslie M.Arch and MG Figueiro PhD Universidad de Sevilla. Seville, Spain)

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