



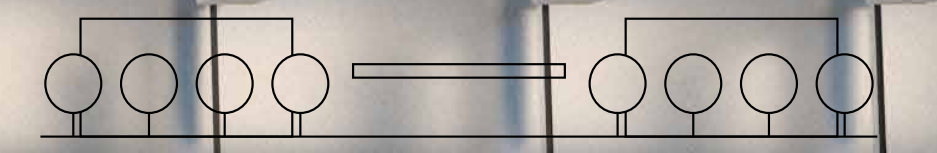
2020

RUIWEN TANG

INCLUSIVE

# INCLUSIVE

A Micro Hospital with Geriatric  
Emergency Department

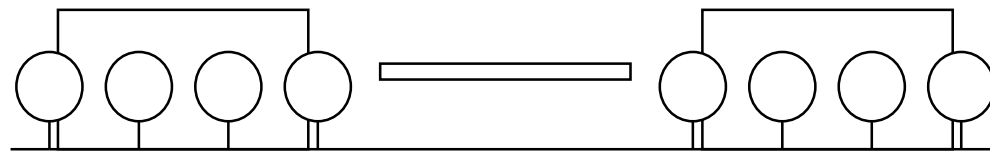


Ruiwen Tang



# INCLUSIVE

A Micro Hospital with Geriatric  
Emergency Department



# Dedication

To my family:

Thank you for your support of my study abroad. Thank you for your cultivation and care for me all the time. I love you!

Thank you for accompanying me in this year. During the extraordinary time of the epidemic, your love enriches and makes my life so colorful. I love you!

# Acknowledgment

I would like to thank my chair, D. Kirk Hamilton. Thank you for sparing no effort to share your knowledge and helping me make the connection with Steven. Thank you for helping me find such an interesting project and pushing me to finish it successfully. The micro hospital project was an excellent opportunity to learn about hospital design. Focusing on the geriatric emergency department also gave me a good chance to learn about older patients' needs.

I would like to express my thanks to my co-chair, Ahmed K. Ali, and my committee member, Changshan Huang. Your professional advice about my double skin façade and master plan design pushed my project forward a lot. Without your instruction, my project would not be unique or completed.

I would like to appreciate my studio professor, Brian Gibbs. Thank you for your instruction for the whole academic year. Your kind and professional guidance helped my project

to develop successfully. With your instruction, I learned more about architecture tectonic and increased my basic knowledge of architecture.

Finally, I would like to especially thank my professional advisor, Steven C. Schultz. Thank you for sharing with me the Caprock program, which provided the program for my final study. Thank you for reviewing my floor plans again and again and for your instruction in the field of medical planning.

In my last year as a student, I designed a hospital that I had always wanted to design. Thanks to all my professors! I will continue to grow as an outstanding architect after graduation, and this project will be a significant foundation for my future career.

# CONTENT

Background	3
Abstract	4
Micro Hospital	5
Geriatric Emergency Department (GED)	6
<b>Chapter 1. Project Programming</b>	
Site Analysis	9
Literature Review	11
Case Study	12
Space Program	13
Design Goals	14
<b>Chapter 2. Schematic Design</b>	
Design Process	17
Site Planning & Form Generation	17
Department Adjacency	19
Landscape & Façade Exploration	20
Sustainable Design	21
Water Collection	22
Double Skin Façade	23
<b>Chapter 3. Design Development</b>	
Master Plan & Floor Plan	27
Façade & Exterior Rendering	33
Interior Public Space Design	43
Medical Rooms Design	47
Wall Section Details	51
Conclusion	57
Bibliography	58
Resume	59

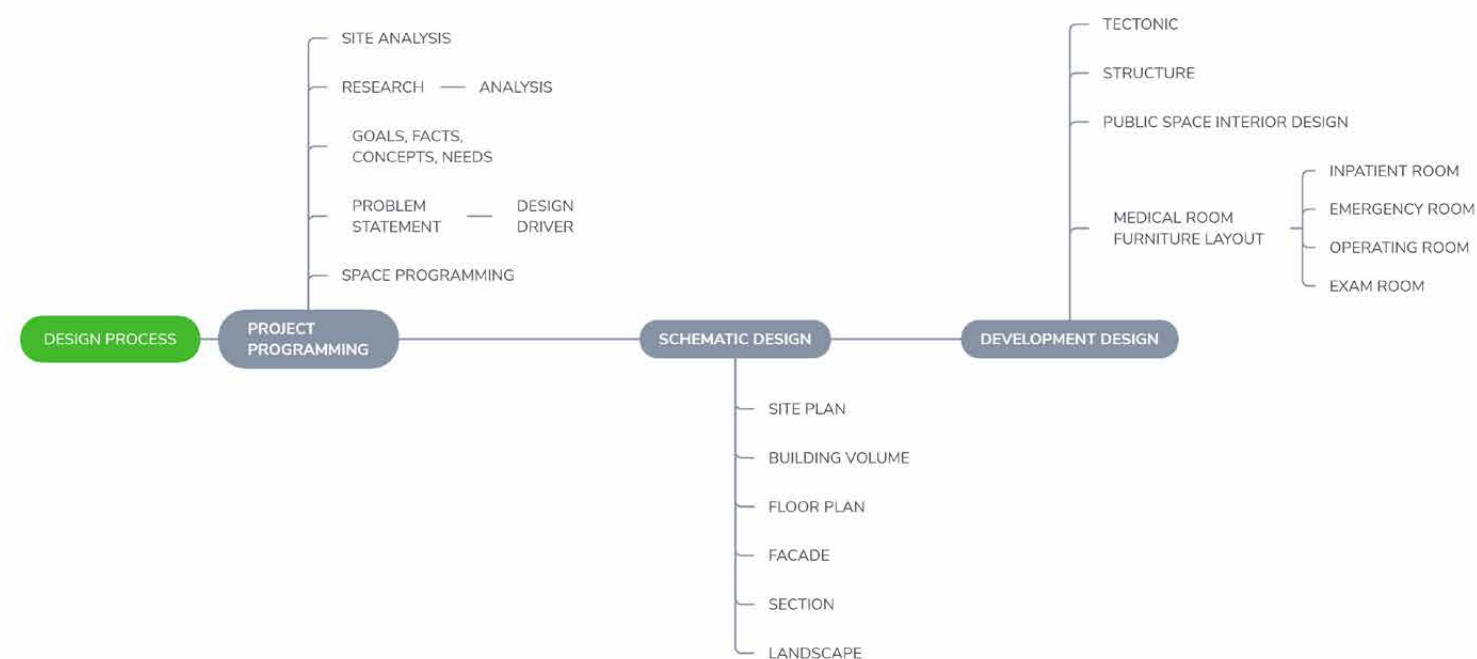




# Background

This is the final study project for the Master of Architecture degree. The instructors for the project include the final study committee, studio professor, and professional advisor. There are three professors in the final study committee - D. Kirk Hamilton (chair of the committee), Ahmed K. Ali (co-chair), and Changshan Huang (member).

The studio professor is Brian Gibbs and the professional advisor is Steven C. Schultz who is a partner at PhiloWilke. The project spanned the full academic year, from August 2019 to May 2020. The design process included three periods, project programming, schematic design, and development design.



# Abstract

The project name is INCLUSIVE. The topic of the project is a Micro Hospital with Geriatric Emergency Department (GED), which focuses on older patients. The micro hospital and GED are both new healthcare concepts and respond to the specific requirements of particular patient group. Micro hospital supplies faster, easier access, and cheaper healthcare service to patients and satisfies the needs of patients who do not have a severe illness but need emergency care. This fills a gap well in the healthcare design market. GED addresses the increasing trend of aging people in emergency departments and creates a better environment for older patients.

The project explores how to design a geriatric emergency department tailored to older people's requirements. The form and spaces were designed to make the staff and users feel comfortable in the hospital. Two areas of concentrated focus were the facade and interior design. The translucent laminate glass panels are used in the double skin facade design to create an inclusive and warm feeling.

Keyword: micro hospital, geriatric emergency department, double skin facade, sustainable design



# Micro Hospital

Micro-hospitals are constantly open, small inpatient facilities with an average of two to ten beds, designed to provide a diversity of healthcare services consistent with community demands. They seek to combine a cost-effective healthcare vehicle with potential time-dependent triage/transfer capabilities to a nearby large medical center.

A typical micro-hospital is organized according to a common service model that includes emergency services, availability and efficient processing of essential laboratory tests, requisite imaging technologies, minor outpatient surgical procedures, and pharmacy services. (Stefano & Kream, 2018) The micro hospital performs many of the same acute-care and emergency services done at larger hospitals but is cheaper to operate.



Picture from: <https://caprockhealthsystem.com/>

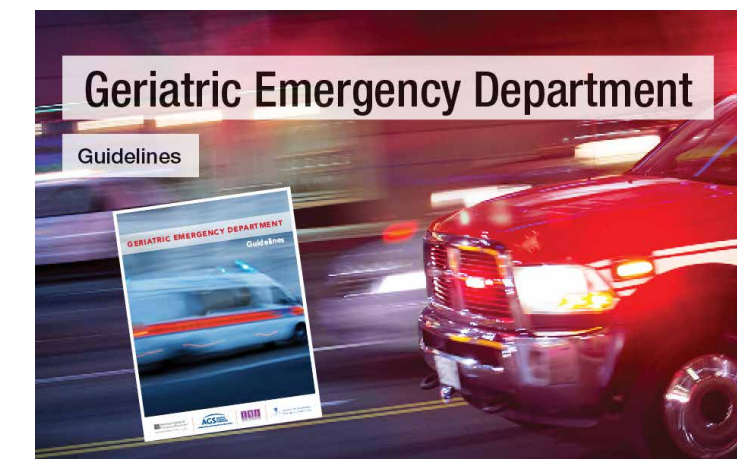
# GED

With the increase of the older population in the U.S., older patients represent an increasing population in emergency departments (ED). Approximately 58% of 75-year-olds had at least one visit to an ED, as compared to 39% of those of all ages, and ED use increased with increasing age. (American Geriatric Physicians Association, 2014) Also, older patients present with a higher level of emergency and more serious medical illness. They arrive more often by ambulance, and they are more likely to receive a higher number of diagnostic tests, spend longer times in the ED, and have higher charges for their ED services than younger patients. (Samaras, Chevalley, Samaras, & Gold, 2010) With the



increasing number of aging people in society and the special care needs of older people, the traditional emergency department does not satisfy aging people's requirements.

The Geriatric Emergency Department (GED) is proposed to have better clinical staff education in geriatric emergency medicine and nursing care, evidence-based protocols for common geriatric syndromes, and ideally, appropriate environmental modifications. (Hwang & Morrison, 2007) The GED design satisfies the traditional ED function and solves more needs of aging people.



Picture from: <https://www.saem.org/agem/agem---geriatric-ed-guidelines>

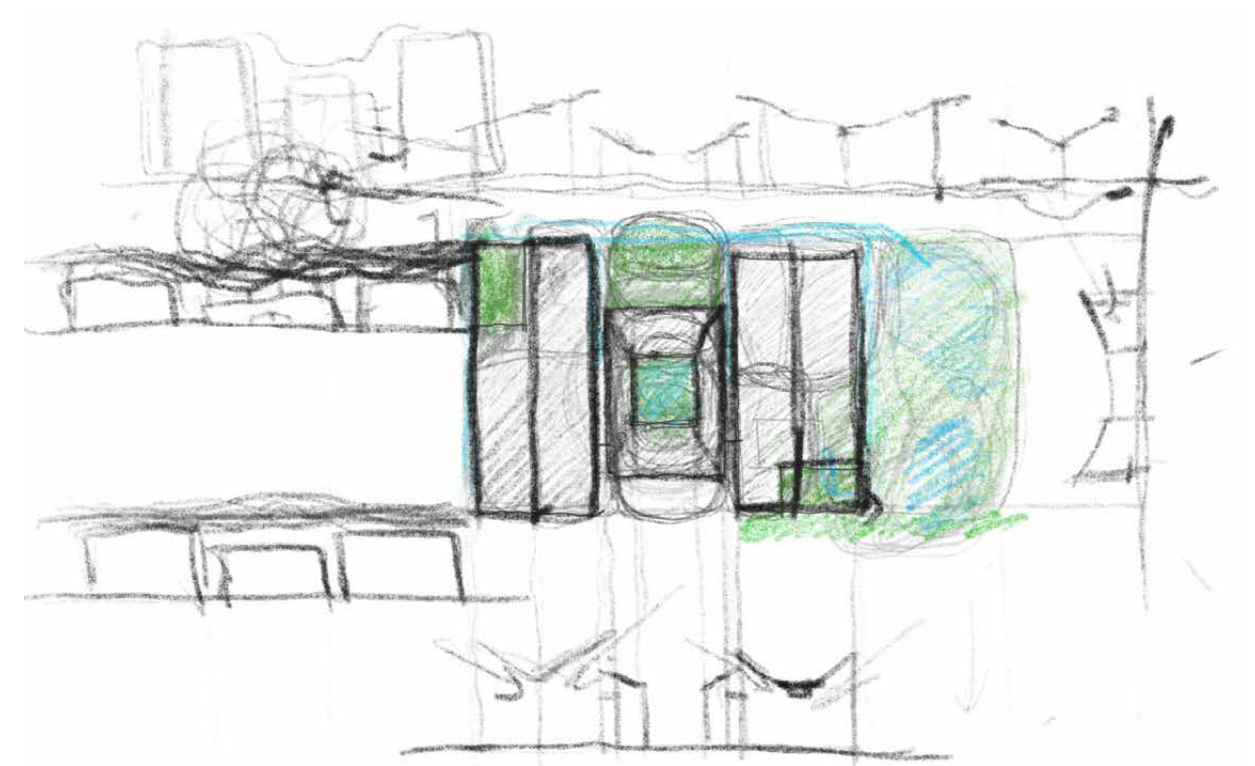
Picture from: <https://www.northwell.edu/geriatrics-palliative-care>



# CHAPTER 1

# PROJECT

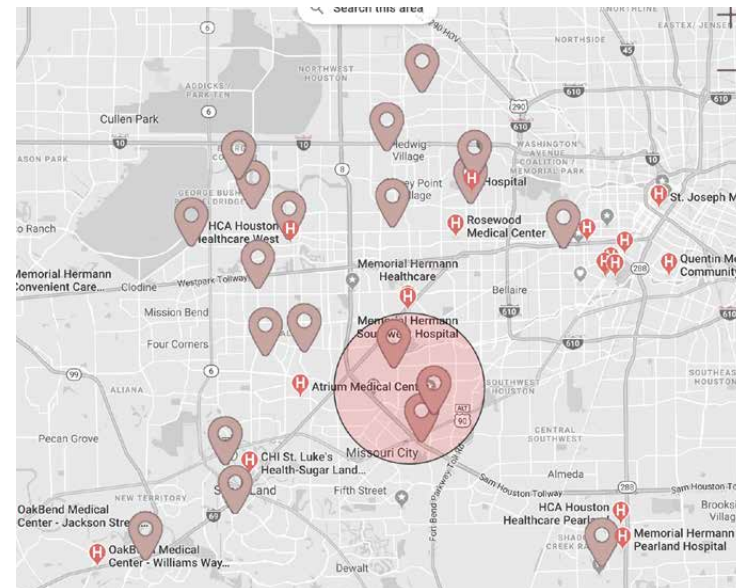
# PROGRAMMING



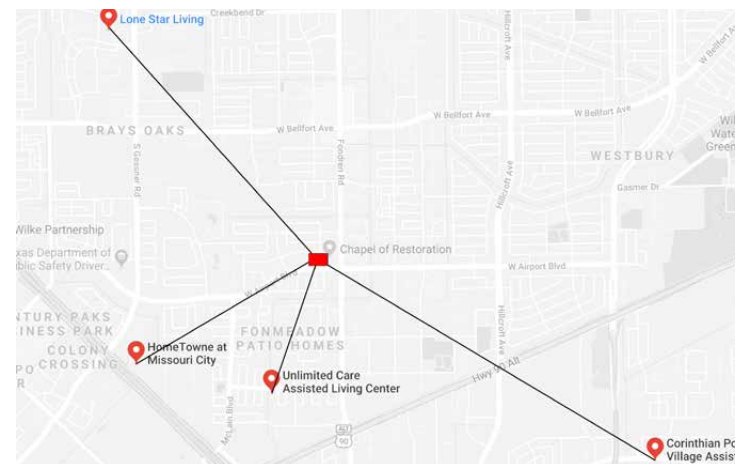


# Site Analysis

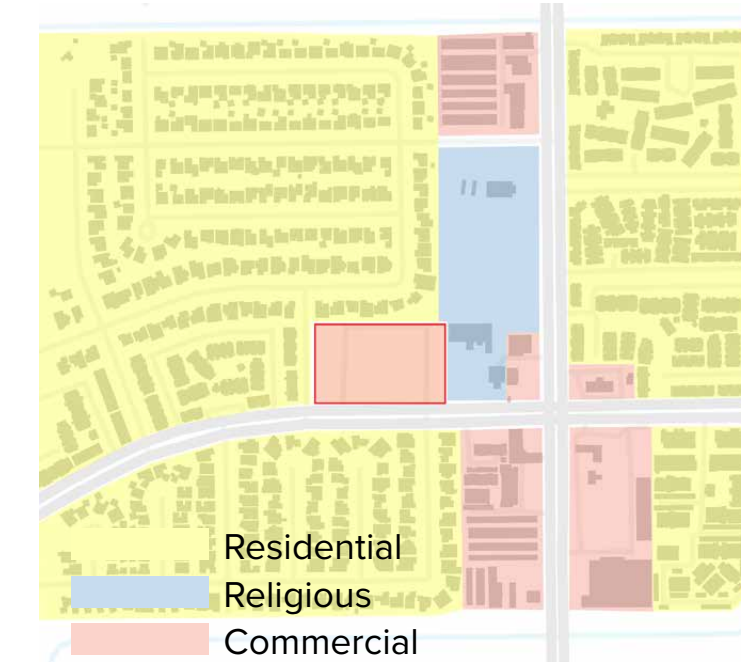
The project is not a real project. The site in Houston was chosen by research. After analyzing assisted living facilities and hospital locations in Houston, a suitable site was chosen for the project.



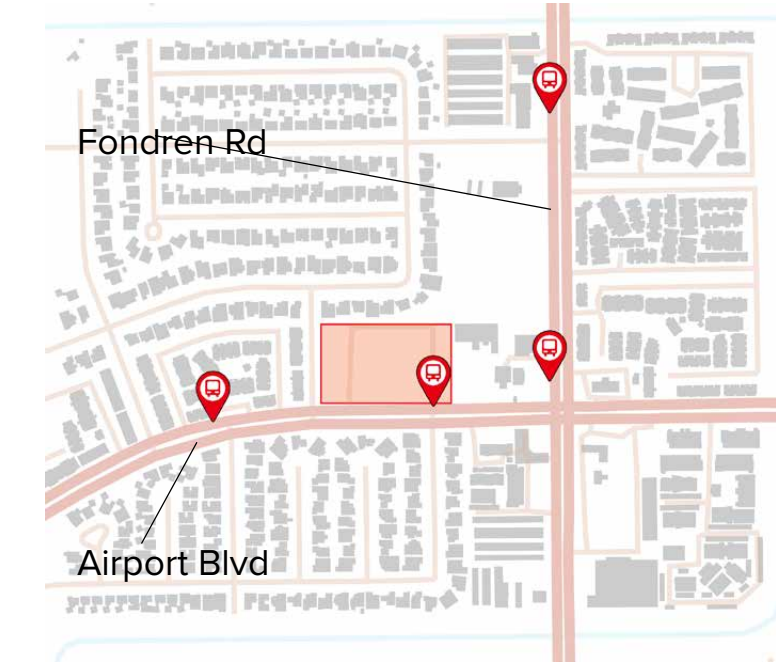
The size of the site is 3.37 acres, with 288 feet width and 510 feet length. The micro hospital will serve the surrounding assisted living facilities including Lone Star Living, Unlimited Care Assisted Living Center, etc. All the surrounding targeted buildings are not more than 3 miles from the new hospital, which is a suitable distance for the older population coming into the hospital.



The site is located in a residential area. On the north, west, and south side of the site are residential communities zones. The east side is the religious zone, including a chapel and a church. Most of the buildings around the site are houses.

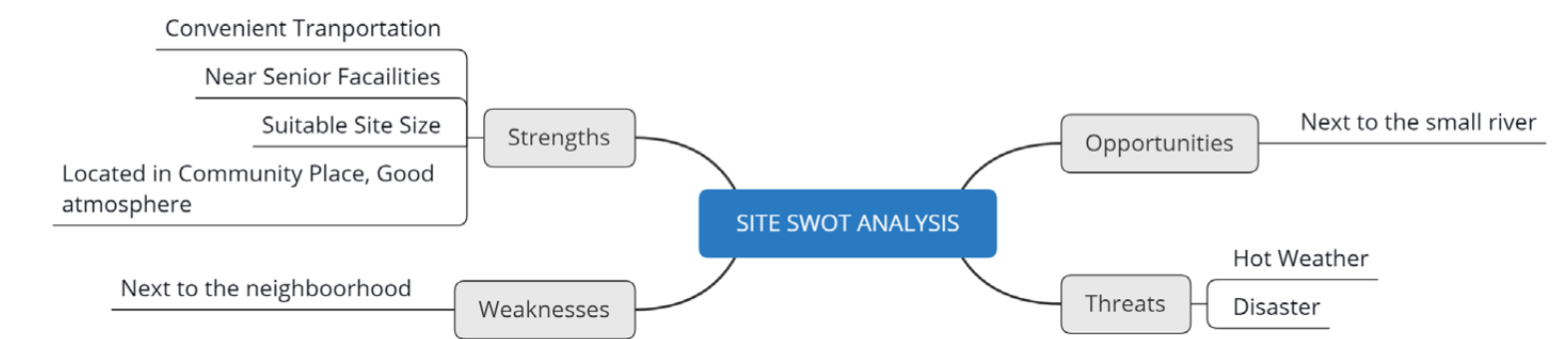


There are two main roads near the site - Airport Blvd and Fondren Road. It is important to ensure public transportation accessibility. Based on the site analysis, there are four bus stations around the site.



The SWOT theory is used to measure the site's advantages and disadvantages. The strengths of the site consist of convenient transportation, senior facilities within a short distance, suitable site size, and a good atmosphere. The residential location is more

in keeping with micro-hospital characteristics. The weakness of the site is also its proximity to a neighborhood, that the project might influence others quiet. Willow Waterhole Bayou is near the site. The design challenges are hot weather and potential for flooding.

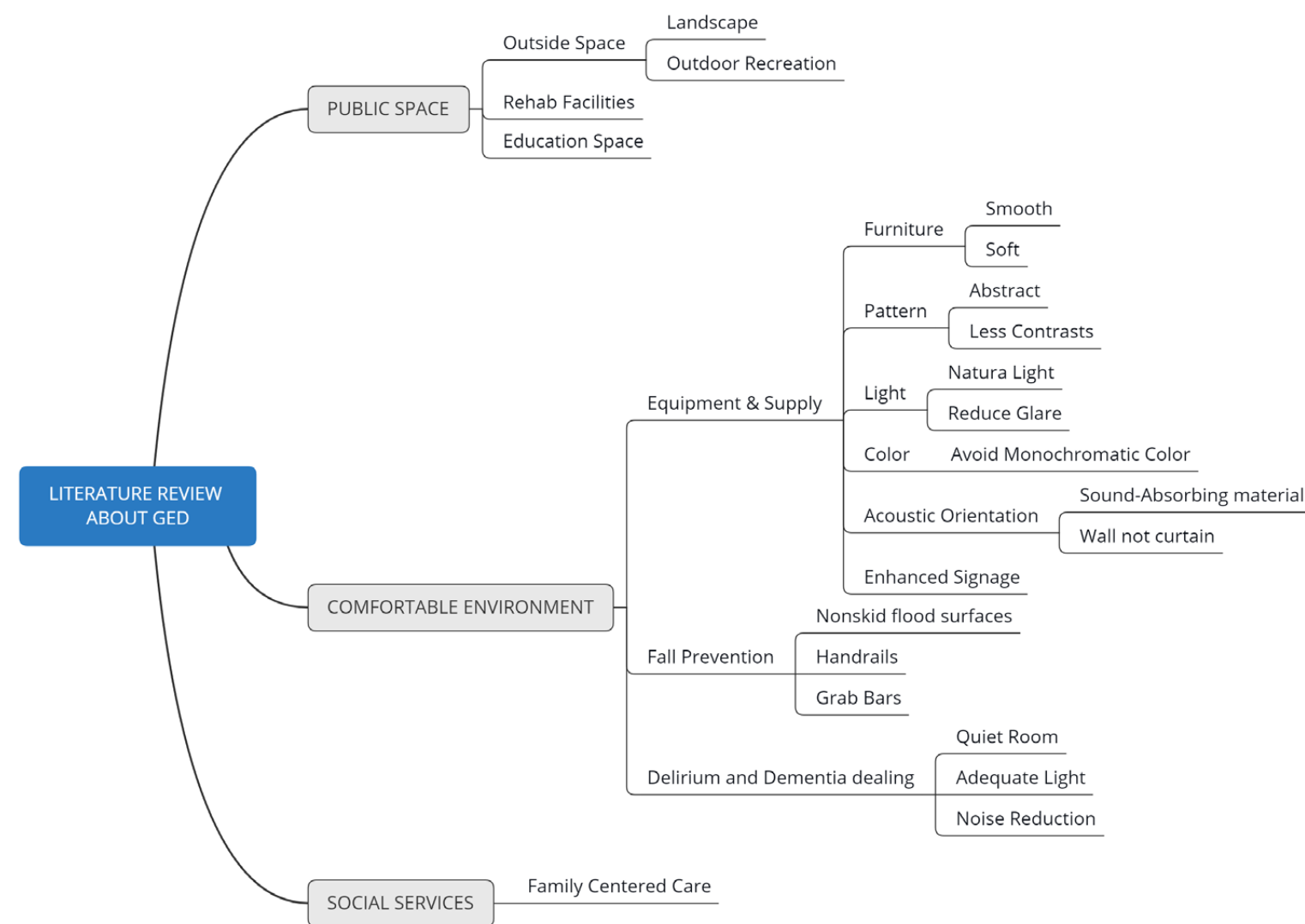




# Literature Review

The Geriatric Emergency Department (GED) Guidelines (American et al., 2014) is the most important literature source for the project. Based on the guidelines, there are three key points for the hospital design: Public Space, Comfortable Environment, and Social Services. Public Space could be landscaped areas, rehab facilities, education spaces, etc.

The Comfortable Environment is more related to interior design: smooth furniture, abstract patterns for decoration, natural light, fall prevention design, etc. Social Services requires the hospital to supply family-centered care, which includes more space for families and more homelike furniture for patients.



# Case Study

I studied at the Caprock Emergency Hospital in Bryan, TX. This project is a micro hospital with ten emergency rooms and ten beds for inpatient care. Lon Young, the chief medical officer at Caprock Health said the hospital revenue is mainly from the Emergency Department, Imaging Facilities, and Surgery operations. An operating room in the micro hospital would be beneficial. Because the geriatric population will be more likely to use the inpatient rooms, ten beds and single inpatient rooms are necessary. As the hospital targeting older patients, rehab facilities can be added as an additional department in the hospital.



# Space Program

The program of the final study project is based on the Caprock Emergency Hospital program which is designed by PhiloWilke. The program was updated and refined with guidance from Lon Young and Steven Schultz, who is a partner at PhiloWilke and the professional advisor for this final study. The surgery department program refers to the Trinity St Joseph's New Campus in Livingston County which was developed by SmithGroup. The final version of the space program is the combination with advice and information from all parties and multiple iterations. Departments include GED, imaging, surgery, inpatient care, administration, education, clinic, rehabilitation, and dietary. The total gross area of the project is 46,342 square feet.

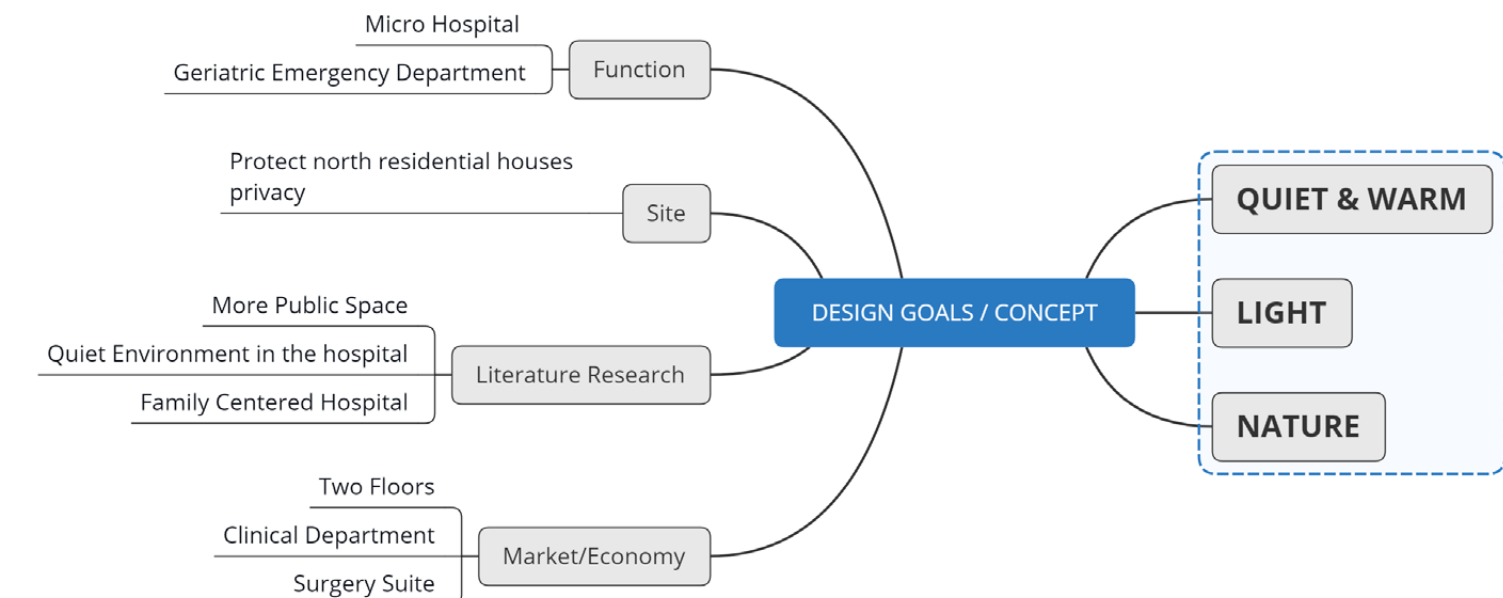
Department / No. of Key Rooms		DGSF
<b>Emergency Department</b>		<b>4,928</b>
1	Triage/Treatment Room	
1	Large Treatment Isolation Room	
8	Treatment Room	
<b>Imaging</b>		<b>2,480</b>
1	Radiographic Room	
1	CT Room	
1	Ultrasound Room	
<b>Surgery</b>		<b>8,394</b>
1	OR	
0	Procedure Rooms	
2	Prep/Holding/Recovery Room	
4	PACU Bay - Stage I	
<b>Laboratory</b>		<b>225</b>
<b>Inpatient Care</b>		<b>6,952</b>
9	Patient Room - Private	
1	Patient Room - Isolation	
<b>Rehab Facilities</b>		<b>728</b>
<b>Pharmacy</b>		<b>149</b>
<b>Dietary</b>		<b>1,121</b>
<b>Admin</b>		<b>2,184</b>
<b>Support Services</b>		<b>1,599</b>
<b>Education</b>		<b>520</b>
1	Receiving/Breakout Room	
<b>Leasing for Clinic</b>		<b>6,370</b>
18	Exam Room	
<b>Exterior Elements</b>		<b>0</b>
<b>Departmental Sub-Total</b>		<b>35,648</b>
<b>Building Grossing Factor</b>		<b>30%</b>
<b>Hospital Total Gross Square Footage</b>		<b>46,342</b>

Space program based on Caprock Emergency Hospital by PhiloWilke

# Design Goals

Based on the project background summary, site analysis, literature review, case study, and the space program, design goals included protecting residential privacy and addressing climatic issues. Based on the GED guidelines, the project should provide older patients and users more public space, a quiet environment, and family-centered care. The hospital will include a surgery suite, clinical department, and rehab facilities on the second floor.

Three big concepts for the project are Quiet and Warm, Light, Nature.  
 Quiet and Warm: create a comfortable environment for the geriatric population.  
 Light: create more public space.  
 Nature: create a family-centered hospital as well as the sustainable design.





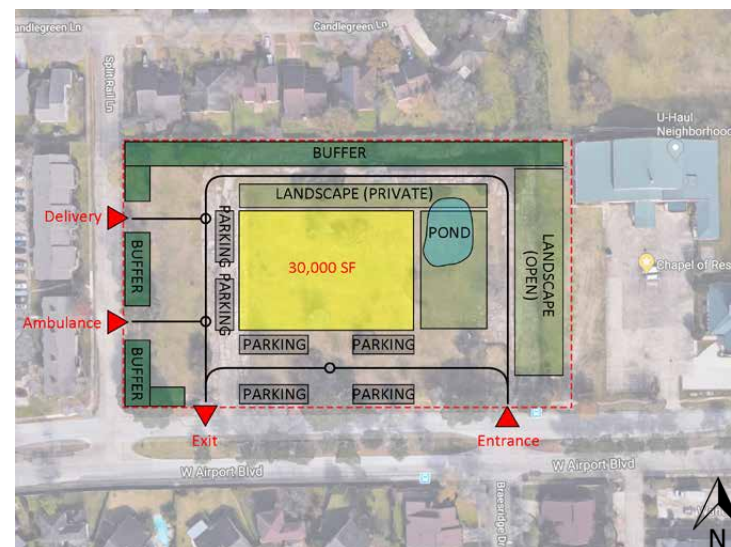


# Design Process

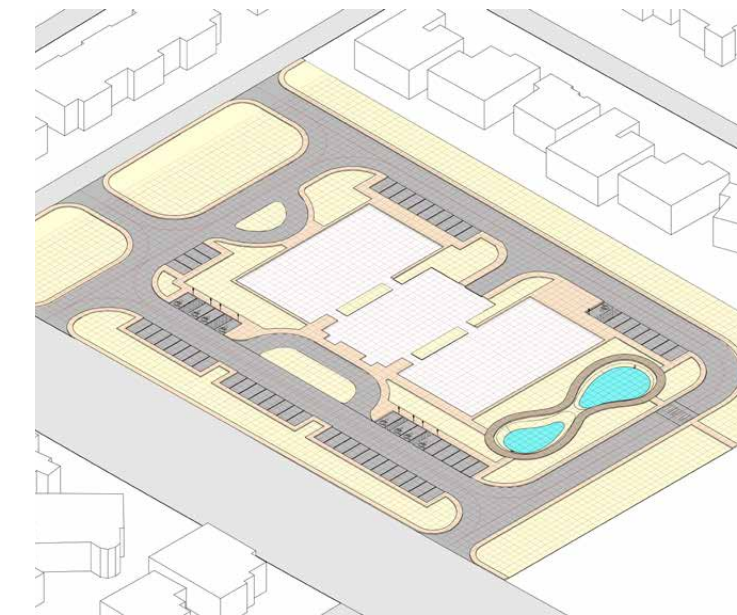
## ■ Site Planning & Form Generation

The first step of hospital design is site organization. Based on research and site analysis, the hospital needed three entrances: a main entrance for visitors, an ambulance entrance, and a delivery entrance. There should also be an exit. On the south side of the site is the main road, Airport Blvd, and on the west side is the sub road Split Rail Ln. The main entrance and exit are on the south side. The ambulance entrance and delivery entrance are organized on the west side. To protect the privacy of the surrounding neighborhood, buffer areas are on the north, west, and south sides of the site.

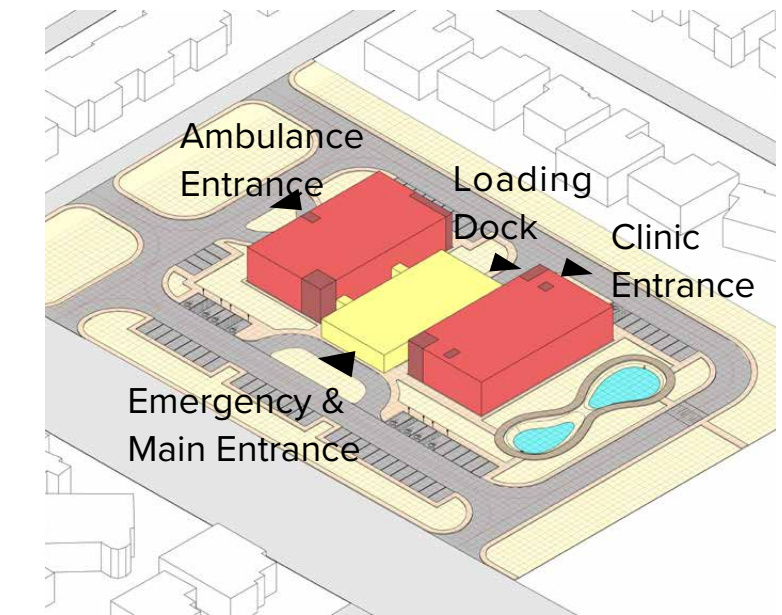
To address drainage and create landscaped areas, a pond is on the east side. This open landscaped area is not only for people in the hospital but also for the church. As a result, the hospital becomes a community building that offers public green.



The parking spaces requirement is based on the online reference and advice from Steven Schultz. Inpatient care requires every bed for two parking spaces. The emergency department and surgery department need ten parking spaces separately. The clinic department requires four parking spaces for every thousand square feet. As a result, the site needed a minimum of sixty parking spaces. Because the hospital is for the geriatric population, the project needs a minimum of five handicapped parking spaces.



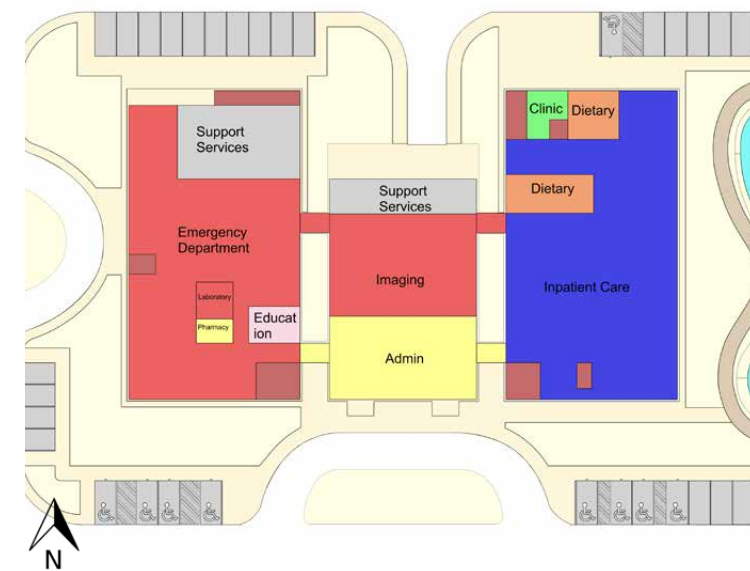
A loop road on the site for the fire lane and drops off points around the building. On the south side, the drop off point is for the main entrance of the hospital. On the west side, the drop off point is for ambulances. On the north side, the drop off point is for the clinic. A walking path on the east side connects the hospital site to the church. The landscaped area becomes an open space for both the hospital and the surrounding buildings.



The concept is three single boxes. The middle box is for the public and administration. The wings house hospital functions. There are four entrances: the emergency and main entrance on the front side of the middle box, the ambulance entrance on the west box, a loading dock on the backside of the middle box, and a clinic entrance on the east box. The three boxes are separated by the interior courtyards.

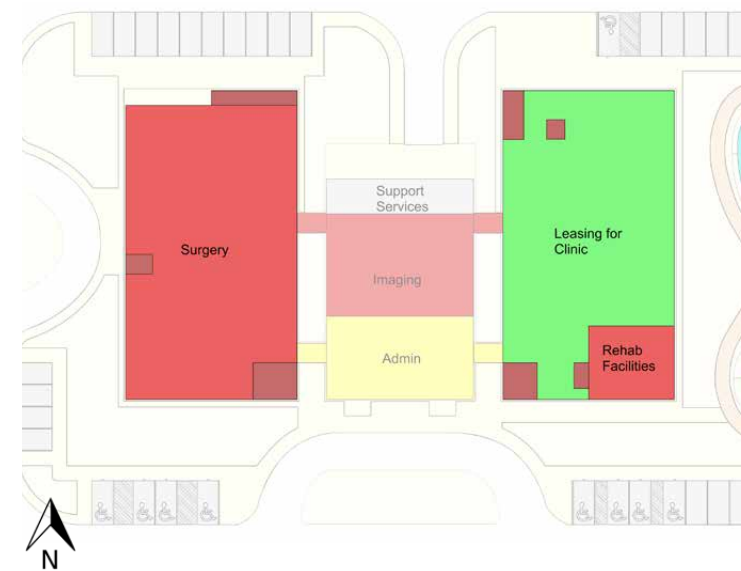


## Department Adjacency



1st Floor Department Adjacency

The gaming method was used for organizing the departments' adjacency and room locations. For the first-floor plan, administration, imaging, and support services departments are in the middle. The reason to put the imaging department in the middle is for serving both inpatients and outpatient people. The west wing is the geriatric emergency department, with the laboratory, pharmacy, education, and support services departments. The east wing is the inpatient care department, with dietary and clinic entrance. Because the wings each have a second floor, each wing has two elevators and two egress stairs for vertical transportation and emergency evacuation.



2nd Floor Department Adjacency

The surgery department is on the west, which connects with the emergency department. The clinic and rehab facilities departments are on the east. The clinic department is separated from the hospital, as an isolated department with individual entrance and streamline. The rehab facilities are connected with the inpatient care department and serving for geriatric patients.

## Landscape & Façade Exploration



Natural elements in the site include the roof garden, interior courtyard, landscaped area, the flower bed for the entrance, and the green buffer areas. The sky window in the middle box reflects the "Light" concept.



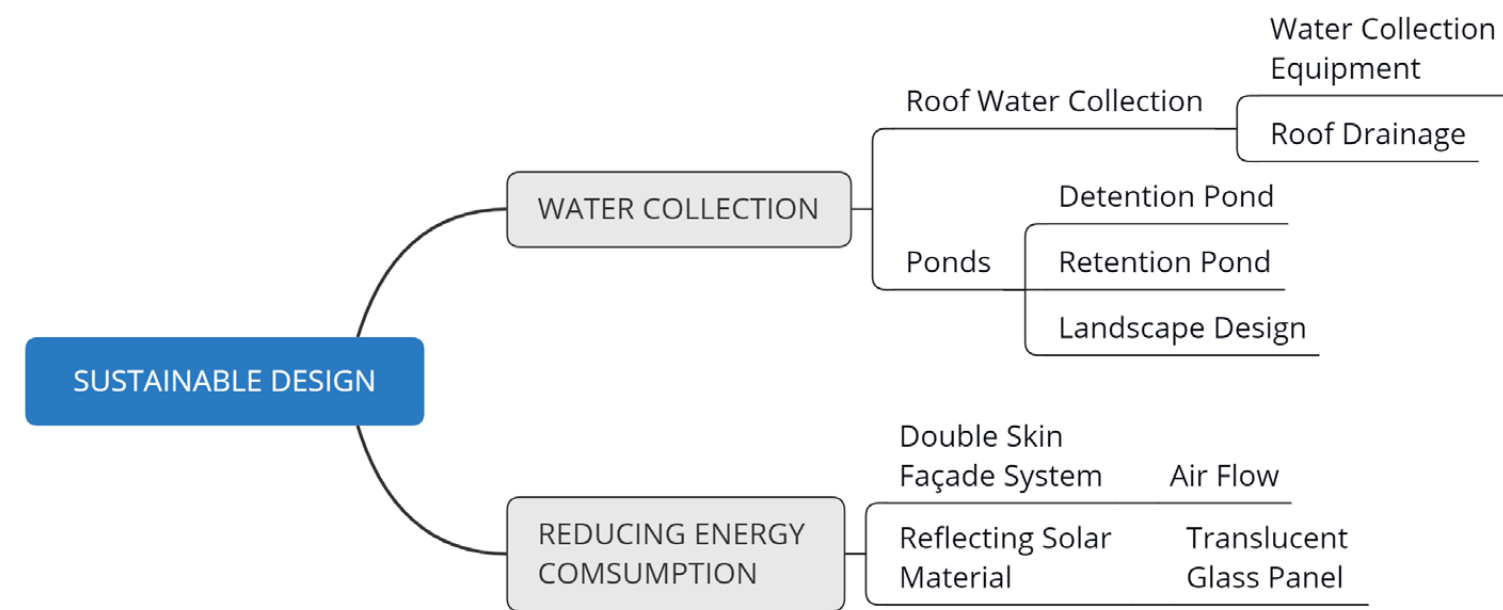
The most significant architectural character in this project is the double-skin façade design. Based on the regular façade of the building, the translucent glass panels are attached to the building as a second layer of the façade. For the middle box, the glass panels are on the roof. The canopy has three functions: creating a particular atmosphere, collecting water, and reducing the sunlight entering into the building by reflecting solar energy. For both wings, the second layer façade with glass panels has two functions: creating a particular architectural character and reducing energy consumption.



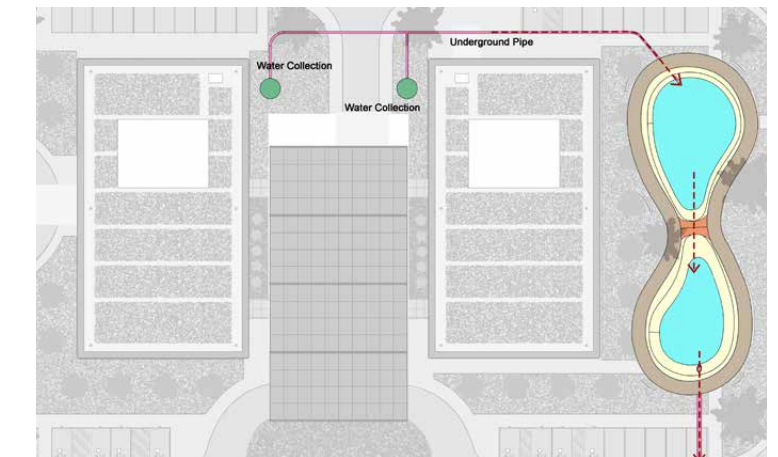
# Sustainable Design

Sustainable design is important from the beginning to the end of the micro hospital design. The project has two main sustainable design strategies: water collection and energy consumption reduction.

The water collection is about water recycling as well as dealing with the flooding in Houston. Energy consumption reduction is about dealing with the hot weather in Houston in an efficient way.



## Water Collection



The first step was to use the green roof to collect water into the water collection. Then the second step was to transfer the water into the ponds. There are two ponds in the landscaped area: the north one is the retention pond and the south one is the detention pond. First, water enters the retention pond. When the water level is higher than the maximum pond line, the water enters the retention

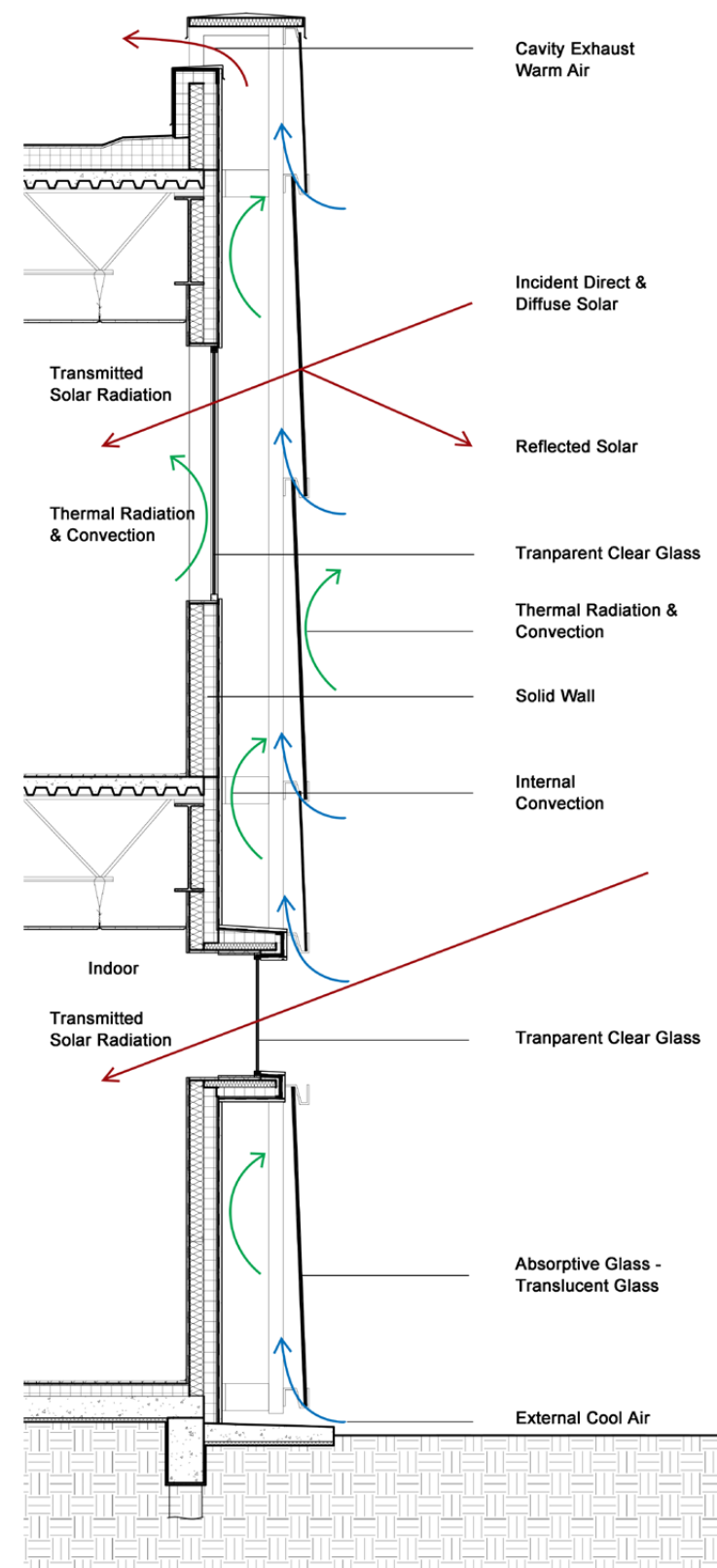
pond. When the water level in the retention pond is also higher than the maximum height, the excess water enters the surrounding river, Willow Waterhole Bayou. The ponds have three functions. The first is to solve the problem of flooding in Houston. The second is to purify the water before entering into the surrounding river. The last point is to create a parklike environment.



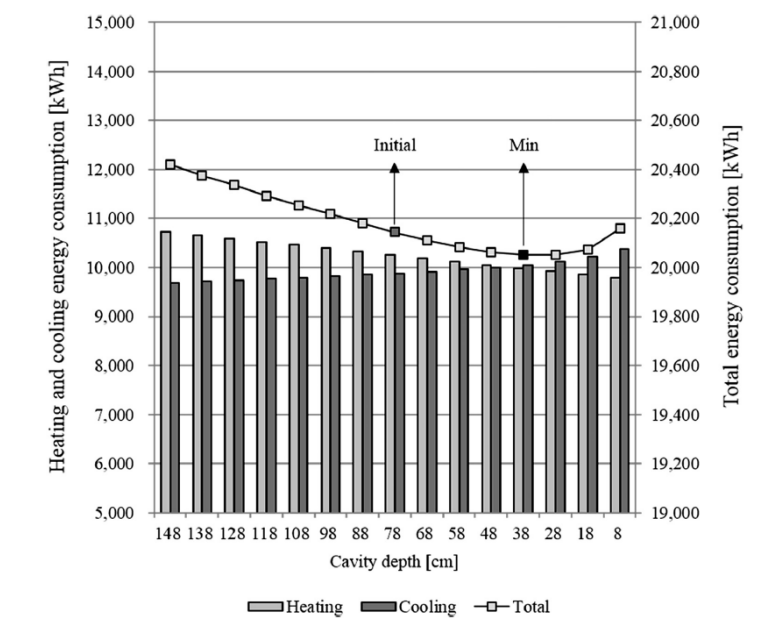
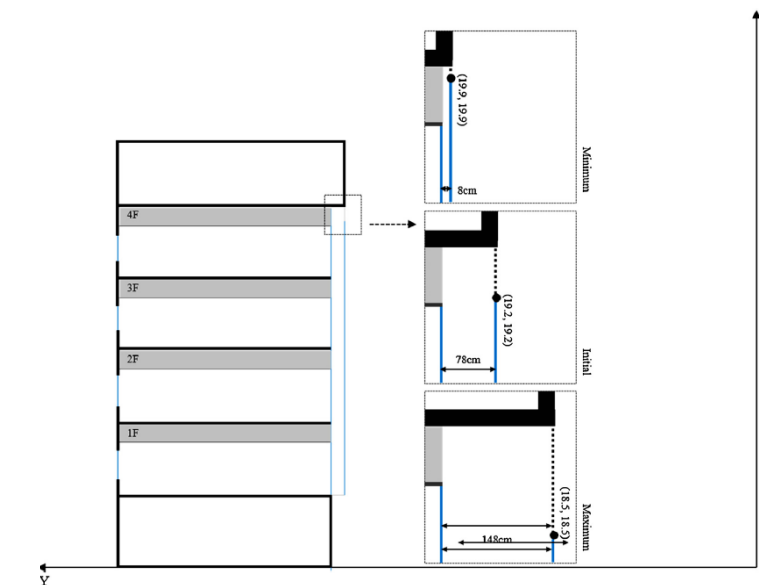
## Double Skin Facade

The hospital project uses a double-skin facade (DSF) to reduce the energy consumption of the building. The DSF is a passive and adaptive system for sustainable design in this project. The paper, *Exploring the Advantages and Challenges of Double-Skin Façades (DSFs)*, showed that a DSF can help reduce energy consumption. (Ghaffarianhoseini et al., 2016)

The exterior layer reflects sunlight to reduce the amount of solar energy that enters the building. The air in the interstitial space absorbs heat and then rises, creating a chimney effect which pulls cooler outside air into the space.



The paper, *Optimal Design of a Multi-story Double Skin Façade*, explores the relationship between building energy consumption and DSF cavity space distance. (Joe, Choi, Kwak, & Huh, 2014) The research shows that for reducing the energy consumption of the building, the most effective distance for the DSF cavity depth is from 18 cm (7 inches) to 68 cm (27 inches). As a result, thinking about the limited size of the site in the final study project, the DSF cavity depth is 18 inches.



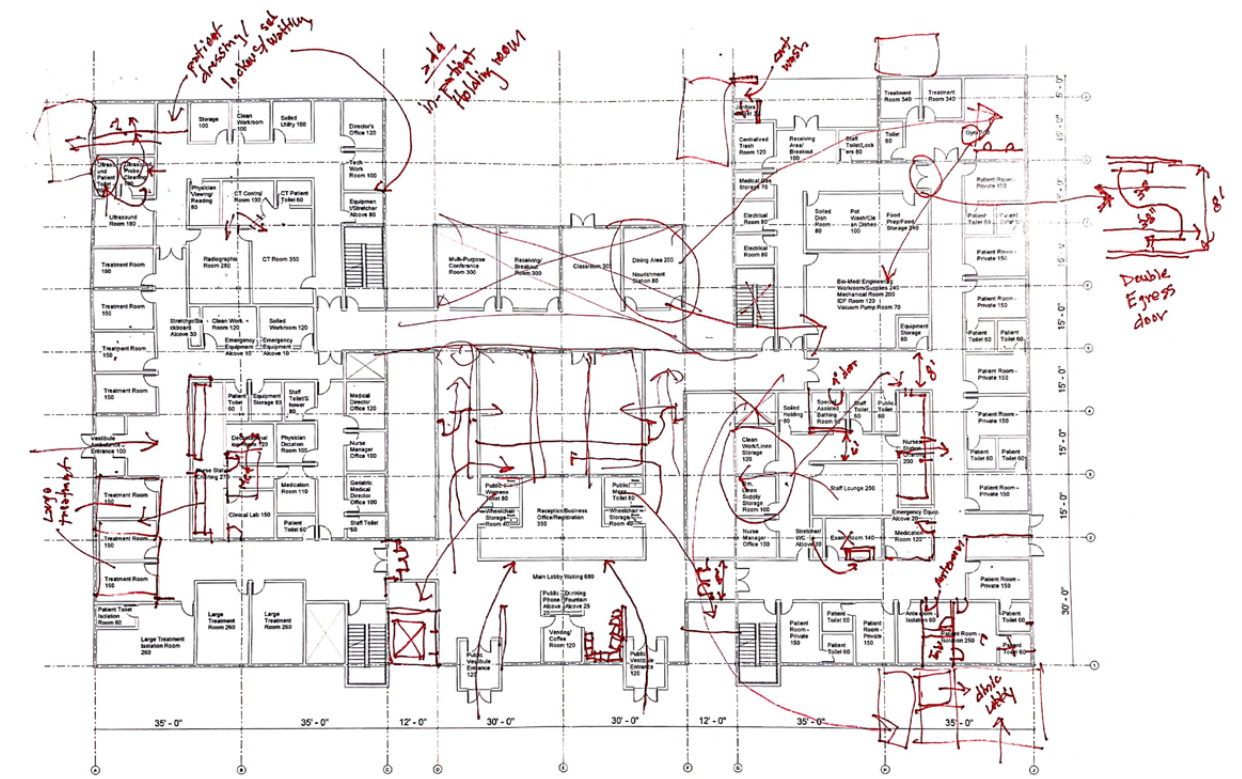
Energy Consumption according to cavity depth, picture from: Joe, Choi, Kwak, & Huh, 2014



# CHAPTER 3

# DESIGN

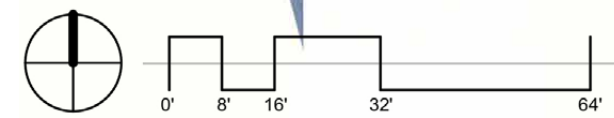
# DEVELOPMENT





# Master Plan

1" = 30'





# First Floor Plan 1/16" = 1'

## Department Legend

- Business Areas
- Geriatric Emergency Room
- Food Service
- Inpatient Care
- Imaging
- Lab
- Patient Support
- Pharmacy
- Public
- Staff Support
- Staff/ Administration Spaces
- Storage
- Vertical Transportation
- Mechanical/ Building Support
- Education

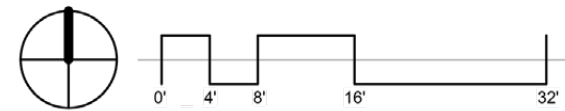




# Second Floor Plan 1/16" = 1'

## Department Legend

- Business Areas
- Patient Support
- Pharmacy
- Public
- Staff Support
- Staff/ Administration Spaces
- Storage
- Vertical Transportation
- Clinic Exam Room
- Rehabilitation Service
- Operating/Prep/PACU/Stage II Room

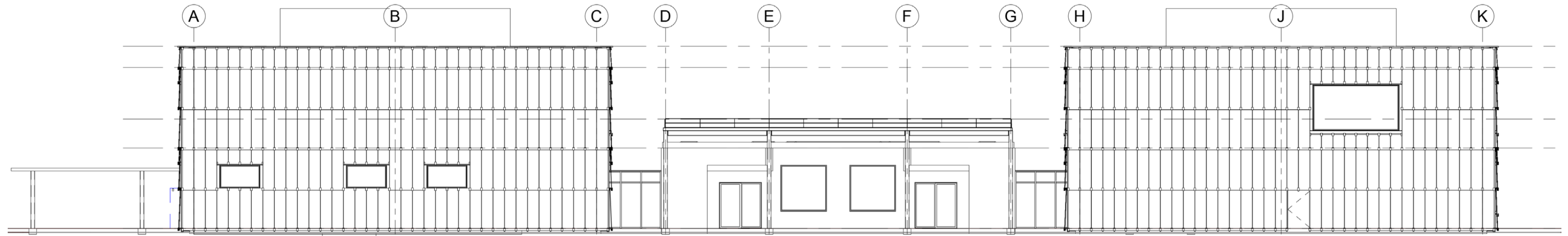




## South Elevation

1/16" = 1'

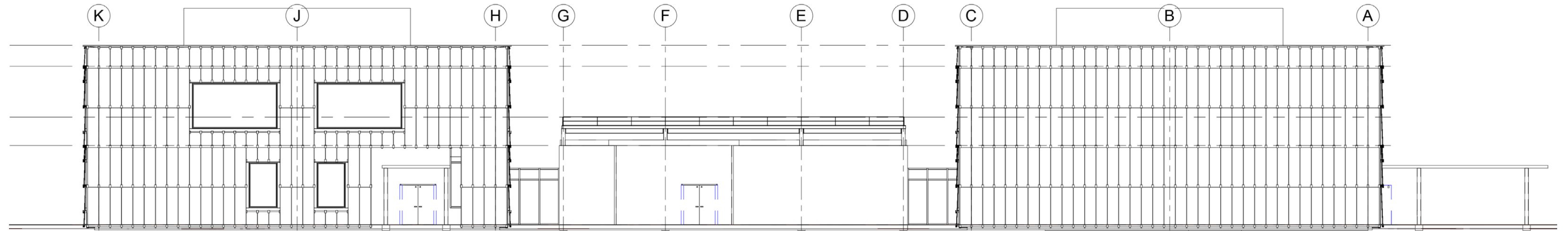
In the entrance space, the double skin façade with using the translucent glass panel creates a warm and inclusive feeling. The trees are planted symmetrically on both sides, which makes the entrance with a ceremonial sense. The unique feeling makes people calm down before entering the building.





## North Elevation 1/16" = 1'

The façade design is rhythmical by using the module of two feet as a design logic. Every translucent glass panel is two feet in width. Because of the natural light requirement for some rooms, including emergency rooms, inpatient rooms, and office rooms, windows are pushed out of the DSF system.

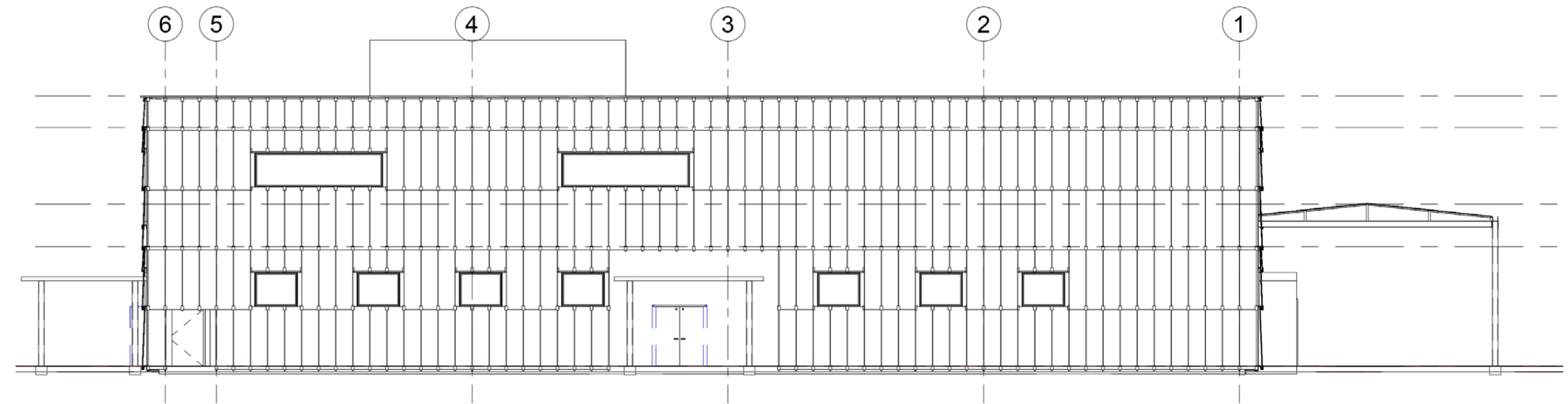




## West Elevation

1/16" = 1'

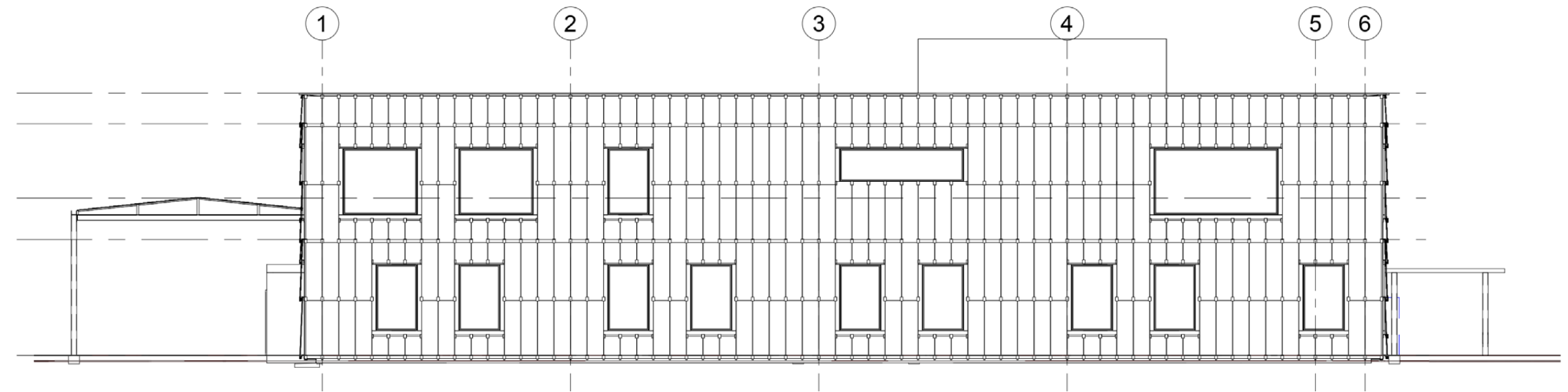
There are two kinds of window sill heights: seven feet and three feet, and two kinds of the window height: four and a half feet and nine feet. Accordingly, two kinds of translucent glass panels are designed on the facade: seven feet by two feet and two and a half feet by two feet.





## East Elevation 1/16" = 1'

One specific design happens in the interior courtyard. There is only one layer facade in the courtyard. The reasons are that the DSF system could not reduce the energy consumption very much in the courtyard and one layer facade can make the interior courtyard larger for the bamboo to grow and become the beautifully landscaped view.





Site Entrance & Ambulance Entrance



Landscaped Garden & Building with Landscape





## Entrance Lobby

Sunlight enters from above, which makes the space lighter and welcoming for the users. A green wall behind the reception desk becomes an interior landscaped view for people. The lighting system follows the sky window shape as a rectangular frame hanging from the roof. The floor is painted with green to invoke the feeling of grass. Wood panels are decorated on two entrance points for improving the space feeling as well as the natural concept.





## Courtyard

The courtyard is a very important landscape of the hospital. Due to the size of the courtyard, we choose plant bamboo in the courtyard. The bamboo not only is

good landscape but also protects the privacy of the rooms on both sides. People cannot enter into the courtyard and there is only one door for staff to maintain.



## Egress Stairs

The egress stairs of the building together with double-skin facade provide more interesting feeling of the elevation. At the same time, the interior space of the

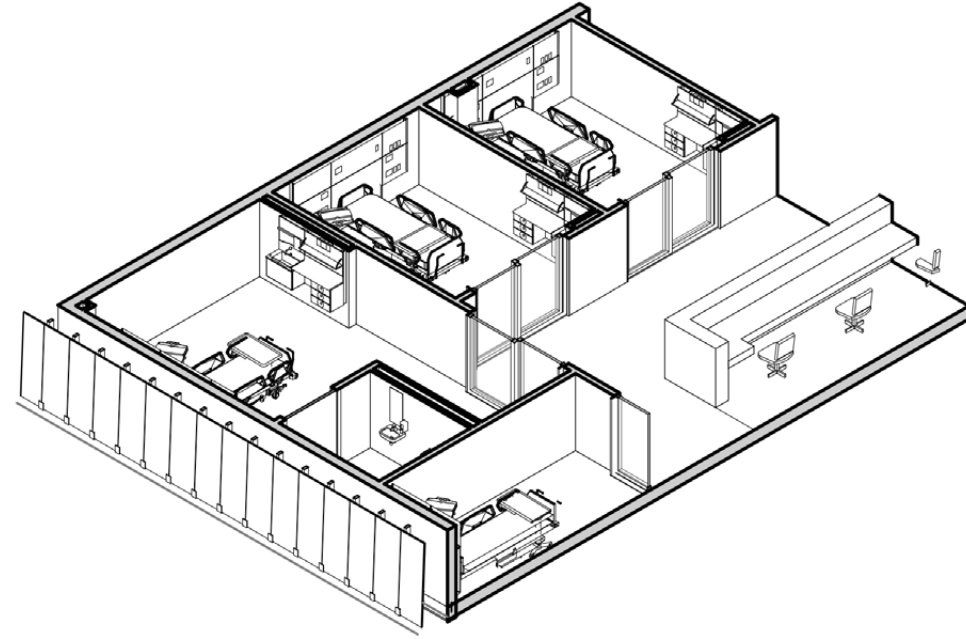
egress stairs reflects the unique feeling brought by the double skin and translucent glass.





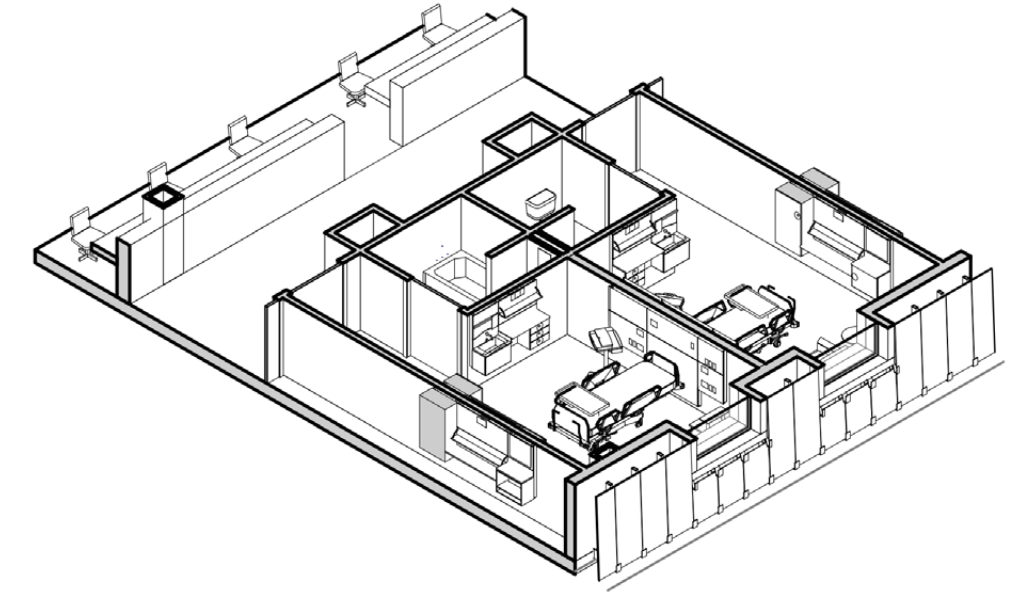
## Emergency Room 3/32" = 1'

The interior design of medical rooms focuses on family-centered care. The emergency room has the necessary furniture, including a power wall, patient bed, shelf, and washing sink. Based on the GED guidelines, the emergency room used more homelike furniture to layout the room, with wood material and warm color.



## Inpatient Room 3/32" = 1'

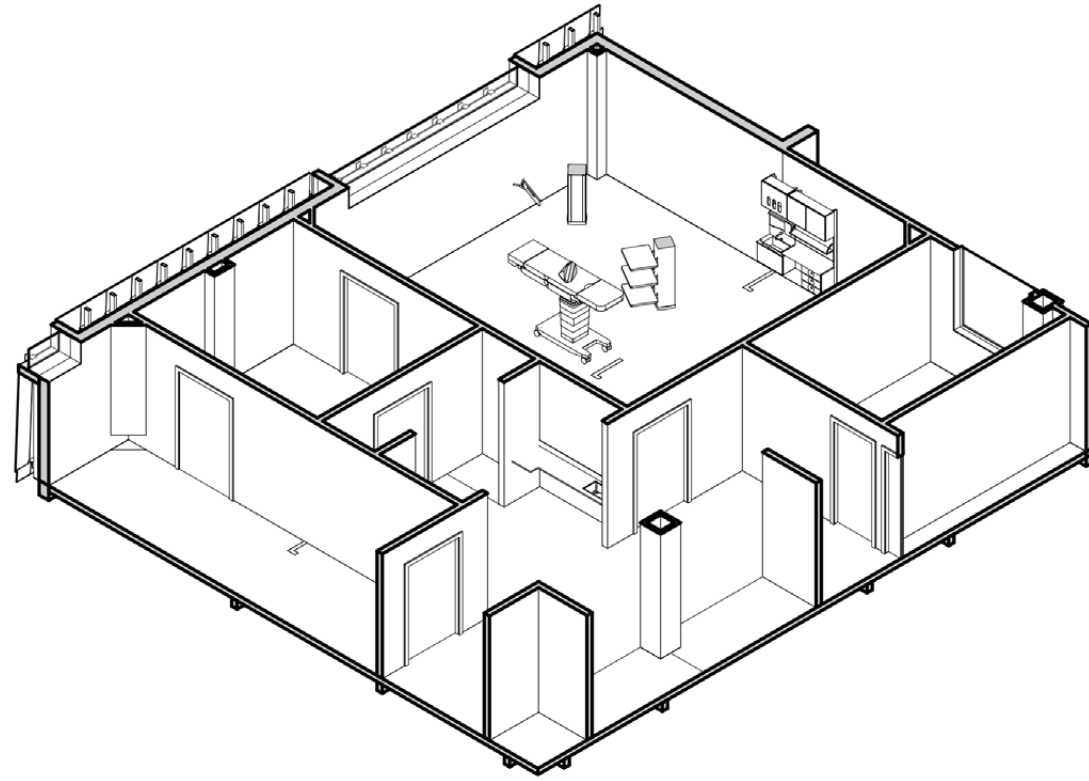
Every inpatient room is a single room with three zones: nursing zone, patient zone, and family zone. The family zone represents the family-centered concept. The patient zone supply the patient with a shelf and television. Wood material and warm color are used to give patients a homelike feeling.





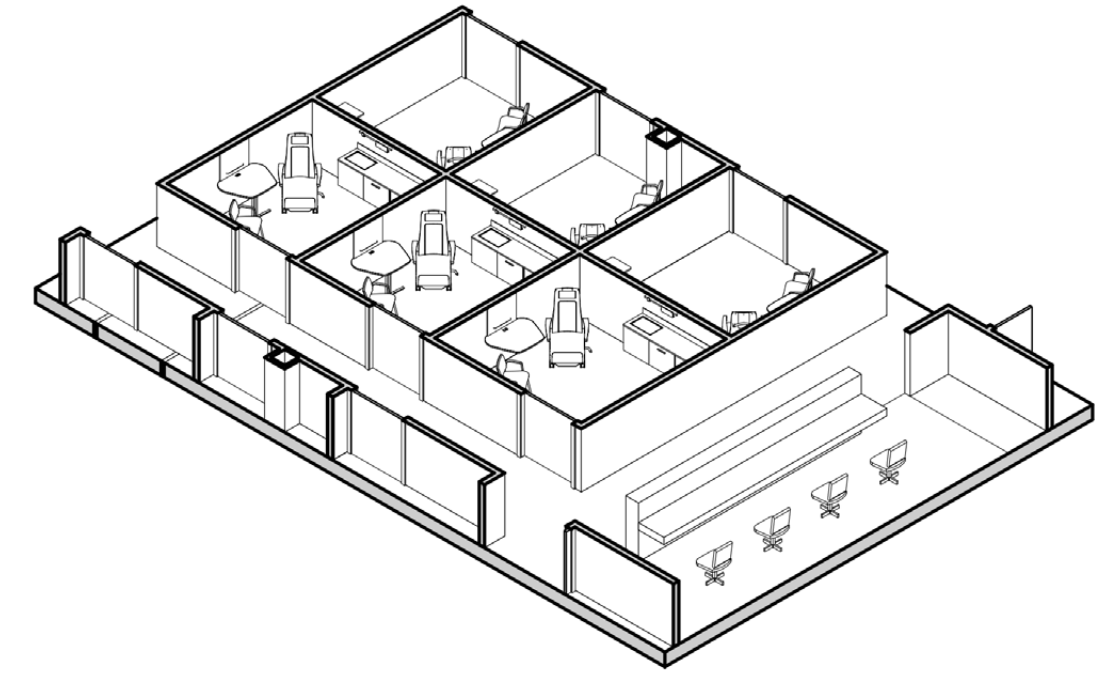
## Operating Room 3/32" = 1'

The different colors on the ground distinguish the zones of the operating room. Sterile zone and anaesthesia zone are in the middle and circulation zone is around the middle part. Air curtain is hanging on the roof. The return grille is in the corner for extracting the air. The lighting system equipped on the ceiling. The installation of wide high window becomes the patient-centered design of the operating room.



## Exam Room 3/32" = 1'

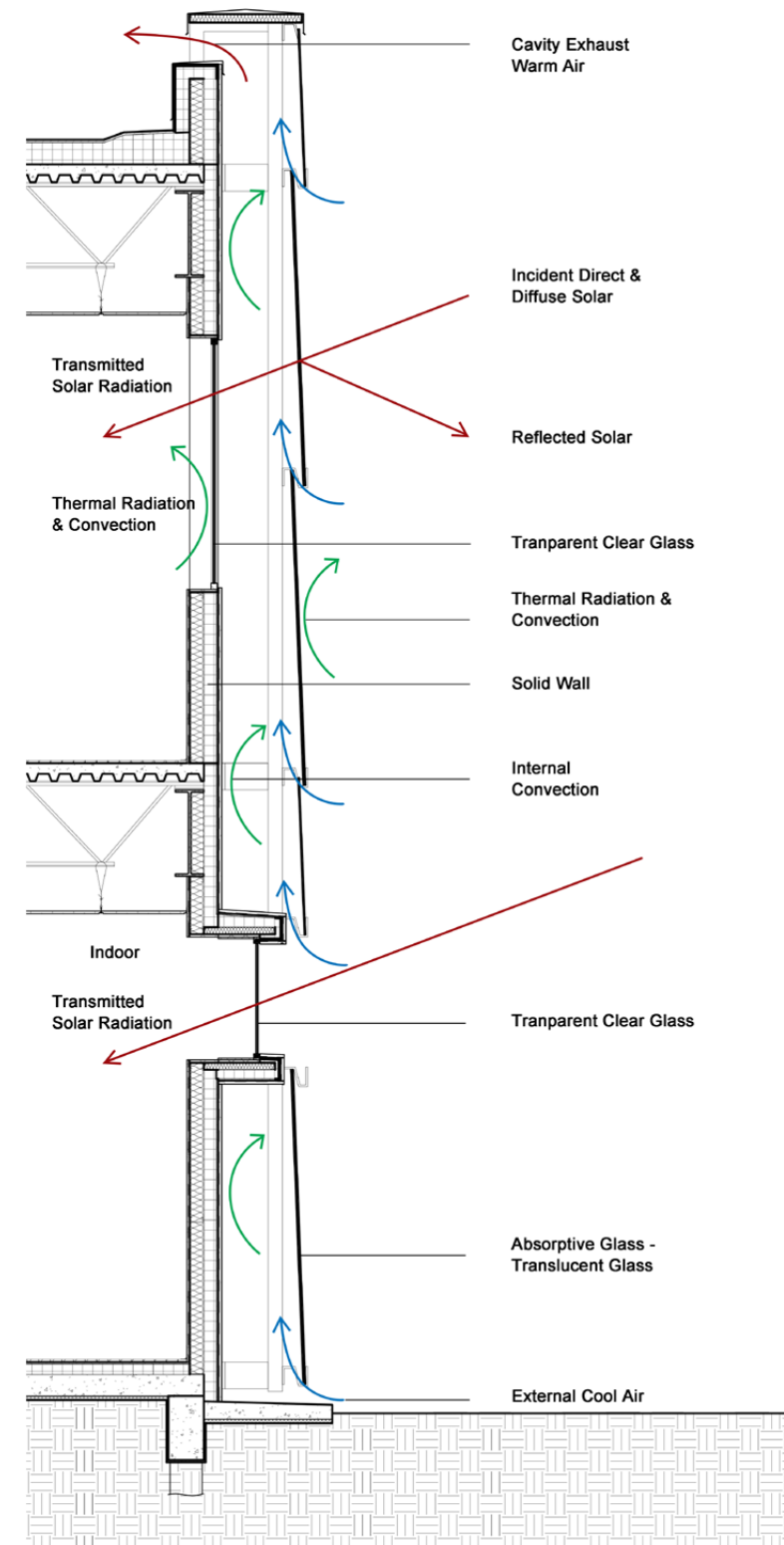
The floor of the building is green as a symbol of grass and nature. The doors of the exam rooms were staggered each other to ensure the privacy of patients in each room. The furniture in the room is wood-based, reflecting the patients centered concepts.





# Wall Detail Study Model

Based on the consideration of the sustainable design by double-skin facade and translucent glass panels, I made the physical model to study the wall details of the building.

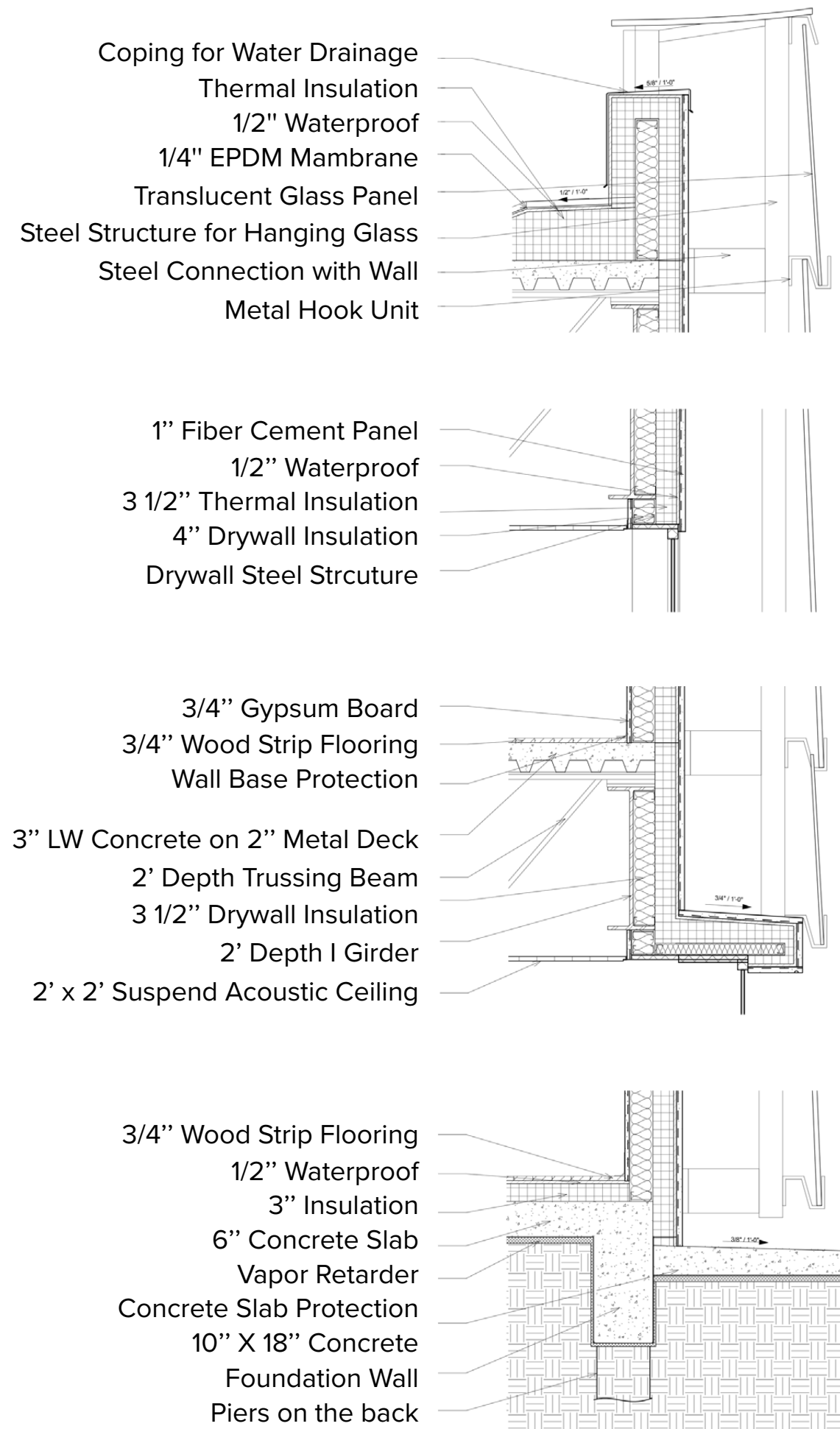




■ **Wall Section  
Details 1/2" = 1'**

■ **Section  
Perspective  
1/4" = 1'**

The hospital is classified as Group I-2 and construction type I-A. The Wall section shows steel structure details and the tectonic design of the double-skin façade. One specific design is the parapet on the roof. There is a double parapets system on the roof to drain the rainwater. A small gap between the two parapets vents the airflow from the DSF cavity. Another important element is the green roof.









# Conclusion

The big concepts of the hospital are Quiet & Warm, Light, and Nature. The double skin façade creates a quiet & warm feeling by using the translucent glass panel. The public space concentrates on the light. The sky window and the green wall in the entrance

space show light and nature. The site prioritizes by the green space, which conveys the concept of nature. The hospital creates an inclusive atmosphere for the geriatric patient and lets their minds be healed in the environment.

# Bibliography

1. American, G. S., Geriatric, E. D. G. T. F., Physicians, A. C. o. E., & Association, E. N. (2014). Geriatric emergency department guidelines. *Annals of emergency medicine*, 63(5), e7.
2. Ghaffarianhoseini, A., Ghaffarianhoseini, A., Berardi, U., Tookey, J., Li, D. H. W., & Kariminia, S. (2016). Exploring the advantages and challenges of double-skin façades (DSFs). *Renewable and Sustainable Energy Reviews*, 60, 1052-1065.
3. Hwang, U., & Morrison, R. S. (2007). The geriatric emergency department. *Journal of the American Geriatrics Society*, 55(11), 1873-1876.
4. Joe, J., Choi, W., Kwak, Y., & Huh, J.-H. (2014). Optimal design of a multi-story double skin facade. *Energy and Buildings*, 76, 143-150.
5. Samaras, N., Chevalley, T., Samaras, D., & Gold, G. (2010). Older patients in the emergency department: a review. *Annals of emergency medicine*, 56(3), 261-269.
6. Stefano, G. B., & Kream, R. M. (2018). The Micro-Hospital: 5G Telemedicine-Based Care. *Medical science monitor basic research*, 24, 103.



# RUIWEN TANG

## Work Experience

08/2019 - **TEXAS A&M UNIVERSITY**

05/2020 *Research Assistant & Teaching Assistant for Studio*  
*College Station, TX, US*

- Built the part of Austin city model in Rhino
- Documented 3 communities and the city drawings in Ai
- Provided technical assistance to the undergraduate students: delivered series lecture about collage and rendering, instructed digital drawing and layout, solved software problems about Rhino, Illustrator, Photoshop, and InDesign

05/2019 - **SMITHGROUP**

08/2019 *Healthcare Planning Intern*  
*Detroit, MI, US*

- Developed the programming phase of a medical services building (237,484 sq. ft): made and refined the space program in Excel, designed and wrote a script code in VBA Excel to formulate the template of program, made the departmental massing model in Revit using Dynamo, prepared the meeting presentation in PowerPoint
- Developed a hospital in the schematic phase: analyzed the functions of floor plans, organized the master plan, drew 5 diagrams with PS & AI

01/2018 - **CHINA IPPR INTERNATIONAL**

02/2018 **ENGINEERING CO., LTD.**  
*Architecture Intern (Healthcare Studio)*  
*Beijing, CN*

- Designed a hospital project in the schematic phase: elaborated and analyzed the site plan, working involved in vehicle transportation and people circulation analysis, landscaping design, parking analysis, entrance and exit planning
- Drew 2 site plans and 6 diagrams of the project by Adobe Suite and built the site model by SketchUp

06/2017 - **ZEPHYR(US) ARCHITECTS P.C.**

08/2017 *Architecture Intern*  
*Beijing, CN*

- Independently designed the commercial complex (54,680 sq. ft) of an industry park project. Drew 15 construction drawings by Auto-CAD and developed the digital model of the commercial complex

## Education

08/2018 - **TEXAS A&M UNIVERSITY**

05/2020 *Master of Architecture, GPA 3.77/4.0*  
*College Station, TX, US*

- Certificate in Health Systems and Design
- Courses: Architectural Design, Health Design & Research, Typologies of Contemporary Hospital Design, Design Programming, Health Lecture Seminar
- William C. Pahlmann Scholarship recipient for the 2018-2019 academic year (\$5,000)
- AIA Houston SES Student Charrette (02/2019), Healthcare Design Expo Conference (11/2018)

09/2012 - **TIANJIN UNIVERSITY**

07/2018 *Bachelor of Architecture, GPA 3.58/4.0*  
*Tianjin, CN*

- Concentrations: Architectural Design, Computer Aided Design, Graphic Expression, Tectonic Design, Fine Arts
- Research Assistant: Co-authored & published paper based on Space Syntax Theory (07/2016 – 09/2017)

## Skills

- Architectural Design
- Project Programming
- Healthcare Planning
- Tectonic Design
- Graphic Drawing
- Analytical & Problem Solving
- Communication & Presentation

## Contact Info

- [ruiwen.tang@tamu.edu](mailto:ruiwen.tang@tamu.edu)
- <https://www.linkedin.com/in/ruiwen-tang-b9aa93b2/>
- <https://ruiwentang.myportfolio.com>

## Techniques

Revit	●●●●●●
AutoCAD	●●●●●●
V-Ray	●●●●●●
Rhino	●●●●●●
Grasshopper	●●●●●●
SketchUp	●●●●●●
Adobe Suite	●●●●●●
Microsoft Office	●●●●●●
VBA	●●●●●●
Python	●●●●●●

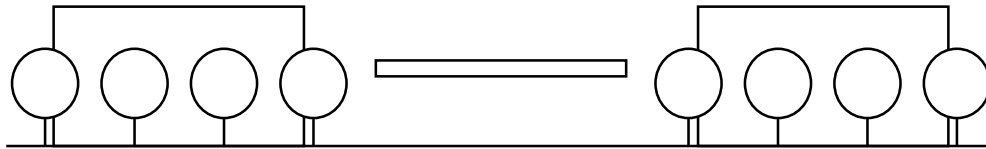
## Languages

English	●●●●●●
Mandarin	●●●●●●

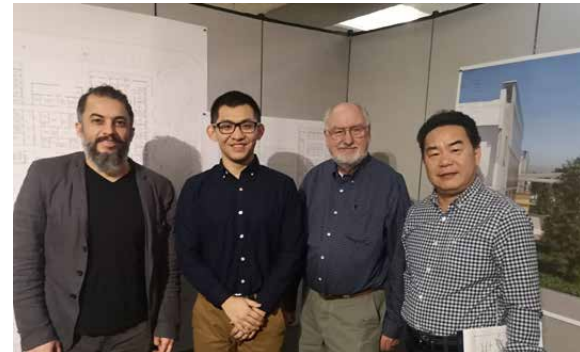


# INCLUSIVE

A Micro Hospital with Geriatric Emergency Department

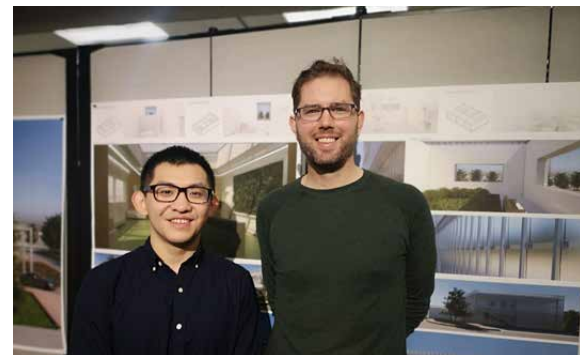


Chair: D. Kirk Hamilton, Ph.D., FAIA, FACHA, FCCM, EDAC



Co-Chair: Ahmed K. Ali, Ph.D.

Committee Member: Changshan Huang, Ph.D., AICP, ASLA, PLA



Studio Professor: Brian Gibbs, AIA, RID, LEED AP

Professional Advisor: Steven C. Schultz, AIA, ACHA, LEED AP

