

REBUILD

— AT CCH —
CHESTER COUNTY CENTER OF
PHYSIOTHERAPY

DREXEL UNIVERSITY

HEALTHCARE INDEPENDENT STUDY

2020

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SUMMARY

This is an outpatient rehabilitation facility featuring multiple training labs, an exam suite, and a boutique retail center. In designing this building, the team is focused on efficient patient flow throughout the space and keeping in consideration the ample research that suggests architecture's effect on the human healing process.

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CONCEPT



NATURALLY-FOSTERED HEALING

GUIDING PRINCIPLES

1

ACCESS TO NATURE

2

HOSPITALITY-LIKE COMFORT

3

ENCOURAGING COMMUNITY



1

ACCESS TO NATURE

RESEARCH

- Creating connections to nature: It has been known for centuries that human connection to nature can have positive impacts for individuals
- Why biophilic design is important: We, as humans, evolved in nature and studies have shown that humans have a deep-rooted connection to nature because of this
- Natural daylight, circadian rhythms, and access to greenery can lead to decreased levels of stress within patients and staff, normalize sleep schedules, lower patient stay time, increase success of treatments and create an overall more calming experience
- There has been a push to incorporate more ways for patients to get outdoors. Newly built facilities and new renovations are trying to including things like roof gardens, courtyards, planters, operable windows, natural ventilation and water elements in the space
- Selecting natural materials or materials that mimic nature is another way to create a successful biophilic design. Creating rhythms or repeating elements in the interior architecture that mimic things that would be found in nature is also another great option

2

HOSPITALITY-LIKE COMFORT



RESEARCH

- Lower stress levels and positive mood have been linked to better health. In a hospital, a simple way to encourage calmness is to paint the walls soothing colors
- Home away from home: Therapy patients can spend extended amounts of time in these care facilities. They should, therefore, provide a certain level of comfort
- There has been extensive research from the past decade that supports a direct correlation between artwork and its ability to aid in healing, patient satisfaction, and provides an opportunity to support communities, diversity, and artists
- Catering to Individuals With Disabilities: People with disabilities fail to receive adequate healthcare because of accessibility issues.
- Decreasing anxiety for patients with a separation of “back of house” spaces while streamlining background work for staff minimizes distraction



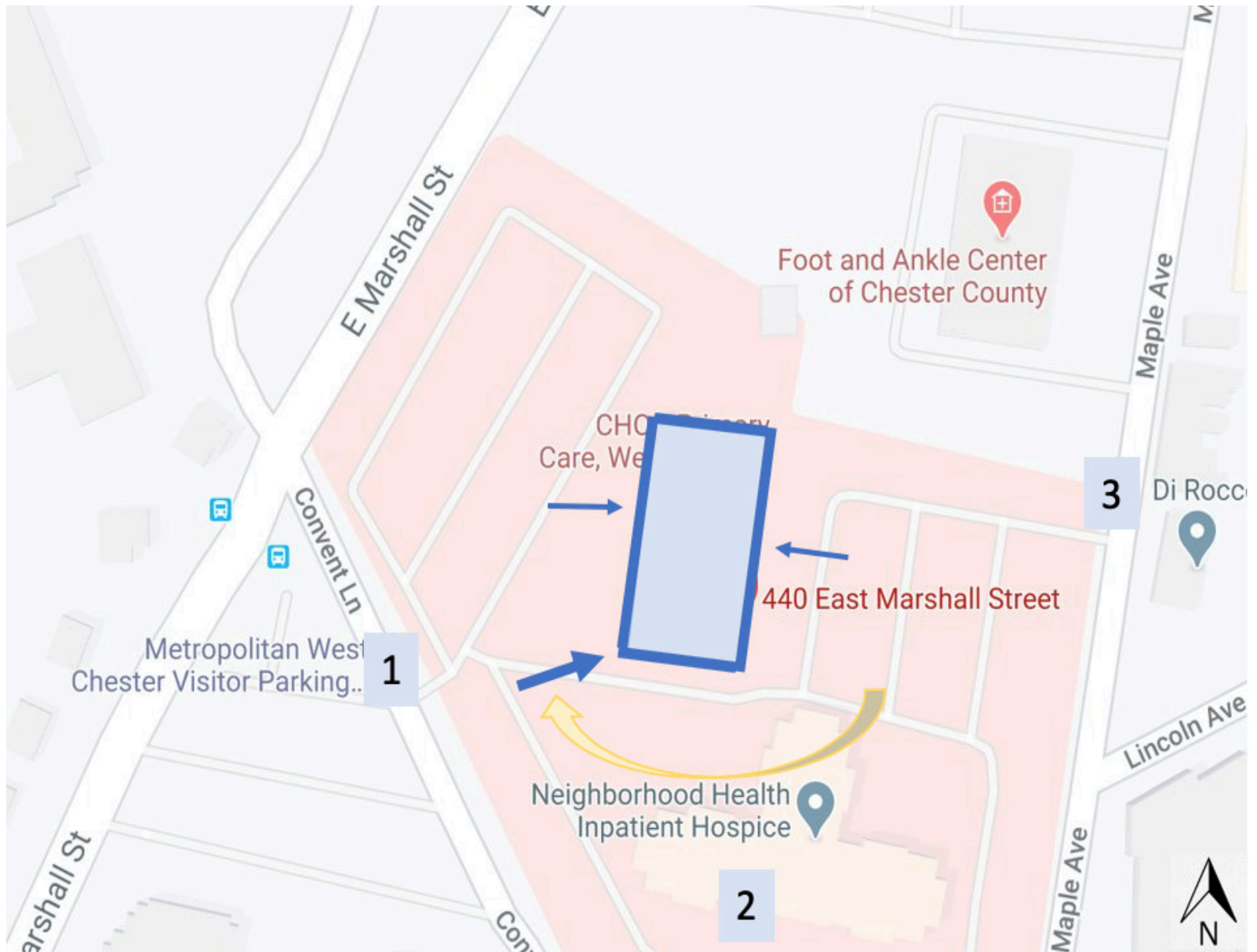
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ENCOURAGING COMMUNITY

RESEARCH

- Wide range of needs: level of social isolation or camaraderie, family involvement in therapy, etc.
- Aside from the display of art, art programs are also proven to be beneficial to patients
- Lounge-like waiting areas to increase comfort and calm possible nerves in patients
- Service design focuses the space planning and functions of the space to be user-centric in the perspective of the target groups. Service spaces are not given storefront or exposure to limit the confusion and highlight the patient experience throughout a project
- Staff Lounges to promote staff bonding
- Areas of respite to encourage group-healing such as waiting areas, cafe, and outdoor spaces

SITE ANALYSIS



440 E Marshall St, West Chester, PA 19380



Access Points:
(3) Street Entrances
(3) Exterior Building Entrances

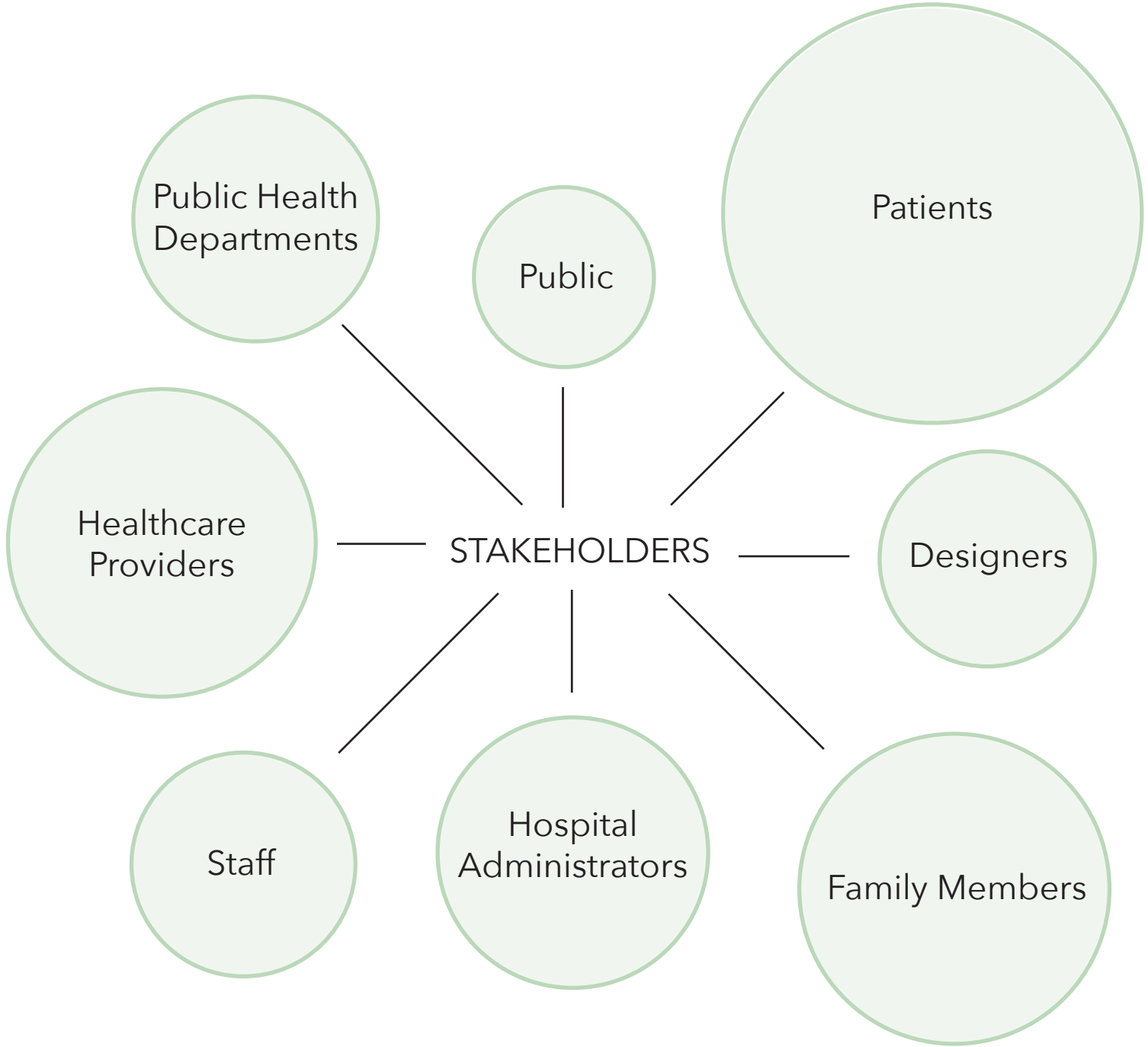
Sun Path:
Southern path from East to West

Potential Outdoor Access:
Northern side of Building uninterrupted by
Parking
Existing natural land space



(A) Main Entrance (B) Rear Entrance

STAKEHOLDER WEB



USER PERSONAS



Patient: Derek Finley
Age: 52

Derek is a high school teacher going through intense physical therapy following his ski related leg injury. He has powered through 2 months of physical therapy and is close to completing his regimen. Derek's therapy includes a supervised workout routine in the strength & endurance lab and the outside space.



Family member: Sarah Finley
Age: 10

10-year-old Sarah has been accompanying her father Derek in some of his therapy visits. Being able to spend time with her dad has kept Sarah optimistic and has kept him encouraged to keep up with the treatments as planned. They love to take classes together in the Multi-Purpose Lab and to catch up in the facility's café.



Staff Member: Dr. Green
Occupation: Physical Therapist

Dr. Green has been Mr. Finley's physical therapist for the last 2 months. She has administered the tailored exercise program which focuses on a series of workouts that improve strength, agility and balance. Dr. Green also supervises several other therapeutic treatments to Mr. Finley that induce relaxation and healing.

Patient Greeting

- Reception station near the entrance of the facility. Receptionists should be there to guide patients to registration, handle any financial or billing matters, and direct them to the proper area of the facility
- Wayfinding and adequate signage should be utilized to help patients and family members
- For patients with increased mobility issues, staff may be needed take them to where they need to go
- Waiting area for patients and family

Patient Mobility

- Patients may be coming in with a wide range of mobility issues
- Since this is an outpatient facility, there may be less cases of patients with severe mobility issues

Patient Visit

- Locker rooms should be provided near/inside of the gym area of the facility so patients can change and store their belongings
- Patients can:
 - Meeting with their doctor/specialists
 - Practice exercises/stretching
 - Undergo tests to diagnose severity of injury

PROGRAMMING

Department	Unit Area	#	Total NSF	Net to Gross	GSF	Floor Occurrence	Remarks
A Administrative							
1 Lobby	700	1	700	1.0	700	1	
2 Secondary Lobby	300	1	300	1.0	300	2	
3 Café	1400	1	1,400	1.0	1,400	1	
4 Waiting / Registration	700	2	1,400	1.0	1,400	2, 3	
5 Staff Lounge	400	3	1,200	1.0	1,200	1,2,3	
6 Administrative Suite	3500	1	3,500	1.2	4,200	1	
			8,580		9,280		DGSF
B Ancillary							
1 Specialty Boutique	630	1	630	1.2	756	1	
2 Women's Locker Room	500	1	500	1.3	650	2	
3 Men's Locker Room	500	1	500	1.3	650	2	
4 Strength & Endurance Lab	800	1	800	1.3	1,040	2	
5 Home Lab	800	1	800	1.3	1,040	2	
6 Think & Speak Lab	800	1	800	1.3	1,040	2	
7 Multi-Purpose Lab	630	1	630	1.3	819	1	
8 Diagnostic Imaging	1,460	1	1,460	1.4	2,044	3	Includes CT and X-Ray
			6,120		8,039		DGSF
C Clinical - Specialty							
1 General Exam Room	110	12	1,320	1.4	1,848	3	Includes all exam specialties
2 Exam Suite Support	500	1	500	1.4	700	3	
3 Staff Work Area	300	3	900	1.3	1,170	2,3	
			2,720		3,718		DGSF
D Building Support							
1 IT Support	90	1	90	1.2	108	1	
2 Wheelchair Storage	80	1	80	1.2	96	1	
3 Housekeeping	90	1	90	1.2	108	2	
4 Building Support	50	3	150	1.2	180	1,2,3	
			410		492		DGSF
					21,529		Total Departmental Gross
					<u>1.25</u>		Building net-to-gross Factor
					26,911		Total Building Gross

FGI CONSIDERATIONS

EXAM SUITE

- **Documentation area.** Accommodations for documentation should include a writing surface and/or area with storage for an electronic device
- **Separate soiled / clean linen storage**
- **Public Drinking Water**
- **Environmental Services Room.** Minimum 1 room per floor. Must include service sink or floor-mounted mop sink, Provisions for storage of supplies and housekeeping equipment, Hand-washing station or hand sanitation dispenser

WAITING AREAS

- **Clear circulation.** To reduce the chances for tripping or injury, seating should not be located near the path of travel
- **Pick-up Waiting at entrances.** Because patients may need to wait for transport, such as cabs, buses, or specialty transport services, consider including a window overlooking the entrance so patients can sit inside to wait for transport.

CIRCULATION

- **Min 6' Corridors**
- **Min 7'-10" Ceiling Height**
- **Sliding Doors.** Use of manual or automatic sliding doors shall be permitted where fire and other emergency exiting requirements are not compromised.
- **Doors.** Door openings serving occupiable spaces shall have a minimum clear width of 34 inches. Doors shall not be permitted to swing into corridors.
- **Storage.** Space(s) shall be provided for wheelchairs, lifts, and gurneys.

FGI CONSIDERATIONS

STRENGTH & ENDURANCE LAB

- **Individual therapy spaces.** Minimum clear floor area of 60 square feet, provisions for patient privacy.
- **Staff work area.** Arranged so staff can view exercise area. Documentation.
- **Storage.** Space for clean and soiled linen. Space for therapeutic equipment, safety devices, and other clinical supplies
- **Public Drinking Water**
- **Windows.** Window(s) in therapy areas shall have features, curtains, or shades to provide patient privacy.

HOME LAB

- **Staff work area.** Arranged so staff can view exercise area. Documentation.
- **Storage.** Space for clean and soiled linen. Space for therapeutic equipment, safety devices, and other clinical supplies
- **Public Drinking Water.**
- **Windows.** Window(s) in therapy areas shall have features, curtains, or shades to provide patient privacy.

THINK & SPEAK LAB

- **Individual therapy spaces.** Minimum clear floor area of 80 square feet, provisions for patient privacy.
- **Storage.** Space for clean and soiled linen. Space for therapeutic equipment, safety devices, and other clinical supplies
- **Public Drinking Water**
- **Windows.** Window(s) in therapy areas shall have features, curtains, or shades to provide patient privacy.
- **Doors:** A gasketed door with a sweep shall be provided in speech and hearing room(s).

STRENGTH & ENDURANCE



PROGRAMMING

PATIENT EXPERIENCE

Patients will be led through physical therapy regimens in the strength and endurance lab to heal from injuries or illnesses that impair motor function, and help regain range of movement or control discomfort. Through these training sessions of the body, the aiding therapist aims to identify the root cause of the patient's trauma, counsel the patients during treatment, and work with the patient to create and achieve a plan for short or long term rehabilitation.

FEATURES

- Free weight cart
- Treadmills
- Exercise Bicycles
- Floor mat
- Stretching equipment
- Open weight training and stretching area
- Private treatment bays

HOME



PROGRAMMING

PATIENT EXPERIENCE

In the Home lab, patients will be administered all-encompassing treatments of occupational therapy. The treatments proctored by the home lab therapists will include common daily experiences that the patients will be faced with in the real world. This way, the exercises that the patients endure during treatment closely mirror motor functions they will have to complete each time they leave the rehabilitation center to return home. The therapists in this lab aim to prepare the patients for life outside of treatment.

FEATURES

- Stair simulator
- Fine motor exercises
- “Kitchen” simulator including common appliances, cabinetry and utensils
- “Living Room” simulator including lounge seating and remote controls
- “Car” simulator including doors, wheel, pedals
- Varied terrain walkways; gravel, decking and turf

THINK & SPEAK



PROGRAMMING

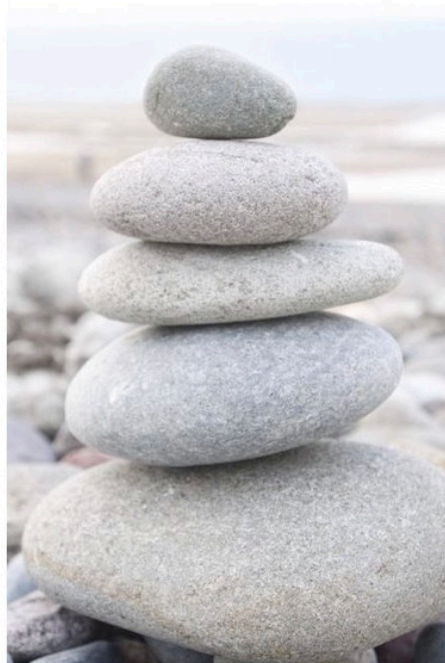
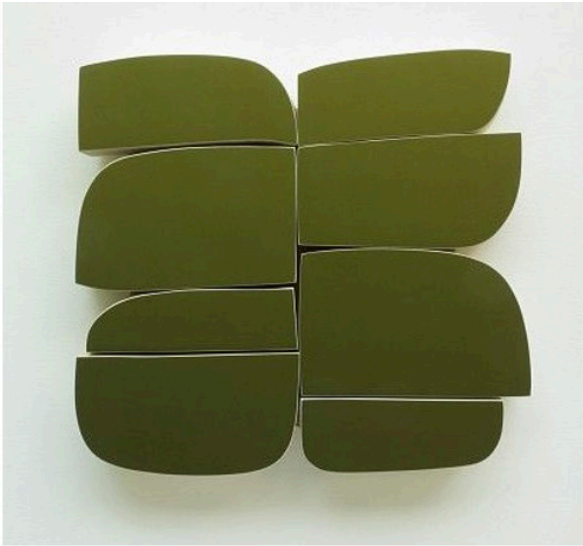
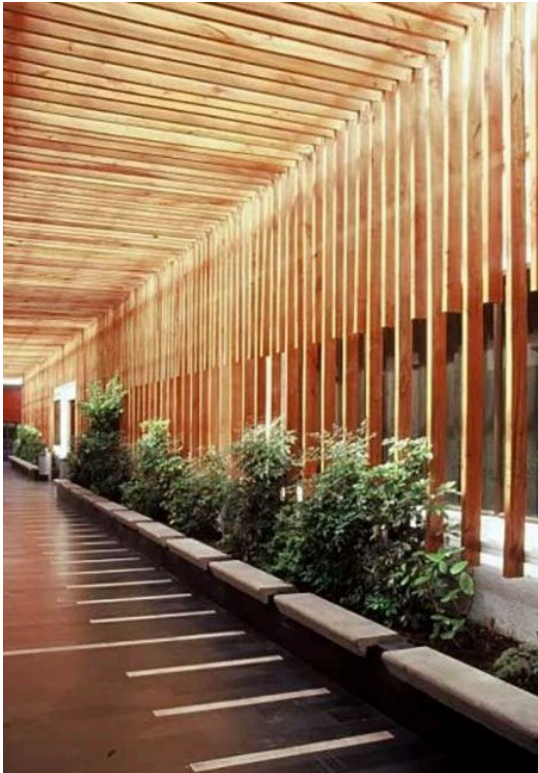
PATIENT EXPERIENCE

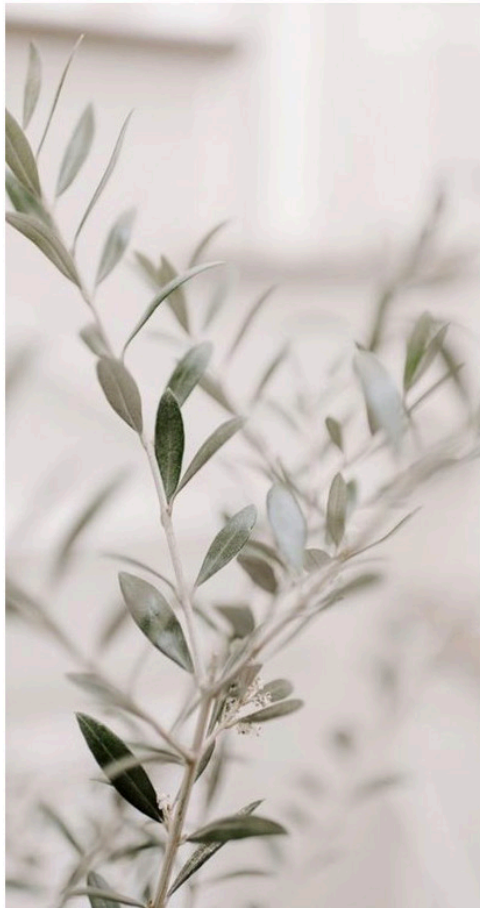
The Think and Speak lab treats patients who are diagnosed with impaired cognition, audio or vocal skills. Therapy sessions carry a one-on-one format with the patient and therapist, to allow for privacy and acoustic purification. Therapists of this lab aim to restore as much of the patient's lost cognitive or audio skill as possible by the end of their treatment term.

FEATURES

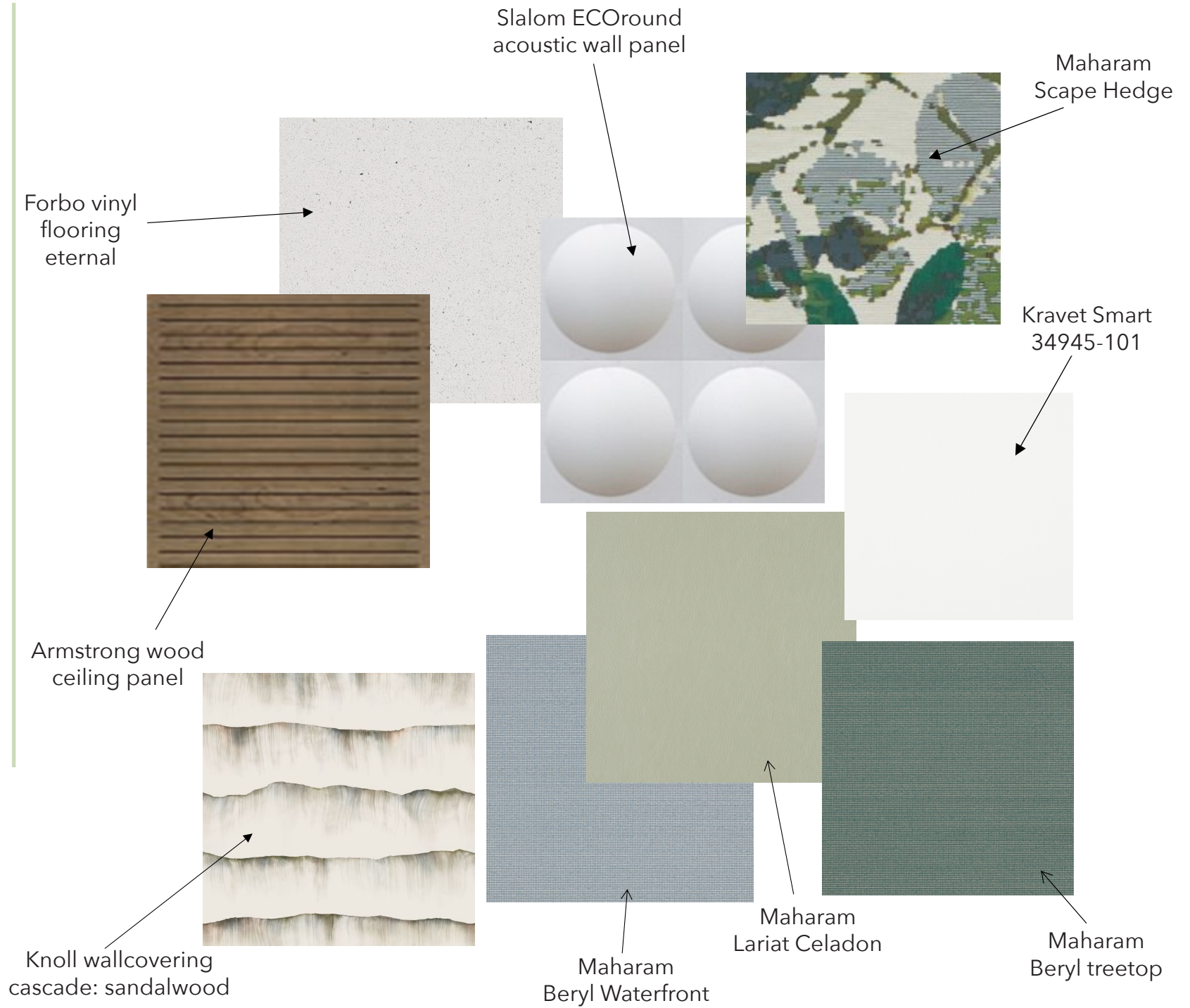
- Private therapy rooms
- Varied room sizes
- Comfortable patient seating
- Guest seating available
- Therapist's station within each therapy room, with storage units for white boards, markers, flashcards, etc.

DESIGN CONCEPT



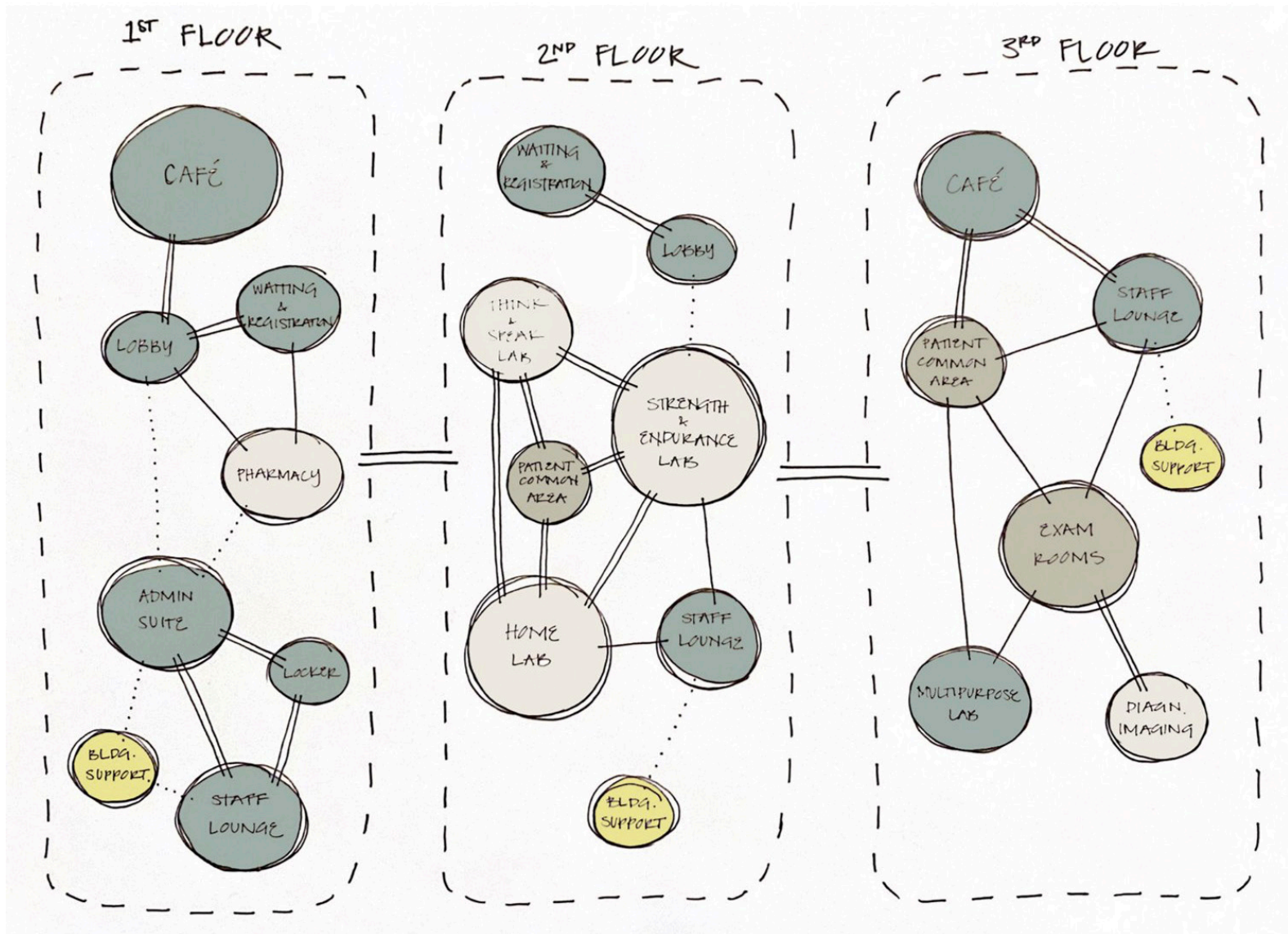


MATERIALS PALETTE

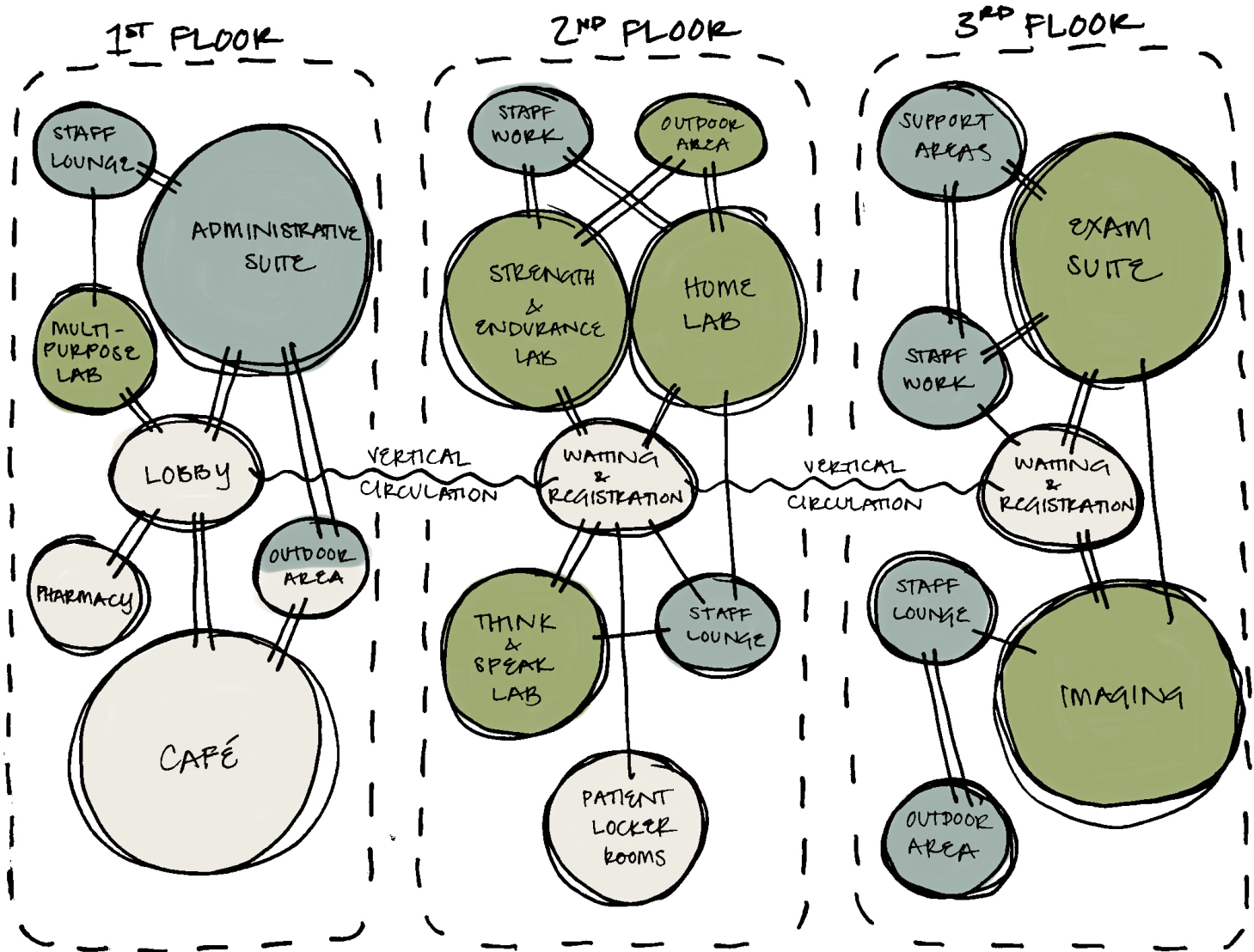




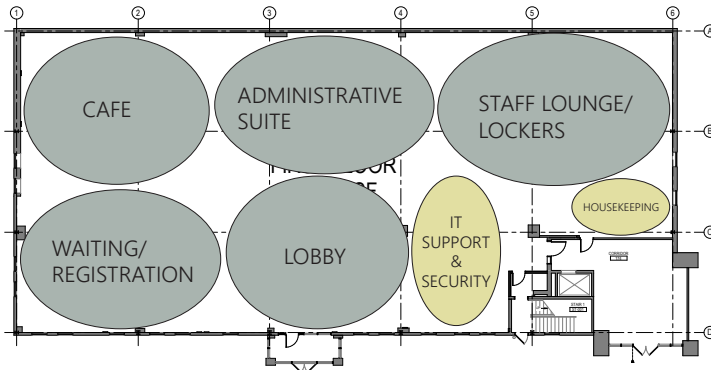
ADJACENCY



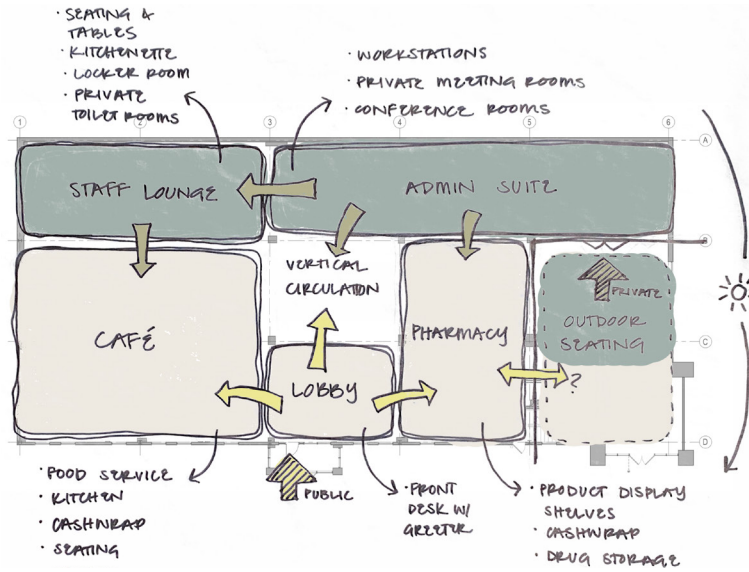
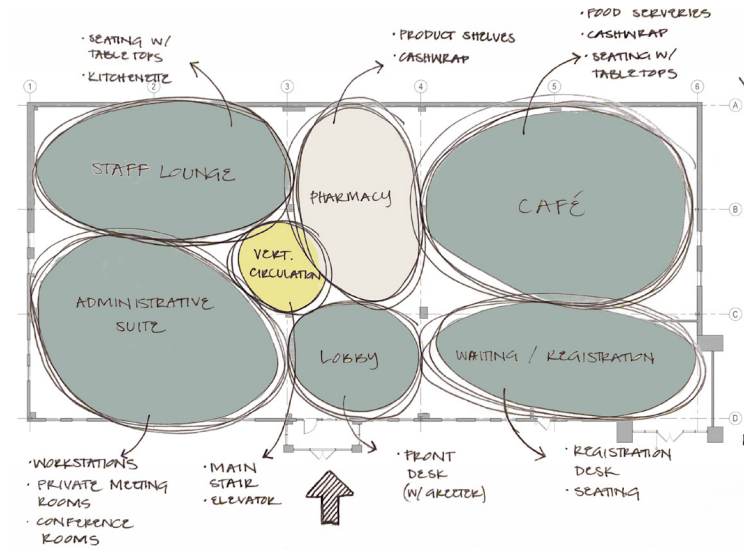
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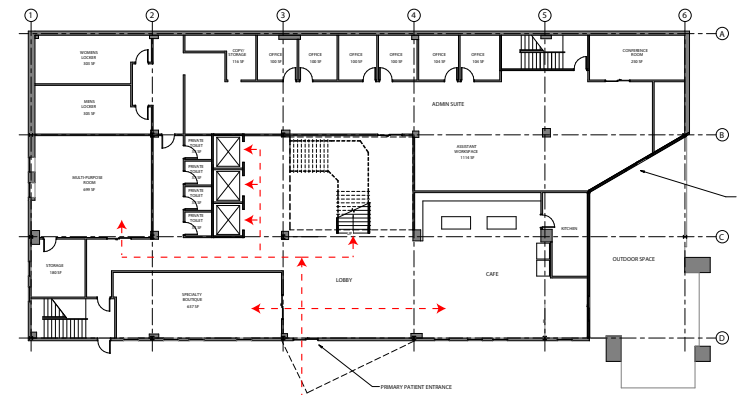
LEVEL 1



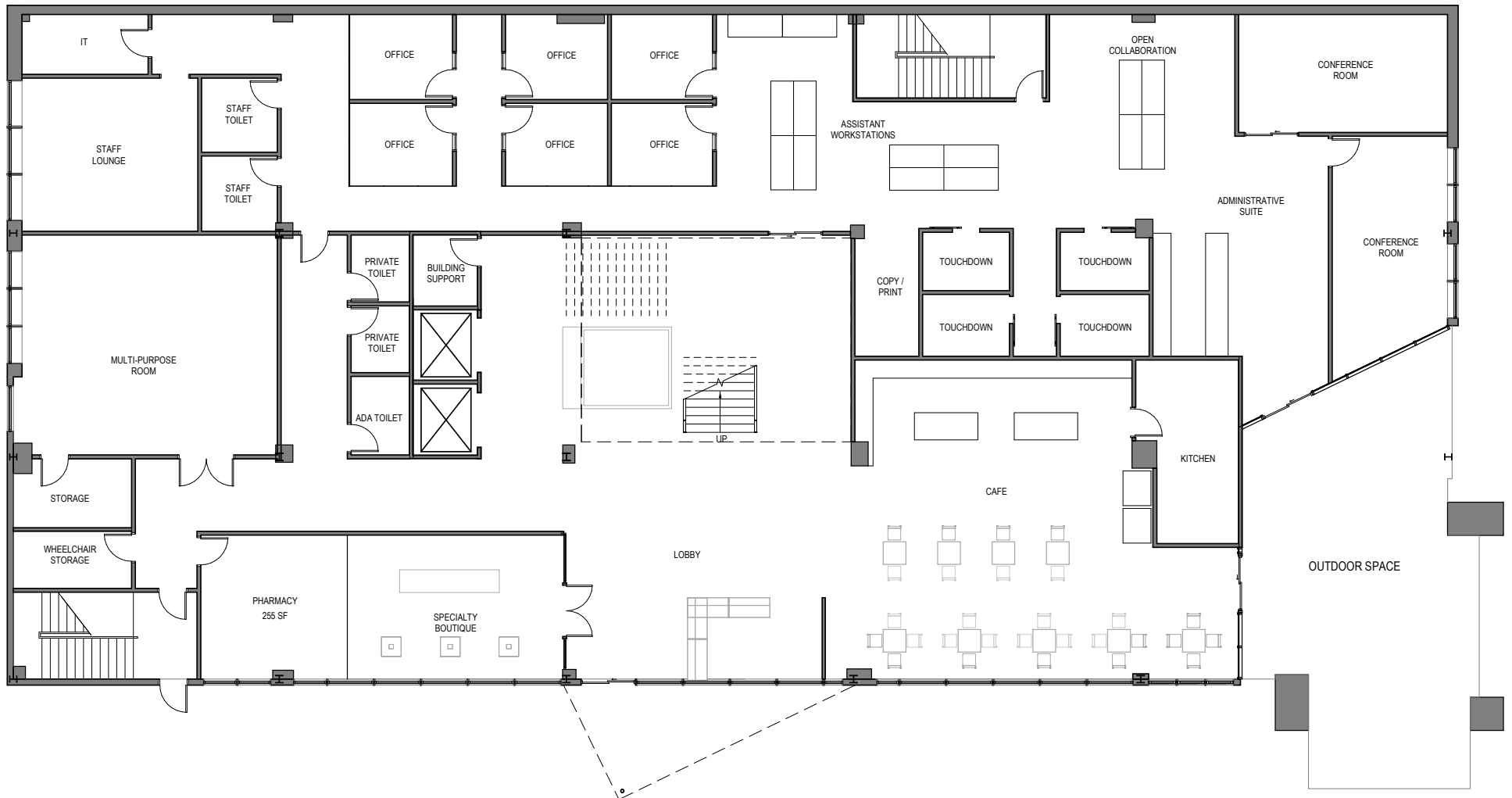
BLOCKING DIAGRAMS



PATIENT FLOW

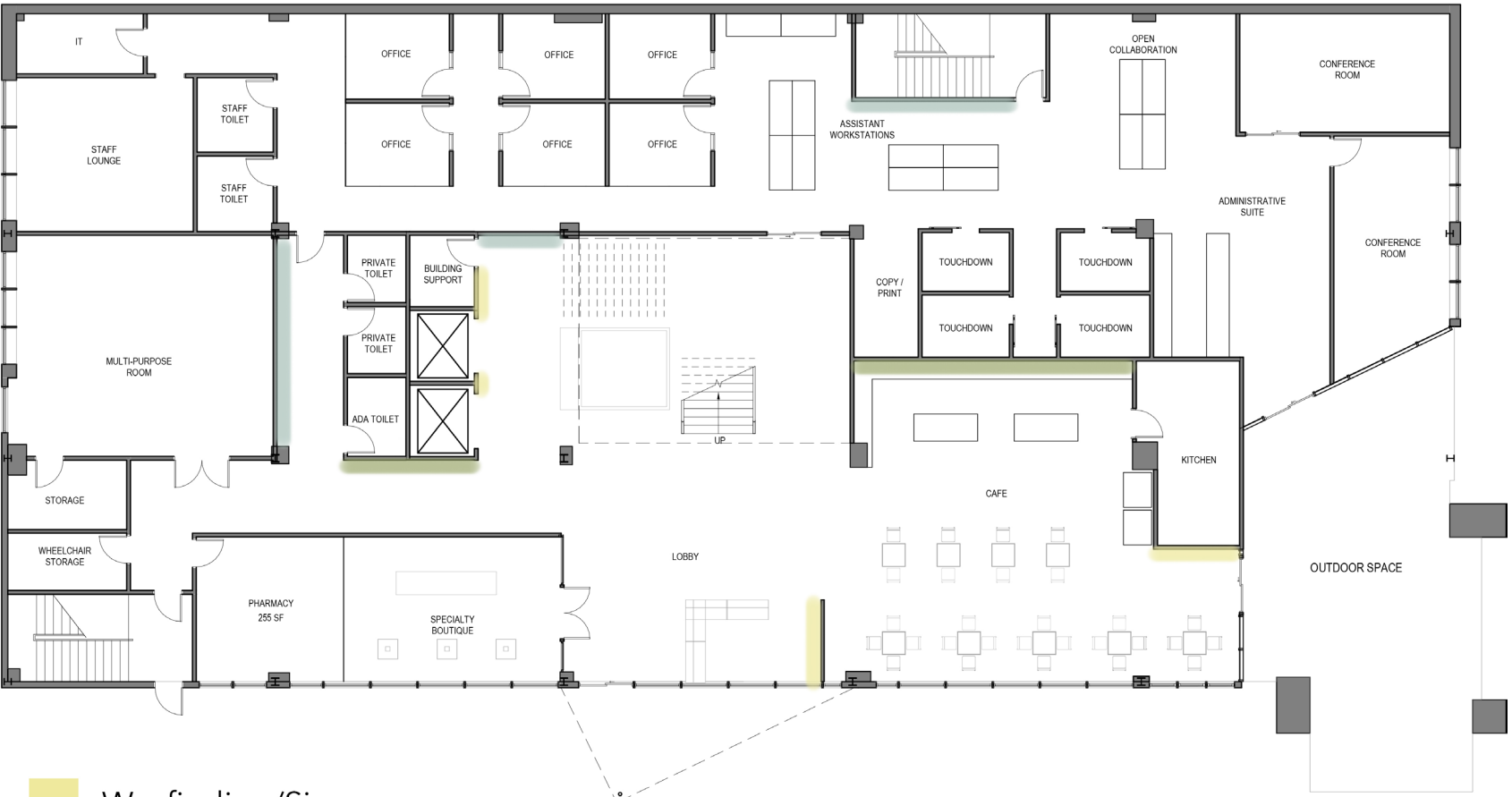





FINAL FLOOR PLAN



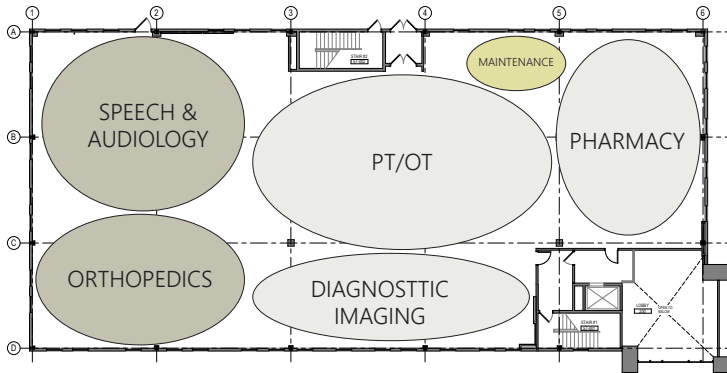
LEVEL 1

WALL DIAGRAM

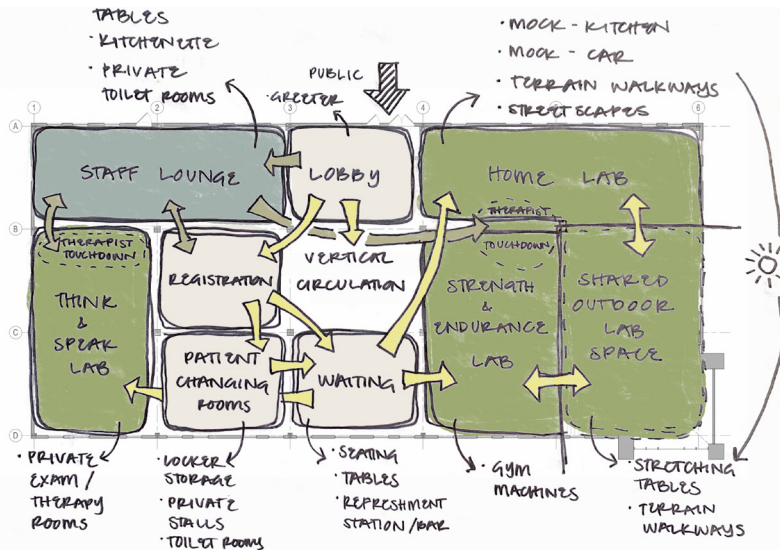
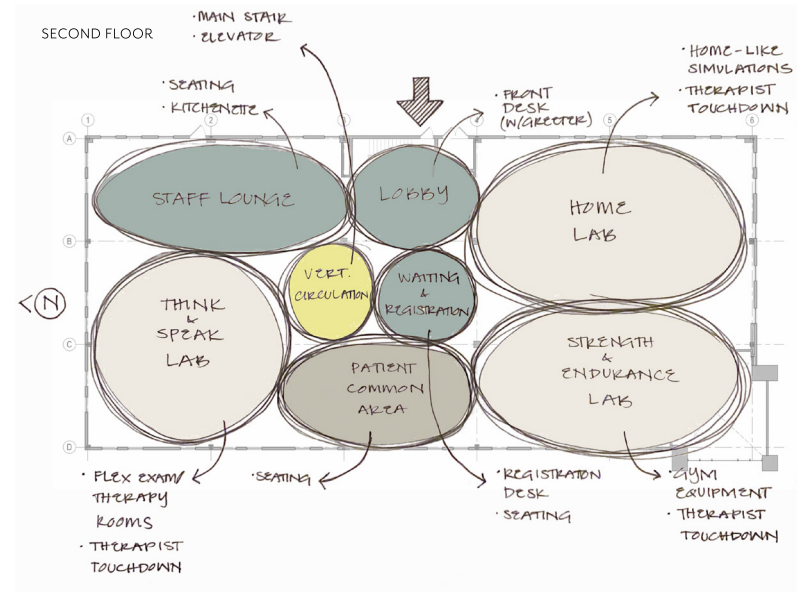


-  Wayfinding/Signage
-  Green wall
-  Art/wall graphics

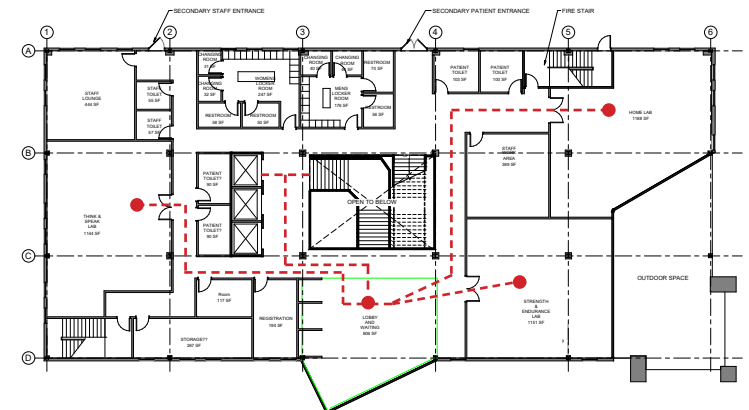
LEVEL 2



BLOCKING DIAGRAMS



PATIENT FLOW



FINAL FLOOR PLAN



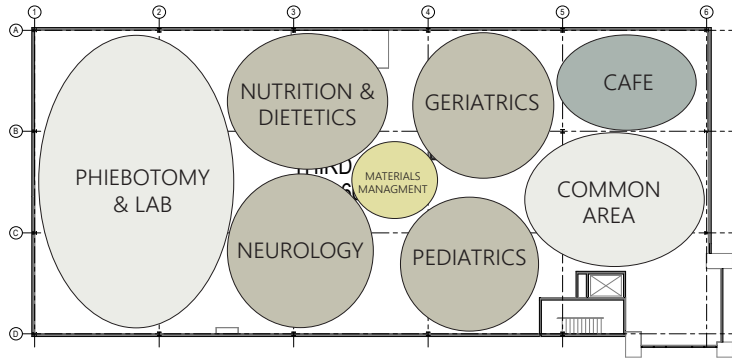
LEVEL 2

WALL DIAGRAM

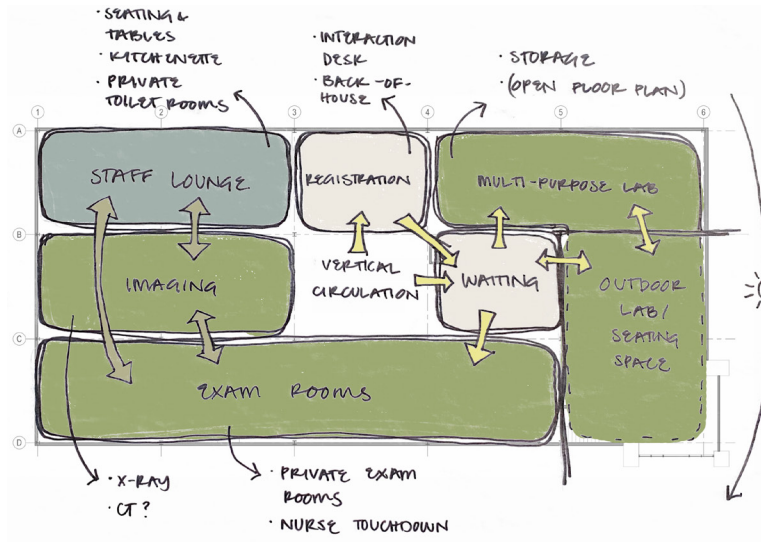
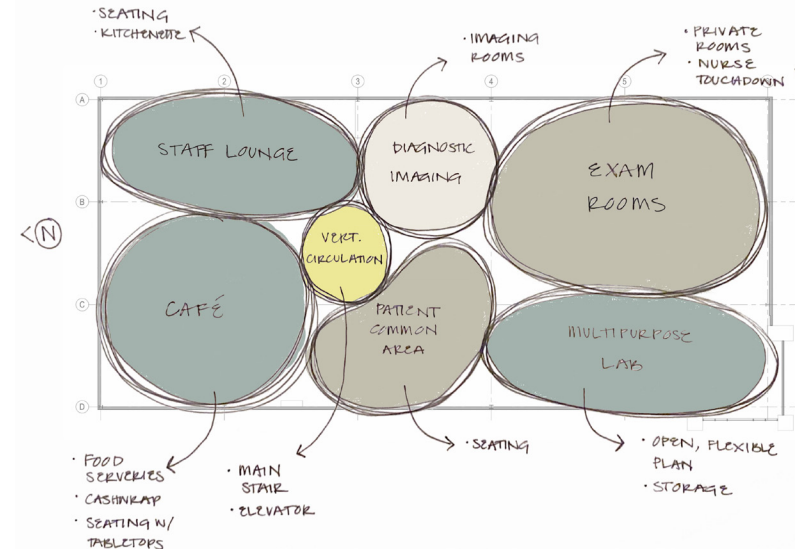


- Wayfinding/Signage
- Green wall
- Art/wall graphics

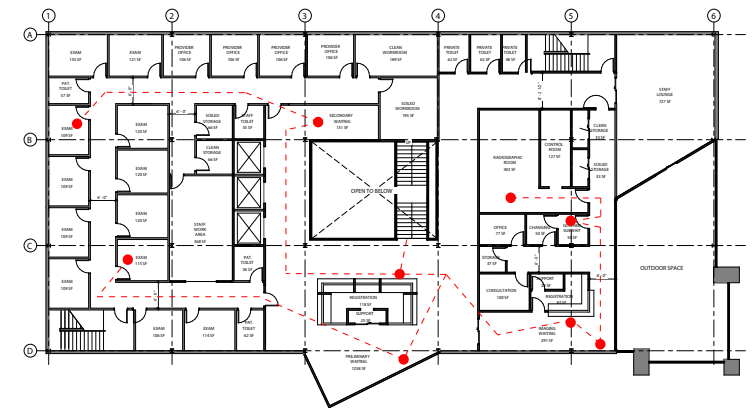
LEVEL 3



BLOCKING DIAGRAMS



PATIENT FLOW



FINAL FLOOR PLAN



LEVEL 3

WALL DIAGRAM



- Wayfinding/Signage
- Green wall
- Art/wall graphics



FIRST FLOOR

1 ACCESS TO NATURE

- BIOPHILIC INTERIOR ELEMENTS
- NATURAL FINISHES
- CENTRAL ATRIUM WITH SKYLIGHT ABOVE

2 HOSPITALITY-LIKE COMFORT

- GLASS PARTITIONS
- HIGH END ARCHITECTURAL FINISHES
- SOOTHING COLOR AND MATERIALS PALETTE
- GRAND MAIN STAIR AND SPACIOUS LOBBY

3 ENCOURAGING COMMUNITY

- SPACIOUS CIRCULATION
- PUBLIC SEATING
- WIDE STAIR ENCOURAGING INTERACTION

LOBBY
PERSPECTIVE





RECEPTION & WAITING PERSPECTIVE

1 ACCESS TO NATURE

- SURROUNDING VIEWS
- BIOPHILIC INTERIOR
- FINISHES PULLING FROM ORGANIC INSPIRATION

2 HOSPITALITY-LIKE COMFORT

- COMFORTING FINISH PALETTE
- FUNCTIONAL MATERIALS AND FURNITURE
- OPEN REGISTRATION
- REFRESHMENT STATION

3 ENCOURAGING COMMUNITY

- SPACIOUS CIRCULATION PATHS
- OPEN SEATING ARRANGEMENTS





HOME LAB PERSPECTIVE

1 ACCESS TO NATURE

- FULLY OPERABLE NANA WALLS
- MATERIALS AND GRAPHICS PULLING FROM ORGANIC INSPIRATION

2 HOSPITALITY-LIKE COMFORT

- HIGH END ARCHITECTURAL FINISHES

3 ENCOURAGING COMMUNITY

- ENGAGING ENVIRONMENT
- SHARED SPACE ENCOURAGING PATIENT INTERACTION





STRENGTH & ENDURANCE PERSPECTIVE

1 ACCESS TO NATURE

- SURROUNDING VIEWS
- ACCESS TO OUTDOORS
- MATERIALS AND GRAPHICS PULLING FROM ORGANIC INSPIRATION

2 HOSPITALITY-LIKE COMFORT

- COMFORTING FINISH PALETTE
- FUNCTIONAL MATERIALS
- VISUAL ACCESS TO STAFF WORK AREA
- PRIVATE TREATMENT BAYS

3 ENCOURAGING COMMUNITY

- OPEN SPACE PLAN
- GROUPINGS OF EQUIPMENT FOR PATIENT INTERACTION

