UNDER-FIVE PEDIATRIC CARE

Introducing preventative care clinics to dense rural communities

Malawi, Africa

PEDIATRIC CARE IN MALAWI

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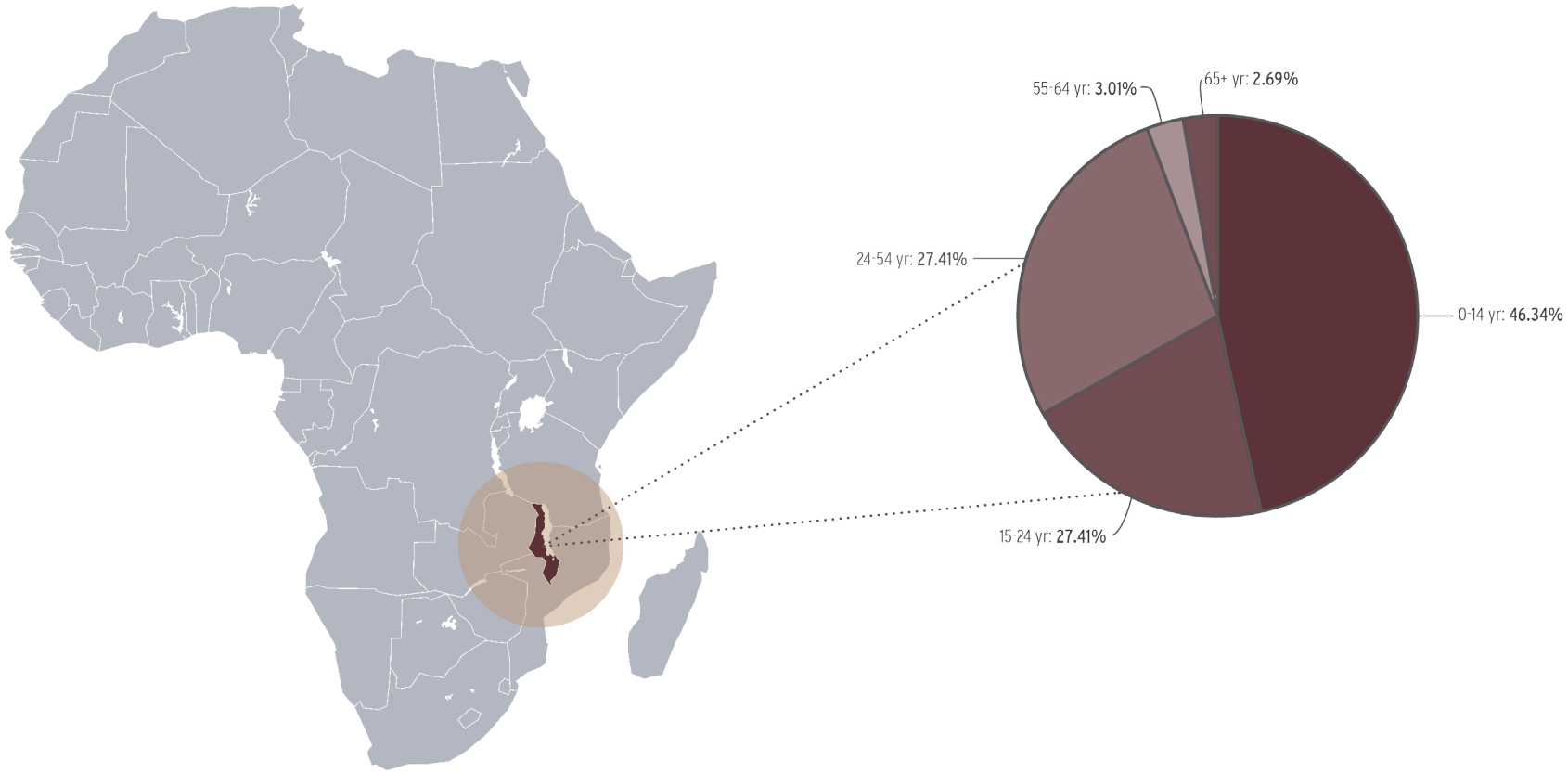
INITIAL RESEARCH

RESEARCH QUESTION

How can Malawi improve health outcomes of the growing youth population through preventative healthcare management and methods?

MALAWIANS | GETTING YOUNGER

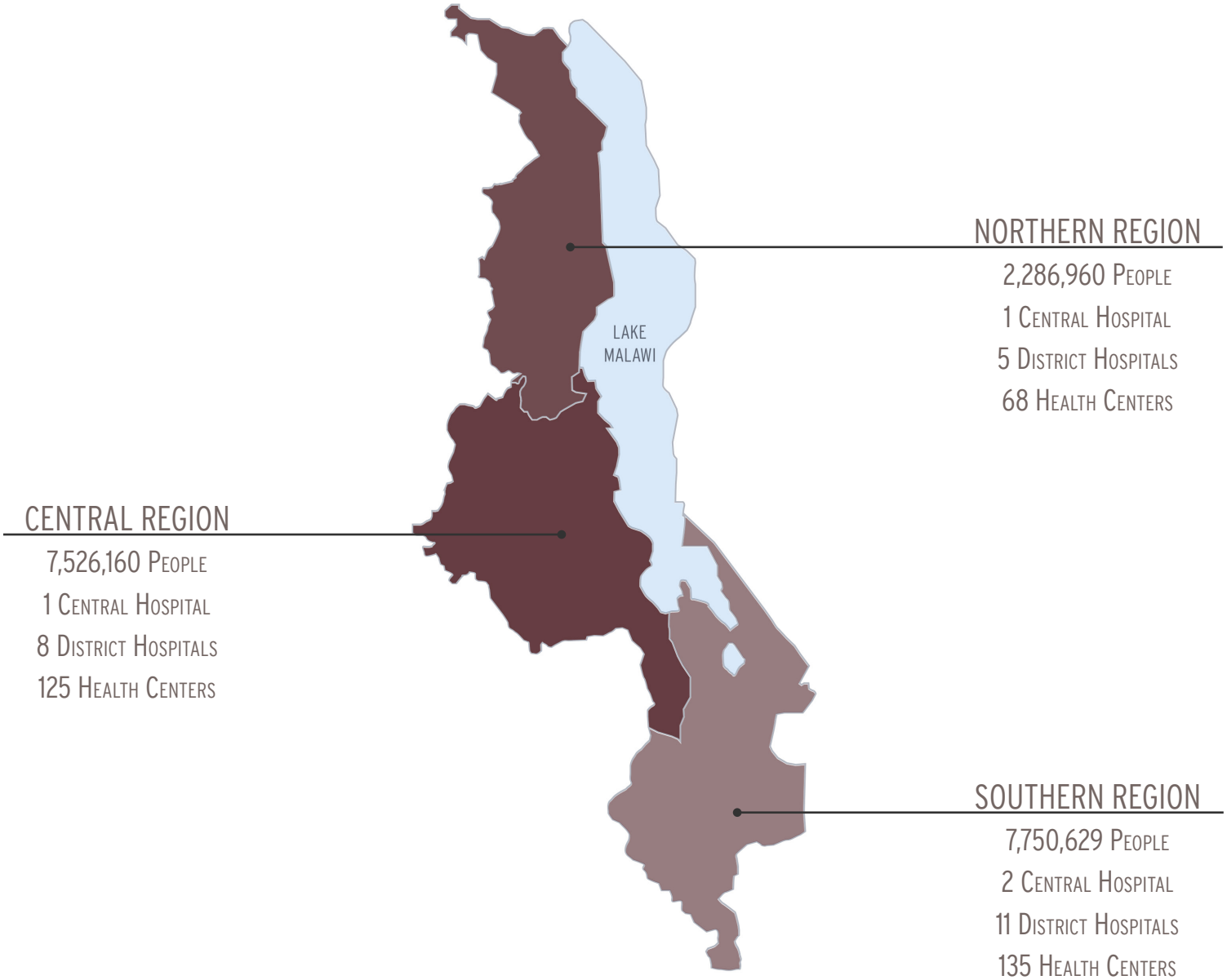
The country of Malawi, located in sub-Saharan Africa, is home to over 18 million people and nearly half of the population is under the age of 14.[1] With a 2.9% anticipated growth rate, a fertility rate of approximately 4.4 children per woman, and an average age of 18 for childbearing woman, the country's population is getting younger.[1,2]



1. | 2018 Population and Housing Census. Report. National Statistical Office, Government of Malawi. 2018.
2. | UNICEF. "Maternal and Newborn Health Disparities Malawi." UNICEF. Accessed February 10, 2019.

HEALTHCARE | GEOGRAPHICAL INEQUITIES

The uneven disbursement of healthcare facilities throughout the country has led to geographical inequities between rural and urban areas. Despite 84% of the population living in rural villages, a majority of healthcare facilities are found in urban contexts.[3] With the average traveling distance ranging anywhere from 5 to 35 kilometers (up to 20 miles) to a nearby clinic, the opportunity for those in rural areas to receive even the most basic of care has become undeniably exhausting and unethical.[4]



3 | Abiiro, Gilbert Abotisem, Grace Bongololo Mbera, and Manuela De Allegri. "Gaps in Universal Health Coverage in Malawi: A Qualitative Study in Rural Communities." BMC Health Services Research14, no. 1 (2014). Accessed February 10, 2019.
4 | International Treatment Preparedness Coalition. Rationing funds, risking lives: the world backtracks on HIV treatment. (Online) 2010. Accessed February 10, 2019.

U5MR | PREVENTABLE DEATHS

In an effort to improve access to care for younger patients, a look at the under-five mortality rate (U5MR) reveals that the greatest potential for intervention lies in the youth population of children five years old and younger. In Malawi, the U5MR is in need of intervention because despite having dropped by nearly 50% in the last 10 years, the World Bank recording for Malawi of 55 deaths per 1,000 live births is still behind the national average, in the bottom 20% of all countries.[5]

23% PNEUMONIA

22% UNDERWEIGHT

18% DIARRHEAL DISEASES

14% MALARIA

An attempt to lower this number would further support the Global Development Goals set forth by the United Nations, the aim is that all countries are able to reduce under-five mortality rates to at least as low as 25 per 1,000 live births, by the year 2030.[6]

5 | "Mortality Rate, Under-5 (per 1,000 Live Births)." The World Bank. 2017. Accessed February 10, 2019.
6 | "Children: Reducing Mortality." WHO. September 19, 2018. Accessed February 10, 2019.

HSAs | LACKING RESOURCES

Malawi has adopted the integrated community case management for childhood illnesses (iCCM) which is an attempt to treat childhood illnesses, which are common causes for under-five deaths, such as diarrheal diseases, malaria and pneumonia.[7] However, this policy is only maintained by Health Surveillance Assistants, individuals without medical degrees or access to equipment in cases of emergencies, and that can have as many as 1,000 patients each on their caseloads.[8]

7 | Rodríguez, Daniela C., Hastings Banda, and Ireen Namakhoma. "Integrated Community Case Management in Malawi: An Analysis of Innovation and Institutional Characteristics for Policy Adoption." Health Policy and Planning30, no. Suppl 2 (2015): Ii74-i83. Accessed February 10, 2019.

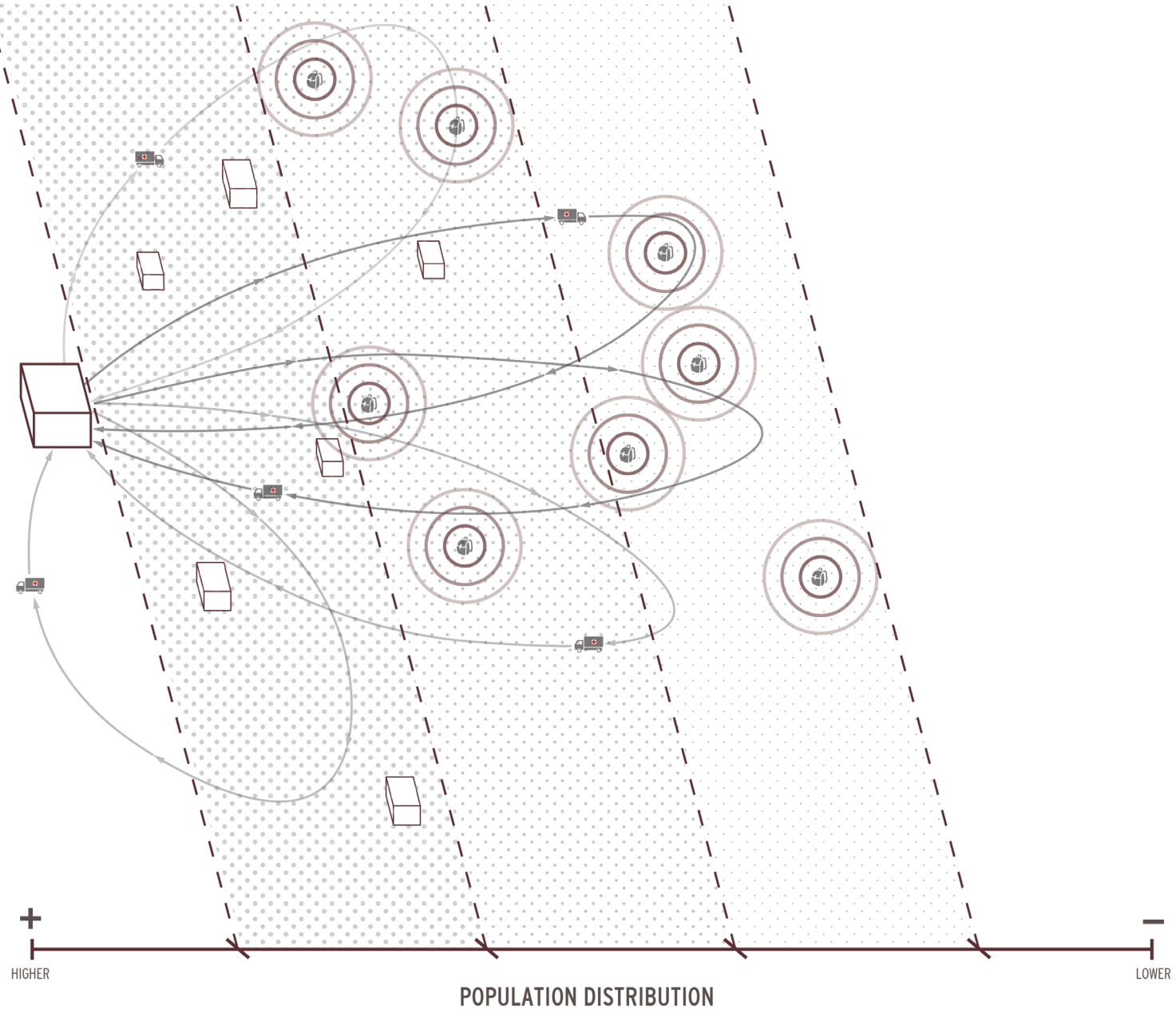
8 | "Malawi Integrated Community Case Management." Democratic Republic of Congo | Severe Malaria Observatory. Accessed February 10, 2019.

MHCs | LACKING CONSISTENCY

Another initiative which Malawi has seen take place over the years, is the use of mobile health clinics (MHCs) in rural communities.[9] These fully equipped clinics, which often are housed in vans or in vacant existing structures move from village to village attempting to treat as many young children as possible.[10] Staffed with educated volunteers, doctors and nurses, care and treatment are available for those willing to wait.

9 | Geoffroy, E., A. D. Harries, K. Bissell, E. Schell, A. Bvumbwe, K. Tayler-Smith, and W. Kizito. "Bringing Care to the Community: Expanding Access to Health Care in Rural Malawi through Mobile Health Clinics." Public Health Action4, no. 4 (2014): 252-58. Accessed February 10, 2019.
10 | Lindgren, Teri, Ellen Schell, Alice Bvumbwe, Kathryn B. Hart, Jones Laviwa, and Sally Rankin. "Using Mobile Clinics to Deliver HIV Testing and Other Basic Health Services in Rural Malawi." Journal of Rural and Remote Health11, no. 2 (June 28, 2011): 1-8. Accessed February 10, 2019. PubMed.

CURRENT |SYSTEM INEFFICIENCIES



MOBILE HEALTH CLINICS | **GENERAL HEALTH CLINICS |** **HEALTH SURVEILLANCE AGENTS |**

CONCLUSIONS

This initial research into Malawi's pediatric care reveals that despite current methods and resources in place to handle preventative care of young children, the rapid growth of the youth population has led to system inefficiencies and gaps in healthcare coverage, specifically in dense rural contexts.

PROPOSAL

PROJECT STATEMENT

The design and construction of under-five outpatient clinics, strategically distributed throughout Malawi's rural communities, will provide a source of constant specialized care for the development and monitoring of young children, and will result in improved health outcomes that lower the country's under-five mortality rate.

U-5 MOBILE CLINICS

WHAT: FULLY EQUIP CARE VEHICLES

WHO: SERVING SMALL COMMUNITIES

WHERE: IN SMALL, REMOTE, VILLAGES

WHEN: WEEKLY VISITS/ROUNDS

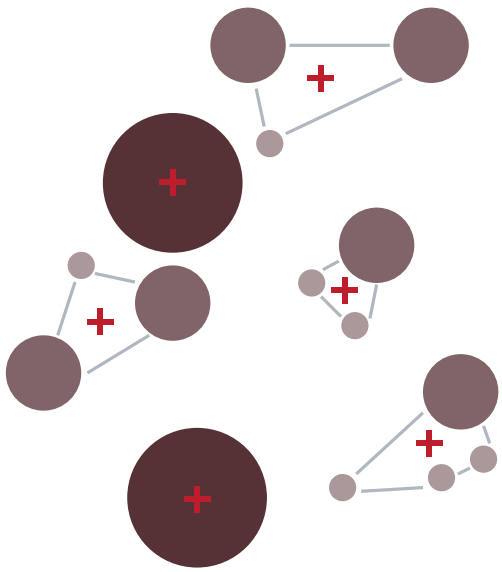
U-5 PERMANENT CLINICS

WHAT: FULLY EQUIP CARE CENTERS

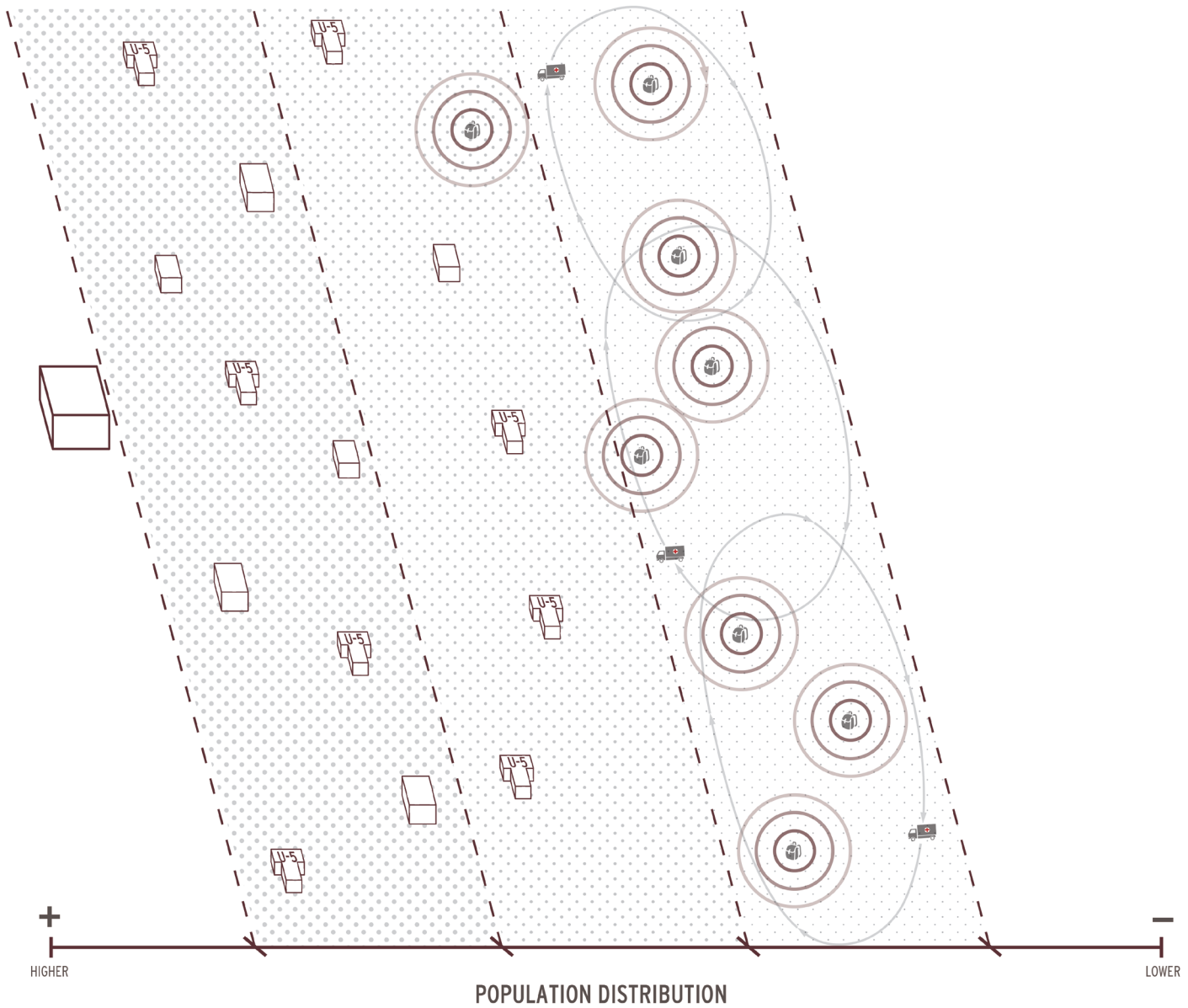
WHO: SERVING ALL COMMUNITY SIZES

WHERE: IN MEDIUM AND LARGE VILLAGES

WHEN: OPEN DAILY, 5 DAYS/WEEK



PROPOSED | SYSTEM IMPROVEMENTS



PROJECT GOALS

Despite Malawi's struggle with human resources and services, the need for an intervention in rural communities is imperative for the anticipated growth of the youth population and their future needs for healthcare- this proposal considers that these resources are to catch up with the needs of the nation in the coming years.[11]

- Address the issue of overcrowding in district and central hospitals by patients with manageable or preventable issues

- Lessen the strain put on health providers and human resources at current facilities

- Reduce U5MR, in correspondence with the Global Development Goals

- Act as model that can be easily replicated by other developing countries

11 | "The World Factbook: Malawi." Central Intelligence Agency. February 01, 2018. Accessed February 27, 2019. https://www.cia.gov/library/publications/the-world-factbook/geos/mi.html.

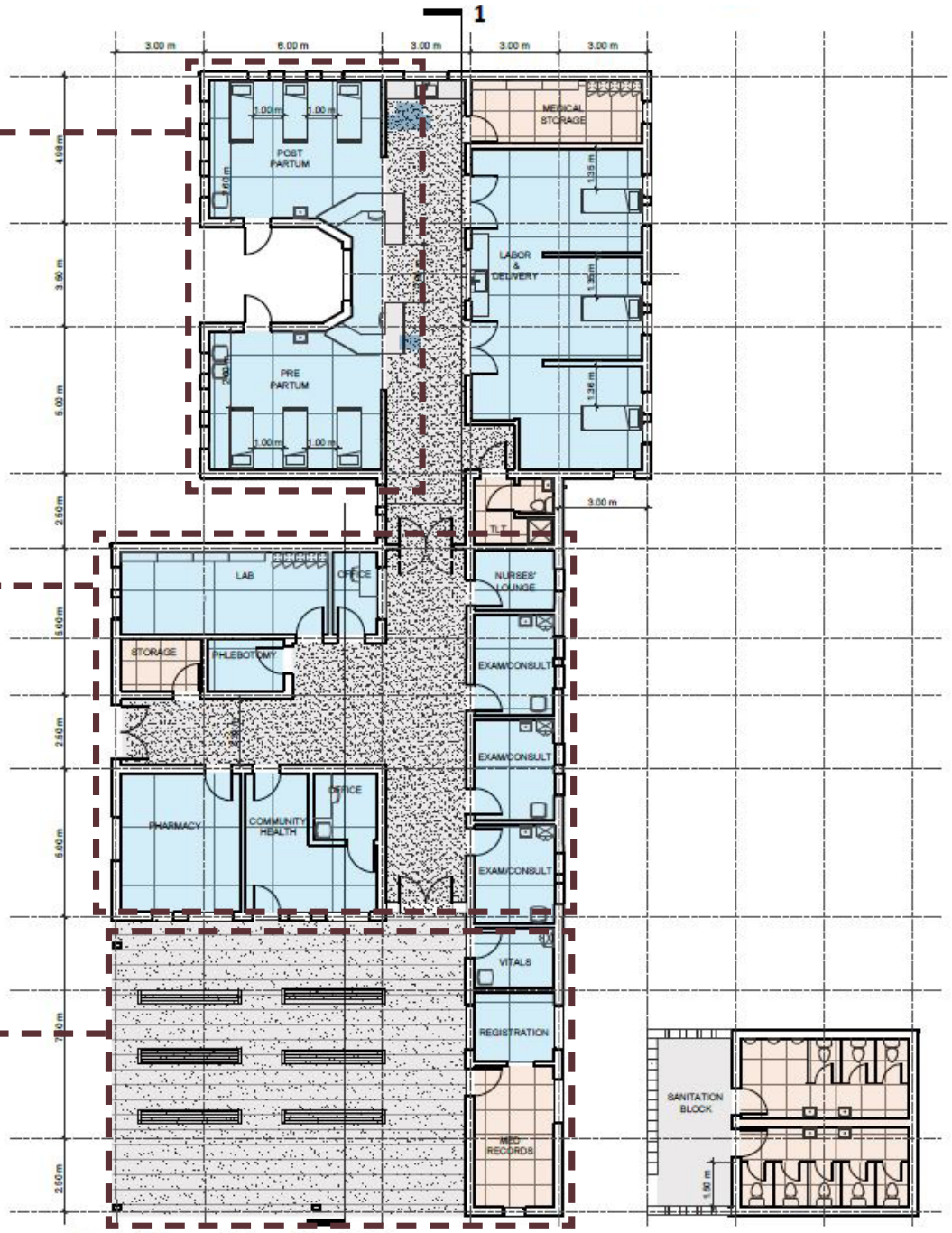
CASE STUDY + DESIGN RESEARCH

CASE STUDY | UGANDA MATERNAL NEWBORN CLINIC [12]

+ ACCESS AND VIEWS TO COURTYARD
+ CENTRALIZED NURSES STATION
+ SEPARATE FROM HEALTHY CHILDREN
- SPACE FOR GUARDIANS
- INFECTION CONTROL B/W BEDS

+ LARGE LAB AREA
+ PHARMACY ACCESS FROM REAR
+ OUTDOOR ACCESS
- SMALL COMMUNITY HEALTH SPACE
- SMALL STAFF LOUNGE

+ LARGE OPEN WAITING AREA
+ MED RECORDS STORAGE
+ SEPARATE SANITATION BLOCK
- INDOOR/OUTDOOR PLAY AREAS
- NO XRAY AND DARK ROOM



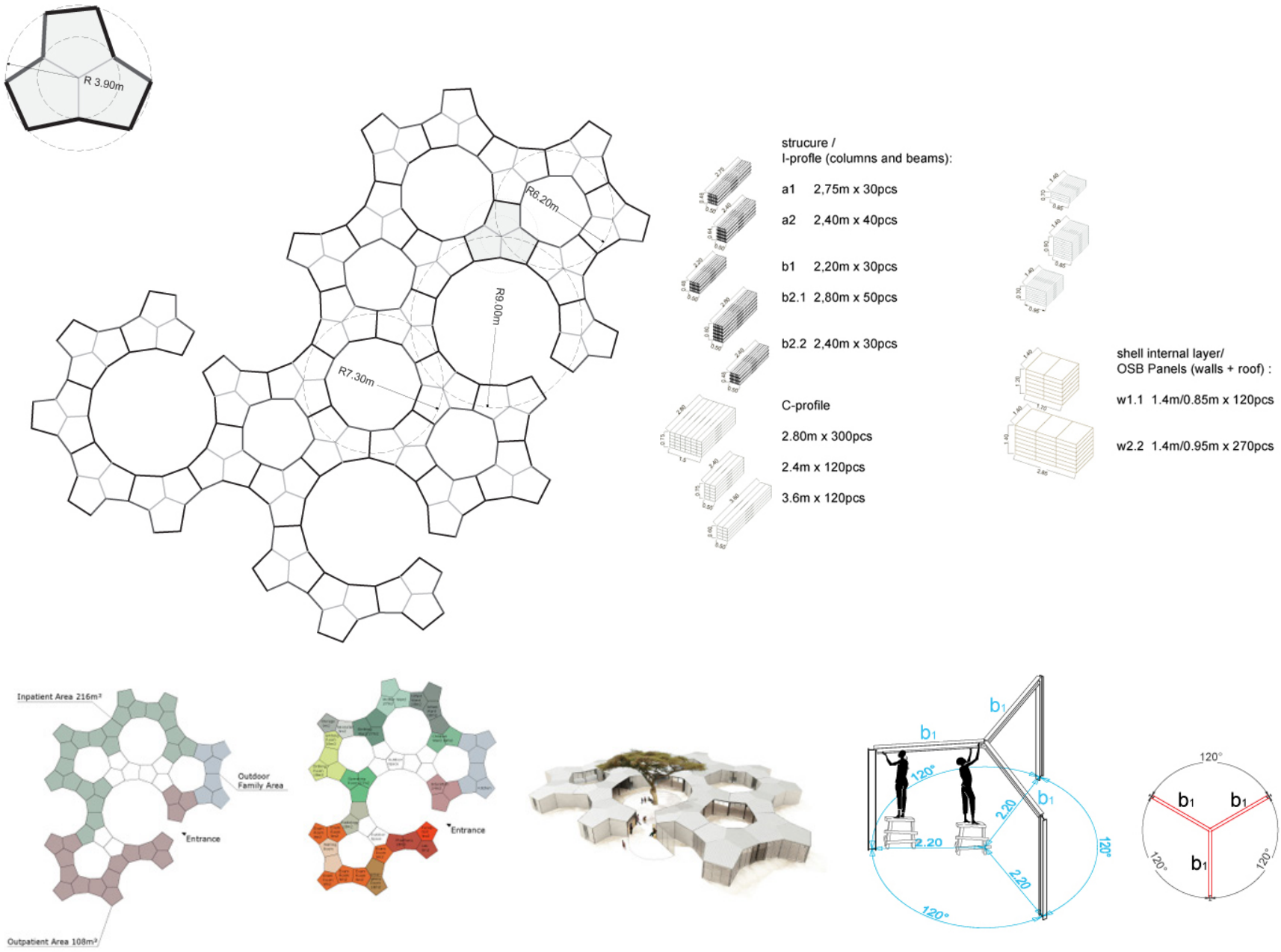
Typical Ground Floor Plan 1:200

+ OPPORTUNITIES - CONSTRAINTS

12 | ADAPTIV, and Gould Family Foundation. "Design Prototype for Maternal Child Health Clinic." Gould Family Foundation. June 2017. Accessed February 27, 2019. http://gouldfamilyfoundation.com/clinic-design.

CASE STUDY | MODULAR PEDIATRIC CLINIC [13]

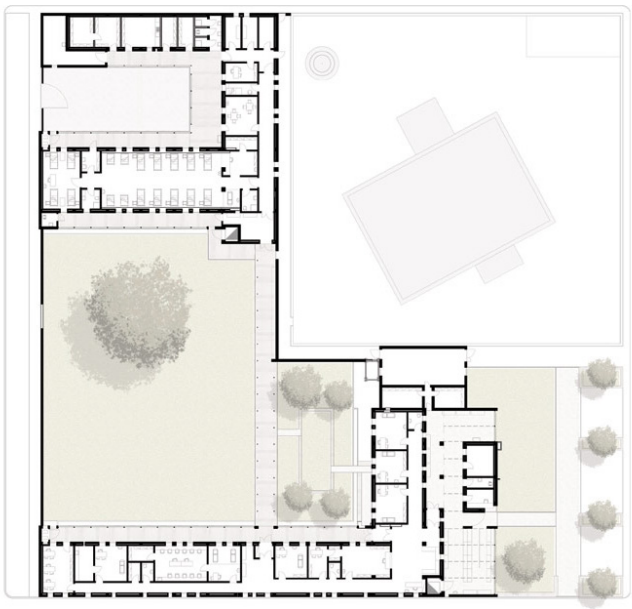
This proposal for a pediatric clinic in East Africa, is designed to be easily replicated as a repeating module comprised of a pre-fabricated structure.[13] This design allows for the potential expansion of the clinic while maintaining a centralized outdoor space that is naturally formed despite direction of growth. The consideration of material amount, cost and labor into the design are also factors which will be considered in the proposed under-five clinics.



13 | Obradovic, Marko. "Pediatric Clinic, East Africa." 4of7 Architecture. October 26, 2009. Accessed May 08, 2019. http://4ofseven.com/84/nggallery/image/image-4/.

CASE STUDY | NYALA EMERGENCY NGO PEDIATRIC CLINIC [14]

Located in South Darfur state, this project captures the importance of both performance and aesthetic in the design and construction of a pediatric clinic. The project mixes both "old" and new technologies to produce a building with ample natural ventilation, lighting and air circulation, as well as incorporates local materials and labor. [14] The sustainable components with that of modern construction technologies and vernacular finishes serves as an important combination of processes that can produce a wholesome and efficient healthcare facility.

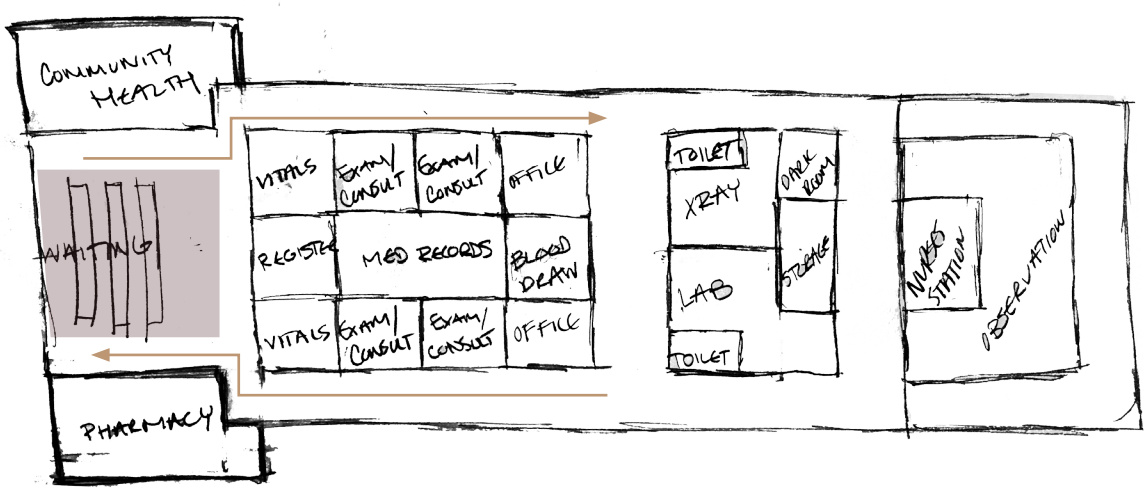


14 | "Nyala Emergency NGO Paediatric Clinic / TAMassociati." ArchiDATUM: Architecture in Africa. March 27, 2016. Accessed May 1, 2019. https://www.archdaily.com/office/bates-masi-architects.

CHARRETTES | DESIGN CONSIDERATIONS

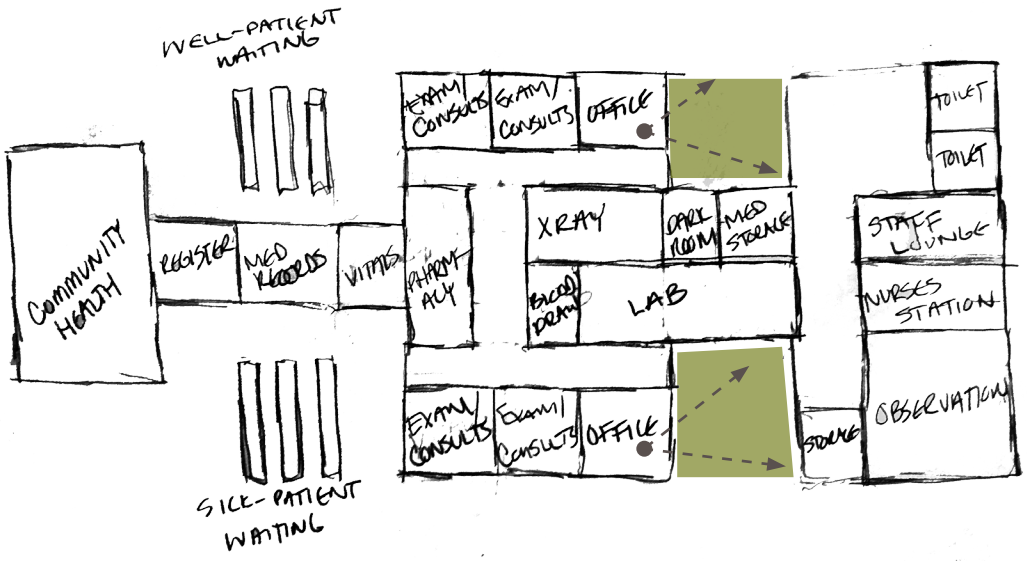
CONSIDER:

- How common waiting areas can incorporate infection control?
- How to separate the flow of those coming and leaving?



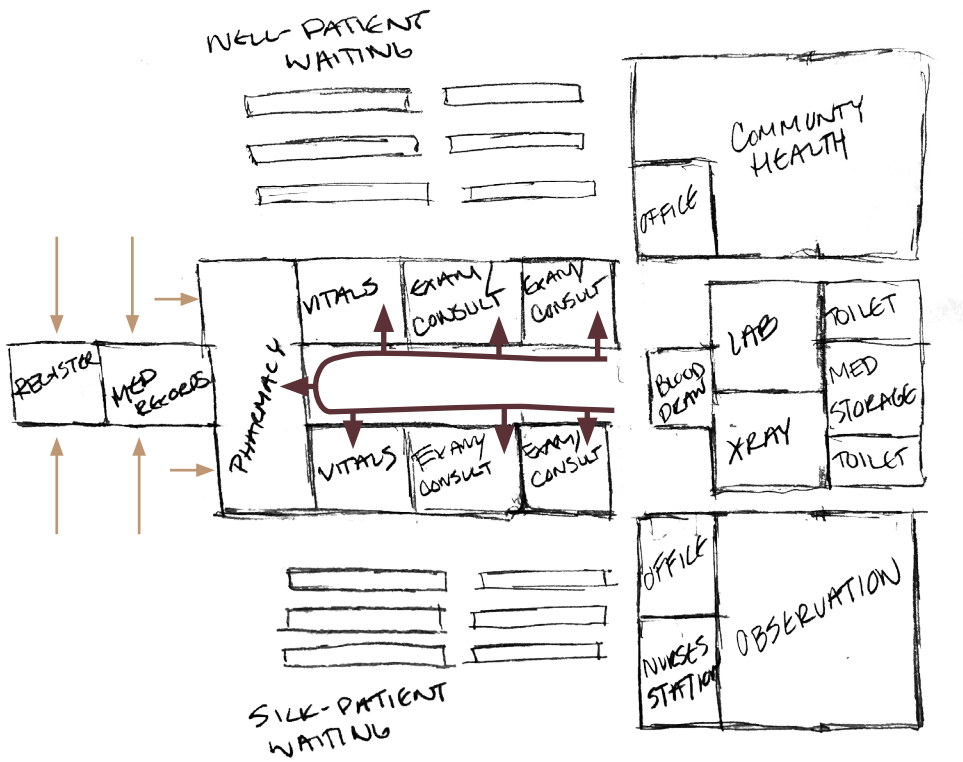
CONSIDER:

- Can an open courtyard create privacy for staff?
- How does play incorporate into waiting areas?



CONSIDER:

- Where is the best location for a staff lounge?
- Where offices can be located to optimize efficiency?



CONSIDER:

- What services can be accessed by both sick and well patients?
- Separate circulation areas for staff members.

INTERACTIONS | INTERVIEWS AND EXPERTISE

Design decisions have also been made with the guidance and suggestions of healthcare workers and designers who have extensive experience with pediatric patients and programs, both in the U.S. and in Sub-Saharan African regions, this includes:

Dr. Rasaq Olaosebikan, MD

-Pediatrician in the Jefferson healthcare system

Dr. Alexandra M. Vinograd, MD, MSHP, DTM&H

- Emergency department physician at CHOP

Linda Robinson

- Nurse midwife practicing in the U.S. and Malawi

Collin Beers, RA

- Senior principal of healthcare architecture at stantec in Philadelphia

Sierra Bainbridge, RLA

- Sr. Principal & Managing Director at MASS design in Boston

PROGRAMMING

SERVICES | COMPREHENSIVE iCCM

In order to foster the established Integrated Community Case Management (ICCM) system, already adopted by the country, program spaces designed especially for the anticipated services will produce a wholesome clinic design, centered on preventative care.

INTEGRATED COMMUNITY CASE MANAGEMENT FOR CHILDHOOD ILLNESSES (ICCM)

Diagnostic testing, rapid tests for malaria, TB and HIV	Dispensary of ART, antibiotics, and other prescriptions	Xray scanning for upper respiratory diseases, pneumonia, and bone growth	Prescription and treatment counseling	Growth and development monitoring	Short stays, transfers and observation	Education about sanitation, health risks, and caretaker roles
↓	↓	↓	↓	↓	↓	↓
Laboratory and draw spaces	Pharmacy and storage	Xray and dark room	Consultation rooms	Exam rooms and triage stations	Isolated ward areas with beds	Community space and lecture hall

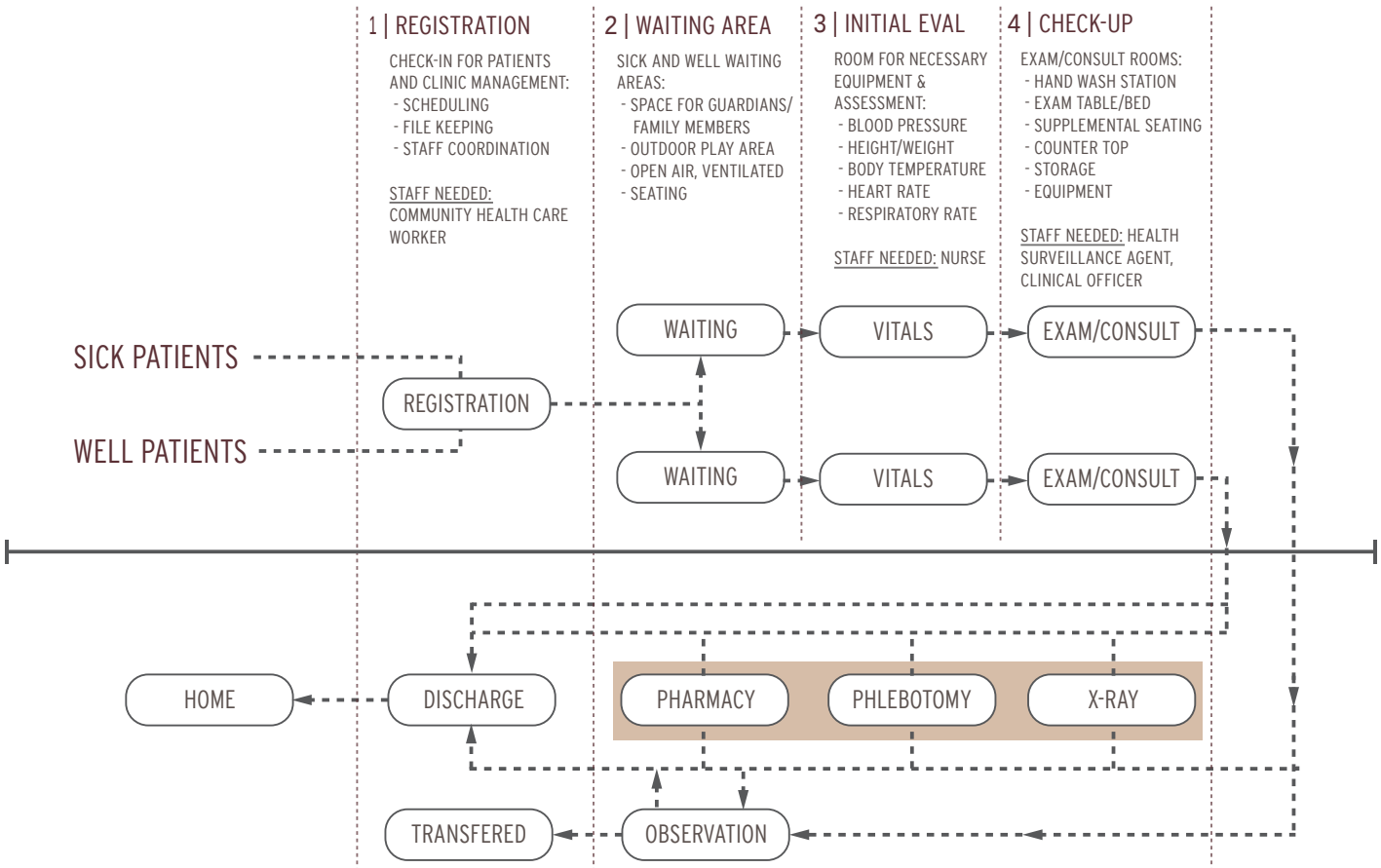






FLOW | SICK VS. HEALTHY

THE IMMEDIATE SEGREGATION OF SICK AND WELL PATIENTS UPON ENTRY TO THE CLINIC, AND THE AVOIDANCE OF CROSS CIRCULATION WILL HELP TO PREVENT THE SPREAD OF ILLNESS AMONG YOUNG PATIENTS WITH COMPROMISED IMMUNE SYSTEMS, SPECIFICALLY TO DISEASES WHICH ARE AIRBORNE AND TOUCH SENSITIVE.



6 | RELEASE

TRANSFERED:
- PATIENTS WHO NEED A HIGHER LEVEL OF CARE
- PATIENTS WHO NEED A SPECIALIST CONSULT

DISCHARGE:
- PATIENTS WHO ARE HEALTHY
- PATIENTS WHO ARE HEALING OR RECOVERING
- PATIENTS WHO HAVE BEEN TREATED EFFECTIVELY

5 | ADDITIONAL SERVICES

X-RAY PROVIDES FOR PATIENTS PRESENTING WITH SIGNS OF UPPER RESPIRATORY INFECTIONS OR ACUTE INJURIES:
- PNEUMONIA
- BROKEN BONES
- FRACTURES

PHLEBOTOMY PROVIDES FOR PATIENTS WHO NEED BLOOD TESTS OR WHOSE LEVELS NEED TO BE MONITORED
- MALARIA
- HIV
- DIARRHEAL DISEASES

PHARMACY PROVIDES FOR PATIENTS PICKING UP PRESCRIPTION MEDICATIONS OR SEEKING OVER-THE-COUNTER DRUGS
- ANTIRETROVIRAL THERAPY
- ANTIBIOTICS
- ANTIPARASITICS

STAFF NEEDED: PHYSICIAN, LAB TECHNICIAN, PHARMACIST

POPULATION | CLINIC BREAKDOWNS

Based on the population and anticipated growth, clinic staff and patients sizes are calculated to ensure that the clinic design will be of appropriate size.

Classification of the village	Population Size	Population Under 5	Assume each treated 1x month, how many is that a day?	Patients per hour, assuming 8 hours/day, how many an hour?	Assume Average time spent with a patient	Assume each staff member is a care provider, staff needed?
Small	2,000	280	9	1	15	0
	4,000	560	19	2	15	1
	6,000	840	28	4	15	1
	8,000	1,120	37	5	15	1
	10,000	1,400	47	6	15	1
	12,000	1,680	56	7	15	2
	14,000	1,960	65	8	15	2
	16,000	2,240	75	9	15	2
Medium	18,000	2,520	84	11	15	3
	20,000	2,800	93	12	15	3
	22,000	3,080	103	13	15	3
	24,000	3,360	112	14	15	4
	26,000	3,640	121	15	15	4
	28,000	3,920	131	16	15	4
	30,000	4,200	140	18	15	4
Large	32,000	4,480	149	19	15	5
	34,000	4,760	159	20	15	5
	36,000	5,040	168	21	15	5
	38,000	5,320	177	22	15	6
	40,000	5,600	187	23	15	6
	42,000	5,880	196	25	15	6
	44,000	6,160	205	26	15	6
	46,000	6,440	215	27	15	7
	48,000	6,720	224	28	15	7
	50,000	7,000	233	29	15	7

PROGRAM | SIZE BREAKDOWN

Based on the case studies identified, as well as well as the anticipated patient population served, it is suggested the most effective and efficient size of the clinic is in the 4,000 - 6,000 sqft range, and is broken down by staff, patient and shared programs.

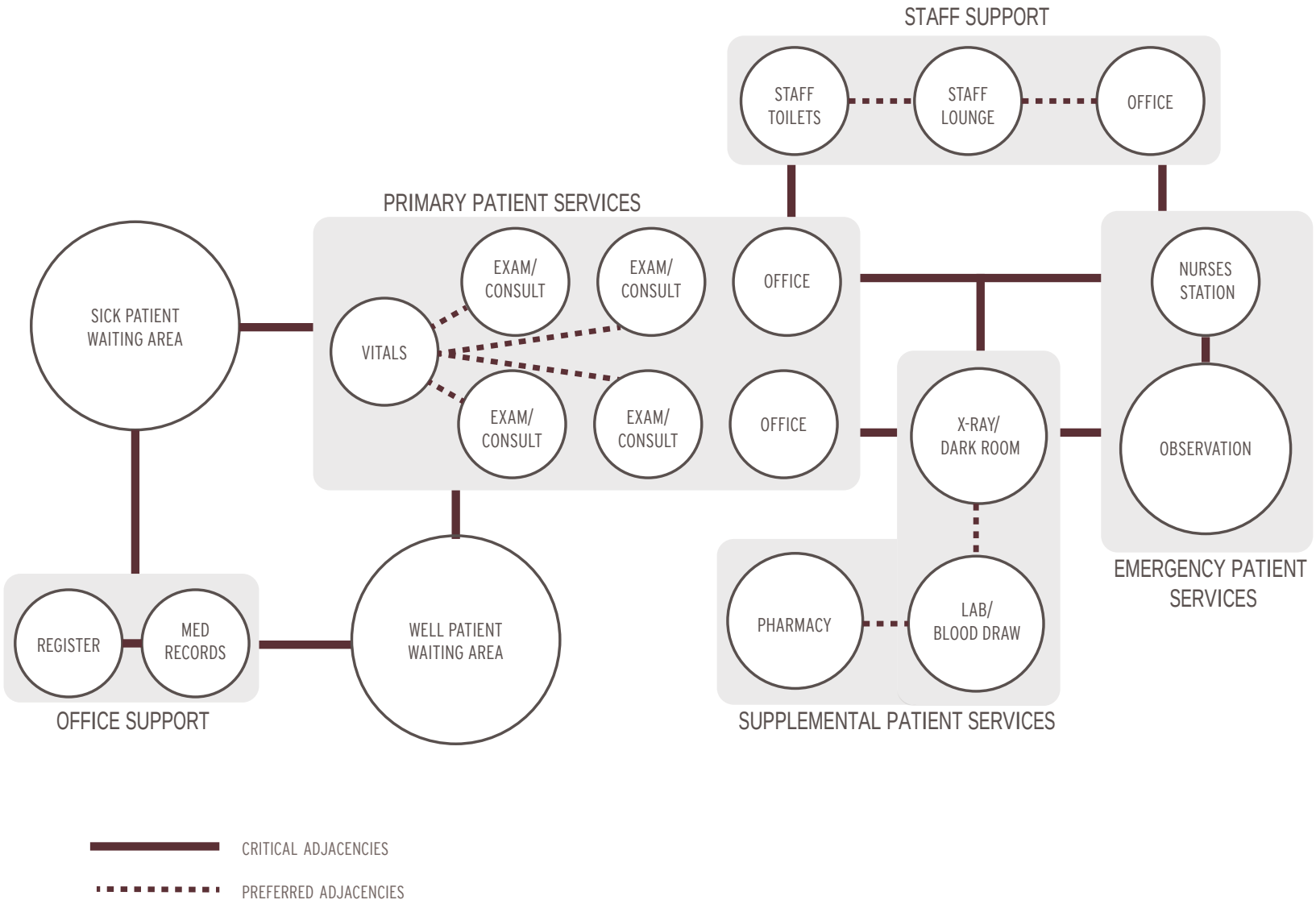
USER	PROGRAM	AMOUNT	SIZE	TOTAL SF
STAFF PROGRAMS	MED RECORDS	1	144	144
	MED STORAGE	1	144	144
	OFFICES	3	60	180
	STAFF TOILET	1	64	64
	STAFF LOUNGE	1	100	100
	NURSES STATION	1	150	150
	DARK ROOM	1	150	150
	LABORATORY	1	210	210
	PHARMACY	1	225	225
	REGISTRATION	1	64	64
	STORAGE	1	60	60
			TOTAL	1491

SHARED PROGRAMS	COMMUNITY HEALTH	1	400	400
	XRAY	1	225	225
	EXAM/CONSULT	4	100	400
	VITALS	2	64	128
	OBSERVATION	1	225	225
			TOTAL	1378

PATIENT PROGRAMS	SANITATION BLOCK	1	400	400
	WAITING AREA	2	600	1200
			TOTAL	1600

GROUPING | CRITICAL ADJACENCIES

Programs have been categorized into primary and supplemental patient services as well as staff and office support areas, emergency patient services are also available. After being grouped, both critical and preferred adjacencies were identified based on staff/patient needs and flow.



INTENTIONS + METHODOLOGY

DESIGN GOALS

- Generate a clinic design which meets the needs of both sick and well patients

- Create a building which can easily be adapted to meet the needs of the growing population

- A self sustaining structure, which utilizes natural elements as a means to fully function

- Challenge the typical vernacular architecture, while respecting that of the existing culture and customs

- Encourage access to health and healthy lifestyles throughout a community

METHODOLOGY | PROCESS

In order to make the most effective and efficient decisions regarding the design of the clinic the following will be considered sequentially:

1. Program
    - Layout
    - Sizing
    - Public vs. private
    - Sick vs. well

2. Critical Adjacencies
    - Primary connections
    - Preferred connections

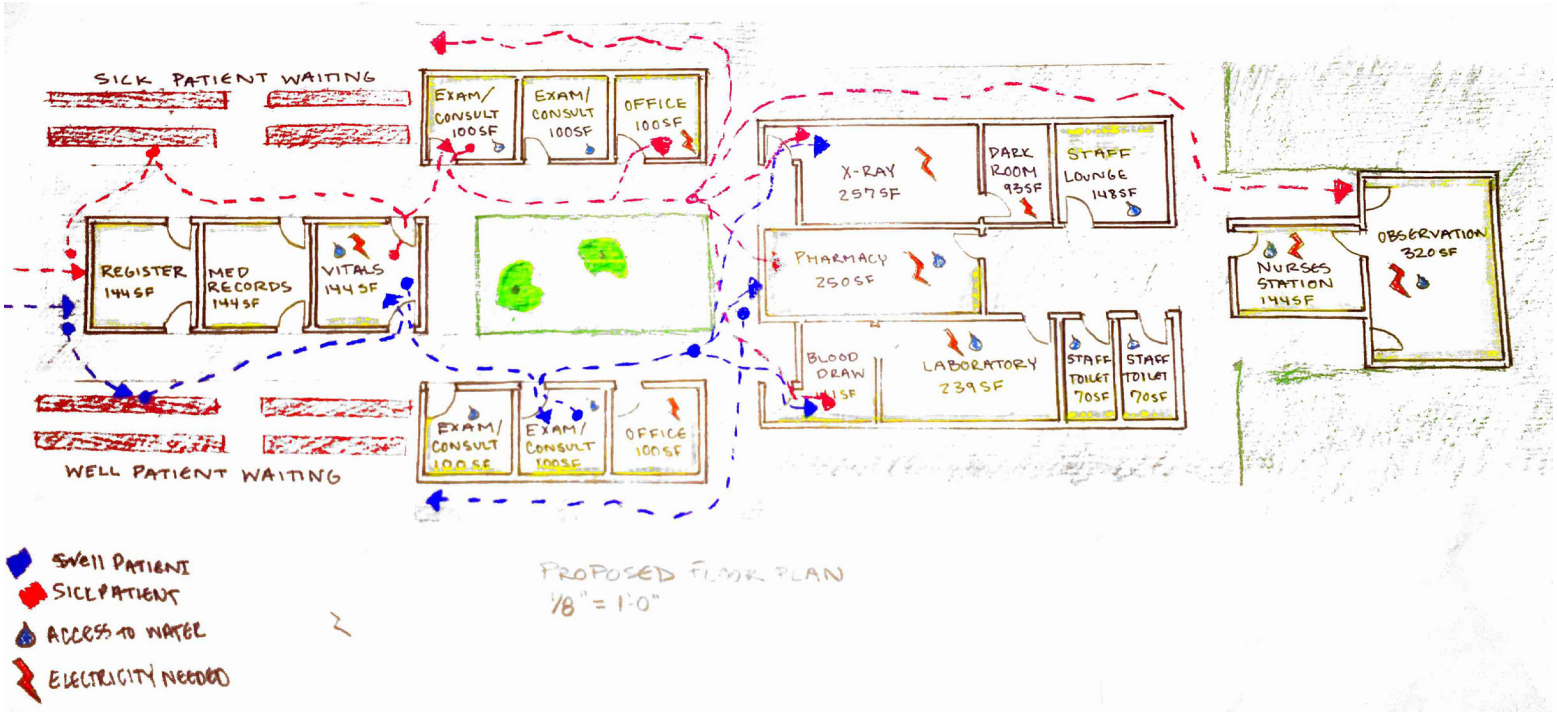
3. Circulation flow
    - Patient movement
    - Staff movement
    - Guardian movement

4. Sustainable systems
    - Ventilation
    - Water
    - Day lighting/solar

5. Construction and materials
    - Pre-fabrication
    - Local fabrication
    - Replicability

SKETCHES| POTENTIAL SYSTEM GROUPINGS

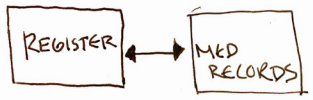
After considering necessary adjacencies, designing based on systems and location of mechanical equipment helped to further organize the design into manageable distribution zones.

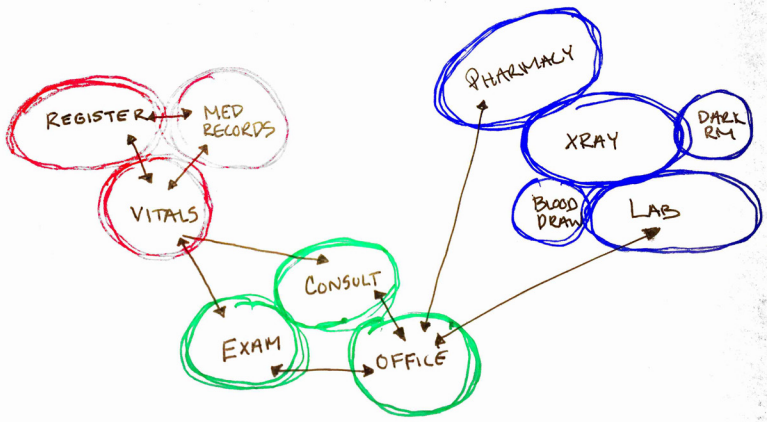


PROGRAM BREAKDOWN

ROOM	USE	SYSTEMS	STAFF	SUPPLIES
REGISTER	GREET & CHECK-IN PATIENTS	ELECTRICITY → COMPUTER → PHONE → LIGHTING	(1) COMMUNITY HEALTHWORKER	DESK, COMPUTER/TABLET (IF APPLICABLE), CHAIR
MED RECORDS	STORE PATIENT FILES	ELECTRICITY → LIGHTING	N/A	FILING/STORAGE SYSTEM
VITALS	INITIAL EXAM OF SICK & HEALTHY PATIENTS	ELECTRICITY → LIGHTING → MACHINES WATER → SINK	NURSE OR (1) COMMUNITY HEALTH WORKER	CABINENT, SINK, EXAM CHAIR, BLOOD PRESSURE MACHINE, SCALE, THERMOMETER
EXAM/CONSULT ROOM	EXAM/MEET WITH CARE PROVIDER, DETERMINATION OF PROGNOSIS	ELECTRICITY → LIGHTING → MACHINES WATER → SINK	DOCTOR OR SPECIALIST OR H.S.A	EXAM TABLE, SINK, CABINENT/ STORAGE, MACHINES, GUARDIAN SEATING, DOCTOR/CARE PROVIDER SEATING
LABORATORY + BLOOD DRAW	RUN BLOOD/ URINE TEST, RAPID RESULTS & TESTING	ELECTRICITY → LIGHTING → LAB MACHINES WATER → SINK	(1) PHLEBOTOMIST (1) HEALTHCARE WORKER/H.S.A	BLOOD DRAW CHAIR, SINK, STORAGE, ACCESS TO RESTROOM (URINE SAMPLES), REFRIDGERATION SYSTEM, COMPUTER
PHARMACY	PROVIDE MEDICATION/ TREATMENT FOR PATIENTS	ELECTRICITY → COMPUTER/ TABLET → LIGHTING → REFRIGERATION WATER → SINK	(1) PHARMACIST (1) TECHNICIAN	STORAGE (SECURE/LOCKING), DESK/COUNTER SPACE, SHELF SPACE, REFRIDGERATION, COMPUTER/TABLET
X-RAY + DARK ROOM	PROVIDE SCANS/ X-RAYS	ELECTRICITY → LIGHTING → MACHINERY	(1) TECHNICIAN	** STORAGE, X-RAY MACHINE, LIGHT BOX, DESK SPACE
OBSERVATION	SPECIALIZED CARE FOR CRITICAL PATIENTS	ELECTRICITY → LIGHTING → MACHINERY WATER → SINK	(1) NURSE (1) HEALTH CARE WORKER	PATIENT BEDS, MEDICATION CARTS, MONITORS, GUARDIAN SEATING,

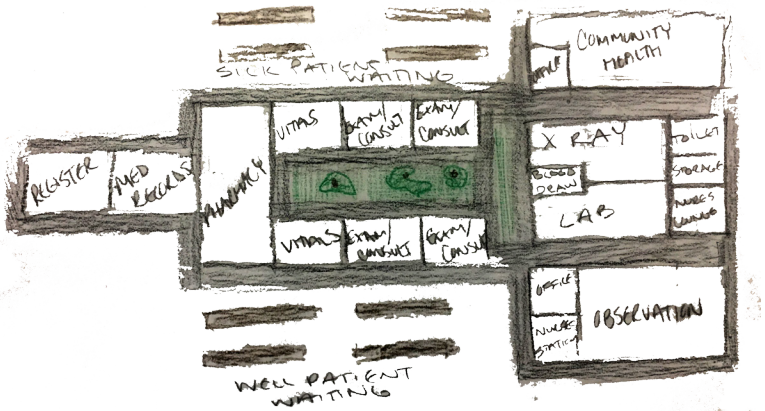
IMPORTANT PROGRAM ADJACENCIES

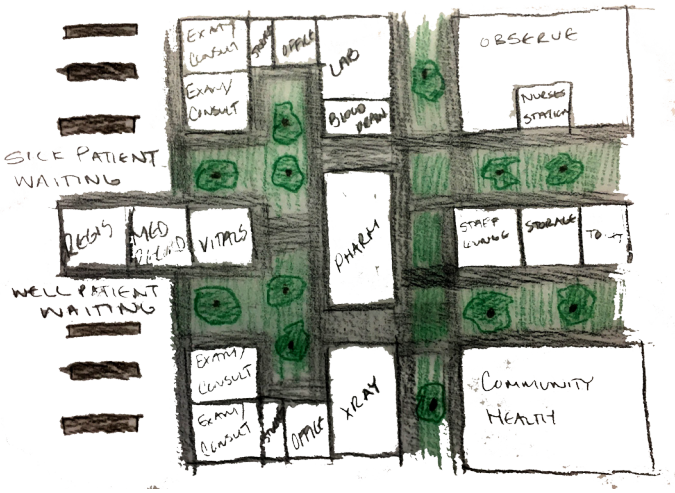


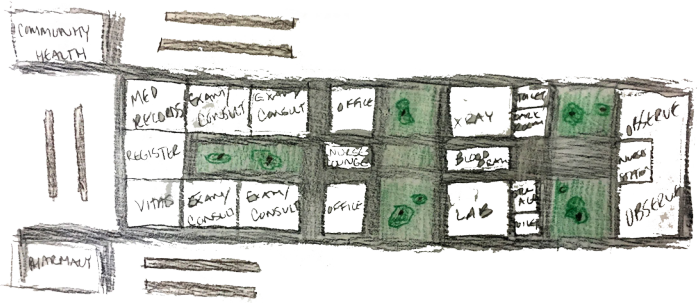


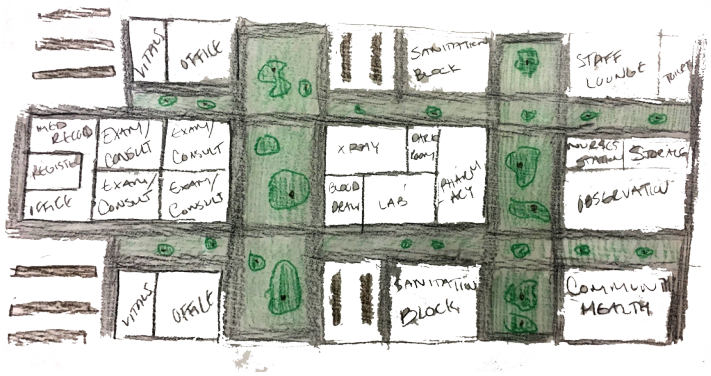
SKETCHES| GREEN SPACE

Location and access to green spaces in the clinic setting, for both staff and patients was considered, as well as the need for both covered and uncovered waiting areas and walkways.





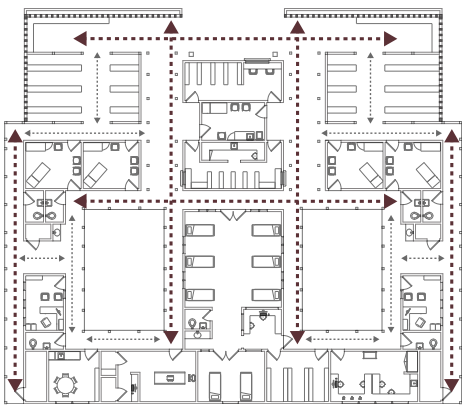




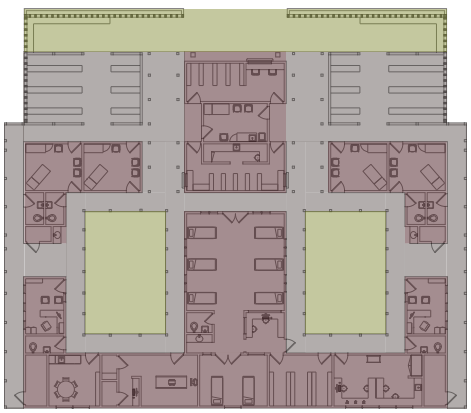
DESIGN

CLINIC | FLOOR PLAN

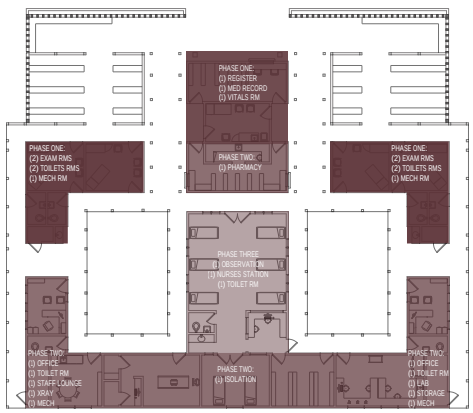
FLOOR PLAN | FIRST LEVEL



CIRCULATION

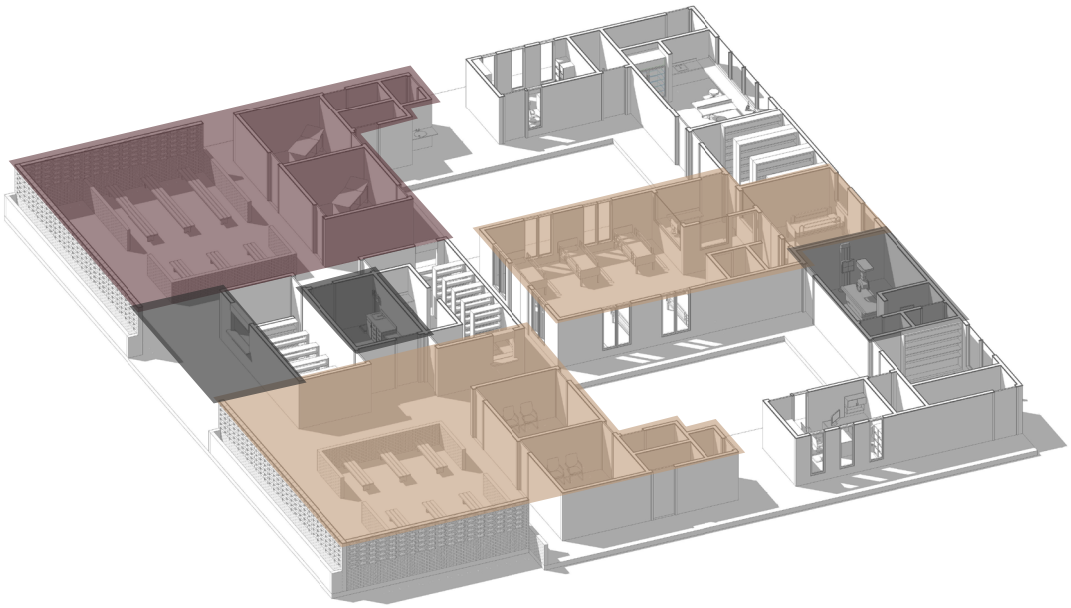


PROGRAM TYPES



PHASING POTENTIAL

PATIENT EXPERIENCE | SICK VS. WELL



WELL PATIENT AREAS
SICK PATIENT AREAS
SHARED AREAS

ANTICIPATED WELL PATIENT FLOW

1 | CLINIC ENTRY
- REGISTRATION
- SCHEDULING

2 | WAITING
- COVERED WAITING
- UNCOVERED WAITING

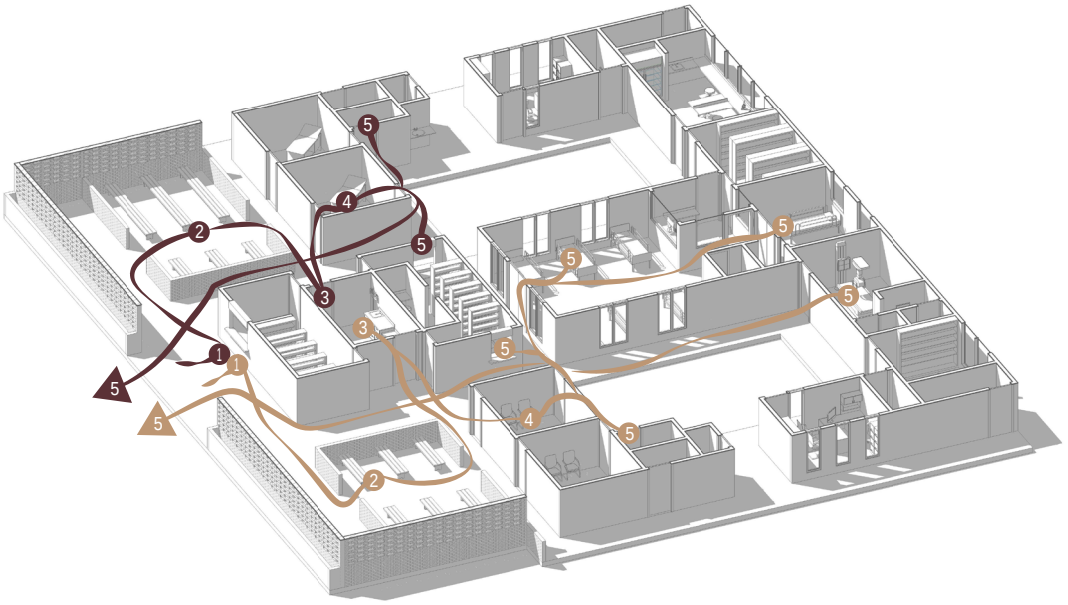
3 | VITALS
- PRELIMINARY CONSULT
- NURSE INTERACTION

4 | EXAM
- DIAGNOSIS/PROGNOSIS
- CLINICAL OFFICER INTERACTION

5 | PHARMACY
- PRESCRIPTION PICKUP

AND/OR

5 | DISCHARGE
- NO FURTHER ACTION REQUIRED



ANTICIPATED SICK PATIENT FLOW

1 | CLINIC ENTRY
- REGISTRATION
- SCHEDULING

2 | WAITING
- COVERED WAITING
- UNCOVERED WAITING

3 | VITALS
- PRELIMINARY CONSULT
- NURSE INTERACTION

4 | EXAM
- DIAGNOSIS/PROGNOSIS
- CLINICAL OFFICER INTERACTION

5 | PHARMACY
- PRESCRIPTION PICKUP

AND/OR

5 | OBSERVATION/ISOLATION
-FURTHER CARE NEEDED

AND/OR

5 | XRAY
- FURTHER TESTING NEEDED

AND/OR

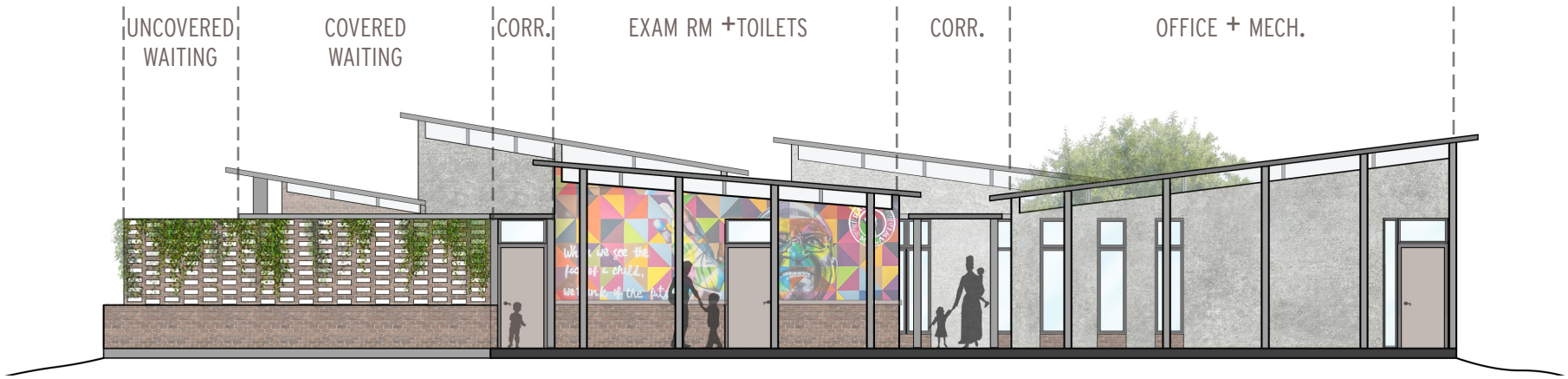
5 | DISCHARGE
- NO FURTHER ACTION REQUIRED

CREATING COMFORT |OBSERVATION ROOM

CLINIC | ELEVATIONS

NORTH ELEVATION | CLINIC ENTRY

0' 4' 12' 28'



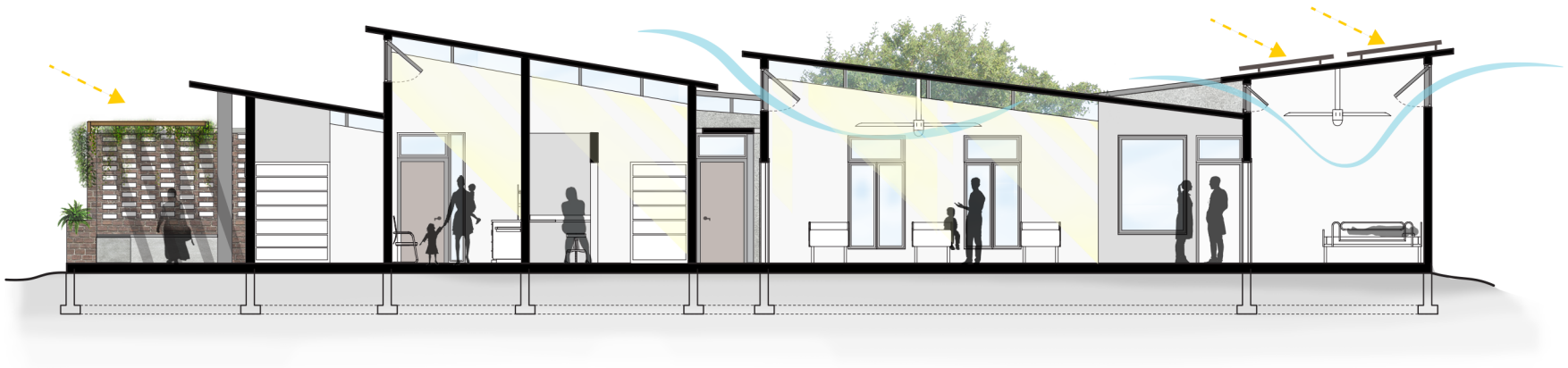
EAST ELEVATION | SIDE CORRIDOR

0' 4' 12' 28'

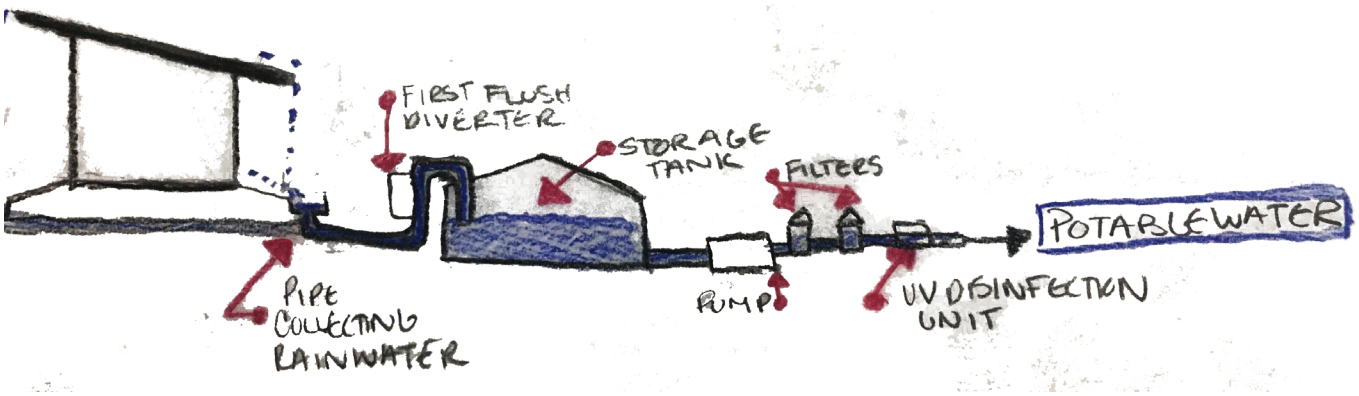
STRATEGY

OFF THE GRID

A proposed 'off the grid' design will seek to ensure that the clinic does not depend solely on the supply of unreliable resources. In order to do so, components such as water, solar, ventilation, and greenery will be considered and utilized to allow the facility to run as a single entity which sustains itself with the natural resources available.



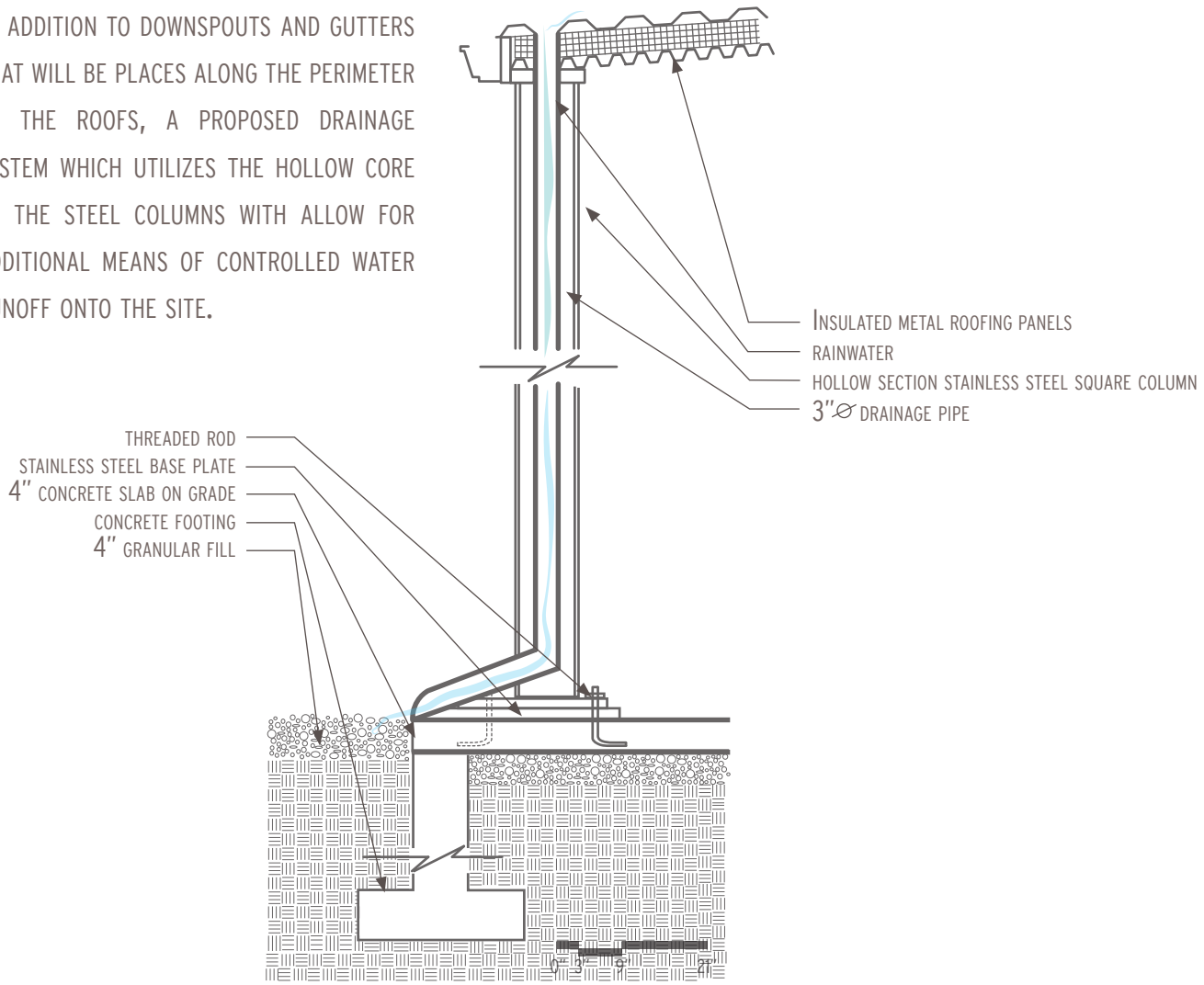
An alternative form of drainage on site will feed into a filtration system which will store, filter then disinfect water in order for it to be reused as potable water.



WATER

Water drainage on-site will be imperative to the successful function of the clinic. This proposal suggests that provided overhangs and roofs along circulation routes will ensure the coverage of important circulation corridors, as well as serve as a vehicle for proper drainage on-site, especially during the rainy season.

In addition to downspouts and gutters that will be places along the perimeter of the roofs, a proposed drainage system which utilizes the hollow core of the steel columns with allow for additional means of controlled water runoff onto the site.

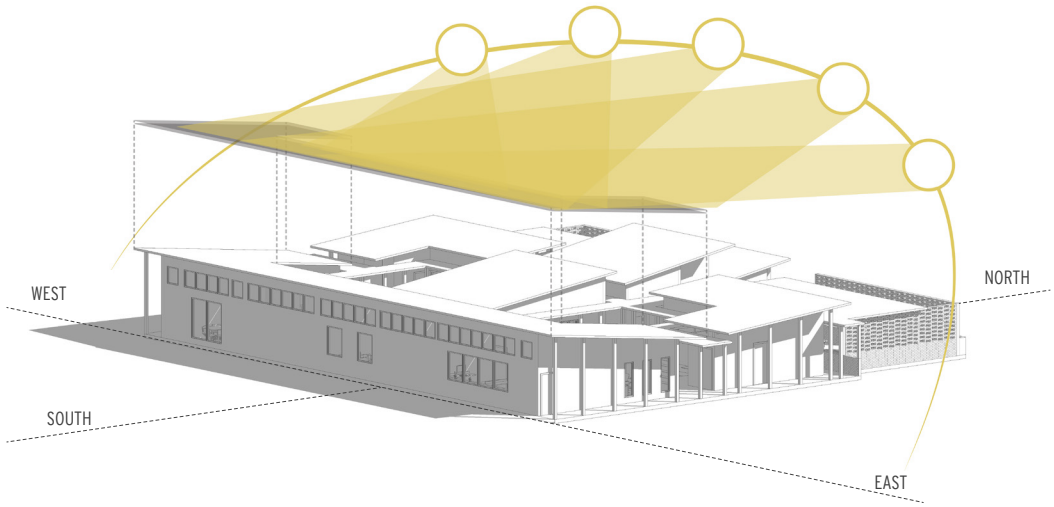


DRAINAGE | COLUMN SECTION

SOLAR

Large north facing roof will provide enough surface area for 100% coverage of any watt solar panels, 35-56 panels at 65" x 39".

Excess solar gains can be stored in battery packs which will be on-site. These batteries can be used to power equipment in the clinic during periods of high demand or cases of emergency.

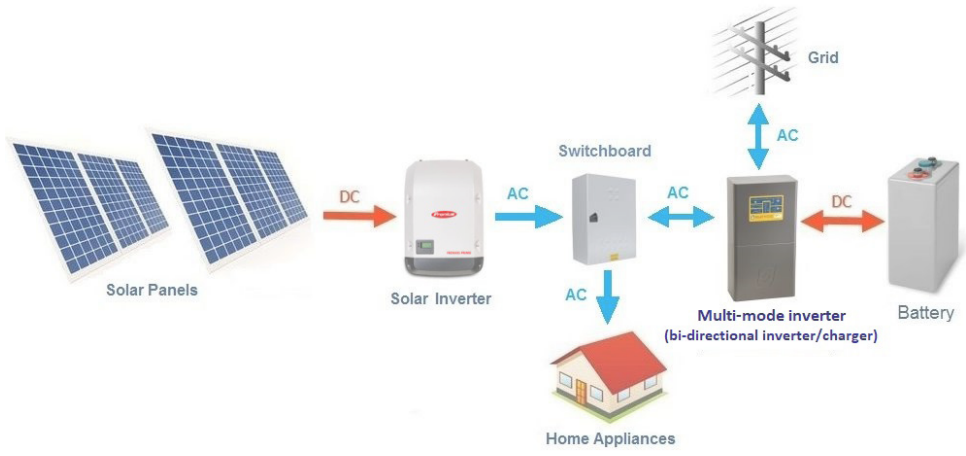


SOLAR PANEL	PRICE ASSUMING $3.05/WATT	KW	KW/DAY ASSUMING 5 HRS OF DIRECT SUNLIGHT	AMOUNT FOR 100% COVERAGE	AMOUNT FOR 75% COVERAGE	AMOUNT FOR 50% COVERAGE	AMOUNT FOR 25% COVERAGE
250 WATTS	$ 762.50	0.25	1.25	56	42	28	14
290 WATTS	$ 884.50	0.29	1.45	48	36	24	12
320 WATTS	$ 976.00	0.32	1.6	44	33	22	11
400 WATTS	$ 1,220.00	0.4	2	35	26	18	9

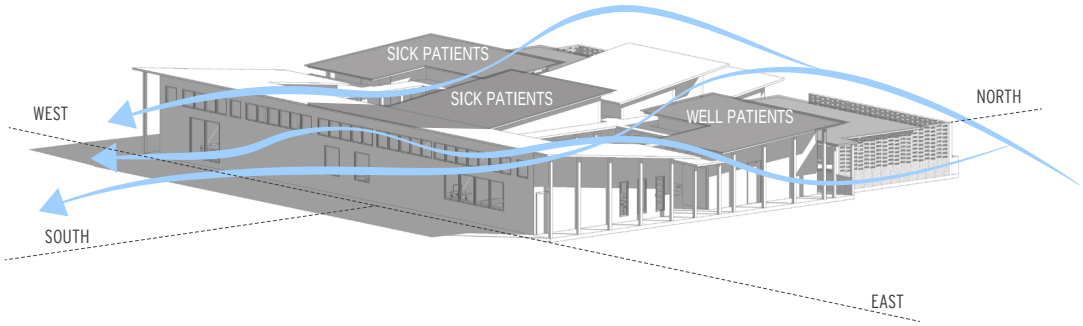
ENERGY RELIANT

- X-Ray Machine
- Kitchen Appliances
- Lab Refrigeration
- Pharmacy Refrigeration
- Hot water heater
- Lighting
- Desktop Computers
- Lab Machines
- Fans

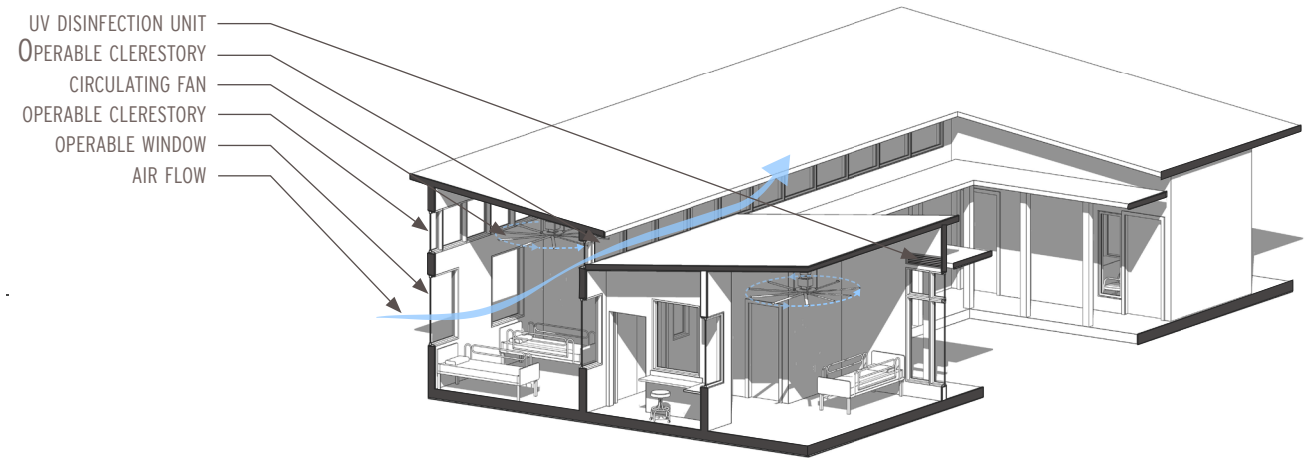
Anticipated energy needs of 70 kwhr/Day



VENTILATION



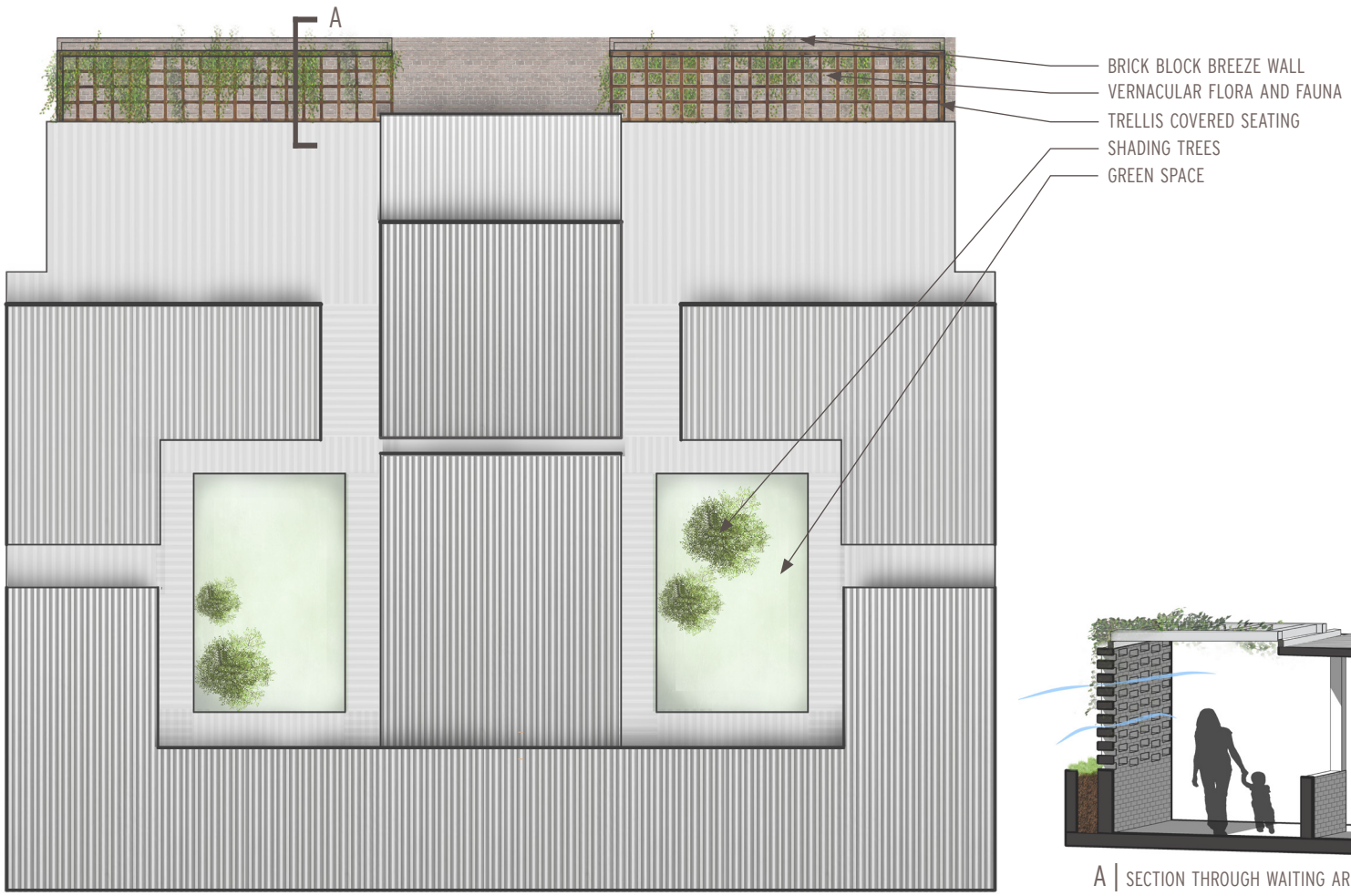
Air flow has been carefully considered in the layout of the clinic. By separating patients into zones of sick and healthy, they can be organized so that natural wind flow pushes air in directions that avoid the spread of disease among patients. This strategy is particularly imperative because many illnesses found in children under five can be airborne and spread when sick and healthy children are in close proximity to each other.

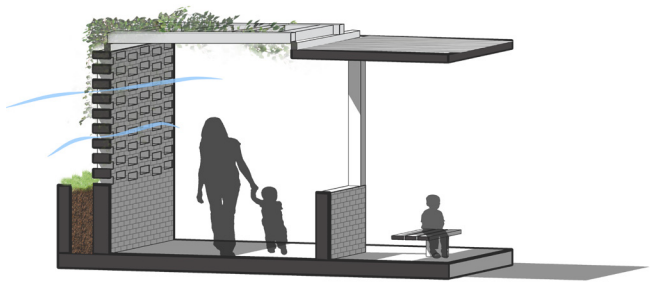


GREEN SPACE

The incorporation of two centralized courtyards, as well as access to outdoor seating and green space plays a natural role in this environment. Trees and plants found within the clinic provide shade as well as contribute to the natural filtering and cleaning of fresh air.

Breeze blocks are utilized as an alternate form of natural ventilation, but also serve as a host to a variety of growing and hanging plants. A wooden trellis can be found atop the breeze block wall and column supports and serves as a means to blur the transition from uncovered to covered areas.





A | SECTION THROUGH WAITING AREA

ENTRY + WAITING AREA

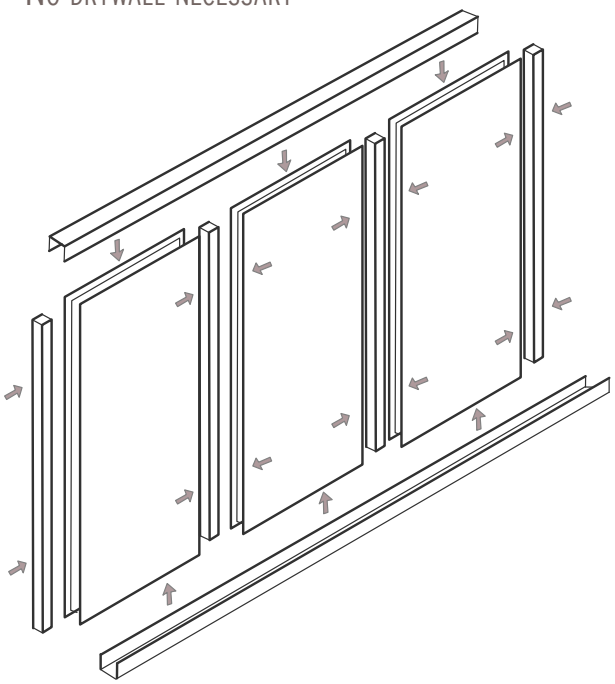
CONSTRUCTABILITY

PRE-FAB | WALL ASSEMBLY

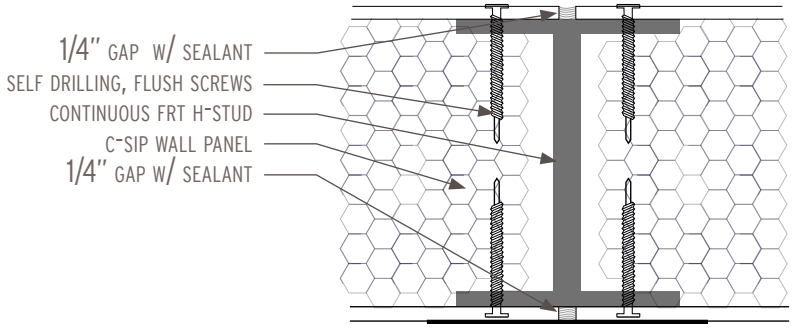
For replicability purposes, the use of pre-fabricated structural insulated panels will be used for the exterior wall construction of the clinics. CSIPS, or composite structural insulated panels, are fiber reinforced cement wall assemblies that will provide interior finish, structure and exterior finish in a three layer sandwich board.

CSIPS benefits include:

- Require less maintenance than osb faced SIPS
- High resistance to moisture absorption
- Rot and termite resistant
- Higher fire rating than osb faced SIPS
- No drywall necessary

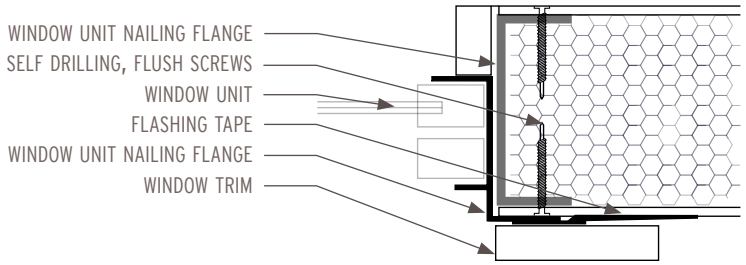


LOCKING MECHANISM



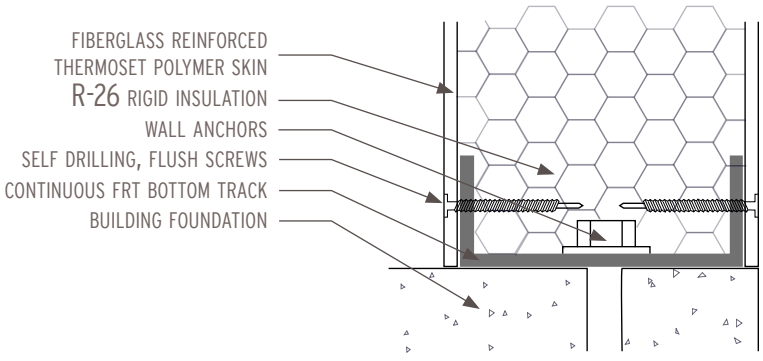
PANEL JOINT DETAIL

SCALE: 1"= 3"



TYP. WINDOW JOINT

SCALE: 1"= 4"

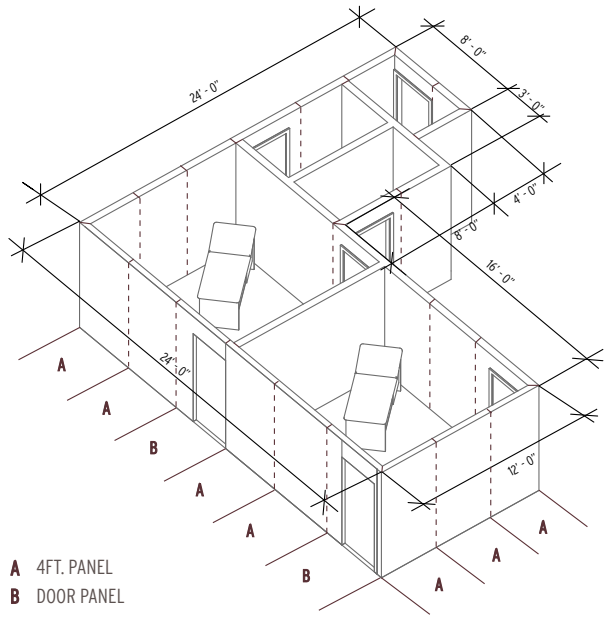


BASE DETAIL

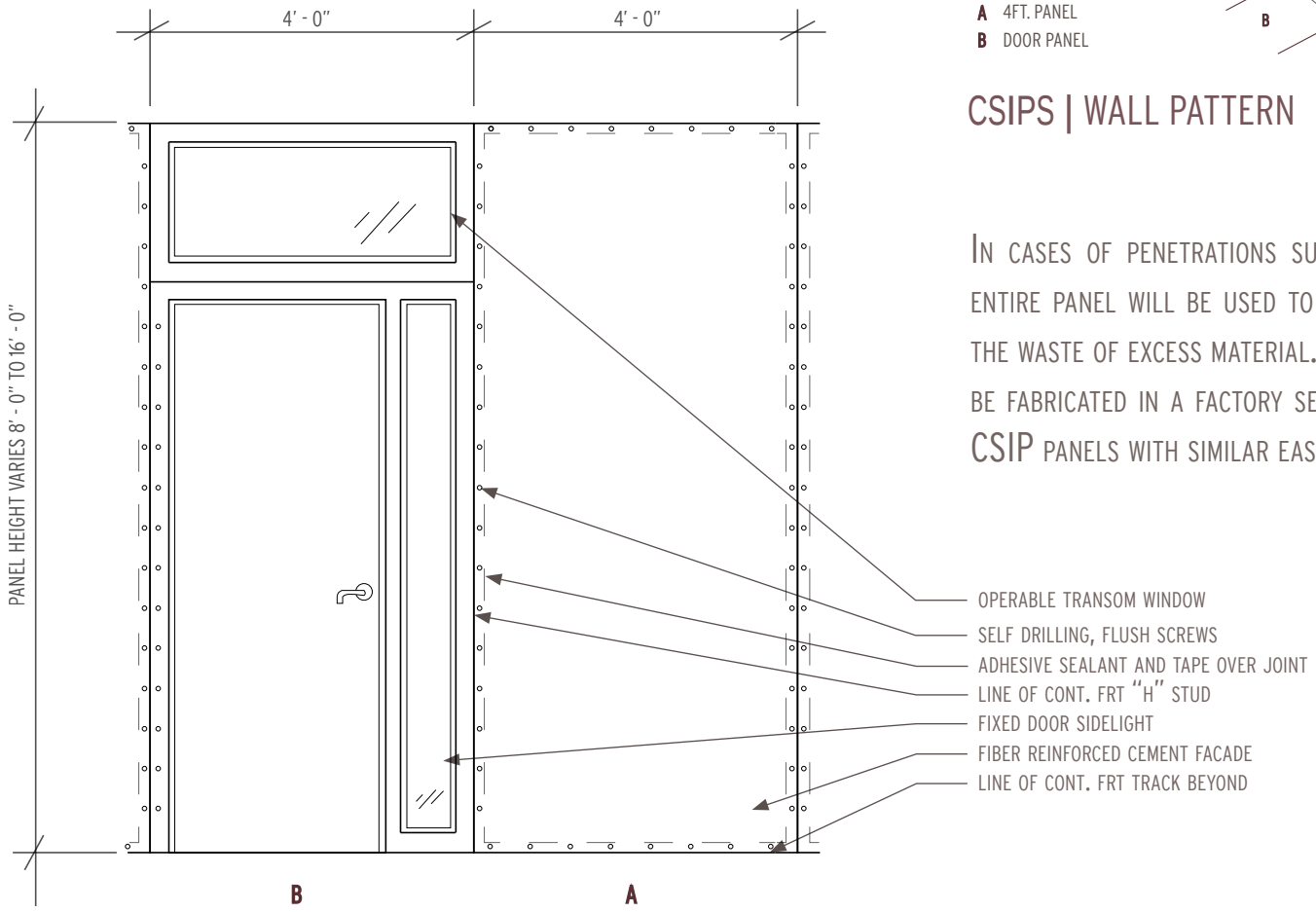
SCALE: 1"= 3"

CSIPS | PANELIZATION

In correspondence with the prefabricated CSIPS panels, the clinic is designed in 4' modules which align with the standard size of a single panel. The height of the panels will vary depending on the height of the room and the roof line. The CSIPS will be cut according to the slopes of the roof in a factory setting, prior to being brought on site, this will allow for greater efficiency with time and materials.



CSIPS | WALL PATTERN



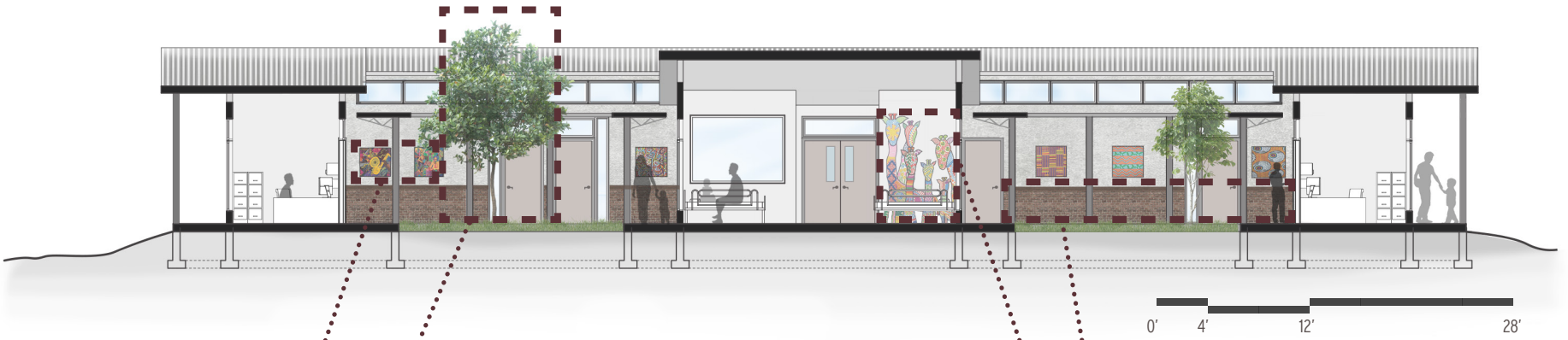
In cases of penetrations such as doors and windows, an entire panel will be used to its maximum capacity, avoiding the waste of excess material. These custom panels will also be fabricated in a factory setting and will lock into other CSIP panels with similar ease.

CONTEXT INTEGRATION

VERNACULAR - RESPONSIVE | LO-FAB

The customization of the clinic into the context which it is placed is imperative for the success of the building. In combination with the pre-fabrication of the structure, local fabrication will be featured throughout, and work will be completed by local laborers and artists. The lo-fab portion of construction will take place over time and will grow the character of the clinic to feature its village and people.

INDUSTRIALIZATION → CUSTOMIZATION → TRANSFORMATION



TEXTILES

Village textiles on display throughout the clinic will promote the visibility of local weavers and specialist spinners, as well as encourage the vending of textiles outside the clinic.

LANDSCAPING

Vernacular fauna and flora throughout the clinic is a way to integrate the building to the local context, and to provide natural forms of shading and comfortable outdoor space.

MURAL ARTS

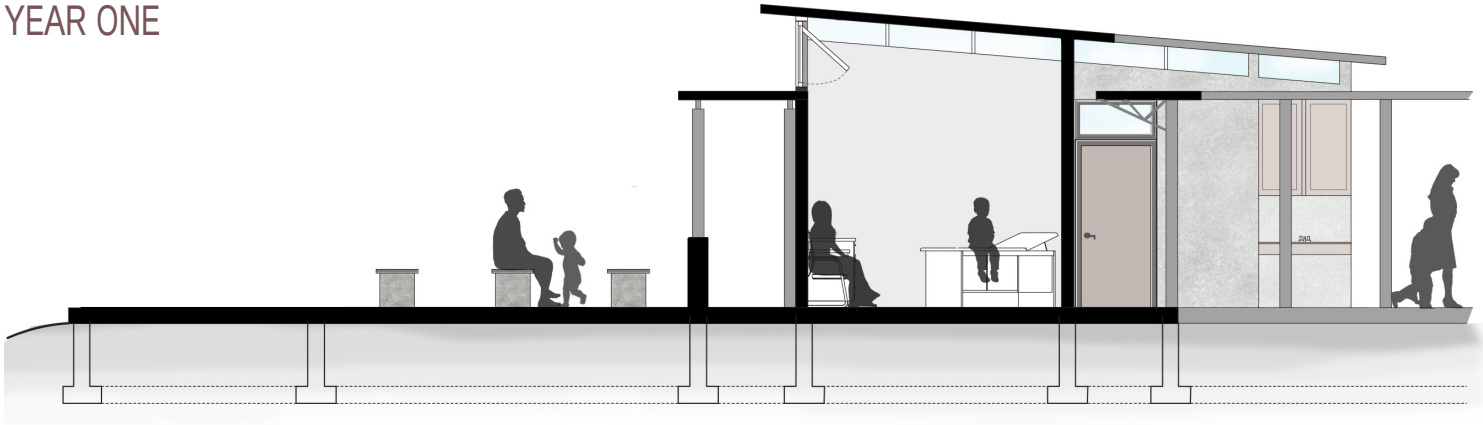
Mural arts done by local artists will be featured on the walls of the clinic. Paintings will express cultural ideals and will help create an inviting environment for children.

MASONRY

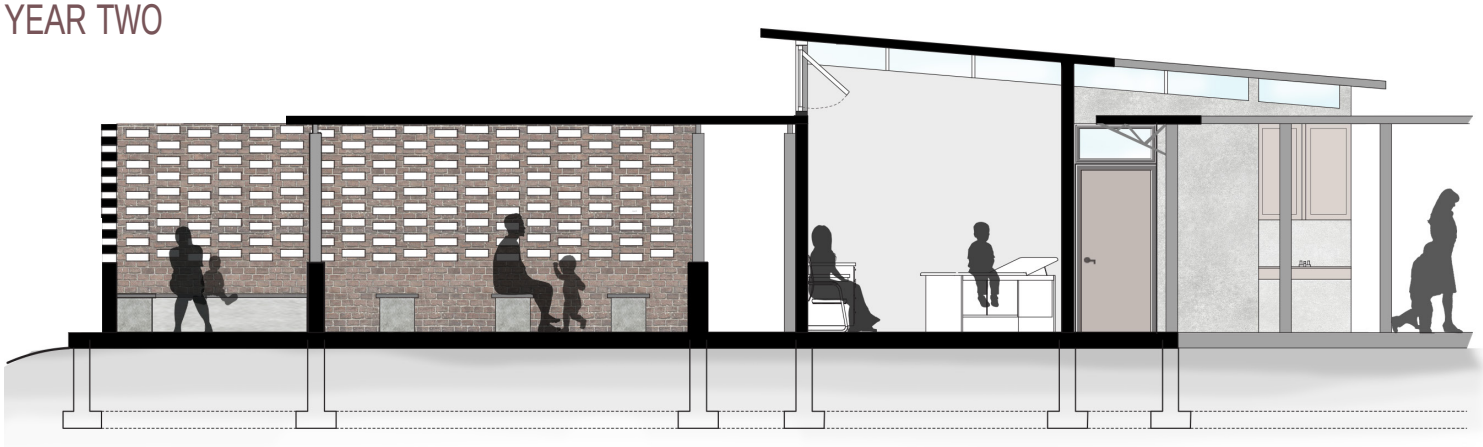
Local masons are welcome to add extra materiality and texture to the wall assemblies with the use of brick and stone. A breeze block wall will also be built by the entry.

TRANSFORMATION | GROWTH OVER TIME

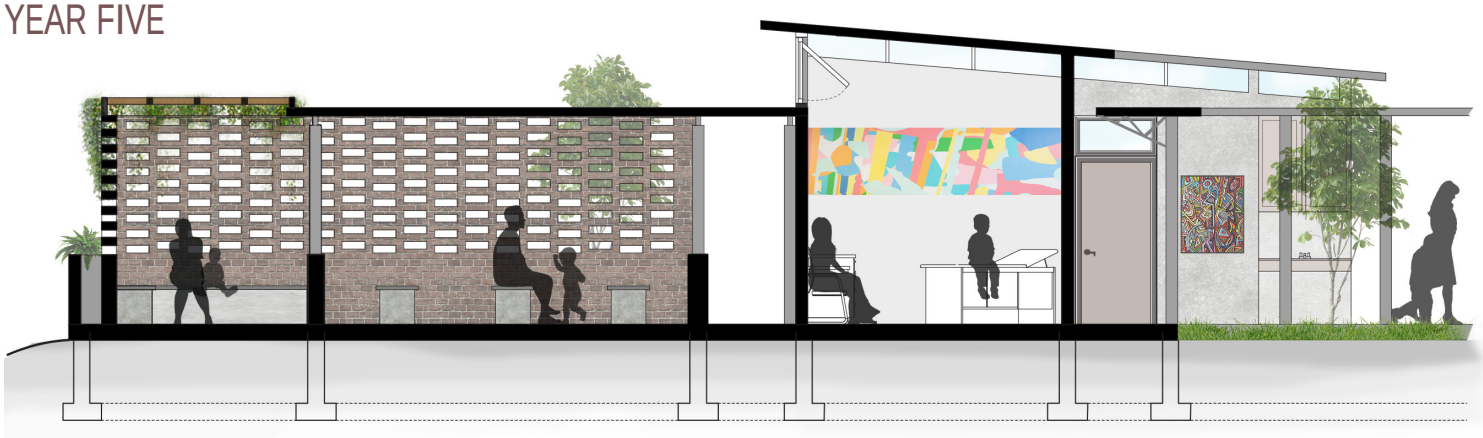
YEAR ONE



YEAR TWO



YEAR FIVE



N/S SECTION | WAITING AREA

THE SUCCESS OF THESE CLINICS LIES WITHIN THOSE WHO CARE FOR THEM AND WORK TO DEVELOP THEM INTO ARCHITECTURE THAT BOTH RESPECTS AND RESPONDS TO THAT OF THE NEEDS OF ITS ENVIRONMENT.

GREATER ACCESSIBILITY AND VISIBILITY OF THESE PREVENTATIVE CARE CLINICS WILL ACT AS A RESOURCE FOR CHANGE IN COMMUNITIES, AND WILL SUPPORT THE GROWTH OF CHILDREN AND PARENTS SEEKING HEALTHCARE IN MALAWI.

FURTHER CONSIDERATIONS

DESIGN REFLECTION

After receiving feedback on this design proposal, the following aspects could use further consideration and development:

- Sizing of sick vs. well patient areas: do they need to be equal in size?

- Shape of clinic: can the clinic take on a more organic or asymmetrical form?

- Play: what will keep waiting children occupied?

- Design details: window sill heights, door handles, bed sizes

- Further refinement of details and how patients will utilize each space

- Green Space: programming of outdoor areas

APPENDIX + BIBLIOGRAPHY

PRESENTATION SCRIPT

SLIDE 1: MY PRESENTATION IS REGARDING UNDER-FIVE PEDIATRIC CARE. SPECIFICALLY, ABOUT HOW INTRODUCING PREVENTATIVE CARE CLINICS TO DENSE RURAL COMMUNITIES CAN BETTER THE FUTURE OF MALAWI'S YOUTH

SLIDE 2: SKIP

BACKGROUND: I AM GOING TO START BY TALKING ABOUT BACKGROUND INFORMATION THAT I FOUND REGARDING CURRENT SITUATION OF PEDIATRIC CARE IN MALAWI

SLIDE 4: CURRENTLY, MALAWI IS HOME TO OVER 18 MILLION PEOPLE AND NEARLY HALF THE POPULATION IS UNDER THE AGE OF 14. BY CONSIDERING FACTORS LIKE:

- THE ANTICIPATED 2.9% GROWTH RATE
- THE EXISTING FERTILITY RATE OF 4.4 CHILDREN PER WOMAN
- AND THAT THE AVERAGE AGE FOR A WOMAN TO HAVE HER FIRST CHILD IS 18 YEARS OLD

THE COUNTRY'S POPULATION IS ONLY CONTINUING TO EXPAND AND GET YOUNGER.

SLIDE 5: THE EXISTING HEALTHCARE SYSTEM IN MALAWI IS COMPRISED OF THREE TIERS AND ADDRESSES PRIMARY, SECONDARY AND TERTIARY HEALTH NEEDS OF THE POPULATION. AS YOU CAN SEE IN THE NUMBERS BELOW, WHICH BREAK DOWN THE REGIONS, THE HEALTH CARE BEING OFFERED IN MALAWI IS DISPROPORTIONATE TO THE SIZE OF THE POPULATION. DESPITE THE FACT THAT 84% OF THE TOTAL POPULATION LIVE IN RURAL VILLAGES, A MAJORITY OF HEALTH SERVICES ARE OFFERED IN URBAN CONTEXTS, LEAVING THE AVERAGE DISTANCE TO ANY GIVEN HEALTH CLINIC FROM A RURAL COMMUNITY ANYWHERE FROM 5-35 KILOMETERS, WHICH IS UP TO 20 MILES.

SLIDE 6: THIS UNEVEN DISBURSEMENT HAS CAUSED SOME PRETTY SERIOUS GEOGRAPHICAL INEQUITIES BETWEEN THE RURAL AND URBAN AREAS, AND HAS IMPACTED THE HEALTH BEING RECEIVED BY THE YOUTH POPULATION. BY TAKING AT LOOK AT THE UNDER FIVE MORTALITY RATE, OR U5MR OF THE COUNTRY, WHICH CURRENTLY SITS AT 55 DEATHS PER 1,000 LIVE BIRTHS, YOU CAN SEE THAT CHILDREN ARE STILL DYING FROM PREVENTABLE DISEASES AND ILLNESSES. THIS RATE REPRESENTS THE LIKELIHOOD OF A CHILD MAKING IT TO THEIR 5TH BIRTHDAY. MALAWI'S U5MR SITS IN THE BOTTOM 20% OF ALL COUNTRIES, AND STILL HAS A WAYS TO GO BEFORE MEETING THE UNITED NATIONS GLOBAL DEVELOPMENT GOAL OF REDUCING THE U5MR OF ALL COUNTRIES TO AT LEAST AS LOW AS 25 PER 1,000 LIVE BIRTH IN THE YEAR 2030.

SLIDE 7: MALAWI IS NOT BLIND TO THE FACT THAT THEIR UNDER-FIVE POPULATION IS STRUGGLING AND HAS ATTEMPTING TO IMPLEMENT STRATEGIES WHICH CAN HELP. ONE OF WHICH IS THE INTEGRATED COMMUNITY CASE MANAGEMENT FOR CHILDHOOD ILLNESSES, OR ICCM, WHICH IS A POLICY MALAWI ADOPTED ALONG WITH SOME OTHER SUB-SAHARAN COUNTRIES THAT AIMS TO ADDRESS THE COMMON CAUSES FOR UNDER 5 MORTALITY. THIS POLICY IS CURRENTLY BEING CARRIED OUT BY HEALTH SURVEILLANCE ASSISTANTS, AS SEEN HERE, WHO TRAVEL AROUND VILLAGES AND MANAGE THE HEALTHCARE OF YOUNG CHILDREN THROUGH COUNSELING, PRESCRIPTIONS, AND EXAMS. WHILE THIS PROCESS HAS PROVEN SUCCESS, HSAS USUALLY DO NOT HAVE MEDICAL DEGREES OR ACCESS TO PROPER EQUIPMENT IN CASES OF EMERGENCIES AND CAN OFTEN BE OVERWHELMED WITH THE SHEAR AMOUNT OF CASES THEY HANDLE INDIVIDUALLY.

SLIDE 8: ANOTHER STRATEGY IN PLACE IS THAT OF TRAVELING MOBILE HEALTH CLINICS TO RURAL COMMUNITIES. THESE CLINICS ARE USUALLY PARTNERED WITH LARGER ORGANIZATIONS AND ARE FULLY EQUIPPED WITH STAFF AND SUPPLIES TO TREAT AS MANY CHILDREN AS POSSIBLE. BUT AN ASPECT IN WHICH THIS SOLUTION LACKS IS THAT THERE IS LITTLE TO NO CONSISTENCY WITH THESE VISITS, MEANING THAT CONSTANT CARE AND CASE MANAGEMENT ON A CHILD BY CHILD BASIS USUALLY DOES NOT EXIST.

SLIDE 9

THIS DIAGRAM SUMS UP THE SYSTEMS INEFFICIENCIES. HERE YOU CAN SEE THAT MOBILE HEALTH CLINICS ARE NOT REACHING THE POPULATIONS IN THE MOST RURAL OF AREAS, AND INSTEAD ARE PRIMARILY FOCUSED IN DENSE AREAS WHICH THEY ARE UNDER STAFFED TO SERVE ON A CONSISTENT BASIS. YOU CAN ALSO SEE THE SPORADIC PLACEMENT OF HEALTH CENTERS THROUGHOUT THE COMMUNITIES, WHICH LACK SPECIALIZED CARE FOR CHILDREN, AND SERVE ENTIRE RURAL POPULATIONS ONLY USUALLY HAVING ONE DAY A WEEK FOR UNDER 5 CARE. THEN LASTLY THESE BULLSEYES REPRESENT THE TRAVELING HSAS WHICH ATTEMPT TO REACH AS MANY PEOPLE IN WHICH THEY CAN WALK TO, BUT THESE INDIVIDUALS USUALLY DO NOT HAVE ENOUGH OF THE PROPER CARE EQUIPMENT WITH THEM TO SERVE THEIR POPULATIONS.

SLIDE 10: BASED ON MY FINDINGS OF THE EXISTING CONDITIONS OF UNDER-FIVE CARE, I THEN GENERATED A RESEARCH QUESTION THAT I WOULD BASE MY DESIGN OFF OF. WHICH IS, CAN THE INCORPORATION OF VERNACULAR-RESPONSIVE, PREFABRICATED CLINICS ENCOURAGE CONSIST RELATIONSHIPS WITH PREVENTATIVE CARE AND REDUCE MALAWI'S UNDER FIVE MORTALITY RATE.

PROPOSAL: BASED ON THIS RESEARCH I THEN MOVED ON TO CREATE A PROPOSAL WHICH WOULD MEET THE NEEDS OF THE USERS, THE HEALTHCARE SYSTEM AND THE FUTURE GENERATIONS TO COME.

SLIDE 13: AS A RESULT OF REALIZING WHICH POPULATIONS COULD BEST BE SERVED, IT HAS BEEN DETERMINED THAT SMALLER COMMUNITIES CAN BEST BE SERVED BY MOBILE HEALTH CLINICS SOLELY, WHILE MEDIUM AND LARGE COMMUNITIES WILL BENEFIT GREATER FROM THIS PROPOSED UNDER 5 CLINIC PROTOTYPES. THIS PROPOSAL DOES NOT ATTEMPT TO WIPE AWAY EXISTING HEALTHCARE PROVIDED BY MOBILE HEALTH CLINICS AND HSAS DO, BUT RATHER TRIES TO REALLOCATE SERVICES TO POPULATIONS THAT CAN BEST USE THEM, AND THEN PROPOSE NEW SOLUTIONS FOR POPULATIONS WHICH HAVE OUTGROWN THE SERVICES.

SLIDE 14: THIS DRAWING FURTHER BREAKS DOWN THE REALLOCATION OF CARE SERVICES FOR CATCHMENT AREAS OF POPULATIONS WITH HIGHER AND LOWER DISTRIBUTION LEVELS. HERE, THE MOBILE CLINICS, AS WELL AS THE HSAS CIRCULATE IN LESS DENSE COMMUNITIES WHILE HEALTH CENTERS AND THE PROPOSED UNDER FIVE CLINICS POPULATE MORE DENSE REGIONS.

SLIDE 16: MY PROJECT STATEMENT IS.... THE INCORPORATION OF UNDER-FIVE OUTPATIENT CLINICS, THROUGHOUT MALAWI'S RURAL COMMUNITIES, WILL PROVIDE A SOURCE OF CONSTANT SPECIALIZED CARE FOR THE DEVELOPMENT AND MONITORING OF YOUNG CHILDREN, AND WILL RESULT IN IMPROVED HEALTH OUTCOMES THAT LOWER THE COUNTRY'S UNDER-FIVE MORTALITY RATE.

SLIDE 17: THE GOALS OF THIS POTENTIAL SOLUTIONS ARE:

- ADDRESS THE ISSUE OF OVERCROWDING IN HOSPITALS BY PATIENTS WITH MANAGEABLE OR PREVENTABLE DISEASES
- LESSEN THE STRAIN PUT ON CURRENT HEALTHCARE PROVIDERS AND THEIR RESOURCES
- REDUCE THE U5MR
- CREATE A DESIGN WHICH CAN BE EASILY MODELED OR REPRODUCED BY OTHER COUNTRIES

DISCLAIMER: DESPITE MALAWI'S STRUGGLE WITH HUMAN RESOURCES AND SERVICES, THE NEED FOR AN INTERVENTION IN RURAL COMMUNITIES IS IMPERATIVE FOR THE ANTICIPATED GROWTH OF THE YOUTH POPULATION AND THEIR FUTURE NEEDS FOR HEALTHCARE- THIS PROPOSAL CONSIDERS THAT THESE RESOURCES ARE TO CATCH UP WITH THE NEEDS OF THE NATION IN THE COMING YEARS.

PROGRAMMING: MOVING INTO THE PROGRAMMING OF THE CLINICS...

SLIDE 20: HERE IS THE IDEALIZED FLOW OF PATIENTS THROUGHOUT THE CLINIC. THIS SEPARATES SICK AND WELL PATIENTS AND PROVIDES THEM WITH NECESSARY CARE FOR THEIR PROSPECTIVE NEEDS

PRESENTATION SCRIPT

SLIDE 21: IN ORDER TO IDENTIFY THE SIZE OF THESE CLINICS, A BREAKDOWN OF SQUARE FOOTAGE REVEALS THAT THE PROGRAMMING IS PRIMARILY DIVIDED INTO STAFF SPACES, PATIENT SPACES, AND SHARED SERVICES. THESE ESTIMATES REVEAL THAT FOR MAXIMUM EFFECTIVENESS, AND MINIMUM PHYSICAL INTRUSION, THAT A CLINIC OF 4,000-6,000 SQUARE FEET WILL MEET ALL PROGRAMMATIC NEEDS.

SLIDE 22: THESE PROGRAMS WERE THAN FURTHER INVESTIGATED IN ORDER TO IDENTIFY CRITICAL AND PREFERRED ADJACENCIES, AND THE RESULTS YIELDED THAT GROUPING SIMILAR PROGRAMS WOULD GENERATE THE GREATEST EFFICIENCY.

DESIGN:

SLIDE 24: THIS IS THE PROPOSED FLOOR PLAN FOR THE UNDER-FIVE CLINIC. WHICH EMPHASIZES STRONG CIRCULATION PATTERNS, RUNNING BOTH NORTH/SOUTH AND EAST/WEST. THE SEPARATION OF STAFF AND PATIENT SPACES, AND GROUPING OF SIMILAR PROGRAM TYPES. AS WELL AS OFFERS THE POTENTIAL FOR SEAMLESS PHASING IF THE CLINIC CANNOT BE COMPLETED AT ONE TIME

SLIDE 25: THE FLOOR PLAN WAS STRATEGICALLY LAID OUT IN A WAY WHICH DELICATELY DEFINES THE SEPARATION OF SICK PATIENT AREAS, WELL PATIENT AREAS, AND SHARED PROGRAMS. ADDITIONALLY, THE ANTICIPATED FLOW OF SICK AND WELL PATIENTS PROVES THAT THE FLOOR PLAN CAN EFFORTLESSLY CARRY THE LOAD OF DUAL PATIENTS WITHOUT DUPLICATING THE PROGRAM SPACES AND SIZES.

FLIP SLIDE: HERE IS AN IMAGE OF THE PROPOSED OBSERVATION ROOM WHICH WILL ACT AS A MEANS OF ADVANCED CARE FOR SICK PATIENTS.

SLIDE 26: THE FRONT ELEVATION IS NEARLY PERFECTLY SYMMETRICAL AND CONFRONTS SICK AND WELL PATIENTS WITH IMMEDIATE SEPARATION UPON ENTRY AND REGISTRATION, WHICH IS IMPERATIVE FOR THE SENSITIVE IMMUNE SYSTEMS OF YOUNG CHILDREN, ESPECIALLY AROUND THOSE WHOM THEY DO NOT USUALLY INTERACT WITH. ADDITIONALLY, THE EAST AND WEST CORRIDORS ALLOW FOR NON-EMERGENT CIRCULATION SEPARATE FROM THE CENTER OF THE CLINIC AND ITS SERVICES

STRATEGY: HOW THE CLINIC CAN BECOME A SELF-SUSTAINING BUILDING IN ITS EVERCHANGING ENVIRONMENT.

SLIDE 28: THIS CLINIC WILL BE DESIGNED TO FUNCTION OFF THE GRID, AND WILL NOT DEPEND SOLELY ON THE SUPPLY OF UNRELIABLE RESOURCES SUCH AS ELECTRICITY AND CLEAN/RUNNING WATER. ONE OF THE BIG WAYS THE CLINIC WILL FUNCTION WITH ENOUGH POTABLE WATER IS THROUGH A SYSTEM OF FILTRATION AND PURIFICATION, WHICH HAS BEEN SEEN IN SUB-SAHARAN CONTEXTS BEFORE.

SLIDE 29: ADDITIONALLY, WATER DRAINAGE ON SITE IS GOING TO BE CRITICAL TO THE FUNCTION OF THE CLINIC, ESPECIALLY DURING THE RAINY SEASONS. ONE UNIQUE FEATURE THAT WILL BE INCORPORATED INTO THE DESIGN IS THE IDEA OF PARTIALLY CONCEALED DRAINAGE MECHANISMS WHICH WILL BE HOUSED IN THE HOLLOW STAINLESS-STEEL COLUMNS THAT SUPPORT L COVERINGS/ROOFS OF PRIMARY CIRCULATION ROUTES.

SLIDE 30: SOLAR GAINS WILL ALSO BE NECESSARY FOR THE "OFF THE GRID" FUNCTIONING OF THE CLINIC. IT IS ESTIMATED AT ROUGHLY 35-56 PANELS CAN PROVIDE ENOUGH FOR 100% COVERAGE OF THE ANTICIPATED ENERGY NEEDS ON A DAILY BASIS. THIS RANGE IS LARGE BECAUSE IT DEPENDS OF THE WATTAGE OF THE SOLAR PANEL WHICH WILL BE USED. ALSO, ANY EXCESS ENERGY WILL BE HARVESTED AND STORED ON SITE FOR EMERGENCIES OR TIMES OF GREATER INFLUX TO THE CLINIC.

NEXT: VENTILATION OF THE CLINIC CORRESPONDS WITH THE ZONES OF SICK AND HEALTHY PATIENTS. WITH WINDS PRIMARILY COMING FROM THE NORTHEAST, THE AIR WILL BE PUSHED IN A HEALTHY TO SICK DIRECTION TO AVOID THE SPREAD OF DISEASE, SPECIFICALLY THOSE AIRBORNE IN NATURE.

SLIDE 31: GREEN SPACE CAN BE FOUND AROUND THE PERIMETER OF THE BUILDING, AS WELL AS IN THE TWO CENTRALIZED COURTYARDS WHICH PROVIDE EASY ACCESS AND VIEWS TO BOTH PATIENTS AND STAFF MEMBERS. ADDITIONALLY, BREEZE BLOCKS AND LOCAL FLORA AND FAUNA CAN BE FOUND TOWARDS THE FRONT OF THE CLINIC AND SERVE AS A MEANS TO BLUR THE TRANSITION FROM THE OUTSIDE IN.

PRESENTATION SCRIPT

SLIDE 32: THIS IS A RENDER OF THE FRONT WAITING AREA, WHICH WILL BE DUPLICATED ON EITHER SIDE OF THE CLINIC FOR BOTH SICK AND WELL PATIENT WAITING. SHOW MODEL!

CONSTRUCTABILITY: THE EASE OF REPLICATION AND CONSTRUCTION FOR THIS CLINIC IN DIFFERENT AREAS OF MALAWI IS A CRITICAL FACTOR TO THIS PROTOTYPE.

SLIDE 34: AFTER CONSIDERING A COUPLE OF METHODS OF FABRICATION, LIKE CONCRETE MASONRY FORMS. I DECIDED THAT PRE-FABRICATED WALL PANELS WOULD ACT AS THE BEST SOLUTION CONSIDERING THE VERNACULAR OF MALAWI ARCHITECTURE, AS WELL AS FOR THEIR EASE OF INSTALLATION, THEIR STRENGTH, AND THE OPPORTUNITY FOR CUSTOMIZATION.

THIS CLINIC WILL BE MADE OF CSIPS OR COMPOSITE STRUCTURAL INSULATED PANELS. THESE PANELS ARE COMPOSED IN A SANDWICH LIKE BOARD THAT INCLUDE THE INTERIOR FINISH, STRUCTURE AND INSULATION AND THE EXTERIOR FINISH. PANELS WORK TOGETHER IN A LOCKING MECHANISM AND CONNECT ALONG A TOP AND BOTTOM FRT TRACK, OR C-CHANNEL.

SLIDE 35: IN CORRESPONDENCE TO THE CSIPS PANELS AND THEIR EASE OF INSTALLATION, THE CLINIC IS DESIGNED IN 4' MODULES, WHICH IS THE TYPICAL SIZE OF PANELS. THE WALLS WHICH GO TO THE ROOFLINE CAN BE PRE-CUT ACCORDING TO THE SLOPE OF THE ROOF, AND THEN BROUGHT ONSITE TO CONNECT WITH THE OTHER GENERIC PANELS. ADDITIONALLY, WHILE THE WIDTH OF THE CSIP PANEL IS ALMOST ALWAYS 4', THE VARIETY OF HEIGHTS AVAILABLE WILL ALLOW FOR TALLER SPACES TO BE EASILY ASSEMBLED

OPENINGS SUCH AS WINDOWS AND DOORS WILL ALSO ADHERE TO THE 4' MODULE, BUT PREVENT THE WASTING OF PANELS BY CUTTING THEM INTO SMALLER STRIPS. IN THESE CASES, THE PENETRATIONS WILL CONSUME THE ENTIRE PANEL AND SIMILARLY FIT INTO THE OTHERS WITH EASE. HERE YOU CAN SEE THE NEED FOR THE DOOR MEANS AND ADDITIONAL SIDELIGHT AND TRANSOM WINDOW TO FILL OUT THE ENTIRE PANEL SIZE.

CONTEXT INTEGRATION: THIS IS ONE OF THE MOST IMPORTANT ASPECTS OF THIS CLINIC BECAUSE IT IS WHAT SETS IT ASIDE FROM OTHER PROJECTS AND ALLOWS THE BUILDING TO BECOME VERNACULARLY RESPONSIVE TO ITS ENVIRONMENT OVERTIME WITH HELP FROM THE COMMUNITY.

SLIDE 37: THE CUSTOMIZATION OF THE OF THE CLINIC INTO THE SITE AND COMMUNITY GREATLY DETERMINES THE SUCCESS OF THIS POROTYPE. IT IS PROPOSED THAT IN ADDITION TO THE PRE-FABRICATED STRUCTURE, LOCAL FABRICATION OR LO-FAB, WILL BE FEATURED THROUGHOUT, WITH WORK DONE BY LOCAL ARTISTS AND LABORERS. THIS WORK WILL GROW THE CHARACTER OF THE CLINIC TO BETTER REFLECT THE NEEDS OF WHOM IT IS SERVING.

EXAMPLES OF LO-FAB INCLUDE, TEXTILES WHICH WILL BE ON DISPLAY ALONG CORRIDORS. LANDSCAPING WHICH WILL FEATURE VERNACULAR FLORA AND FAUNA. MURAL ARTS WHICH WILL EXPRESS CULTURAL IDEALS AND EXPAND THE IMAGINATION OF CHILDREN. AND LASTLY, MASONRY, BRICK OR STONE WORK WHICH WILL PROVIDE A LAYER OF TEXTURE AND DEPTH ATOP THE COMPOSITE WALL PANELS.

SLIDE 38: HERE YOU CAN SEE THE TRANSFORMATION OF A SPACE OVER TIME, WITH NECESSARY BUILDING PROGRAM BEING BUILT FIRST, FOLLOWED BY ADDITIONAL PRIVACY WALLS AND COVERED AREAS, AND FURTHER FINISHED WITH ARTS, TEXTILES, AND GROWTH OF THE LANDSCAPE.

LAST SLIDE:

THE SUCCESS OF THESE CLINICS LIES WITHIN THOSE WHO CARE FOR THEM AND WORK TO DEVELOP THEM INTO ARCHITECTURE THAT BOTH RESPECTS AND RESPONDS TO THAT OF THE NEEDS OF ITS ENVIRONMENT.

GREATER ACCESSIBILITY AND VISIBILITY OF THESE PREVENTATIVE CARE CLINICS WILL ACT AS A RESOURCE FOR CHANGE IN COMMUNITIES, AND WILL SUPPORT THE GROWTH OF CHILDREN AND PARENTS SEEKING HEALTHCARE IN MALAWI.

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