

3.3 School of Dentistry

Design Vision

St. Francis University sees and understands the crucial need for more medical professionals, especially dental professionals, in Ifakara and the broader Tanzania. Consequently, the school wants to become a leader in the development of students into the future professionals and leaders of the country. They want to encourage transfers of ideas and knowledge – showing that there’s always a precious lesson that can be learned from others, no matter who you are.

Their vision is to bring parties together in a safe space to interact and enrich each other’s lives, and then send them out to teach their family and friends back home. By the end of the visit to the School of Dentistry, all parties will leave with a greater understanding not only of dentistry but of the people and cultures they will have met. To achieve this, SFUCHAS desires to bring together the patient, student, and the lecturer into a setting where the patient can learn from the student as the student learns from the lecturer, and in turn, where the lecturer learns about the rich culture and medical practices in Ifakara.

Similarly, SFUCHAS has the desire to connect the Dental Faculty students with the people of Ifakara, rural Tanzania and the world through service in local, regional and international dental clinics. At the same time, researchers from around the world will be invited to come to Ifakara and exchange knowledge with students and patients on the local and global medical practices taking place in Ifakara and internationally.

Lastly, SFUCHAS desires for the School of Dentistry to be a place where the spiritual, educational, and practical converge, creating an environment where a student can grow spiritual while also growing in their educational training. Their hope

is that students become passionate about using what they have learned to practically serve the community.

Stemming from these desires, the vision for the Dental Faculty at SFUCHAS is to create a world class dental facility where the teaching and clinical spaces would be directly linked to one another. This integrated design provides students the space to learn hands-on and provide services to the community under the supervision of the lecturers and professional dentists.

After the project trip to Ifakara, members of the project team met with dental professors from Stellenbosch University in South Africa to learn further about best design practices and requirements for a school of dentistry and integrated clinic and how these practices may be included in the design for SFUCHAS. In this meeting it was suggested that the number

of dental chairs in the clinic be increased to allow upper year students more clinical time seeing patients.

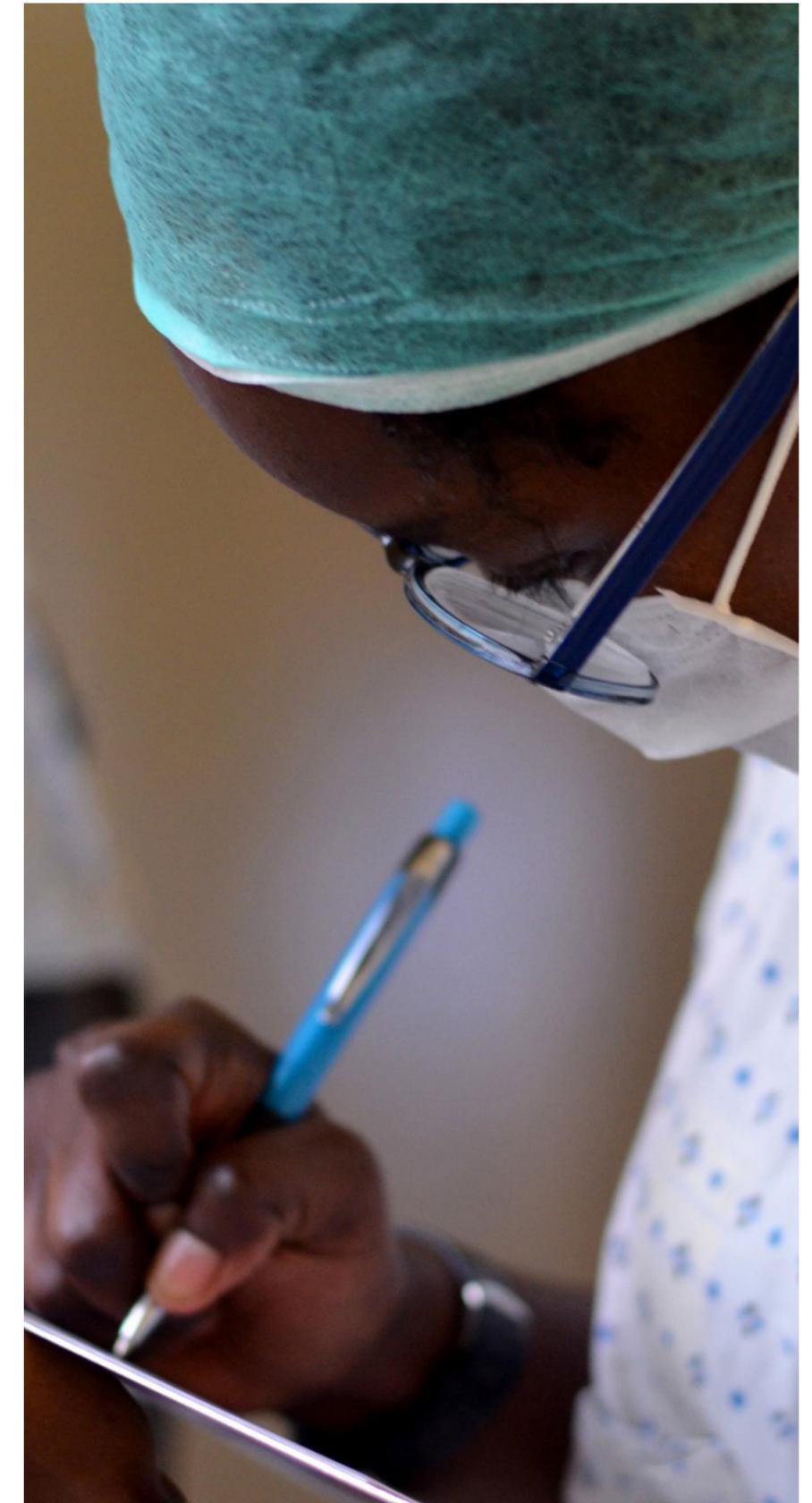
This report and subsequent drawings illustrate the framework of the initial client brief received from SFUCHAS personnel during the project trip, but allocates space within the master plan for the dental clinic to expand over time as the School of Dentistry grows and demand for dental services in Ifakara increases. As the University further refines their understanding of the dental teaching practices and the types of facilities needed within the School of Dentistry, the design should be reevaluated to include these requirements. EMI will be happy to facilitate further discussions and even a partnership with Stellenbosch University’s School of Dentistry faculty. At the appropriate time, we would also appreciate the opportunity to be involved with the further design development of the building.



School of Dentistry and Dental Clinic Entrance

Table 3.4: Building Program for School of Dentistry and Dental Clinic

School of Dentistry			
Feature	Total Number of Feature	Floor Area	Design Notes
Reception space + Store (Admin)		15 m ²	Excluding seating/waiting area
Office (Admin)		15 m ²	3 Desks
Meeting space (Admin)		15 m ²	6-8 Seater table
Research work area with working spaces		35 m ²	4 Lab desks 1 Meeting desk
Student toilets	1 wash closet per 100 students		10 Female wc total 11 Male wc total
Staff room and offices		80 m ² total	2 Offices 1 Meeting Room Open plan office space Reception space
Chancellor	1	80 m ² total	4 Offices 1 Meeting room Reception space
External Multi-purpose space (courtyard)	1	630 m ²	N.A.
Student Labs	2	270 m ² each	84 students per lab
Research Lab	1	220 m ²	72 students per lab
Large Lecture Hall	2	270 m ² each	176 students per hall
Medium Lecture Hall	1	220 m ²	154 students per hall
Dental Clinic			
Feature	Total Number of Feature	Floor Area	Design Notes
Waiting Area and small waiting area pockets	Ground Floor	125 m ²	Excluding benches outside rooms in passage
	First Floor	80 m ²	
Reception (including Payee and Records rooms)		60 m ²	
Public Toilets	1 per floor	34 m ² total	2 Male wc per floor 3 Female wc per floor
Disabled Toilets	1 per floor	5 m ²	Unisex wc
Treatment room	6	17.5 m ² each	Includes additional observation space for students
Surgery room	2	25 m ² each	
Dentures Treatment room	2	17.5 m ² each	
Labs	3	35 m ² each	
Communal dentists' office	1		Includes 3 hot desks for visiting doctors
Medical waste room	2	10 m ² each	
Equipment room	2	5 m ² each	
Dispensary	2	15 m ² each	



Layout

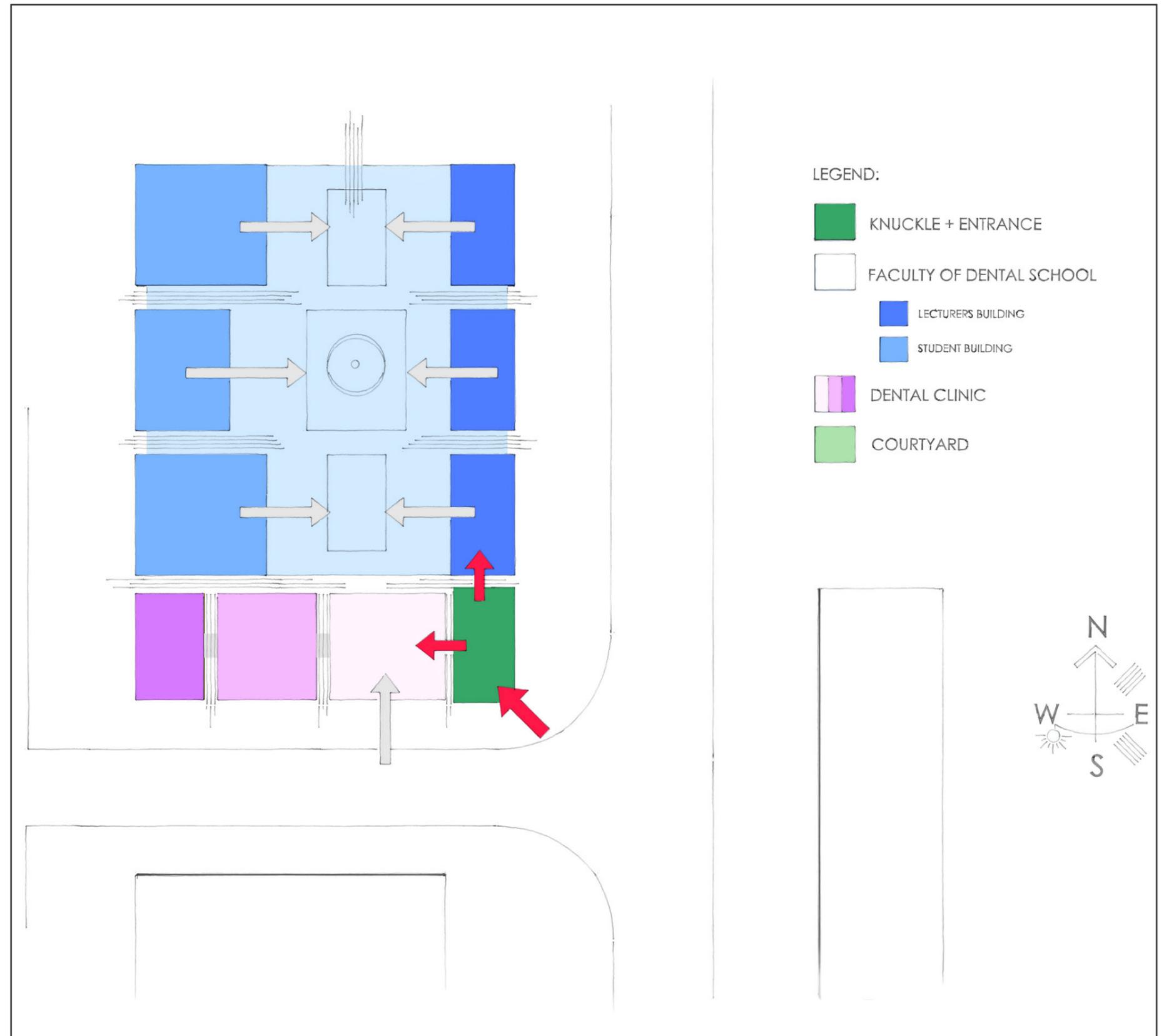
School

The school requires spaces for both lecturers and students. For this reason, the east portion of the school has dedicated office space for the head of department and staff on the first floor. On the ground floor administration staff and researchers conduct research with the University. The west portion of the school contains the student space where lectures and teaching labs occur. The two spaces have been kept separate to distinguish and strengthen both entities. The area where they overlap forms the courtyard, allowing lecturers and students to mingle and share.

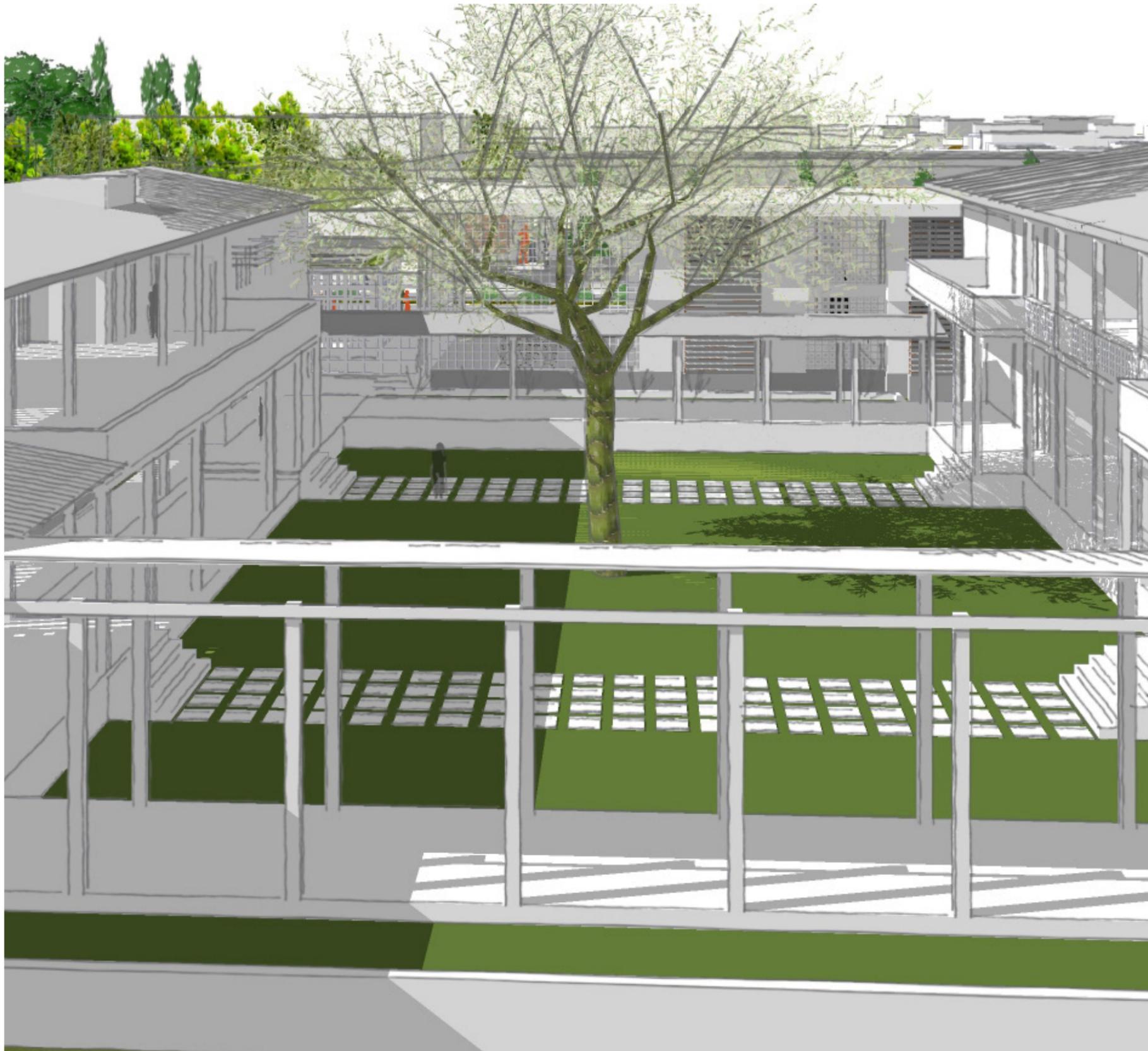
At the moment, the Chancellor and Vice Principal offices are scattered across the existing campus and do not have a united office. Since this school will be the first lecture building constructed on the site, offices will be allocated for the administrative staff to relocate until the dedicated administration offices are built. After the transition, this space will be refurbished for additional storage and lecturer offices.

Courtyard

The courtyard in the centre of the two spaces is a vital feature to the teaching space. While in Tanzania, the students shared with the EMI team the precious lesson of 'sitting under the tree' – it's that safe space where one can ask questions about the lessons learned in the classroom, where lecturers can discuss with the students, where assignments can be completed, and where a lesson can be taught if the classroom is too hot. To the Tanzanian culture, this communal space is very important and required across ages and education. This space is utilised throughout the year, as the rain allows, and is an important facet in enriching the experience for students and lecturers.



Dental Faculty Layout



School of Dentistry Courtyard

The courtyard has formal seating areas on either side of the grassed area where students can study, read, and socialize between lectures. The large centre tree provides shade, cooling and beautiful greenery to the space. The stepping stones separate the two areas creating definition and a short cut for students to use in the dry season.

The space has also been designed as one where informal awards, speeches, or addresses to the students can be made. In front of the research centre is a dropped step that provides a podium to address the audience. Providing a backdrop for the presenter is the enclosed glass façade of the research centre where students can look toward the future and hope for their achievements.

Clinic

The clinic has a two-fold purpose to teach students and to provide medical treatment to the community of Ifakara. The clinic will serve as a space where students can be taught, observe, be connected to the people they are serving, and once they are equipped, to work with supervision. For this reason, treatment rooms have been designed with additional floor area to accommodate students observing treatment procedures.

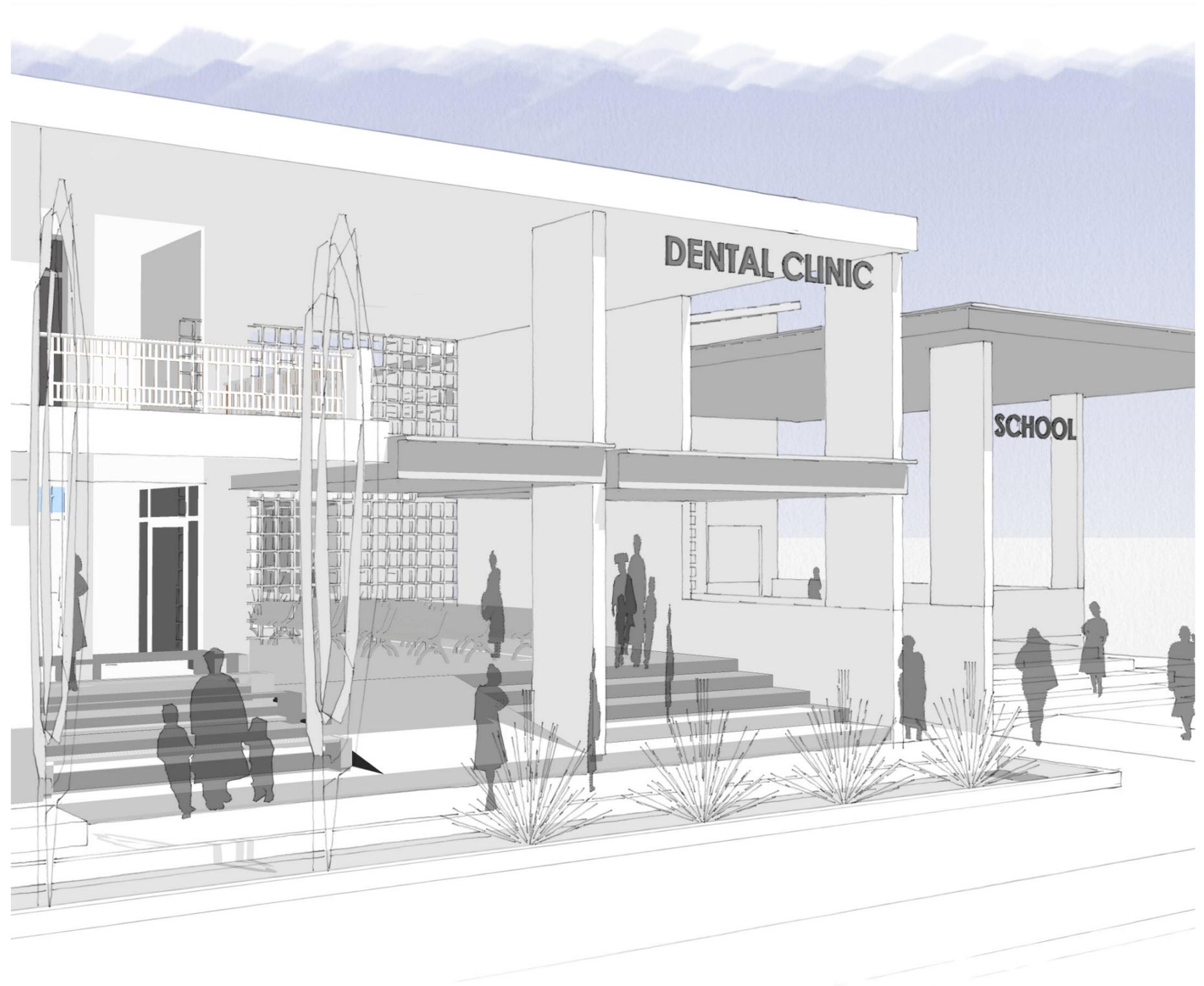
The building is divided into three pockets by recessed ventilated brick walls which allow for cooling along the long circulation spine of the building and define areas of access. These pockets were carefully designed to flow from public to private spaces to provide interaction for the patients in common areas while also allowing for more privacy in treatment areas. The western portion of the clinic hosts the stores, labs and dispensaries. This space is solid and enclosed and is used by staff and students exclusively. This private space begins to open up to the semi-public spaces of

the treatment areas, and slowly leads to the open, inviting and social waiting areas where patients can interact with the public, fellow patients, or family members that joined for the trip.

The waiting areas for the clinic are broken up within the building to maximize efficiency and create more private areas for patients about to receive treatment. The main waiting area is located at the reception adjacent to the entrance of the building. Should someone require surgery or dentures, they will be redirected to smaller waiting areas on the first floor. Once patients have been called to a specific room, there are further benches in the passage outside the treatment rooms for patients to wait in privacy.

Architectural Tree

This is the space where clinic and school meet. As visitors and students walk up the steps of the entrance, they can either branch off towards the reception area for the school or go towards the waiting area for the clinic. This is a space where the different site users can mingle and learn from each other; it's where the public can interface with the buildings; it's where the discussions can happen in the wet season; and it's a space for gathering on registration day. More simply, it can also be a space where one can watch the rain fall, smell the moisture in the air, and enjoy the beauty of the world passing by.



Architectural Tree

Design Notes

The building for the lecturers and building for the students are independent buildings. This breaks down the scale of building mass as well as allowing for interaction between them. Each building is divided into three separate sub-buildings, to allow for circulation and cross-ventilation. The roof will be continuous over those breathing pockets, thus cooling those walls, which will in turn cool the Lab and Lecture Halls.

The building uses a strong concrete frame structure with infill brickwork which allows simple additions and fixing for the ventilation louvers. The roof slopes at 10 degrees away from the courtyard, allowing cool air from the shaded courtyard to flow through the louvers into the internal spaces and be guided out by convective currents. This method of passive cooling is especially effective in the dry summer months when the sun will heat the building up quickly, but the tree(s) will keep the inner courtyard cool.

The building is designed with lean-to-roofs and large overhangs which provide shelter from the sun and rain while also creating two different scale effects. The lower end of the sloped roof faces the interior of the building and creates a covered space between the courtyard and building for gathering and circulation. This low roof and circulation balcony increases the layering of the building, improving the impression left by the building. The courtyard is intended to feel like a safe, relatable space whereas the building facades along the road are designed to create a large presence that demands attention and respect.



School of Dentistry looking NW



DENTAL CLINIC

SCHOOL