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## SUMMARY

Despite two decades of progress reducing avoidable blindness, the need remains vast. Globally, about 1.1 billion people have unaddressed vision loss, according to the International Agency for the Prevention of Blindness. In Kenya, over 80% of blindness is due to curable and preventable causes, with an estimated 15.5% (7.5 million) of Kenyans in need of quality eye care services. The leading causes of poor vision have cost-effective solutions (e.g., cataract surgery and glasses); however, many people have limited access to eye health services.

To decrease the burden of blindness in densely populated, rural region of Kericho, Western Kenya, the AIC Litein Hospital (Kenya) and the Rotary Clubs of Kericho (Kenya) and Huizen Gooimeer (The Netherlands), are expanding the current eye clinic at the AIC Litein Hospital to a stand alone teaching and referral centre. It will replace the existing small facility within the hospital, which contains only two small rooms for all outpatient services. The current eye department shares their surgery room with all other hospital specialists, thus making it hard for the eye department to attend to the many patients who flock the hospital for treatment. The surgery room is available for eye operations on Thursdays only, and can be halted when the hospital receives emergencies like a caesarean section. The layout is not suitable for eye operations as the windows have to be closed using black polyurethane bags to develop a temporary dark environment required for eye operations.

The current number of cataract surgeries (SICS-Small Incision Cataract Surgery) is around 400 a year. To reduce the burden of blindness from cataract in the Litein area the cataract surgery rate should be at least 2000 a year (RAAB survey Ministry of Health Kenya). The new eye department will better accommodate the growing number of patients with eye problems and reduce the burden of blindness in the region.

The new facility will be spacious and furnished with modern equipment to improve the quality of eye care. Furthermore, it will be a facility for training of eye care personnel, from ophthalmic nurses to cataract surgeons. The project will involve the construction of a simple but modern facility with adequate space for consultation, examination, treatment, and surgery rooms. The new eye unit will be equipped with the necessary diagnostic and treatment equipment and will be staffed by qualified medical personnel. A team of ophthalmologists from the Netherlands visits at least once a year to work with the local staff. It is a wish to use the facility for research as well, in collaboration with the Dutch International Ophthalmology Society of the NOG (Nederlands Oogheelkundig Genootschap) and other interested parties.

The clinic will have a spacious outpatient facility on the ground floor and two theaters and wards on the first floor. A piece of land was allocated and cleared by the hospital, and “Groundbreaking” took place on January 20th 2024. After tendering and selecting a construction company, building started in May 2024, and is expected to be completed by June 2025.

The total estimated building cost is 55,000,000 KES (appr. 320.000 to 390.000 Euros, depending on the fluctuating exchange rate) which is funded through donations from various organizations and fundraising events. Most equipment needed is allocated second hand in The Netherlands and shipped to the hospital. Funds for some equipment,

extra staff and training, is still needed (Annex 7). The proposed eye unit will create employment opportunities for medical professionals and support staff. The project will also provide a platform for training and skill development for the medical staff to keep them updated with new and emerging technologies and treatments.

The project is implemented in phases, and started with the construction of the facility's foundation, followed by block work, installation of electrical and water systems, after which the medical equipment can be implemented. Officially opening of the Training and Referral Eye Centre of the AIC Litein Hospital is scheduled for June 19th, 2025.

In conclusion, the proposed standalone AIC Litein Hospital eye clinic will significantly improve access to quality eye care services for the residents of Kericho county and its surrounding areas. The project will create job opportunities and provide a platform for training and skill development for medical professionals. All parties are committed to ensuring that this project is completed successfully within the stipulated timeframe and budget.



***Groundbreaking for Eye Clinic at AIC Litein Hospital, January 2024***

***Current Operating Room***





*Current theatre*

### ***AIC Litein Hospital Eye Clinic Proposal***

#### **ACKNOWLEDGEMENT from the authors**

We would like to express our sincere appreciation and gratitude to everyone who has contributed to the success of this project proposal.

Secondly, we would like to thank the hospital management, led by the CEO Dr. Elijah Terer for providing us with the opportunity to propose this project. Their support and encouragement have been instrumental in making this proposal a reality.

We are grateful to the eye unit staff for their cooperation and support during the preparation of this proposal. We extend our heartfelt thanks to the head of the eye unit, Dr. Toroitich, for providing us with valuable insights and guidance regarding the project.

First and foremost, on behalf of AIC Litein Hospital and Rotary Club of Kericho, Dr. Terer would like to convey his sincere gratitude to the almighty God for extending His grace and peace within us.

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We would also like to acknowledge the contribution of the patients who have participated in our research and have provided invaluable feedback. Our thanks to members of the community who participated in our outreach and education programs, and who have demonstrated a strong interest in our project.

Our sincere appreciation goes to the architectural team who helped in the drawing of the proposed story building and the committee that guided in the proposal writing process, and who have provided us with constructive feedback and support.

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We express our sincerest thanks to everyone for providing us with the resources and support we needed to create this proposal successfully. We look forward to implementing the eye care project with all of your continued support.

### ***AIC Litein Hospital Eye Clinic Proposal***

1. Introduction / background	page 7
2. Eye Department	page 9
3. Summary of Challenges	page 13
4. Agreement	page 18
5. Building	page 19
6. Equipment	page 22
7. Training / Staff	page 24
8. Partnerships	page 26
9. Evaluation	page 27

### ***Architectural Plans and Project Management***

A. Architectural plans	page 28
B. Bill of Quantities (Summary)	page 31
C. Project Management Organization	page 35

### **ANNEXES**

1. Declaration CEO AIC Litein Hospital	page 40
2. Rotary Club of Kericho Registration Certificate	page 41
3. AIC Litein Hospital Registration Certificate	page 42
4. AIC Litein Hospital Operating License	page 43
5. Letter of Endorsement	page 44
6. Video links	page 45
7. Equipment list	page 46

# AIC Litein Hospital Eye Clinic Proposal

## 1. Introduction / Background

AIC Litein Hospital is a 220 bed level 5, faith based teaching and referral hospital based in Litein Town, Bureti Sub-County, Kericho County. The Hospital is devoted in their mission to serve humanity through provision of integrated evidence based, quality, affordable, sustainable healthcare training and research services.

Rotary club of Kericho was chartered in the year 2021, September 25<sup>th</sup>, and since then the club has seen the development of community projects like building of houses for people with disability, school feeding programs, maternal health programs, planting of 4,000 seedlings, water borne diseases prevention programs, outreach medical camps etc. AIC Litein Hospital has been our partner in community development programs concerning disease prevention and specifically eye ailments. With the growing number of patients in Litein and limited resources, AIC Litein Hospital has its eye unit overwhelmed thus offers eye care services to lesser patients as expected.



The hospital serves a population of about 800,000 drawn from several counties in the south west region of Kenya, namely Kericho, Bomet, Narok, Nakuru, Kisii, Nyamira, offering primary specialist and preventive care.

The hospital's day to day running is overseen by a CEO and team of management whose oversight is governed by a Board of Trustees drawn from professionals in different church council, the trustees report to the Central Health council of the African Inland Church Health Ministries.



A huge number of the patients (80%) come from a poor background and cannot afford to access healthcare services. They relied on the government sponsored National Hospital Insurance Fund (NHIF), followed by SHA (Social Health Authority) which requires a minimum monthly subscription of KSH300 (USD 3) to get treatment. 15% of the clients have commercial medical insurances and this is mainly dominated by teachers and police service. Only 5% of the patients are cash payers and more often they have to sell their parcels of land or livestock to pay off the medical bills. The Hospital lives by the words of John 6: 37 ***“Whomsoever cometh unto me I shall by no means cast out”***. And God’s grace has been sufficient, providing funds even in months the Hospital has felt that the doors can no longer stay open.

Over the years the hospital has seen a growing number of patients visiting the outpatient department from 350 patients a day in 2016 to an average of 700 patients a day in 2023. However, with the change of coverage from NHIF to SHA, numbers have temporarily dropped to 300 a day.



*Laurette Happel (physician assistant) and Marjolein Ronday (ophthalmologist) visiting the hospital in 2019, second on the right is Dr. Toroitich, cataract surgeon*



## *AIC Litein Hospital Eye Clinic Proposal*

### *2 Eye Department*

Ever since missionaries established the hospital as a grass-thatched dispensary in 1924, eye care was used as a way to attract locals. The first registered nurse, Miss Sterner, came to the hospital three years later. In 1938 Miss Veda Nicodemus, a nurse, came to work at the hospital. She injected a huge growth in the in-patient work. By 1942, she and Dr. Philip Morris were carrying out cataract surgery with limited resources. Despite all the limitations, they restored eyesight to many old people.



*Eye examination*



*Cataract Surgery*

Continuous availability of eye services was realized from 1979. The department is open for 8 hours daily on weekdays and half day on Saturdays, although a cataract surgeon is available for emergencies at night.

The unit is supported by the following staff:

2 cataract surgeons, 1 ophthalmic nurse, 2 nurses, 1 ophthalmic assistant, 1 optometrist, 2 optical technicians and 3 subordinate staff.



*Eye Department staff 2023*

## **Present situation**

All patients, regardless of their socio-economic status, will receive treatment, even if they cannot pay the full amount for cataract surgery, making it a very popular facility in the area. The present Eye Unit at AIC Litein Hospital is too small to treat the growing number of patients coming to the hospital for eye care.

### One room for everything?

Despite the large number of patients who seek eye care services, the eye unit has one room for consultation, diagnosis and treatment. The room is a 3 meters by 3 meters in size which is not enough for partitioning. This has caused a significant bottleneck in the hospital's operations as patients and nurses have no privacy in treatment.



*Current Outpatients Department Eye Unit*

## Surgery

The surgery room is shared with gynecology and general surgery, and is not very suitable for eye surgery. A bed sheet curtain is the only thing that separates the different



operations. Black polyurethane bags have to be put over the windows to provide the necessary darkness for eye surgeries. These black papers have to be removed when other surgeries are on-going. It's a surreal sight, seeing a woman in labour next to a patient recovering from cataract surgery. Not having a dedicated operating room available every day of the week halts the total of cataract surgeries at 400 a year.

## Waiting Bay

The waiting bay is a congested area that poses risks of the transmission of air borne diseases like COVID 19 to the patients. This bay that has been improvised to accommodate 20 patients at a go, has been used by many more patients from both eye and physiotherapy departments.





## Glasses Workshop

The Eye Unit workshop is another predicament adding on to the dire situation of the eye unit. As required, the workshop is supposed to be spacious and well lit. But this is the exact opposite of an ideal eye workshop. It is a room that was developed from a corridor under a stair case and it is poorly ventilated with no emergency exit door in case of any eventuality. The size of this room cannot accommodate modern equipment and only allows one person to pass at a time.



*Biometry in the glasses display room*

The display room in the eye unit is a small room of about 2.3 Meters by 2 Meters where spectacles are stored for distribution to eye patients. This room is also shared room with consultation (biometry and fundoscopy) and it makes it difficult for patients to view their preferred spectacles when a consultation is on-going.



### 3. Summary of Challenges

1. One room for everything: consultation, treatment and admission.
2. Long waiting time in crowded waiting room due to too small space
3. Shared waiting room with physiotherapy and surgical clinic
4. Lack of own theatre space: only once a week, sometimes delayed in case of an emergency caesarean
5. Small display room for glasses shared with biometry
6. Small (under the staircase) workshop for making glasses.

It is estimated that 20 million people worldwide are blind because of cataracts, but sight can be restored with a straightforward operation. According to Sight Savers International, cataracts cause up to 60% of blindness in Africa. World Health Organization asserts almost a quarter of a million Kenyans suffer from blindness; 43% of these cases are caused by cataracts, an avoidable and often treatable condition.

According to hospital data, there is a drastic increment of eye patients in the last five years.

<b>EYE CONDITIONS</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>
1. CATARACTS	878	1042	1216	1189
2. REFRACTIVE ERRORS	990	805	1426	1464
3. PRESBYOPIA	526	548	619	644
4. ALLERGIC CONJUNCTIVITIS	2122	1518	2258	2538
5. GLAUCOMA	61	121	147	123
6. DIABETIC RETINOPATHIES AND OTHER RETINOPATHIES	79	65	71	98
7. TOTAL NUMBER OF CATARACT SURGERIES DONE	358	408	442	426
<b>8. TOTAL NUMBER OF PATIENTS SEEN</b>	<b>7632</b>	<b>7196</b>	<b>9352</b>	<b>9887</b>

The Eye Unit can only do cataract surgeries for less than the number of patients diagnosed with cataracts due to the limited theatre time (days) the hospital allocates the unit and the extra traveling time/costs it poses on patients. Patients with vision better than 0.3 are sent away because of lack of operating time / space in the wards.



*Litein, rural but densely populated*

**There are several reasons why Litein Eye Unit needs a standalone eye building.**

Firstly, it will provide a specialized facility with modern equipment and technology to cater to the increasing number of patients with eye-related conditions. A standalone eye unit will allow us to see more patients, providing more efficient services, reduce waiting times, and offer more comprehensive care to patients.

Secondly, the growing population of Bureti Sub-County where Litein town is located means that there is a higher demand for healthcare services, especially for the elderly population. Litein is the second biggest town in Kericho County after Kericho Town.

<b>Bureti Sub-County Population</b>					
	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>
<b>Male</b>	<b>98,823</b>	<b>112,021</b>	<b>130,792</b>	<b>139,251</b>	<b>149,000</b>
<b>Female</b>	<b>100,642</b>	<b>122,024</b>	<b>135,014</b>	<b>145,658</b>	<b>154,658</b>

This makes it necessary to have a standalone eye unit that will provide specialized care and attention for optimal health outcomes.





Thirdly, as there are only 2 eye units in Kericho County that perform eye surgeries, a standalone eye unit will help to reduce referrals to other facilities, which can be time-consuming and expensive for patients.

There two eye care centers in Kericho County are:

1. The Kericho County Referral Hospital
2. AIC Litein Hospital

The number of cataract surgery estimated by Kenya Ministry of Health for Kericho region:

**Effective Cataract Surgical Coverage (ECSR): 56%**

The ideal target is 80% of 3000/ million people

( Kericho population is approx 1 million) =2400 .

With Kericho County Hospital doing around 350 and Litein around 400 cataract surgeries a year we are lacking at least 1650 surgeries per year which is necessitated by the lack of facilities and resources.

Fourthly, there is a growing number of other diseases like diabetes, that require specialized attention and treatment.



*Cataract Surgery (SICS)*



*Patient after surgery*



A standalone eye unit will be better equipped to provide appropriate care for these conditions, which will improve the overall health outcomes for patients.

Overall, a standalone eye unit will provide a more efficient, specialized, and comprehensive health service to the residents of Litein and the surrounding areas. It will improve the quality of care offered to patients with eye-related conditions and enhance the healthcare delivery system in the region.

Our goal is to build a standalone eye care centre next to the hospital, on a 3 points piece of land identified by the hospital CEO. The foundation will be strong enough to provide 2 more floors in future, eg. for the Dental Department and administrative staff, thus freeing up important space in the main hospital.

This will enable to adequately treat the growing number of eye patients needing treatment, thus reducing the burden of blindness in the Kericho region.



AIC Litein Hospital, a grade 5 facility

## *AIC Litein Hospital Eye Clinic Proposal*

### *4. Agreement*



*Plot with Eye Clinic outlined*

The AIC Litein Hospital is in charge of building the Eye Clinic on the grounds provided. (PLOT LR NO - KCO/LTN/788, LITEIN TOWN). This land is a property of AIC Litein Hospital with a valid Title Deed.

Fundraising to help with the costs of the building comes through the Blessed Sun Foundation (KvK 32164567, Beethovenlaan 2, Huizen, the Netherlands), or other well wishers inside and outside the Netherlands. Fundraising for equipment and training will come through Dr. Ronday and colleagues, and Rotary Clubs worldwide, coordinated through the Rotary Clubs of Kericho and Huizen Gooimeer.

Members of the Rotary Club of Kericho (RCK) and the Rotary Club Huizen Gooimeer (RCHG) will lend their voluntary vocational skills to assist in the realization of the project. This is a commitment for at least 5 years.

The AIC Litein Hospital will pay all costs made by the architect, and provide plumbers, painters and electricians free of charge during the building and afterwards. The AIC Litein Hospital will provide water and electricity during the building and afterwards.

A financial and procurement team made up from members of all stakeholders will make sure the building goes according to plan and within budget.



## **AIC Litein Hospital Eye Clinic Proposal**

### **5. Building**

The proposed Eye Clinic will have a waiting bay and ground floor to treat outpatients, and a first floor with two surgery rooms and two wards for cataract surgery. It is the hospitals wish to add more floors in future (for dental and administration). Therefore the foundation is made strong enough to add 2 more floors.

The building of the Eye Clinic will be realized in phases:

#### Phase 1: Preparations

Drawing and approving of the proposed Eye Clinic (January 2024). Obtaining the Structural Design (January 2024)

Obtaining a “change of use” for the plot (from staff housing to clinic, March 2024).

Clearing the land, provide electricity and water on site (January 2024).

Obtain quotes from at least 6 contractors, which are shared with RCK and RCHG (February 2024).

Appoint a contractor to build the Eye Clinic, sign an agreement between the hospital and the contractor (April 2024).

A team of the architect (Kefa Kibet), structural engineer (Dominic Ochieng RCK), civil engineer Job Wamui (RCK), quantity surveyor (Dorothy Chepkemoi, RCK), electrical engineer (Wesley Cheruiyot, Hospital), medical director (Dr. Kerich, Hospital), and financial administrator (Richard Koech, Hospital), as well as the project coordinator in Kenya (Oscar Lumire RCK) and The Netherlands (Marjolein Ronday RCHG, Blessed Sun), are appointed to ensure that building goes according to plan and within budget. There are regular meetings to evaluate the project (*document attached*). A separate bankaccount dedicated to this project was opened. Before paying any bill the project team must first approve.

#### Phase 2: Building of the foundation (May-October 2024)

The hospital will provide a secure facility to store the materials. An underground tank to hold 100.000 liters of rainwater has already been built. This water will be used to flush toilets.



Phase 3: Building of the ground floor (November-January 2024)

*Plan ground floor and waiting area*





Phase 4: Building of the first floor and outside ramp (February 2025- May 2025)

*Plan first floor wards and surgery*

The first floor will have 2 wards (male and female) with a total of 11 beds, 2 surgery rooms, consultation rooms and a training centre, among other facilities.

The roof will hold (solar) water tanks.



*Current male ward*

## AIC Litein Hospital Eye Clinic Proposal

### 6. Equipment



Funds for furnishing and equipment can be provided through Eye Care Foundations and a Global Grant from the Rotary Foundation. The current eye unit inventory will be transferred to the new facility.

The current inventory contains 2 slit lamps, 2 visual acuity charts (E hooks and Letters), I-Care tonometer, biometry equipment (A scan), a mobile fundus camera, (from Retinal Global), a laptop, a computer, 2 ophthalmic surgical microscopes, and equipment for SICS. There is a workshop to provide glasses.



The autoclave is shared with other hospital departments, as well as the operating bed and chairs. Recently an operating chair/table and two stools were donated to the Eye Unit.

The Autorefractor is not working well. There is no Non-Contact Tonometer, Yag- or Argon laser.

### In summary

The Training and Referral Eye Centre will require a range of equipment to diagnose and treat eye conditions, including:

- a) Slit Lamps (from 2 to 6)
- b) Ophthalmoscopes (from 1 to 3)
- c) Retinoscope
- d) A non contact tonometer
- e) Visual field analyzer
- f) OCT (optical coherence tomography) machine
- g) Autorefractor
- h) 2 units with phoropter for express lane and the orthoptics room.
- i) 20 extra SICS sets
- j) Autoclave
- k) Phacoemulsification machine and surgical equipment (10 sets)
- l) Operating microscope (2 available, one needs upgrading)
- m) Yag/SLT laser
- n) Argon laser
- o) Surgical operation chairs (3)
- p) Equipment for training facility (beamer and sound, chairs, etc)
- q) 2 beds for local anesthesia
- r) Kitchen equipment (2 floors)
- s) Chairs and tables, shelves and storage facilities
- t) A 'Medical' Fridge
- u) Chairs for the waiting bay
- v) Computers (16)
- w) Printer (1)
- x) a Washing Machine (XL)

Most equipment will be second hand but in good working condition, provided by various well wishers and the Medic Foundation (Netherlands). Dr. Runday is the driving force behind this. Most costs will be spent on transporting and importing the equipment. However, a good working used Yag/SLT laser has been impossible to find and will have to be purchased anew. Furniture will be made and purchased locally.

## AIC Litein Hospital Eye Clinic Proposal

### 7. Training / staff

The current eye department is led by Mike Toroitich, cataract surgeon.



The Eye Department, lead by Mike, is a training facility for Small Incision Cataract Surgery (SICS), ophthalmic nurses, technical ophthalmic assistants and optometrists. A team of Dutch ophthalmologist lead by Dr. Marjolein Ronday visits at least once a year to assist with training (e.g. biometry, pre- and postop refraction, registration of results and complications, difficult cases) and introducing new surgical skills (e.g. phaco emulsification, oculoplastic surgery, glaucoma surgery).

Dr. Toroitich teaches Dutch residents / ophthalmologist the SICS technique.



Cataract Surgery

The new eye clinic can be a facility for scientific research in the area, supported by the International Ophthalmology Society of the Netherlands.



**Staff**

The hospital has enough staff to oversee the daily operation of the Eye Unit once its operational. The department has;

- a) 2 Cataract surgeons
- b) 1 Ophthalmic nurse
- c) 2 Nurses
- d) 1 Ophthalmic assistant
- e) 1 Optometrist
- f) 2 Optical technicians
- g) 3 Subordinate staff.

The hospital will make sure the staffs undergo training on how to use modern machines and increase the number of subordinate staffs due to the increase in the building capacity and size.

**Students**

Students training as nurses under Kenya Medical Training College (KMTC) under the management of AIC Litein Hospital will also use the facility as a training place thus ensuring it has enough staff throughout the year.

**Revenue**

The revenue generated by the department will be geared towards meeting the units operational costs as well as improving it.

This includes;

- a) Power costs
- b) Water costs
- c) Maintenance costs

Staff is paid by the hospital. Visiting specialists from the Netherlands come on a voluntary basis. Members of the Rotary Clubs are only paid for traveling expenses during the building phase.

## *AIC Litein Hospital Eye Clinic Proposal*

### **8. Partnerships**

The eye unit has partnerships with other healthcare facilities, such as the Kericho County Referral Hospital (Dr. Sam Langat) and Tenwek Hospital, to ensure that patients receive comprehensive care.

#### Outreach services

The eye unit conducts outreach services to reach underserved communities and provide them with basic eye care services, such as screening for common eye conditions and distribution of glasses. A partnership with Kisaruni Community Based Action Organization (KCBAO) through Diane Steinhilber (Retinal Global), Nehemiah Kahato and Kelvin Kayere to help organize camps, has been established.

An outreach camp including cataract surgery is carried out every year at the Kaparon Health Centre in Elgeiyo Marakwet county, a 7 hour drive from Litein), in collaboration with the county ophthalmologist and ophthalmic nurse from Iten and the Rotary Club of Kericho. More outreach areas and camps will be added in future to reach more visually impaired people in underserved areas.

#### Health education

The eye unit will also conduct health education programs to raise awareness about eye health and the importance of regular eye check-ups. This will help to prevent avoidable blindness and encourage early detection and treatment of eye conditions, such as glaucoma and diabetic retinopathy.

In conclusion, the proposed eye unit would require a range of interventions to ensure that it is fully equipped to provide comprehensive eye care services to patients. These interventions include infrastructure development, provision of equipment, staffing, training, partnerships, outreach services, and health education.

## 9. Evaluation

Every year in January Dr. Runday, partners and the Eye team evaluate the past year.

Set endpoints to measure succes are:

1. Number of patients treated per year
2. Number of cataract surgeries per year
3. Number of glasses prescribed per year
4. Visual outcome after surgery
5. Monthly registration and evaluation of complications / adverse events
6. Number of staff trained successfully
7. New skills learned



*Teaching new skills, Mike Toroitich and Hester van Nouhuys*



## Architectural plans / Project Management

The proposed eye unit will require a range of interventions to ensure that it is adequately equipped to provide comprehensive eye care services to patients. Here are some proposed interventions:

The first step is to construct a two story building that is specifically designed to provide eye care services. The building should be spacious enough to accommodate all the necessary equipment and staff, and have separate spaces for patient registration, consultation, diagnostic testing, treatment rooms, and post-operative care.

### Elevations



### Ground Floor lay out

1. A waiting area outside and inside (35 people)
2. Reception / registry / cashiers desk
3. Optical (work)shop
4. Washrooms staff / patients
5. Surgical coordinating / insurance room
6. Auto refractor / non-contact tonometry unit
7. 2 visual acuity / refraction rooms
8. 7 consultation units
9. 1 orthoptic consultation room
10. 1 express clinic consultation room
11. Laser room (Yag and Argon)

12. OCT / biometry unit
13. Procedure Room
14. Pharmacy store
15. Staff changing rooms and lunchroom
16. Staircase / outside ramp



*Ground Floor*

## Architectural plans / Project Management

### First Floor lay out

1. 2 Operating theaters with microscopes and beds
2. Adjacent room for local anesthesia (2 patients)
3. Changing room M / F with lockers
4. Sterilization room
5. Washrooms staff
6. Linen room
7. Store room
8. Male ward with 6 beds
9. Female ward with 6 beds
10. Nursing station
11. Balcony / waiting area patients
12. Washrooms patients
13. 2 consultation rooms (discharging patients day 1)
14. Staff lunchroom with balcony
15. Training facility / aula



First Floor



## Architectural plans / Project Management

The budget is based on the architectural drawings and approved by the building committee. The complete Bill of Quantities is attached separately, we included the grand total in the next paragraph.

### PROPOSED MODERN EYE CLINIC FACILITY ON PLOT LR NO - KCO/LTN/788 FOR AIC LITEIN MISSION HOSPITAL

### BILLS OF QUANTITIES (amount in Kenyan Shillings- KSH)

### FEBRUARY, 2024 GRAND SUMMARY

		Page No.	Amount KSH
	PRELIMINARIES	Preliminaries Pg 21 of 21	884,665.00
A	MEASURED WORKS		
I	GROUND FLOOR	Ground Floor Pg 21 of 21	21,604,455.00
II	FIRST FLOORS	First Floor Pg 17 of 17	15,741,055.00
III	SECOND FLOORS	Second Floor Pg 7 of 7	4,853,525.00
B	PRIME COST AND PROVISIONAL SUMS		
I	PRIME COST AND PROVISIONAL SUMS		11,900,000.00
	Sub-Total		54,983,700.00
	TOTAL COST OF TENDER CARRIED TO FORM OF TENDER (VAT INCLUSIVE)		54,983,700.00

## Architectural plans / Project Management

### Projected Timelines

It is envisioned that the construction of the 2 story building will take one year if there are no financial constraints and no delays with construction permits.

### Work plan and implementation for the construction of the two story AIC LITEIN HOSPITAL EYE UNIT

ACTIVITY	TIME FRAME	RESPONSIBLE PERSON	OBJECTIVES	EXPECTATIONS
Site Preparation	2 weeks <b>Week 1 and week 2</b>	Site Engineer	Clear the site, level the ground, and establish site boundaries.	Complete site preparation within the scheduled timeframe to ensure a suitable foundation for the construction.
Excavation and Foundation Works	4 weeks <b>Week 3 and week 4</b>	Civil Engineer	Excavate trenches, lay foundation footings, and construct columns.	Ensure proper reinforcement and alignment of the foundation elements for a strong and stable building structure.
Structural Works (Columns, Beams, and Slabs)	12 weeks <b>Week 5 to week 19</b>	Structural Engineer	Construct the columns, beams, and slabs for each floor of the building.	Ensure structural integrity, precise alignment, and adherence to design specifications.

Masonry Works	8 weeks Week 19 to week 26	Masonry Contractor	Carry out brickwork and blockwork for walls, install lintels, and construct staircases.	Achieve high-quality brickwork, properly aligned walls, and safe and accessible staircases.
Roofing and Waterproofing	4 weeks <b>Week 26 to week 30</b>	Roofing Contractor	: Install the roof structure, waterproofing layers, and roof finishes.	Ensure a watertight and durable roof that meets design requirements.
Electrical and Plumbing Works	6 weeks <b>Week 30 to week 36</b>	Electrical and Plumbing Contractor	Install electrical wiring, switches, fixtures, and plumbing systems.	Achieve safe and functional electrical and plumbing installations according to approved plans and regulations.
Finishing Works	8 weeks <b>Week 36 to week 44</b>	Interior Designer/Finishing Contractor	Install flooring, doors, windows, paint walls, and apply finishes.	Achieve an aesthetically pleasing and functional interior that meets the project requirements and client's specifications.

Landscaping and External Works	4 weeks <b>Week 44 to week 48</b>	Landscaping Contractor	Landscape the surrounding area, install external finishes, and create parking spaces.	Create an attractive and functional exterior space that complements the building and meets landscaping standards.
Handover				



## *Architectural plans / Project Management*

### **Supervision**

Regular progress meetings are held with the Project Manager, Consultants, and Contractors to review progress, address issues, and ensure the project stays on schedule and within budget.

Quality inspections are conducted to verify that each stage of the construction meets the required standards.

Safety measures will be strictly enforced to prevent accidents and ensure compliance with relevant regulations.

Construction will be progressive, done in phases of foundation, completion of ground floor, completion of first floor wards and theatre space. Utilization begins once a space is completed as other construction progresses.

### **Sustainability**

Upon completion of construction the hospital through its staff, the Eye department will ensure:

Maintenance of the electrical and plumbing works as well as any repairs of equipment through the biomedical department will be done by the hospital.

The hospital has qualified biomedical engineers, electricians and plumbers employed on a permanent basis to oversee maintenance and repair of machines.

- a) Electricians – 3
- b) Plumbers – 3
- c) Biomedical engineers – 4

The hospital will also make sure this technical department undergo thorough training on how to handle modern eye machines.

## **Key Personnel and responsibilities**

The successful construction of the Litein Eye Unit requires a team of key personnel with diverse backgrounds and skill sets. The following are the key personnel and their responsibilities in the construction of the Litein Eye Unit:

### Project Manager

The project manager will be responsible for the overall management and coordination of the construction project. This involves ensuring that the project was completed within the set timeline and budget, overseeing the allocation of resources, and liaising with stakeholders and donors.

### Site Manager

The site manager is responsible for supervising the on-site construction team and ensuring that the construction activities were carried out according to the set specifications and project timelines. He will oversee the day-to-day activities on site, including the allocation of labor, equipment, and materials.

### Architect

The architect is responsible for developing the project design, ensuring that it met the specifications, and ensuring that the construction complies with the building codes and regulations. They will liaise with the project manager, site manager, and donors to ensure that the project met the stakeholders' expectations.

### Engineer

The engineer is responsible for ensuring the structural integrity of the building, including the stability and strength of the foundations, walls, and roof, among other things. The engineer also supervises the designs and installed mechanical and electrical systems, including air conditioning and ventilation systems, electrical wiring, and plumbing.

### Financial Manager/Quantity Surveyor

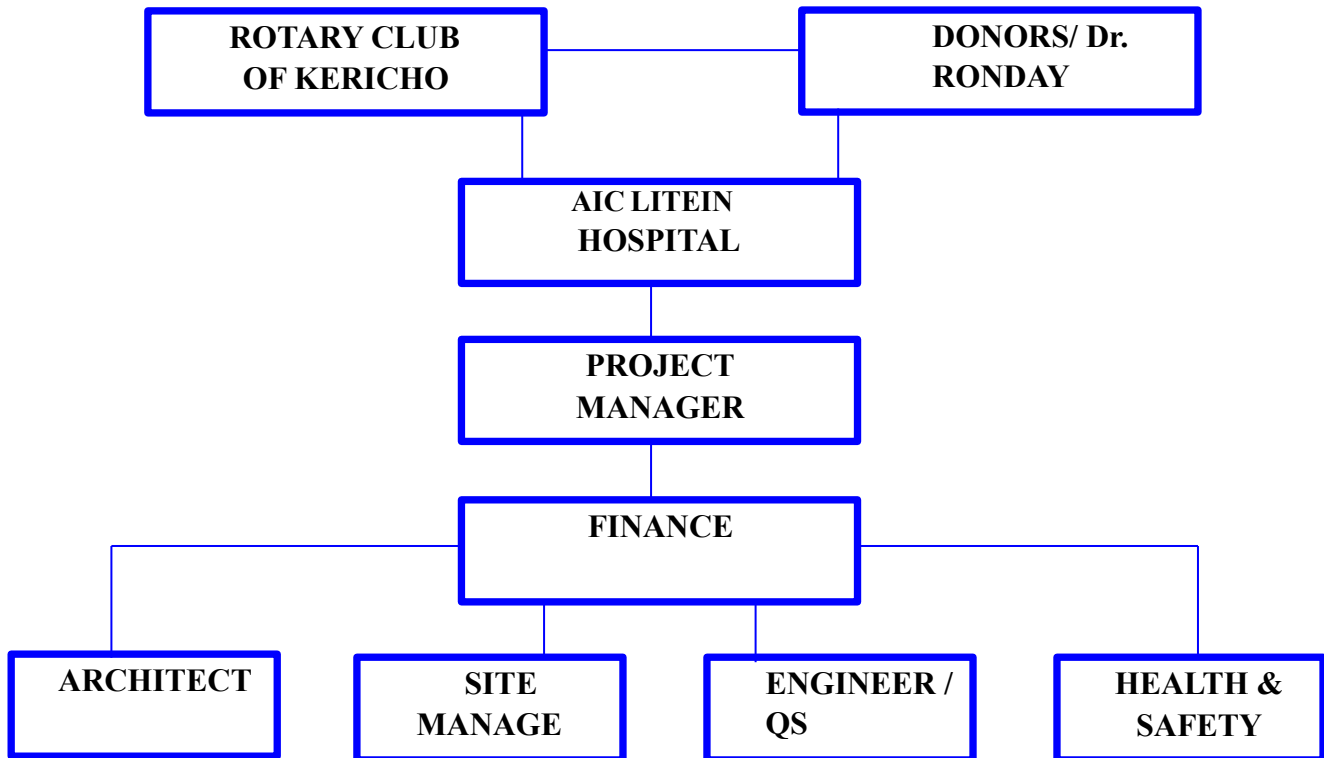
The quantity surveyor is responsible for developing and managing the project budget. She will ensure that the construction activities adhered to the budget, including the procurement and allocation of construction materials.

### Health and Safety Officer

The health and safety officer is responsible for ensuring that the construction site is safe, and that workers comply with established safety procedures. He will conduct regular safety inspections, provide safety training to workers, and report any safety concerns to the site manager.

The construction of the Litein Eye Unit was a collaborative effort that required the input of various key personnel. Through their diverse skills and expertise, they ensure that the project will be completed within budget, on time, and will meet all of the stakeholders' expectations.

### Construction Management structure



## **Financial management**

### Develop a budget

Before the construction of the Litein Eye Unit commences, Rotary Club of Kericho , Litein Hospital, and stakeholders developed a comprehensive budget that covers all the project's expenses. The budget includes the cost of materials, labor, equipment, and permits required for the project. The development of a budget helps to ensure that the project remains financially viable and that the funds are used wisely.

### Appoint a financial manager

To ensure that the funds are used appropriately, Rotary Club of Kericho, Litein Hospital and stakeholders have appointed a financial manager to oversee the financial aspect of the project. The financial manager is responsible for managing the project's funds, keeping track of expenses and ensuring that there is sufficient cash flow for the project.

### Maintain financial records

Proper record-keeping is crucial in any construction project. The financial manager should ensure that all financial transactions related to the Litein Eye Unit are documented properly. Keeping a record of all expenses and financial receipts helps to track the project's financial progress and identify any financial discrepancies that may arise.

### Implement cost-saving measures

During the construction of the Litein Eye Unit, Rotary Club of Kericho, Litein Hospital, and stakeholders should consider implementing cost-saving measures. The cost-saving measures will reduce expenses and ensure that the funds are used efficiently.

### Monitor project milestones

To ensure that the project is progressing as planned, Rotary Club of Kericho monitors project milestones and ensures that they are achieved within the specified budget and timeframe. The monitoring of project milestones helps to identify any potential financial risks and address them in time.

In conclusion, proper financial management is crucial in the construction of any project, including the Litein Eye Unit. By implementing the above financial management strategies, Rotary Club of Kericho , Litein Hospital and Stake holders can ensure that the project remains financially viable and that the funds are used efficiently.



## **Communication strategy**

The construction of the Litein Eye Unit requires effective communication strategies to ensure that the project is completed on-time and within budget while meeting the expectations of all stakeholders. The following are the communication strategies to be employed during the construction phase of the Litein Eye Unit.

### Weekly Site Meetings

Throughout the construction process, weekly site meetings will be held to provide updates on the construction progress to all stakeholders. These meetings will provide a platform for the project team to communicate any challenges encountered during the construction process and to present potential solutions. Communication during these meetings is essential to ensure all stakeholders were on the same page regarding the construction process.

### Weekly Construction Updates

Weekly construction updates will be sent via email or posted on the construction WhatsApp group every Saturday to keep stakeholders informed on the construction process. The updates will detail the progress made during the week, any challenges encountered, and any upcoming milestones. These updates will keep stakeholders informed on the project's construction progress, thus reducing any potential communication gaps between the project team and stakeholders.

### Warning Notices

During the construction process, warning notices will be placed on the construction site to warn passers-by of potential dangers such as moving equipment or excavation sites. The warning notices will be an effective way of communicating potential hazards to the community, ensuring that safety was maintained throughout the construction process.

### Contractor Reviews

The project team will conduct regular reviews of the construction contractors' performance, focusing on communication, quality of work, safety, budget, and timelines during these reviews. Effective communication will be a vital component of these reviews since it will allow for constructive feedback to be given, ensuring high levels of performance and accountability during the construction process.

### Open House Events

Toward the end of the construction process, an open house event will be held to provide the community with an opportunity to see the completed facility. This will allow for stakeholders to see first-hand the impact of the completed project and the benefits it would bring to the community, fostering a sense of ownership and pride of the project.

Effective communication is a critical component of the successful construction of the Litein Eye Unit. Through weekly site meetings, weekly construction updates, warning notices, contractor reviews, and open house events, effective communication strategies will be used to ensure all stakeholders were informed and involved during the construction process. Effective communication will ensure that the project will be delivered on-time and within budget, meeting all of the stakeholders' expectations.

## **Risk management**

The construction of the Litein Eye Unit is a significant project that requires a robust risk management plan to identify and mitigate potential risks that could arise during the construction phase. The following are the risk management strategies to be employed during the construction phase of the Litein Eye Unit.

### Hazard Identification

The project team will conduct a thorough hazard identification process to identify potential risks that could arise during the construction process. This assessment will enable the team to identify risks such as construction site accidents, equipment failure, and supply chain disruptions.

### Risk Assessment

After identifying potential risks, the project team will assess the likelihood of occurrence and the potential impact of each risk. This assessment will allow the team to prioritize potential risks and develop effective mitigation strategies to reduce the likelihood of occurrence and mitigate the impact of any that arise.

### Risk Mitigation

Effective mitigation strategies will be identified and put in place to reduce the likelihood of potential risks and to mitigate their impact. This will involve using strategies such as the use of protective gear, regular maintenance of equipment, and deploying alternative suppliers in the case of supply chain disruptions.

### Contingency Planning

The project team will develop contingency plans to address the likelihood of occurrence of potential risks and to ensure that the project stays on track in the event of any unexpected events. These contingency plans detail a course of action for the project team to follow in response to potential risks and ensure the project's successful completion.

### Regular Monitoring

To ensure that the risk management strategies were effective, the project team will monitor the construction site and the progress of the project regularly. This monitoring allows the team to identify potential risks that may have arisen and to adjust the mitigation strategies accordingly.

Effective risk management is a critical component of the successful construction of the Litein Eye Unit. Through hazard identification, risk assessment, risk mitigation, contingency planning, and regular monitoring, potential risks will be identified, and effective strategies will be put in place to reduce their likelihood and mitigate their impacts. This approach will ensure the successful completion of the construction project within budget and on time, meeting all of the stakeholders' expectations.

# ANNEXES

## 1. Declaration CEO AIC Litein Hospital

I Dr. Elijah Terer  
of AIC Litein Hospital

declare that the information given above about Litein Hospital Eye Unit is true.

Phone: +254 718 856 844

Email: eliemiterer70@gmail.com, liteinhospital@gmail.com

Designation: Hospital CEO

Signature: 

Stamp: 

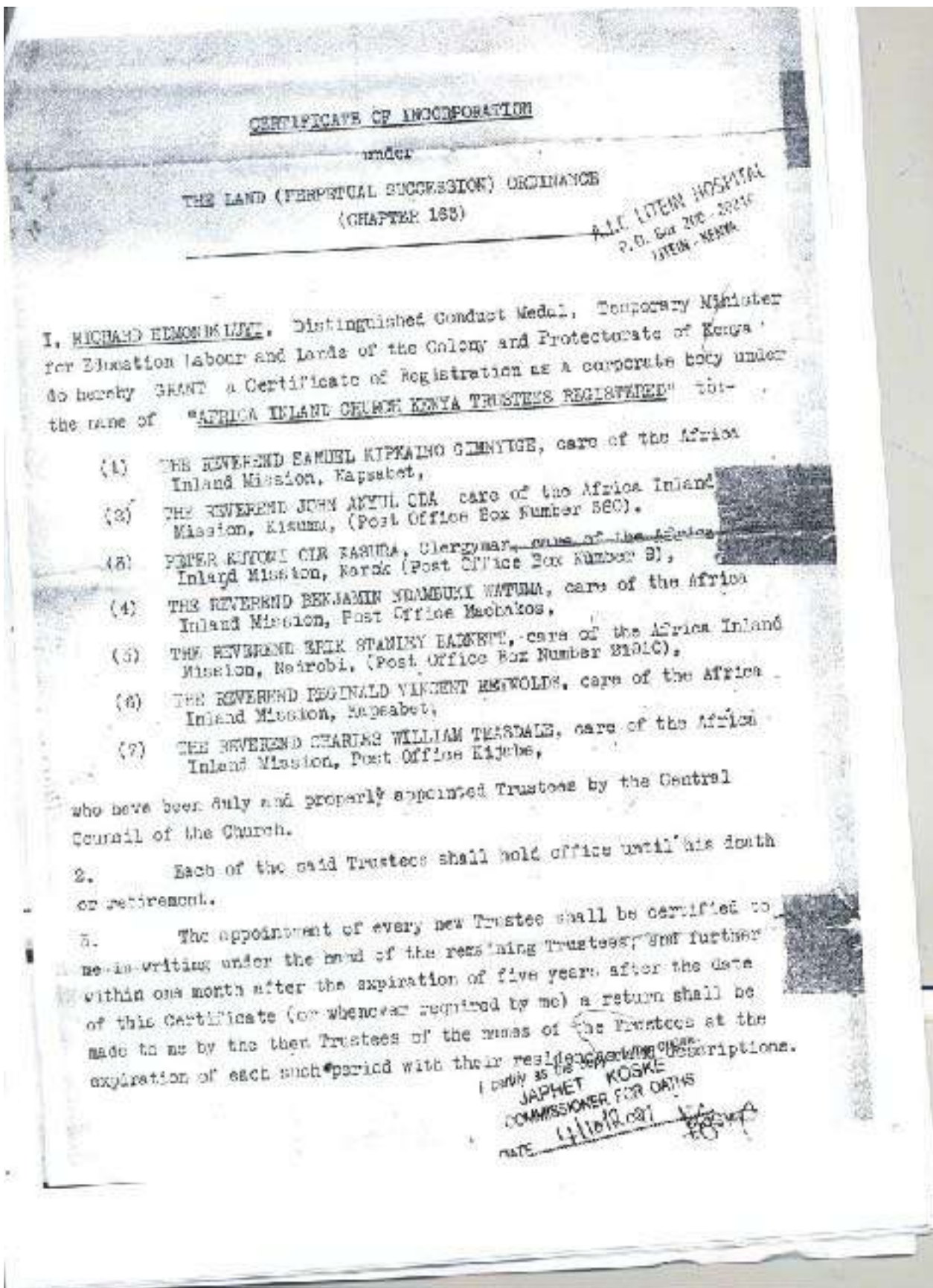
Date: 30<sup>th</sup> May 2023

2. Rotary Club of Kericho Registration Certificate





3. AIC Litein Hospital Registration certificate



CERTIFICATE OF INCORPORATION

under

THE LAND (PERPETUAL SUCCESSION) ORDINANCE  
(CHAPTER 188)

A.I.C. LITEIN HOSPITAL  
P.O. Box No. 10010  
LITEIN - NAKURU

I, RICHARD HEMONS LYLE, Distinguished Conduct Medal, Temporary Minister for Education, Labour and Lands of the Colony and Protectorate of Kenya do hereby GRANT a Certificate of Registration as a corporate body under the name of "AFRICA INLAND CHURCH KENYA TRUSTEES REGISTERED" to:-

- (1) THE REVEREND SAMUEL KIPKAINO GIMNYIGE, care of the Africa Inland Mission, Kapsobet,
- (2) THE REVEREND JOHN NYUL CIA, care of the Africa Inland Mission, Kisumu, (Post Office Box Number 580).
- (3) PETER KIPKORI CIA, Clergyman, care of the Africa Inland Mission, Narak (Post Office Box Number 91),
- (4) THE REVEREND BENJAMIN NYAMBURI MATUMA, care of the Africa Inland Mission, Post Office Machakos,
- (5) THE REVEREND BERE STANLEY BAINBET, care of the Africa Inland Mission, Nairobi, (Post Office Box Number 2191C),
- (6) THE REVEREND REGINALD VINCENT REYNOLDS, care of the Africa Inland Mission, Kapsobet,
- (7) THE REVEREND CHARLES WILLIAM TRASSDALE, care of the Africa Inland Mission, Post Office Kijabe,

who have been duly and properly appointed Trustees by the Central Council of the Church.

2. Each of the said Trustees shall hold office until his death or retirement.

3. The appointment of every new Trustee shall be certified to me in writing under the hand of the remaining Trustees, and further within one month after the expiration of five years after the date of this Certificate (or whenever required by me) a return shall be made to me by the then Trustees of the names of the Trustees at the expiration of each such period with their residences and descriptions.

JAPHET KOSKE  
COMMISSIONER FOR OATHS  
DATE 1/11/62

#### 4. AIC Litein Hospital Operating License

Issue Date: 19-11-2022  
FORM XIII

No. 606364



### THE MEDICAL PRACTITIONERS AND DENTISTS ACT (Cap. 253)

#### LICENCE TO OPERATE AS A FAITH BASED MEDICAL INSTITUTION

Institution Name: AIC LITEIN HOSPITAL / 000242  
RepNo

P.O. BOX 200 20210 LITEIN

full address

Is hereby licensed to operate a Faith Based Medical Institution In Accordance With the Provisions of Rule(5) of the Medical Practitioners and Dentists (Medical Institutions) Rules. This Licence Entitles the Medical Institution To Operate As a:

**FAITH BASED LEVEL 5 FAITH BASED LEVEL 5 HOSPITAL**

in Medical Institutions;

**LEVEL 5**

Authorised County for the Institution

**KERICHO**

Authorised Premises for the Institution

**Plot No. 1672 LITEIN HOSPITAL ROAD**

Maximum number of In-patients **220**

This Licence Shall Expire on the Last Day of **December 2023**

No Change of Premises is Permitted Without the Authority of the Council.

Dated This **19th day of November, 2022**



Dr. David Kariuki  
Chief Executive Officer/Registrar  
Medical Practitioners and Dentists Council

#### CONDITIONS OF LICENSE:

1. This Licence is issued on condition that minimum requirements set by the Council for operation of the Private Medical Institution are adhered to at all times.





## 5. Letter of endorsement

### SUPPORT FOR THE PROPOSED EYE UNIT PROJECT

We hope this finds you in good health and high spirits. We are writing to express our unwavering support for the proposed project to build an eye unit and to convey to you the profound impact it will have on our community. The current eye unit at the hospital is a small shared room used for consultations, examination and treatment. There is no dedicated surgery rooms and they are allocated only two days in a week for eye surgeries. There is sharing with other surgical services of the available theatre space. This makes turn around time for our clients fairly long and reduces the number of those being served despite the high number of clients in need of eye care services. The proposed project will play a pivotal role in making the dream of establishing an expansive eye unit a reality. The significance of this project cannot be overstated, as it addresses a pressing issue that has plagued the residents of Litein and the surrounding community.

The eye unit will serve as a beacon of hope, providing comprehensive eye care services to individuals who otherwise have limited access to such vital care. By offering these services locally, our community members will no longer have to endure long and costly journeys to distant healthcare facilities, thereby reducing the burden on both patients and their families. The eye unit will enhance early detection and intervention for eye diseases, significantly improving the eye care outcomes to many individuals. In addition to its direct impact on individual patients, the eye unit will contribute to the overall well-being and productivity of the community by promoting good eye health.

Clear vision is essential for learning, working, and engaging in everyday activities. It is crucial to recognize that your support extends beyond the physical infrastructure of the eye unit. Your belief in the potential of our community and your dedication to empowering individuals to lead healthy lives will make a lasting difference. By investing in this project, you are investing in the future of our community and leaving a legacy of compassion and care. On behalf of the entire community, we would like to express our heartfelt appreciation for your generosity. Your support for the project to build an eye unit exemplifies your commitment to making a positive impact on the lives of others. We are honored to have you as a partner in this noble endeavor, and we eagerly anticipate the transformative benefits that will emerge from the establishment of this much-needed facility.

Once again, thank you for your unwavering support. Together, we are creating a healthier, more inclusive, and brighter future for our community.

Yours faithfully,



Joel Chepkwony  
Board Chairman



## 6. Video links

### 1. Dr. Mike Toroitich testimonial



### 2. A blind patient at the AIC Eye Department



<b>product needed</b>			<b>#</b>	<b>€</b>	
Yag/ SLT laser			1	50000	
Slitlamp HG			2	30000	
Visual Field Analyses			1	3500	
IOL Master biometry			1	10000	
3 mirror lens			1	500	
SLT lens				Gift?	
Yag lens				Gift?	
OR bed			2	6000	
Adjustable Eye lid speculum			5	120	
Sweeps			5	100	
Reusable I/A handpieces		Oertli	5	4000	
			<b>SUM</b>	104220	