



MY HEART CENTRE RWANDA

MAY 2024

EXECUTIVE SUMMARY

Cardiovascular diseases (CVD) are the number one cause of death globally; more than 80% of CVD deaths take place in low and middle income countries and Sub-Saharan Africa is one of the most affected regions.

(WHO Data, Non Communicable Diseases 2018)

Rwanda is now one of the fastest growing economies in Sub-Saharan Africa, and has demonstrated tremendous advances in primary care delivery, but has only a small pool of cardiologists serving its population of approximately 13 million people.

Following the example and concept of the Aswan Heart Centre in the South of Egypt, the Magdi Yacoub Heart Centre, Rwanda will be the first dedicated cardiac hospital in Rwanda and the wider Sub-Saharan region. It will offer the entire spectrum of diagnostics and treatment of congenital and acquired heart diseases, free of charge in an egalitarian fashion.

It is a humanitarian project that involves the design and build of a 12000 sqm cardiac teaching hospital in Kigali. The medical remit is to transfer knowledge, skills and experience across the region and help create a biomedical and innovation knowledge base, training a generation of young Rwandan doctors, nurses, scientists and technicians to ensure sustainability in the region.

The Magdi Yacoub Heart Centre collaborates with local government and will be owned, operated and funded by the Heart Care and Research Foundation (HCRFR), a Rwandan registered charity. The HCRFR is anchored in a strong network of international collaborations which include the Aswan Heart Centre, founded by Prof Sir Magdi Yacoub, RobinAID Foundation, Chain of Hope UK, Sawiris Foundation For Social Development and Flux Architects. In addition, the project has secured the patronage of the First Lady in Rwanda.

Training programmes of local medical staff are in progress in collaboration with the University of Rwanda. We have now reached an important milestone with the project and have completed the shell and core of the building under construction.

Performing medical training as well as operating an active research institute will make a sustainable impact and will elevate the capacity of well trained and innovative health professionals in the region.

The guiding principle is knowledge transfer by international cardiac specialists to Rwandan health care professionals to ensure sustainability.



Medical Aims

- Offer state of the art, free of charge medical services to children and adults with heart disease in a purpose built heart centre.
- Conduct research aimed at defining the size and type of heart diseases in Rwanda to guide prevention programmes.
- Train a generation of young Rwandan doctors, nurses, scientists, engineers and technicians at the highest international standards to ensure sustainability in the region.

Project Aims

- World Class Centre of Excellence for Tertiary Cardiac Care.
- Heart Centre, providing free of charge treatment to all, regardless of wealth, religion, ethnicity or gender, thereby affirming human dignity for all.
- Centre of Innovation. Research will be at the heart of every treatment and is vital to find solutions to pressing healthcare challenges.
- Sustainability as a holistic process, aiming to restore and maintain harmony between the natural and built environment.



COLLABORATIONS



MAX FORDHAM



ARUP



The Heart Care and Research Foundation – Rwanda (HCRF-Rwanda) was formed in October 2018 as a not for profit organisation and registered in Kigali. Its mission is to assure the development of cardiovascular care and research in Rwanda and the wider Sub-Saharan Region.

Setting up The Rwanda Heart Centre follows the role model of the Aswan Heart Centre in the South of Egypt founded by Prof Sir Magdi Yacoub, one of the world's most respected cardiac surgeons, scientists, and medical teachers. This exceptional project represents a model in Africa for the prevention, treatment and research into the causes of heart diseases.

The design proposal has been established by Flux Architects, London in close collaboration with the Magdi Yacoub Heart Foundation, the Chain of Hope UK, Robin Aid as well as UK and German design consultants. The tender design documents are developed by ECG, an Egyptian consulting firm. Orascom Construction Industries were appointed as the main contractor. EEaon was appointed as local Architect of Record.

The Egyptian Agency for Partnership and Development (EAPD) from the Egyptian Ministry of Foreign Affairs has signed a Memorandum of Understanding with the Rwanda Heart Care and Research Foundation to donate the equipment of the hospital with two cardiac theatres, a catheter lab, fully equipped Intensive Care beds, progressive care beds and ward beds. Future grants from the EAPD have been pledged for the development of the Heart Centre in Rwanda.

STRATEGIC VISION

Over the past decade, Rwanda has focused on strengthening primary health care delivery through decentralization of services, establishing a cadre of community health workers and development of community-based health insurance. However, socio-economic barriers and a critical shortage of specialists are the most important impediments as to why critical illnesses like congenital and acquired heart diseases are still not yet addressed adequately in Rwanda and the wider Sub-Saharan Region.

To make the new Heart Centre sustainable through international training programmes, it aims to form a new generation of physicians, nurses, technicians, engineers, and scientists, thereby extending impact beyond the facility and strengthening the broader Rwandan healthcare ecosystem.

The new Heart Centre aims to become a Centre of Excellence and reference, providing hope and improving life chances for critically ill patients whilst reducing the mortality rate from cardiac diseases in the region.



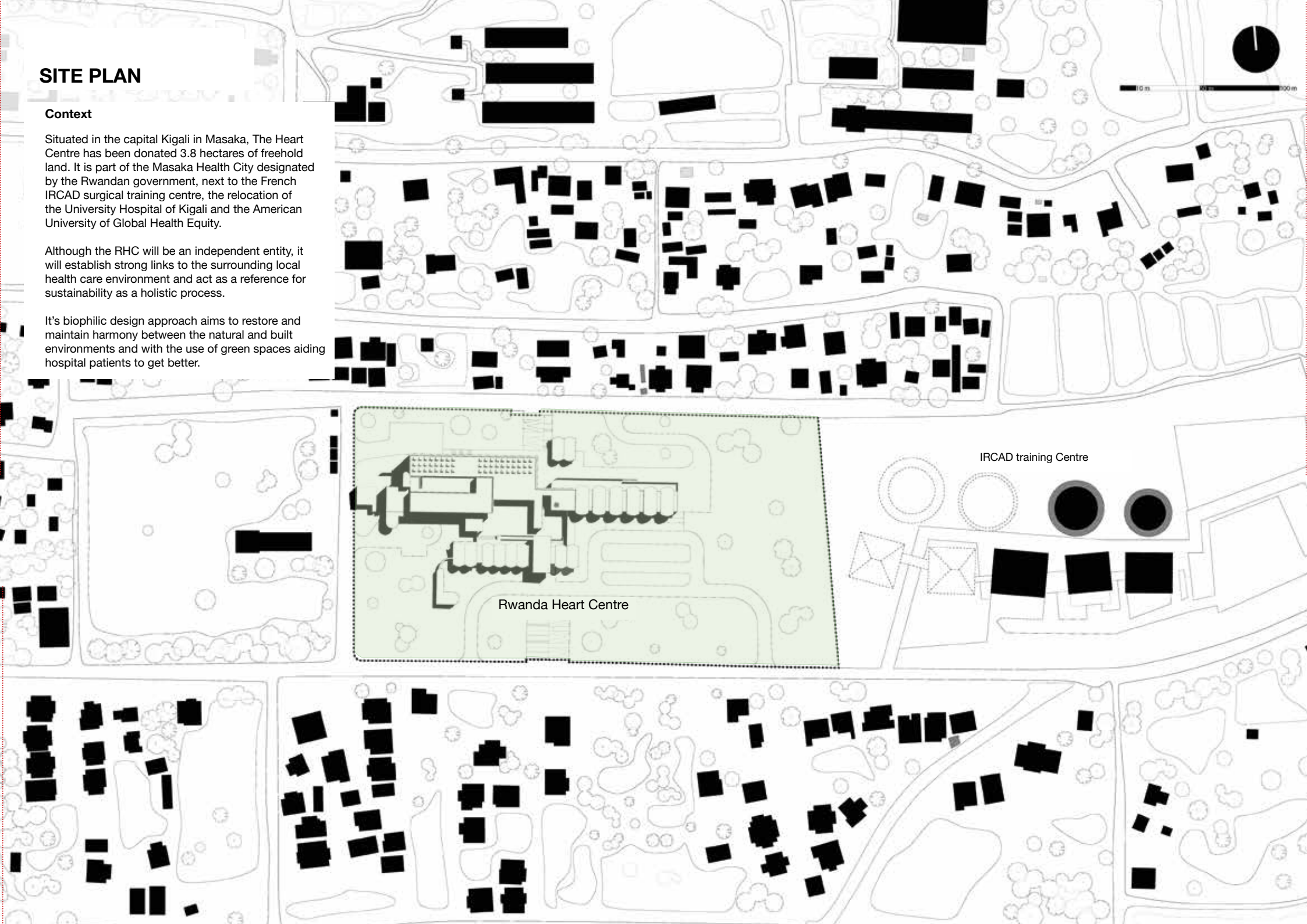
SITE PLAN

Context

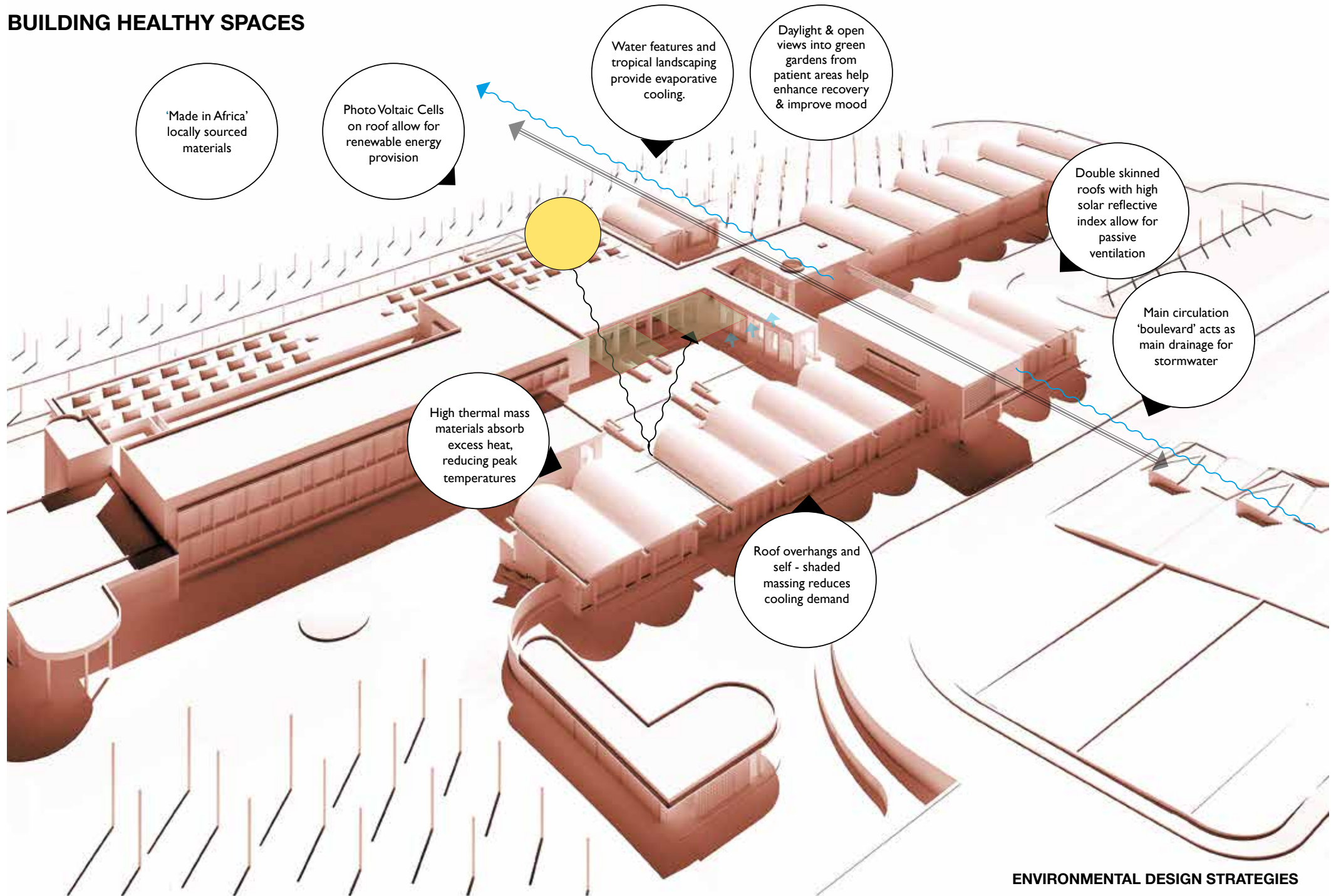
Situated in the capital Kigali in Masaka, The Heart Centre has been donated 3.8 hectares of freehold land. It is part of the Masaka Health City designated by the Rwandan government, next to the French IRCAD surgical training centre, the relocation of the University Hospital of Kigali and the American University of Global Health Equity.

Although the RHC will be an independent entity, it will establish strong links to the surrounding local health care environment and act as a reference for sustainability as a holistic process.

It's biophilic design approach aims to restore and maintain harmony between the natural and built environments and with the use of green spaces aiding hospital patients to get better.

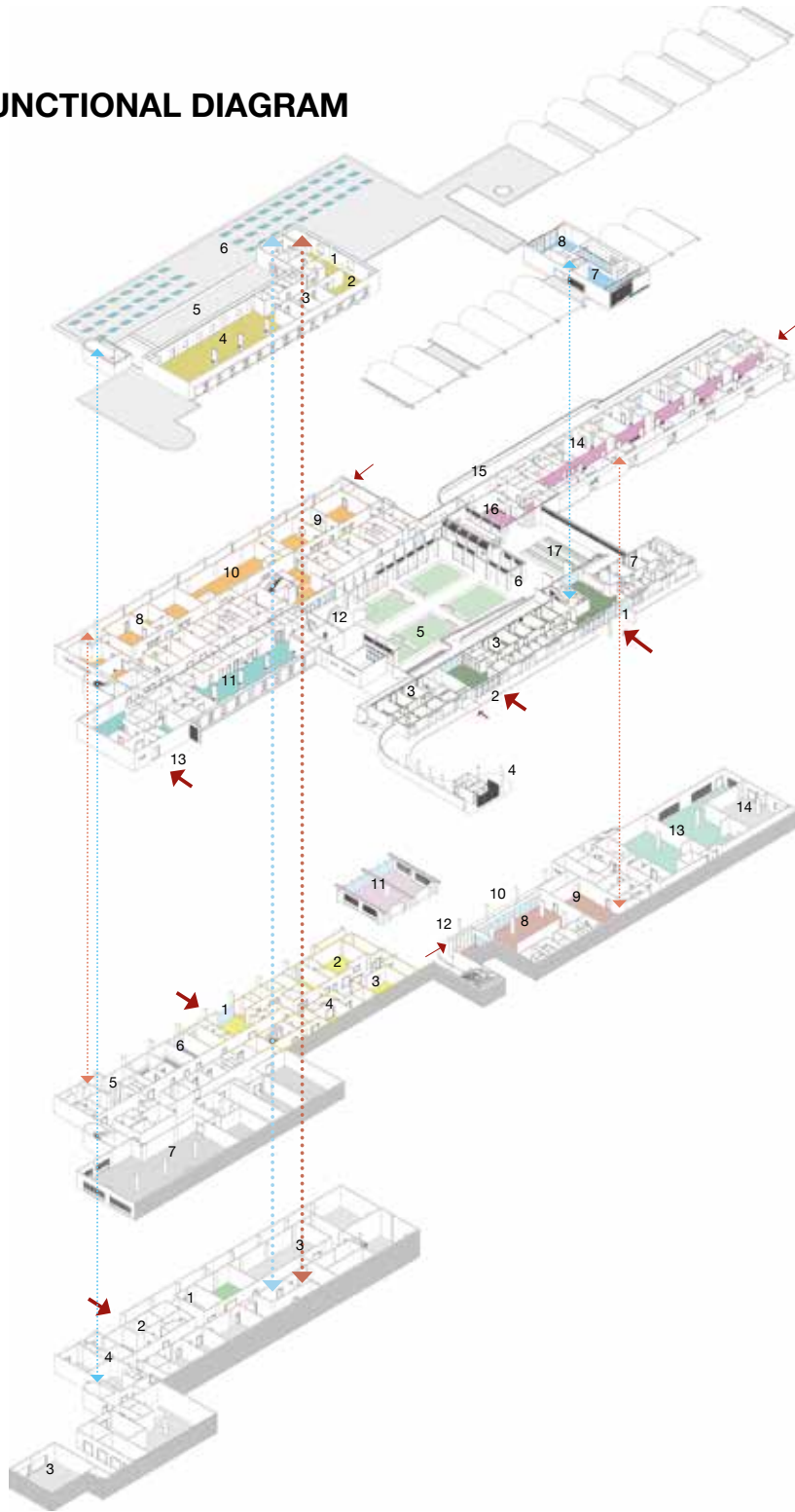


BUILDING HEALTHY SPACES



ENVIRONMENTAL DESIGN STRATEGIES

FUNCTIONAL DIAGRAM



First Floor

Research Department

- 1 Lobby/ Waiting
- 2 Seminar room
- 3 Doctor offices/ admin offices
 - Kitchenette
- 4 Research Labs (Phase2)
 - Ancillary Facilities
- 5 Outdoor Terrace
- 6 Solar Farm

Administration

- 7 Open plan office
 - Kitchenette
- 8 Seminar room

Ground Floor

Outpatient Department

- 1 Main Entrance/ Reception
- 2 Outpatients Entrance/ Reception
- 3 Outpatient Department
 - Consultation
 - Offices
 - ECG/Holter/ Echo
 - Phlebotomist
 - X-Ray
 - Satellite Pharmacy
 - Crèche
 - Staff Changing
 - Ancillary Facilities
- 4 Outpatient Cafe
 - Outdoor Waiting area
- 5 Tropical Courtyard
- 6 Boulevard
- 7 Administration

Acute Department

- 8 Operation Theatres x 2
 - Anaesthesia
 - Offices
 - Lab
 - Perfusion
 - Staff Change
 - Equipment Storage
 - Ancillary Facilities
- 9 Cath Labs x 2
 - Reception/waiting
 - Anaesthesia
 - Offices
 - Staff Change
 - Ancillary Facilities
- 10 Progressive Care

Acute Department

- 11 ICU
 - Reception
 - ICU beds
 - Isolation rooms
 - Doctor on Call
 - Staff Change
 - Prof Office
 - Ancillary Facilities
- 12 Outdoor Waiting
- 13 Entrance Ambulance

Inpatient Department

- 14 Patient Ward
 - Reception/ Waiting
 - Nursing Station
 - Isolation Rooms x 2
 - Patient Rooms
 - Offices
 - Satellite Kitchen
 - Staff Change
 - Equipment Storage
 - Ancillary Facilities
- 15 Terrace
- 16 Outdoor Waiting
- 17 Kitchen Garden

Lower Ground Floor

Imaging Department

- 1 Entrance/ Waiting
- 2 CT Scan (Phase 2)
- 3 MRI (Phase 2)
- 4 X-Ray (Phase 2)
 - Consultation
 - Offices
 - Ancillary Facilities

CSSD/Bloodbank

- 5 CSSD
 - Ancillary Facilities
 - Soiled & Clean Elevator
- 6 Blood Bank
 - Consultation
 - Offices
 - Ancillary Facilities
- 7 Plant room

Staff Canteen

- 8 Dining Hall
 - Ancillary Facilities
- 9 Main Kitchen
 - Ancillary Facilities
- 10 Outdoor Seating
- 11 Chapel/ Seminar
- 12 Staff entrance

Laundry

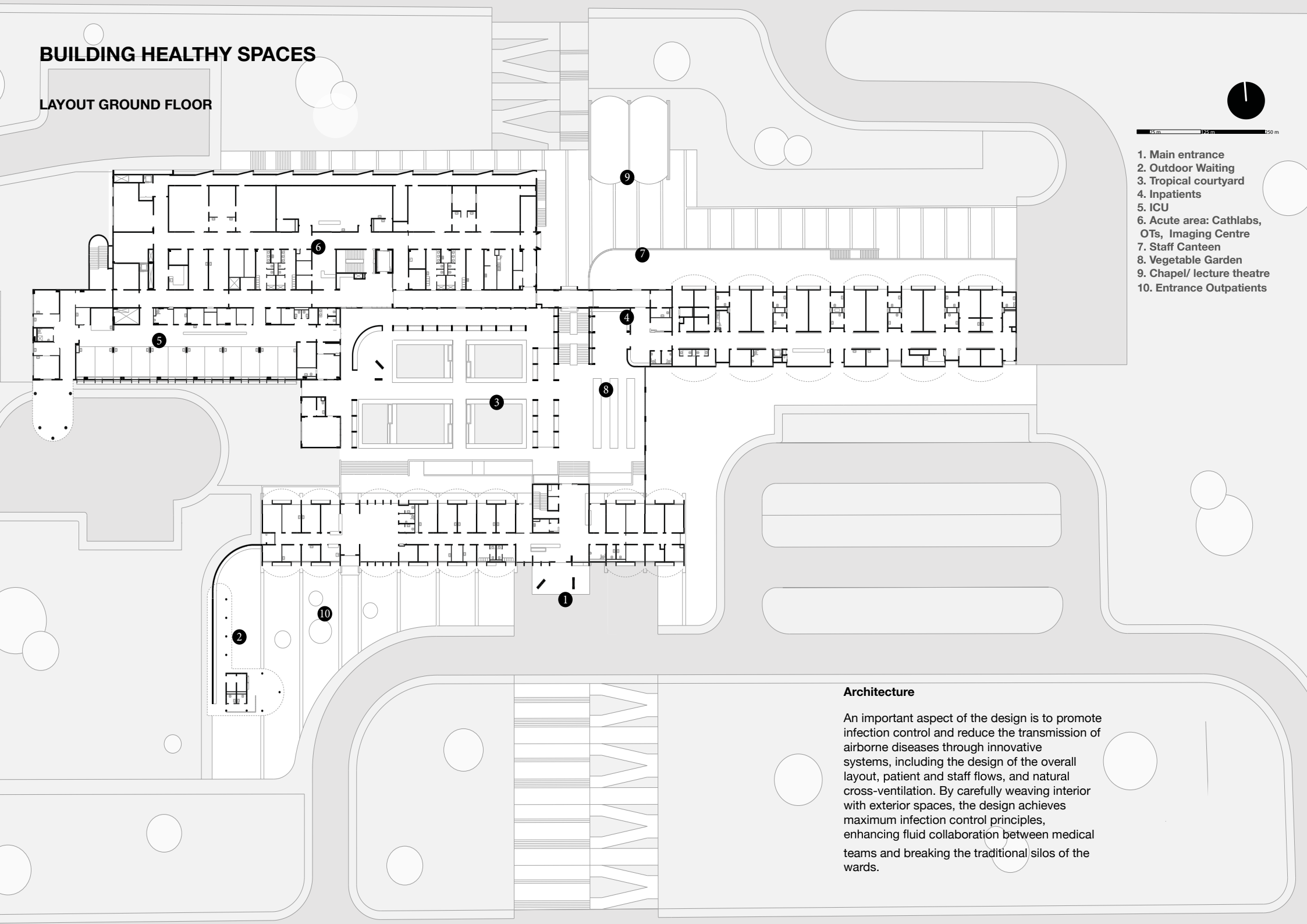
- 13 Laundry
 - Ancillary Facilities
- 14 Plant room

Basement Level

- 1 Pharmacy
- 2 Body Keeping
- 3 Plant Area
- 4 Waste Department

BUILDING HEALTHY SPACES

LAYOUT GROUND FLOOR

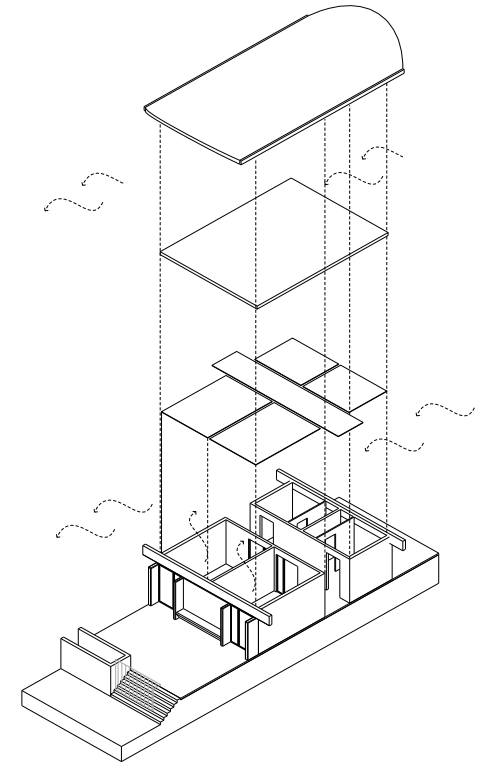


1. Main entrance
2. Outdoor Waiting
3. Tropical courtyard
4. Inpatients
5. ICU
6. Acute area: Cathlabs, OTs, Imaging Centre
7. Staff Canteen
8. Vegetable Garden
9. Chapel/ lecture theatre
10. Entrance Outpatients

Architecture

An important aspect of the design is to promote infection control and reduce the transmission of airborne diseases through innovative systems, including the design of the overall layout, patient and staff flows, and natural cross-ventilation. By carefully weaving interior with exterior spaces, the design achieves maximum infection control principles, enhancing fluid collaboration between medical teams and breaking the traditional silos of the wards.

BUILDING HEALTHY SPACES



HEALTH AND WELLBEING

Putting patients, staff and visitors at the centre of the design to provide a healing environment that improves recovery times, increases productivity and has a positive impact on the mood of all users.

PASSIVE DESIGN STRATEGIES

Passive design strategies aim to reduce overall energy usage. Long narrowly designed buildings perpendicular to prevailing winds facilitate best natural ventilation. Horizontal shading and self shaded massing reduces cooling demand.

SUSTAINABILITY

Sustainability is seen as a holistic process, aiming to restore and maintain harmony between the natural and built environment. The project proposes modular and prefabricated (low carbon) concrete systems in combination with traditional materials to deliver culturally appropriate, therapeutic and ecologically balanced design solutions whilst supporting a local supply chain and future flexibility.



ICU



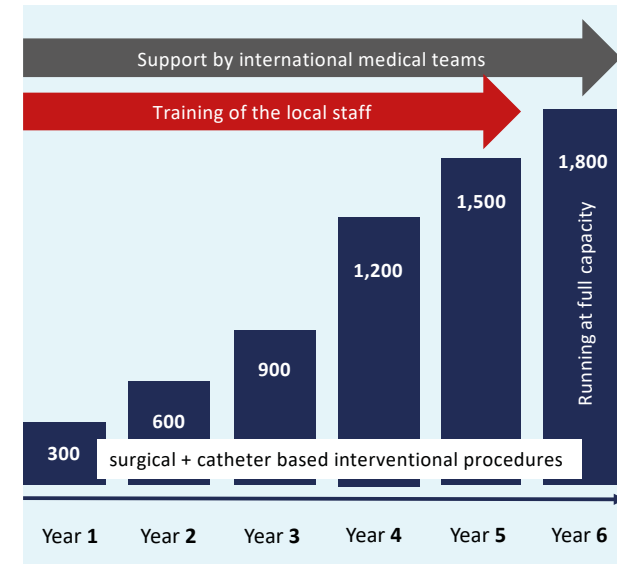
Outpatient waiting area



Operating Theatre



Cath Lab



Create the Future – Realise Visions

Following the role model of the successful Aswan Heart Centre in the South of Egypt, the Rwanda Heart Centre will provide state of the art treatment to all patients free of charge regardless of wealth, religion, ethnicity or gender; a clear signal that equitable access to medical care is an inalienable human right.

The successful integration of clinical care, training and cardiac research at a centre of medical excellence in Rwanda will open a new chapter in the development of high-quality medical services in East Africa.



Tropical Courtyard View Towards Acute/Treatment Area

A tropical courtyard garden forms the heart of the building and is framed by a covered walkway, acting as an outdoor cardiac rehabilitation track - connecting the majority of all medical departments. All inpatient rooms provide access to an outdoor area and views towards a valley, in an effort to mitigate stress and speed up recovery.



Flux
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Kigali, May 2024





‘People helping one another can bring an elephant into the house’

Rwandan Proverb

www.rwandaheartcentre.org