Healing Survivors
Serving Mothers
Empowering Women

Panzi Hospital: building a global center of excellence for women and girls in Central Africa

HOPITAL GENERAL DE REFERENCE DE PANZI

PANZI FOUNDATION USA
HEAL·LIVE·HOPE

croix-rouge luxembourgeoise
Mënschen hëllefen

white

Contents

The vision for Panzi

A global center of excellence for women's health, well-being and empowerment

PANZI HOSPITAL is located in Bukavu, the capital of the South Kivu in the east of the Democratic Republic of Congo (DRC). The hospital was founded in 1999 by Dr. Denis Mukwege, world-renowned gynecologist and the 2018 co-recipient of the Nobel Peace Prize. Since the hospital's inception, Panzi Hospital has specialized in compassionate, holistic care for survivors of sexual violence and has served nearly 100,000 women suffering from severe gynecological trauma, including more than 55,000 survivors of sexual violence. To deliver upon Dr. Mukwege's vision to end rape as a weapon of war worldwide, Panzi is undergoing an ambitious project to extend and modernize the hospital as a global teaching hospital and center of excellence for treating survivors of sexual violence.

THIS PROJECT requires significant funding by donors who will rally to the cause of Dr. Denis Mukwege; providing compassionate, holistic care for women and girls who seek healing at Panzi Hospital and empowering survivors to regain their place in society by rebuilding their lives.

WAR, MILITIA conflict, and ongoing political instability in eastern DRC have been marked by extreme violence, including widespread rape. When Panzi Hospital first opened its doors, Dr. Mukwege and his staff were faced with women and girls who were physically and psychologically affected by the atrocities of sexual assault. Over the years and given the large number of cases to be treated, his team has gained experience in caring for survivors of sexual violence and has developed a proven global response model.

HOWEVER, INSUFFICIENT resources and inadequate infrastructure prevent Panzi hospital from meeting the needs of all these women and children who have been subject to attack and are often traumatized. The current conditions of the hospital do not allow it to fully fulfill its mission as a reference hospital for approximately 400,000 people in the Ibanda health zone, the most populated part of the city of Bukavu.

THE SWEDISH architectural office, White Arkitekter, has been commissioned by the Luxembourg Red Cross to design a master plan, in collaboration with Panzi Hospital. It includes extension of the hospital structure and the development of the activities of different units, especially a maternity ward and a specialized ward for survivors of sexual violence.

PROJECTIONS FOR the future hospital aim to strengthen and develop its holistic model. The objective is to contribute to achieving the Sustainable Development Goals by the year 2030 by ensuring peace and prosperity for people and the planet. Panzi works globally for the good health and well-being of women, but also for the reduction of women's poverty and gender equality.

Aerial view of the existing hospital

Introduction

Nearly 100,000 women have been treated at Dr Denis Mukwege's hospital in Bukavu, eastern DRC. Over half are survivors of sexual violence. With its holistic model of caring for women, Panzi Hospital aims to be a global center of excellence and training to heal and empower women.

Context

Rape as a weapon of war

Rape occurs in a systematic and organized way. In the DRC, as in other countries, it has become the weapon of choice for the military strategy of the warring parties. Dr. Denis Mukwege, deeply affected by the genital assault on women, decides to raise global awareness on this barbarism and to take action to help them.

Excerpt from the speech

given by Dr. Denis Mukwege, Nobel Peace Prize, Oslo, 10 December 2018:

"Sarah was referred to us at the hospital in a critical condition. Her village had been attacked by an armed group that had murdered her entire family, leaving her alone. Taken hostage, she was taken into the forest. Tied to a tree. Naked. Every day, Sarah was subjected to gang rape until she lost consciousness.

The objective of this daily violation – a weapon of war – was to destroy Sarah, her family and her community. In short: to tear down the social fabric. Upon her arrival at the hospital, Sarah was not able to walk or even stand upright. She was unable to control her bladder or bowels. Due to the severity of her genital and gastrointestinal injuries, coupled with an infection, nobody could imagine that she would ever be able to get back on her feet again. However, with each passing day, the desire to continue living shone bright in Sarah's eyes. With each passing day, Sarah fought for her survival.

Today, Sarah is a beautiful lady; she is cheerful, strong and kind. Sarah is committed to helping people who have survived situations similar to her own. Sarah received fifty American dollars – a benefit that "Maison Dorcas", our transit house, gives to women who want to rebuild their lives in the social and economic field. Today, Sarah runs her small business. She bought a plot of land. The Panzi Foundation helped her with sheeting to make a roof. She built a house. She is independent and proud….

This is Sarah's story. Sarah is Congolese. But, there are other Sarahs in the Central African Republic, in Colombia, in Bosnia in Myanmar, in Iraq and many other countries in conflict around the world…"

Photos: Mukwege Foundation | Panzi Foundation | Wikimedia Commons

Women and children are the biggest victims of conflict

The brutality of sexual violence in the DRC includes gang rape, kidnapping, forced marriages and genital mutilation. The consequences are mass population movements, reduction of the population, breakdown of the economy, destruction of the social fabric and family life. Panzi Hospital has treated survivors as young as six months old; Human Rights Watch has described five-year-old girls and 80-year-old women being shot in the vagina or mutilated with knives and razor blades – many of whom have ultimately been treated at Panzi. Epidemics, such as Ebola fever and cholera, as well as malnutrition and food insecurity,also contribute to the instability of the region.

"Because of the suffering of Congolese women from widespread rape, our team at Panzi has gained experience over 20 years in relation to medical care and, far beyond, to the global support needed that allows survivors of sexual violence not only to heal, but to be able to return to a normal life in society."

Dr. Mukwege, July 2019

The man who mends women

Dr. Denis Mukwege is a world-renowned gynecologist and human rights activist. After completing his gynecology studies in France in 1989, he returned to his country to take care of the Lemera Hospital, where he became Medical Director. Dr. Mukwege wanted to tackle the excessively high maternal mortality rate in his home region and throughout the Congo.

In 1996, during the first Congo war, his hospital in Lemera was brutally destroyed. Many of his colleagues were murdered, and the doctor himself narrowly escaped death. He took refuge in Bukavu where he founded Panzi Hospital. In a region where gang rape is used as a weapon of war, he specializes in treating female victims of sexual assault.

Today, he is known as one of the world's specialists in treating fistulas and a celebrated human rights activist with a particular focus on women's rights. In addition to numerous academic awards, he received the Sakharov Prize in 2014 and the Nobel Peace Prize in 2018 shared with Nadia Murad, a Yazidi activist and survivor.

Panzi today

General Referral Hospital for 400,000 inhabitants and more

Panzi Hospital was founded to focus upon providing high-quality maternal health when it opened 20 year ago, in an area plagued with sky-high maternal mortality rates. However, the first patients that Dr. Mukwege and the Panzi Hospital staff treated were not delivering mothers – they were victims of brutal rapes by knives, guns, razors, and more. Panzi adapted quickly to meet the needs of its burgeoning patient population, becoming a hospital that specialized in the care of women who have suffered sexual violence, as well as maintaining its focus on providing high-quality maternal health care.

The Panzi Reference General Hospital in Bukavu was founded in 1999 by Dr. Denis Mukwege and is the recognized hospital for the Ibanda Health Zone; it serves a population of over 400,000 but welcomes patients from all across the region.

Over the years, the hospital has extended its services to meet the needs of the population, with departments of general medicine, surgery, gynecology-obstetrics and pediatrics. It is now a regional training center for family planning, as well as for maternal health providing safe delivery for the mother and her baby. Panzi also hosts outpatient services for general medicine, otolaryngology (ENT), dental and ophthalmic care, radiology and cervical cancer screening.

The hospital is particularly renowned for its surgical repair of vesicovaginal and rectovaginal fistulas and is specialized in the care of survivors of sexual violence. Dr. Mukwege's hospital commits to the health and empowerment of women survivors of sexual violence.

"Because of the suffering of Congolese women from widespread rape, our team at Panzi has gained experience over 20 years in relation to medical care and, far beyond, to the global support needed that allows survivors of sexual violence not only to heal, but to be able to return to a normal life in society."

Dr. Mukwege, July 2019

The holistic care model has proved its effectiveness. It is based on four pillars:

MEDICAL TREATMENT: medical procedures for sexually abused women, care for women with fistulas or other genital lesions, comprehensive sexual health and reproduction program, family planning, safe motherhood, mobile clinics, etc.

PSYCHO-SOCIAL SUPPORT: psychotherapy and various other therapies provided by psychosocial assistants, psychologists and psychiatrists.

Photos: Mukwege Foundation | Panzi Foundation | Wikimedia Commons

- **Maternal mortality rate in the DRC among the highest in the world: 846 maternal deaths per 100,000 live births**
- **On average, 3,600 SAFE child-births per year**
- **42,298 women with urogenital fistulas and prolapse treated**
- **55,919 women survivors of sexual violence treated**

SOCIO-ECONOMIC REINTEGRATION: income-generating activities (agriculture, farming, fishing, small craft business, etc.), literacy programs, career training and educational support for children, women's groups, etc.
LEGAL ASSISTANCE: access to lawyers and legal experts who guide survivors through the justice process, including filing formal complaints, taking testimony, and participating in awarene-ss raising activities.

Nearly 100,000 women treated at Panzi have recovered their physical and mental health. Like Sarah[1], they resumed their activities or were trained in other income-generating activities. They have been able to support their families and contribute to the sustainable restoration of their community.

"When they have been physically and psychologically treated and can live independently, putting women in a role of survivors rather than victims helps them to feel stronger, to be able to report to justice. This is the final stage of their healing through the four pillars. They take power and become agents for change in their own community by giving them a voice."

Dr. Mukwege, July 2019

Far from ideal conditions

The hospital does not have enough beds for patients in all departments. Its initial capacity was 125 beds; it has come to accommodate up to 450 patients in a very limited space. The maternity, for example, has only 27 beds for 75 births a week. Due to lack of staff and equipment, family planning support is insufficient (low contraceptive prevalence, poor quality of care, etc.).

The care unit for victims of sexual violence accommodates about 200 patients in a space with a capacity of less than 100 beds. Often, two women have to share the same bed! In the absence of accommodation for women, they are housed in two unsecured, cramped facilities rented outside of the hospital. There are no rooms dedicated to psychological consultations and psycho-corporal activities. Overall, the supply of water and electricity is vastly inadequate. Sanitary and pipelines are few, old and deteriorated.

The hospital faces a number of problems, in addition to the overcrowding of services:

- inefficient flow and logistics
- inappropriate location of activities
- poor water, electricity, and sanitation systems
- lack of technical infrastructure

[1] Cf. excerpt from Dr. Denis Mukwege's speech, p.6

Goals

Resources to realize its triple mission

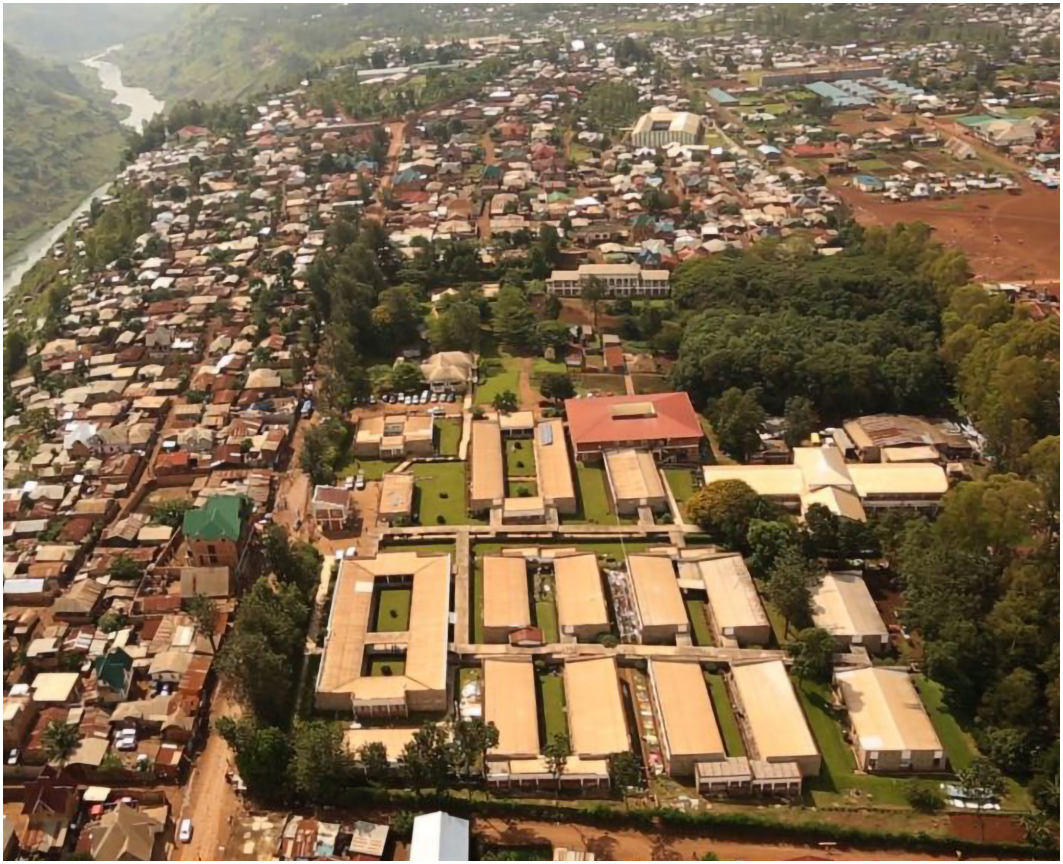
In order to fully play its role as a global model of reference and excellence, specialized in the reduction of maternal mortality and for the care of survivors of sexual violence, the Panzi hospital needs adequate human resources and infrastructure. This master plan is designed to structure the evolution of the Panzi hospital.

The establishment must be renovated in depth to be better able to fulfill its triple mission, which is to be:

1. A global center of excellence for the holistic approach of treating women who have survived sexual violence and other genital injuries, including:
   - a training center for the repair of fistulas and other gynecological trauma and lesions
   - a center of excellence for minimally invasive surgery (laparoscopy) and orthopedic surgery

2. A regional training center with a Mother-Baby Unit to reduce maternal mortality, with a new delivery room and other related services, as well as family planning outreach programs

3. A referral hospital in the Ibanda Health Zone, including a nutrition center covering the health region and an HIV/AIDS treatment center.



Photos: Mukwege Foundation | Panzi Foundation | Wikimedia Commons

"Improving mother-child care and preventing women from losing their lives while giving birth can be achieved by providing better infrastructure, including adequate equipment and skills development. Peripheral hospitals must be able to redirect women to us in case of complications and we must have the resources to ensure that the delivery is going well.

"We think that the holistic model we created at Panzi deserves to be exported to other countries because the scourge of the raped woman exists everywhere in the world. However, today we are not able to multiply this model. Our working conditions do not allow us, for example, to invite medical teams to our hospital to convey our approach. The new hospital shall be able to play this role of a training center. "

Dr. Mukwege, July 2019.

View from the entrance plaza towards the new building

Sunrise over Panzi Hospital

The new plan for Panzi Hospital will result in a modern, world-class hospital. The proposal is based on an extensive survey of the hospital's existing conditions and future needs. The results are one large new building, several smaller additions and a plan for renovation that will support the hospital in its mission for many years to come.

Existing conditions and shortcomings

Today, the world class care at Panzi Hospital is compromised by overcrowded and outdated facilities, insufficient infrastructure, and a lack of resources.

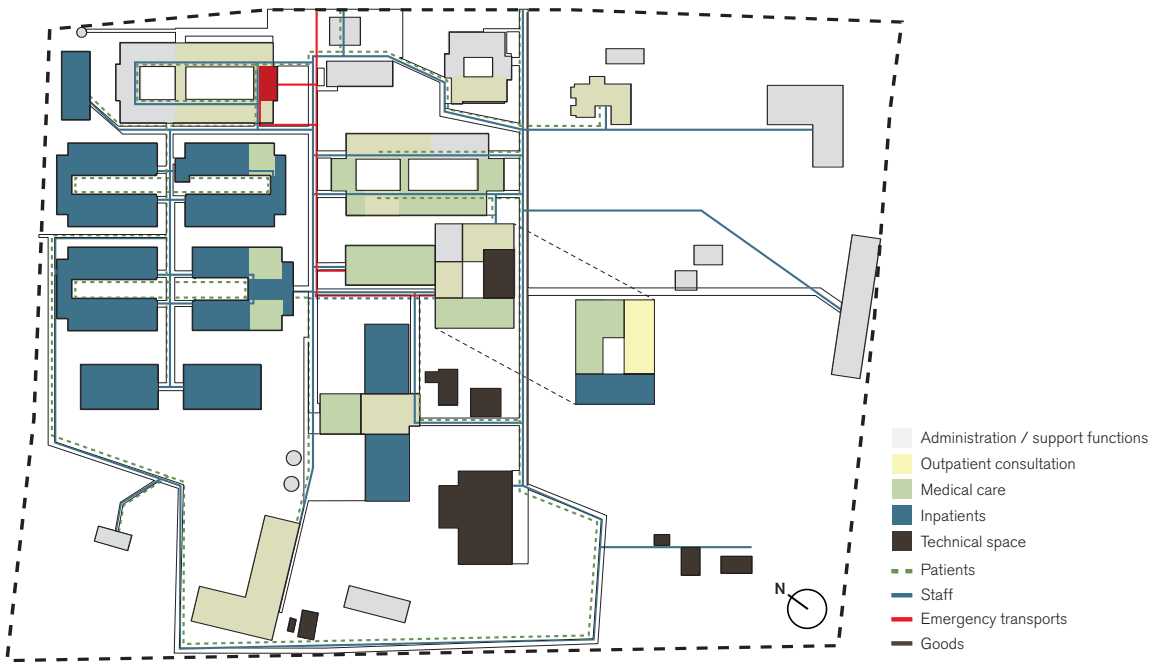
PANZI HOSPITAL is located on a beautiful site, lush with greenery and sloping towards the southwest. The vegetation here is the last green lung in a former forest, where trees have given way to the houses of refugees.

THE ORIGINAL HOSPITAL layout is a series of one-story pavilions, mainly in the western part of the site, that are connected by covered pathways and separated by gardens. Since the opening of the hospital, new buildings have been added intermittently, without following a clear strategy. As the needs for the hospital have developed, the newer buildings have grown in height and complexity. As a result of the intensive use, the existing buildings are worn and in dire need of renovation.

WITH THE EXPANSION of the hospital, the organization and use of the buildings has changed. This has led to complicated logistics, with interdependent functions separated by great distances. For example, the operating unit is currently located far away from the intensive care unit, and no designated emergency unit exists. Relocating these units to work closer together would literally save lives.

COMMUNICATIONS IN and between units have also become inefficient and complicated. The differences in height on the site makes transporting patients and goods difficult. Visitors, staff and patients move along the same paths in the hospital, which causes security risks and a lack of privacy for patients.

THERE IS ALSO a severe scarcity of energy, water and material resources. Due to this, the existing technical systems, such as for heating and cooling, are unreliable. Although the local climate is mild, this leads to problems with indoor comfort, hygiene, and lighting. These conditions pose a great challenge to the daily work in the hospital. Sustainably designed architecture with a strong focus on conserving resources and adapting to the local climate is a prerequisite in this context, rather than a choice, if the hospital is to be sustained.



Current functions and flows

Technical infrastructure

The strain on the hospitals capacity means that there has been a lack of maintenance also on the technical infrastructure concerning water and energy.

All water is brought to the site from external sources, and because the situation in the region is unstable, the hospital must privately organize and fund access to it. Once secured, the water is stored and distributed on site via systems that require expansion and renovation to function properly. Drinking water is currently only available to purchase in bottles and access to heated water is limited. Wastewater management is underdeveloped, and rainwater is under-utilized and prone to cause flooding. These issues have a huge impact on hygiene standards in the hospital environment and are prioritized in the new master plan.

A reliable and sustainable energy supply for the hospital is crucial to providing high-quality care. The National provider supplies the main external source of electricity, which is expensive and insufficient in quantity. Therefore, the hospital mainly relies extensively on diesel generators on site, which are unreliable, require maintenance and are dependent on fossil fuels. The on-site electrical distribution system connecting the buildings is unsafe and requires extensive renovation.

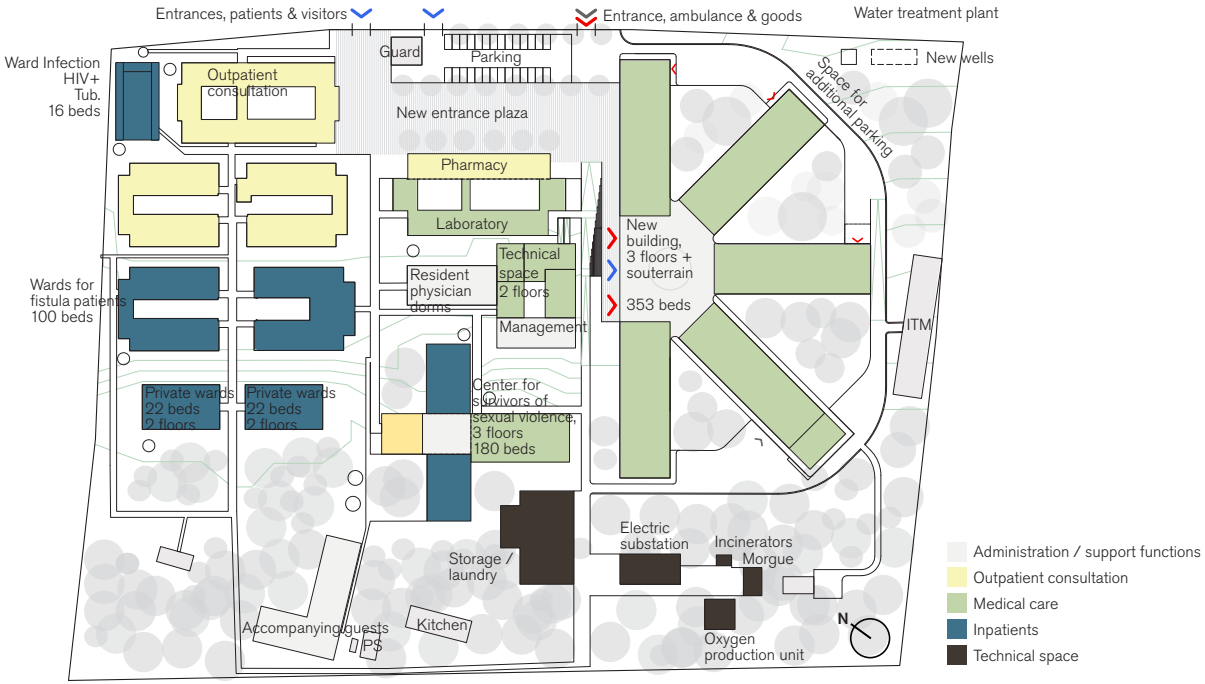
Proposal

In the proposal, the original qualities of the hospital structure – greenery, access to light, and clear structure – are preserved and emphasized. New additions are proposed in ways that minimize the need for demolition. The most crucial functions are relocated to new, modern facilities. The resulting health care environment is easily navigated, efficient, attractive and promotes the well-being of patients, staff and visitors alike.

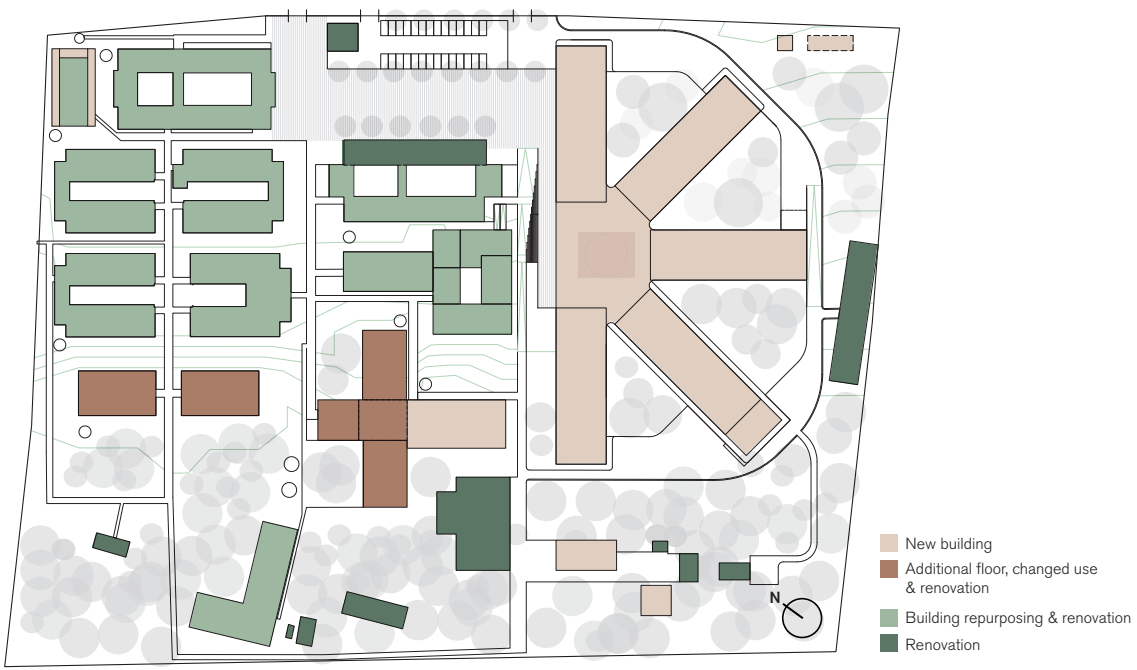
THE NEW HOSPITAL master plan is designed to consolidate technology-intensive care functions together on the site therefore shortening distances and improving communications between them. The largest addition is a new, modern hospital building on the currently under-utilized eastern section of the site, opposite the existing imagery building and laboratory. This main new building is dedicated to care intensive functions and emergencies. As functions move out of existing buildings and into this new building, existing space is made available for outpatients departments and less care intensive functions. In total, the future hospital contains 466 beds.

SEVERAL ADDITIONAL changes have been devised to meet the demand on the hospital. The building designated for care for survivors of sexual violence will be expanded to accommodate additional beds and a new operating unit. By adding another wing and third floor, ward capacity is tripled. There will also be another floor added to the buildings containing private clinics, doubling their capacity. The segregated wards for infectious patients will also be expanded and modernized. Once the new buildings are completed, the remaining existing buildings will undergo extensive renovation.

THE FIRST SIGHT upon reaching the future Panzi Hospital is a new, beautiful entrance plaza connected to the existing entrance. Activities that are frequented by the majority of the external visitors to the hospital are relocated here with easy access from the main entrance plaza - consultation rooms, a pharmacy and guest parking. A separate entrance is devised for ambulances, shielding them from view and ensuring patient privacy. The two main streets that already exist on the site are conserved and become the location for new, efficient and centralized infrastructure. The ITM building, which is used for education of healthcare staff, and the service buildings in the southeast of the site, are possible to retain within the new master plan.



Functions



New, repurposed and renovated buildings

Aerial view including the new buildings

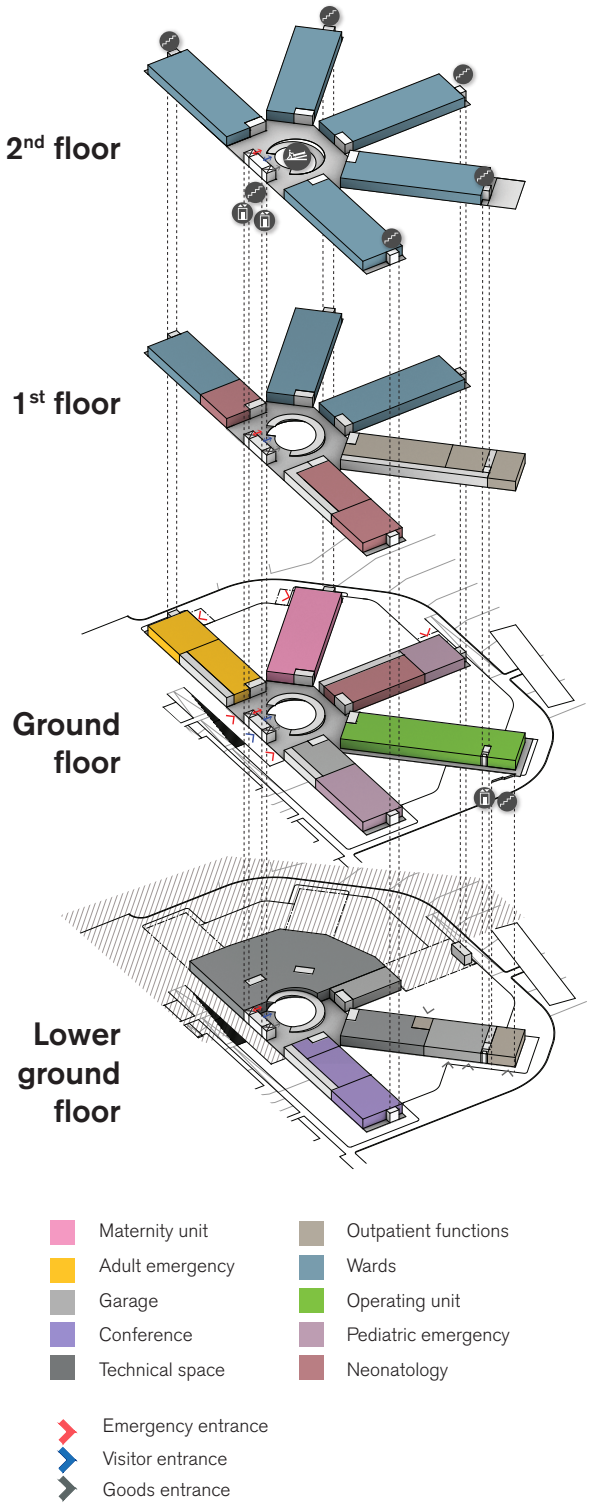
The main new building

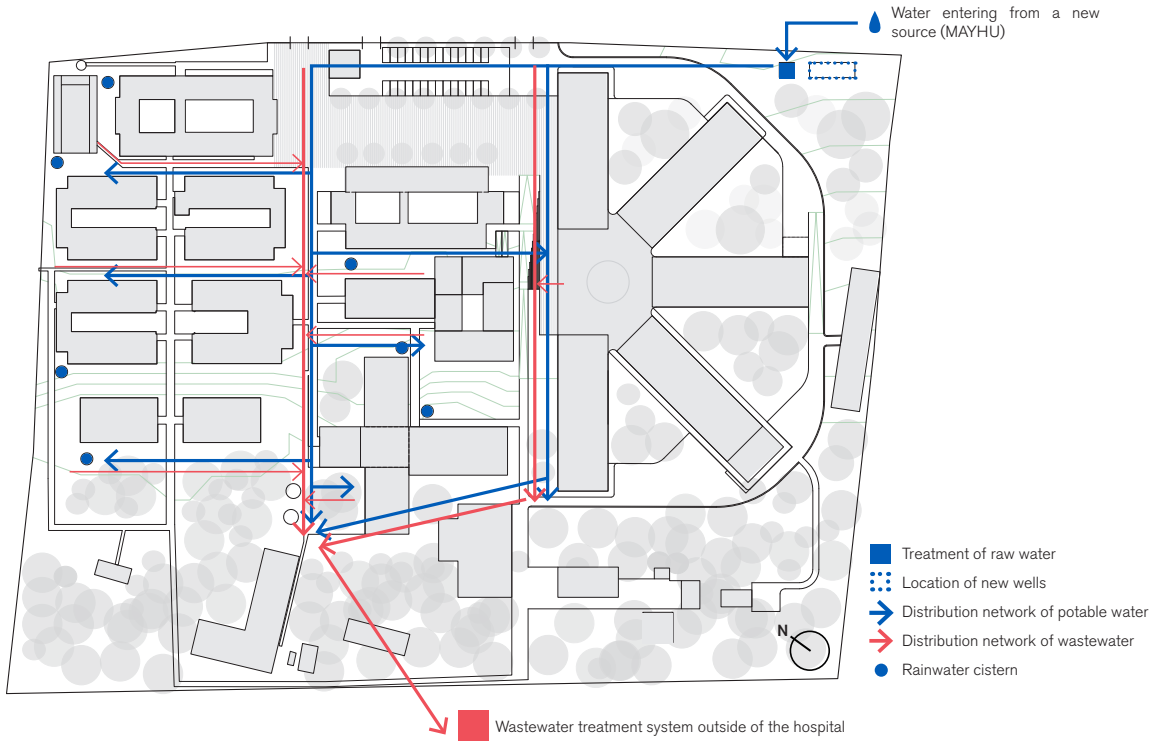
The heart of the new hospital structure is the building that completes the eastern side of the site and creates a strong visual link to the entrance plaza. The most technologically advanced functions in the hospital – adult and pediatric emergency units, intensive care units, maternity unit, and operation unit – fit into a single ground floor here to create excellent opportunities for cooperative and efficient care. The five wings of the building are arranged around a central space, the "rondpoint", which vertically connects all different floors. Here staircases, elevators and ramps are placed, and it becomes a natural meeting space and central communication hub.

THE FLOORS above the "hot floor" accommodate accomodate modern neonatal, children and adult wards. Each patient room hosts 1, 2 or 4 beds and benefits from extensive daylight and views over the natural landscape. The rational and flexible structure of these spaces facilities a range of different uses and future flexibility. The wards are equipped with modern hygiene facilities and central spaces for staff and support functions.

THE SLOPE of the site is used to the advantage of the lower ground floor, which has access to daylight and can be reached by vehicle traffic. The restaurant and conference space created here are inviting to external visitors and easily accessed for staff and patients from the rest of the hospital.

THE NEW BUILDING is a world class hospital facility that will also be characterised by strong architectural qualities. Plenty of daylight, views of the surrounding greenery, access to gardens, and beautiful and durable materials give an impression of well-designed, health-promotive environment.





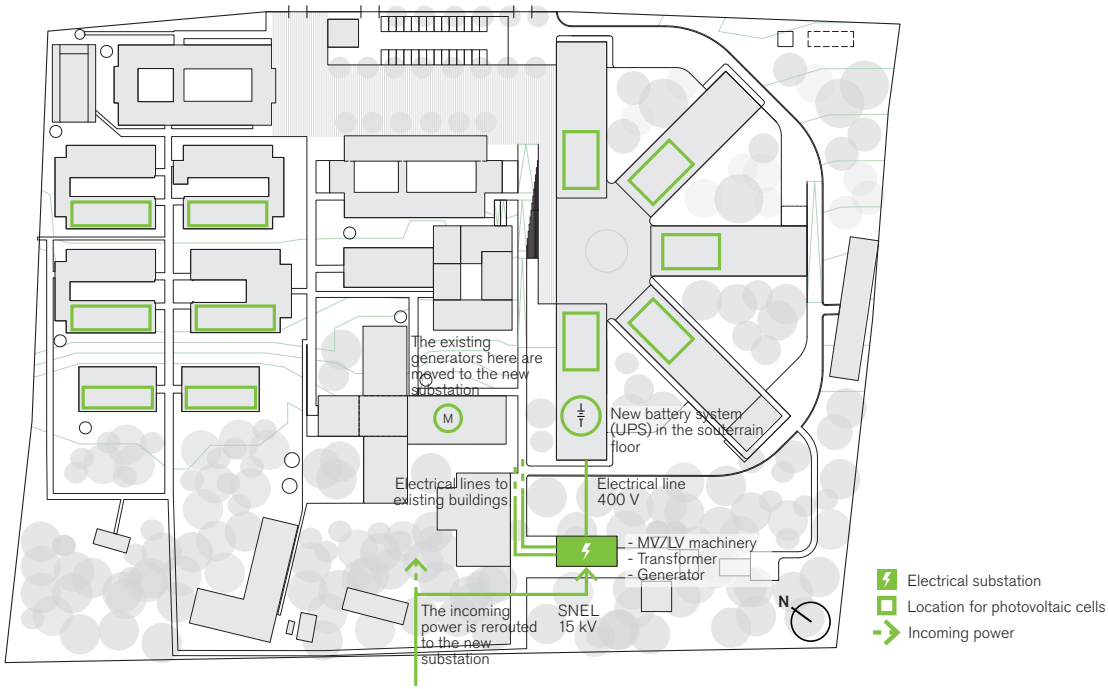
New water infrastructure

Modernizing the systems for supplying drinking water, taking care of wastewater and collecting rainwater is a crucial step towards a well-functioning hospital.

In order to achieve water security, it is important that there are several different sources of fresh water available. Panzi currently relies on a single source: reservoirs outside of the site. New wells should be established on hospital grounds. A new freshwater supply, the MAYHU well, has been identified and should also be taken into use. This requires a new underground pipe network, as well as additional water storage on the site.

The lack of drinking water has been identified as an urgent problem for the hospital. To convert fresh water into potable water, a new water treatment plant will be installed on-site at the location of the incoming water. New distribution pumps to supply the new and existing buildings with drinking water will be installed. Finally, a reconstructed, centralized pipe system will distribute the water to all buildings.

Improving the management of wastewater will be important to reach the necessary hygiene standards. A new wastewater pipe network will be centralized and situated in the same trenches as the drinking water network. Wastewater will be treated off-site before being discharged to a nearby recipient. Rainwater can be used for several purposes, including cleaning hospital facilities and firefighting. This lessens the dependency on using potable water. When renovating the existing buildings, gutters will be added to collect rainwater. Rainwater reservoirs will then be located underground in several places throughout the site.



New energy infrastructure

The energy consumption of Panzi hospital, including existing buildings and the new planned building, is expected to increase by eighty-five per cent compared to the current consumption level. With such energy requirements, access becomes even more important. Installing solar panels is a good alternative for the future construction of Panzi Hospital. The production of electricity via solar panels requires little maintenance.

To achieve a good balance from the point of view of economy, technical viability and environmental impact, the following distribution of energy is recommended: electric generators with diesel engines (thirty per cent), solar panels (fifty per cent) or electricity grid (twenty per cent).

As the care provided by the hospital becomes more high-technological the reliance on a steady electricity supply will increase. Operating theatres and a modern pharmacy are among the functions that are sensitive to power outages. In order too avoid interruptions in the power supply, a double backup system is proposed; an electric backup generator located in the new hospital building, and an emergency battery, which is used during the short time it takes to start up the generator.

The new Panzi Hospital will also be equipped with WiFi-enabled and fibre-optic communication systems in order to have a surveillance system and ensure the safety of patients during rehabilitation and surgical procedures. The fibre-optic connection is inadequate at this moment, but the hospital must prepare for this communication system for future communications.

Sustainability

The goal of creating a socially, economically and ecologically sustainable project will inform every design when creating the future Panzi Hospital. Below are some strategies on how to achieve a sustainable design.

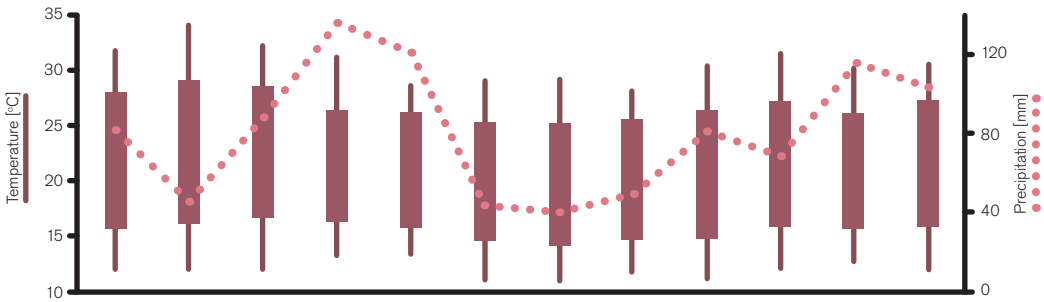
Health & well-being

Recent research has shown that a well-designed physical environment greatly influences medical treatment outcomes and recovery. Healing architecture is achieved from a variety of factors that work together to increase the sense of well-being in patients, staff and visitors. A beautiful, accessible and attractive environment shows consideration for the individual user. A clear understanding of which spaces are private and public spaces is important. Small wards and private spaces for patients create a sense of safety, whereas space for meeting places is needed to promote social sustainability through community. Clear orientation between these spaces, both within and between buildings, increase both efficiency of their use and the well-being of the users. Architectural access to natural daylight, greenery and outdoor views have been shown to improve the healing process.

Climate adaptation

Panzi is located in a context with limited resources but a mild climate. Instead of using elaborate, resource-demanding technical solutions to power the hospital and create a good indoor environment, ways of adapting the buildings themselves to the climate should be considered. Many different methods can be used to ensure a well-functioning hospital building, even if technical systems were to fail. These methods can include:

- optimizing windows size and layout for maximizing access to daylight, decreasing the need for electrical light
- plan well calibrated sunshading solutions to protect indoor spaces from overheating
- designing systems for natural ventilation instead of using air conditioning
- selecting materials and detailed solutions that prevent damage from moisture
- using the sun to store energy in the building to then passively heat it during the cooler hours of the day



Temperature and precipitation diagram

Resource efficiency

Although the hospital is located in a region rich with natural resources, due to instability the access to and use of those resources is restricted. Any thoughtful design must take this into consideration, and devise ways to maximize the value of the resources available, both in construction and maintenance.

This is also, of course, ecologically sound. There is currently a tradition of using local materials. The carbon footprint of the project can be decreased by using locally sourced materials and materials with low embodied emissions, such as locally produced brick and locally harvested timber.

Rain water and sun energy is present in abundance on the site, but the systems required to harvest them need to be developed. The core challenge is to design a high-performance building in a context with limited materials and lack of infrastructure.

Long-term development

An important aspect of sustainable architecture is designing for the future. It is especially significant in the case of Panzi Hospital where good maintenance of existing facilities has been a challenge during past years. Robustness, possibility for change and low maintenance requirements are key factors for a long-term construction that works over time. The new construction shall be designed with a well-tested module system that ensures flexibility of use and resilience under technical development. All buildings are also to be designed to be structurally robust, since this is a region under seismic risk. Materials that require as little maintenance as possible shall be encouraged throughout.

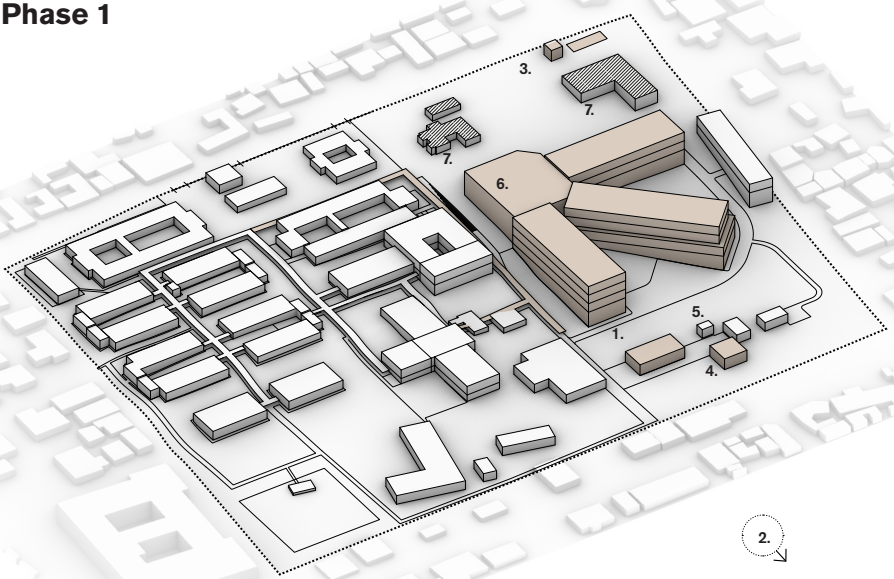
Interior view by the “rondpoint”

Making it happen

The new master plan is designed with an emphasis on pragmatism and forward-thinking. The following chapter outlines the practical steps needed to realize the vision of the new Panzi Hospital.

Construction phasing

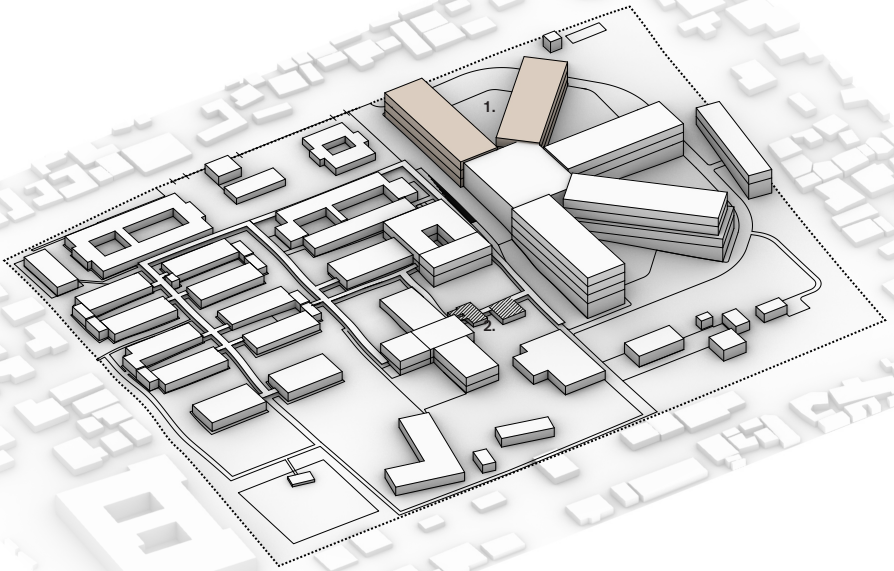
Phase 1



New structure
Demolition

In order for the hospital to continue its usual function during the construction period, the new technical infrastructure needs to be put into place. First, the new substation (1), wastewater treatment system (2), and potable water treatment system (3), are constructed. Then, a new unit for producing oxygen (4) and for treating solid waste (5) are put into place. When these are finished, the first section of the new building (6) can be constructed, and the existing buildings in this part of the site (7) can be demolished.

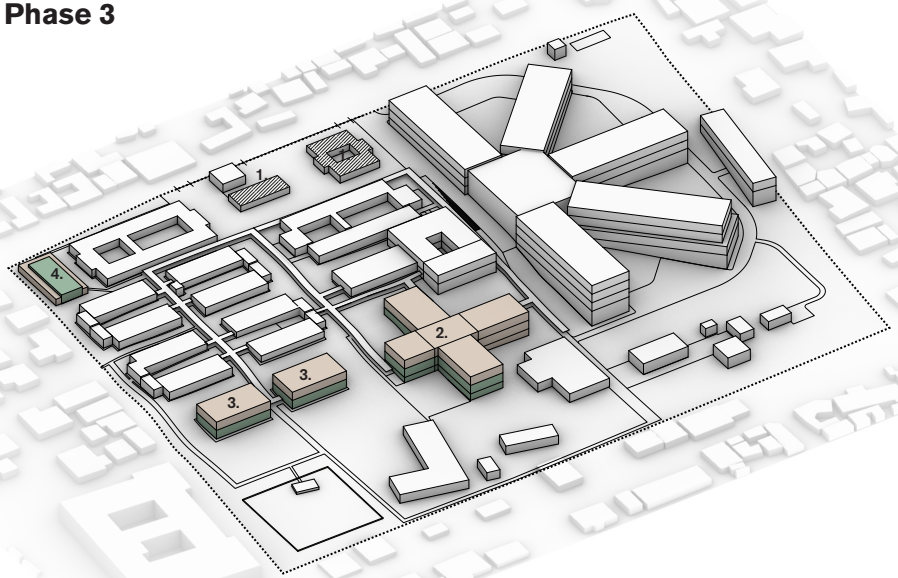
Phase 2



New structure
Demolition

Once the site is cleared and the new electrical supply is in order, the second section of the new building (1) can be constructed, and the existing generator buildings (2) can be demolished.

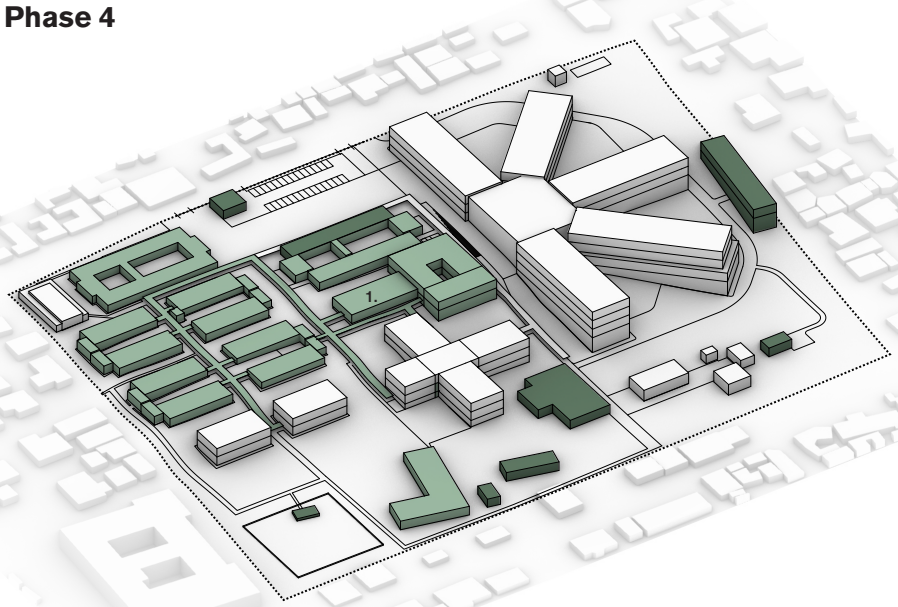
Phase 3



New structure
Demolition
Building repurposing

As some functions have moved into the new buildings, space is freed up in the existing buildings. This allows the creation of the new entrance plaza (1) by demolition. The center for survivors of sexual violence (2), as well as the private wards (3) and the wards for infectious patients (4) are expanded and refurbished.

Phase 4



Building repurposing
Renovation

Finally, the remaining existing buildings (1) are either renovated and repurposed for moved functions, or simply refurbished.

Production schedule

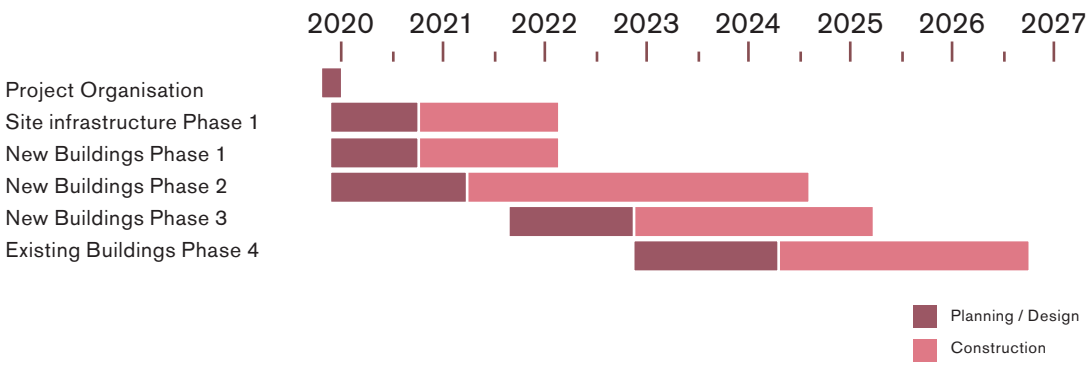
The time schedule for the project has been developed in a comprehensive manner to encompass all phases of the project, from inception, design, through the implementation, delivery and commissioning.

Phasing of the construction works has formed a key aspect, driving the time schedule, and considers a logical and practical staged development and identification of key milestones.

On and off-site infrastructure take precedence into order to create the capacity to both service the existing facilities adequately and safely, but also form the foundation to develop new hospital facilities. Subsequently, construction of new medical facilities is scheduled in order to both relieve existing over-use and meet demand. Disruption to existing facilities is minimised by careful master planning, and following completion of the new facilities, existing buildings can be decanted, renovated and repurposed as appropriate.

The Project time schedule also allows for procurement of the project team and design process to delivery a project of International standards and best practise including engagement with local and international stakeholders to deliver inclusive and considered solutions.

A key aspect of the project delivery is procurement and commissioning of specialist equipment and the time schedule encompasses a strategic and direct procurement process.



Cost estimate

The Cost Estimate represents a complete analysis of all costs required to achieve the projects objectives. It includes all phases, from assembly of the project team, continuing through to hand-over of the completed site-wide construction works.

The Cost Estimate represents a comprehensive cost plan covering all stages of the project development and implementation. It has been compiled utilising International and regional cost Consultant experience from similar healthcare projects.

Architects and Engineers have also contributed with technical information to the preparation of the cost estimate.

The cost estimate includes formation of a project team and local capacity building to manage design development, construction management, and establish a sustainable management regime.

The cost estimate is aligned with the project phasing and separates costs of key phases to facilitate the process.

New Infrastructure: Phase 1	$ 5,475,000
New Buildings: Phase 1	$ 15,120,000
New Buildings: Phase 2	$ 7,150,000
Project Costs for New Buildings & Infrastructure: Phase 1 & 2	$ 5,286,013
New Buildings Phase 3	$ 4,455,000
Existing Buildings Phase 4	$ 8,152,000
Existing Buildings Infrastructure: Phase 4	$ 1,750,000
Project Costs for New and Existing Buildings & Infrastructure: Phases 3 & 4	$ 2,876,583
Contingency @ 10%	$ 5,026,459
Grand total	**$ 55,291,055**

Into the future

Over the past two decades, Panzi Hospital has established its reputation as a refuge for survivors of sexual violence seeking holistic care and for delivering mothers in the Democratic Republic of Congo. Now, it is time to expand our work across the globe.

The renovation and expansion of Panzi Hospital will allow us to make real the vision of Dr. Denis Mukwege: a world where survivors of sexual violence have access to the care and services they need to rebuild their lives, and where eventually rape is no longer used as a weapon of war.

We will do this by ensuring that Panzi Hospital is the preeminent training center for medical practitioners specializing in the treatment of survivors of sexual violence and severe gynecological trauma. We will serve as a global center of excellence for holistic healing, ensuring that our innovative four-pillar model is replicated in other areas of conflict across the globe. Our practical training will be met with increased advocacy and awareness-building, as we work with governments and other civil society organizations to draw a red line against impunity and to call for reparations for survivors.

Our dedication to these survivors around the world will match the commitment we have to the women of our community. We will continue to provide them with high-quality maternal health services, constantly adapting to offer the most innovative and life-saving care possible. And lastly, we are firm in our belief that health care is a human right, and that every person who seeks medical treatment at Panzi Hospital receives it. In doing so, we will solidify our reputation as a global, regional, and local center of excellence for the treatment of survivors of sexual violence, the treatment of delivering mothers and their children, and the treatment of all people.

Join us in making our vision a reality.

Interior view by the "rondpoint"

The Luxembourg Red Cross has been working alongside Dr. Mukwege acting as an advisor for the development of the hospital's master plan and aims to bring together all parties willing to support the Panzi Hospital modernisation and expansion project.

CONTACT PERSONS

Dr Christian Huvelle
Advisor to the Board of Directors

Aide internationale de la Croix-Rouge luxembourgeoise
44, boulevard Joseph II – L-1840 Luxembourg
B.P.404 - L-2014 Luxembourg
Telephone: (+352) 2755-8002
Fax: (+352) 2755-8001
Mobile: (+352) 691493024
Email: christian.huvelle@croix-rouge.lu
www.croix-rouge.lu

Tony Gambino
Executive Director

Panzi Foundation USA
5185 MacArthur Blvd.
#708
Washington, DC 20016
Telephone: (+1) 301-541-8375
Email: tonygambino@pfusa.org
www.panzifoundation.org

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