GLOBAL HUMANITARIAN MISSION

PROJECT PROPOSAL

Juan Pablo II Hospital

Pediatric Outpatient & Maternity Care Expansion

MIXCO,

GUATEMALA

Overview

Guatemala is the largest country and economy in Central America, with more than 16 million inhabitants, more than half of whom live in poverty. The population is divided roughly equally between urban and rural areas. However, large disparities persist in economic development indicators, access to health services, and health outcomes, with rural areas faring much worse than urban areas. In addition, the rural population is mainly indigenous, composed of numerous ethnic and linguistic groups.

Although Guatemala has made progress in improving the health status of its population, the country still faces an institutional crisis in ensuring access to and coverage of basic health services in a context of unresolved problems combined with new challenges. Over the last few decades, the health system in Guatemala has accumulated a series of problems, resulting in an obsolete, fragmented, and inefficient health system. Political instability in the country in recent years has exacerbated this health situation.

The health situation of the population is uneven, with worse indicators in areas with the most vulnerable populations (poor, indigenous, and rural). Maternal mortality is 2.2 times higher in vulnerable populations. Chronic malnutrition in children under 5 is 1.8 times higher among indigenous people than among non-indigenous people. Municipalities with lower poverty rates, less rural areas, and a lower percentage of indigenous people have the most physical infrastructure for health services.

Guatemala has the second highest infant mortality rate in the Americas, behind only Haiti. According to the Ministry of Public Health and Social Assistance, in Guatemala, for every 100,000 live births, 103 women die due to complications during pregnancy. The neonatal mortality rate is 23 children per 1,000 live births. The main causes of death in children are perinatal conditions (50.5%), pneumonia (17.0%), intestinal infections (8.8%), and malnutrition (2.3%).

In addition to these data, Guatemala lacks adequate infrastructure and personnel, making it difficult to ensure good health services for the population, especially children of all ages.

In contrast, compared to other Latin American countries, Guatemala has a birth rate of 24.6 births per 1,000 inhabitants, the highest un l rate in Latin America and the 50th highest in the world. With a total fertility rate of 3.6 births per woman and an annual population growth rate of 2.5 percent, the Guatemalan population is growing at twice the average rate (1.1 percent) of other LAC countries (WHO).

Nearly 40% of the population is between the ages of 0 and 17, meaning that there are approximately 6.4 million children, of whom nearly 70% live in extreme poverty (Mundy Index).

CÁRITAS ARQUIDIOCESANA

Cáritas Arquidiocesana is a social welfare foundation of the Archdiocese of Santiago de Guatemala, which manages and provides resources to transform communities and lives in a comprehensive manner, following the example of Christ, through development programs and projects, bringing those most in need closer to the fulfillment of God's plan.
For more than 40 years, Caritas has been known for bringing health, education, and development to the neediest people in the country, especially in the departments of Guatemala and Sacatepéquez, the area where the Church is active.

Currently, through various programs and projects, more than 2.5 million people, equivalent to 13% of the Guatemalan population, benefit in more than 800 communities, care centers, and churches.

Juan Pablo II

Pediatric Outpatient & Maternity Care Hospital

This is the largest program run by Cáritas Arquidiocesana. Focused on health, the hospital provides comprehensive services to the population most in need, treating patients from all departments of Guatemala.

The hospital provides pediatric services for children aged 0 to 17 and has more than 20 pediatric specialties, an emergency room, surgery, and beds. Gynecology and obstetrics services are available for women of all ages. Services for the whole family are also offered, such as nutrition, ophthalmology, clinical laboratory, X-rays, and pharmacy.

The hospital receives 9 million quetzales from the Ministry of Public Health and Social Assistance (MSPAS), which is converted into direct support for inpatients, especially those with limited resources, offering free consultations, tests, surgeries, and hospitalization. The MSPAS provides financial assistance equivalent to 30% of the hospital's annual operating costs.

In turn, the hospital has a postgraduate school of pediatrics in partnership with Rafael Landívar University and the Monseñor Arnold Poll nursing assistant school, which seek to educate successful professionals with values, turning the hospital into a teaching hospital.

Thanks to the hospital's credibility over more than 35 years, it has strategic alliances that enable it to have a greater impact on those most in need. Among its partner institutions are Operation Smile, the Paiz Foundation, and the Semillas de Esperanza Foundation, among others.

For these reasons, it is essential that the hospital expand its services to provide more care to Guatemala's growing population, especially the most vulnerable and economically disadvantaged.

This project to construct a green building for outpatient care at the Juan Pablo II Children's Hospital will make a significant contribution to the growth of high-quality pediatric and reproductive health care for poor women and children who would otherwise not have access to adequate health services in Guatemala.

For this reason, the goal is to expand and enlarge the pediatric outpatient clinics and diagnostic laboratories within the hospital to serve Guatemala's growing population. In the last year, the hospital experienced a 15% growth in patients treated and services provided in these areas and anticipates this growth rate annually for the next few years. In 2019, the hospital provided outpatient clinical services to more than 125,000 children aged 0 to 17 in general pediatric consultations. The hospital currently has 30 clinics in the pediatrics area and four clinics in the maternity area.

This growth in recent years has led to daily congestion in the hospital's clinical areas due to the large number of parents and children waiting to be seen, with an average of around 350 patients per day. Therefore, there is a pressing need for more clinics and pediatric specialists. The current building has no room for expansion, so the construction of a new building is the ideal option to increase the quantity and quality of services.

This construction project will help strengthen the only pediatric hospital in Guatemala.

Project Snapshot

In its quest to serve more children at the Juan Pablo II Children's Hospital, Cáritas Arquidiocesana aims to implement a project to construct a new outpatient building. This building is another step toward transforming the hospital into a green hospital, promoting public health and the same time reducing its ecological footprint through continuous reduction of its environmental impact.

The project includes the construction of a three-story hospital building with a basement to expand the services currently provided in the pediatric outpatient clinic and diagnostic laboratories. The green building will use ecological and resilient construction techniques, following design principles for construction to meet national and international standards.

The construction of this building will serve as a platform for other hospitals and the surrounding community to promote sustainable practices and environmental stewardship in ways that foster a positive image, making it the second green hospital in the country.

The building will be located in the northern part of the facilities, next to the main entrance of the hospital to give the hospital façade greater visibility and identify the hospital complex.
The area where the green building will be constructed is approximately 700 m2, currently occupied by the Juan Pablo II plaza. The building will have a total of 3,270 square meters of construction.

The building will have two entrances: one directly from the outside to the diagnostic and outpatient area and another from inside the existing facilities for patients already admitted. The project also includes a security gate to control pedestrian and vehicle access. Access to the basement will be via a ramp located in the garden area leading to an entrance tunnel to the parking lots. The basement will have natural light and ventilation with two windows below the ground floor and two skylights.

- *Natural climate control*: The building is designed with the concept of natural environment control, using low external energy inputs for the building's continuous operations, while providing the necessary comfort. This is achieved by installing windows that allow natural lighting during the day, as well as cross ventilation for air renewal and temperature control. For this reason, most of the windows are located on the north and south sides of the building to take advantage of the prevailing north-south wind in the Guatemala Valley. The position of the windows also allows for lighting while avoiding direct sunlight from the east and west during the morning and afternoon, respectively, which would overheat the interior spaces. Skylights also contribute to the ventilation of the building on all levels, acting as vertical pipes to remove hot air.

- *Energy*: The building will have a combined electric power system, which will use city power and self-generated solar energy through photovoltaic cells. Geographically, Guatemala has favorable conditions for solar energy capture throughout the year. To promote low electricity consumption, LED lamps will be used in the lighting system along with sensor-based controls in specific areas of the building.

- *Water consumption*: The hydraulic system designed for the building reduces water consumption through the use of high-efficiency bathroom fixtures and by replacing certain fixtures with water-free alternatives.

Planning & Execution

- Tap water will be obtained from the existing internal flow, which will then be taken to an underground tank located in the basement and pumped by a hydropneumatic system to supply the entire building.

- *Wastewater Treatment*: Wastewater from the sanitary drainage system on all three levels of the building will be captured and collected in the southeast corner, which is the closest area to conduct the flow to the existing wastewater treatment plant in the hospital complex. The plant has the capacity to process it to prevent pollution.

- *Maintenance*: The building was designed as a low-cost maintenance facility, using high-quality materials, fixtures, and fittings with a guaranteed long service life. The finishes are low maintenance, as is the case with most of the exterior walls that support exposed brick. The brick only needs waterproofing sealant; no stucco, cleaner, or paint needs to be applied to it. The exposed concrete architectural elements are the same.

For the planning and execution of the project, building design principles will be followed to design and construct buildings in a post-carbon and climate-sensitive construction environment. The proposed building is designed to be highly energy efficient and includes the use of insulated building envelopes, triple-insulated glazing, and, where possible, passive solar heating with mass thermal storage systems. Where necessary, lighting systems will use LED task lighting in combination with natural lighting. It is also designed to allow for natural ventilation and simple, low-energy mechanical systems. The building is designed to maximize daylight for interior lighting. The building is also designed for durability and robustness, as it will be a seismic structure that can be repaired and maintained with local materials, parts, and labor. The building has a seismic design with reinforced concrete, consisting of foundation footings and structural frames formed by columns and continuous beams supporting reinforced concrete slabs. The structural design is based on national and international engineering standards for a country with high seismic activity.

Well water and building pumps will be drained into the existing wastewater treatment plant, carrying treated water and rainwater to the existing absorption well, which will be connected to municipal drains when they become available. The proposed building complies with current regulations and standards for use by persons with disabilities, all safety requirements, natural disaster evacuation requirements, and the seismic, environmental, and climatic conditions of Guatemala.

The building construction process is estimated to take a maximum of one year. With this project, together with previous projects such as the construction of the water treatment plant, the solar panel system, and the replacement of the roof with aluzinc, the process of converting the hospital into a green hospital continues. The hospital will become a leading promoter of health and the environment by modeling environmentally sustainable and economically viable practices.

The hospital's green committee will play an important role in integrating environmental health promotion into hospital practices, educating staff and the community about the health impacts of climate change and solutions to these problems. Our next goal is to join the global network of green and healthy hospitals, becoming the second green hospital in Guatemala.

This construction project is partially funded by ASHA (American Schools and Hospitals Abroad), a USAID-affiliated institution that supports hospitals and schools worldwide.

Annexes

In recent years, the Juan Pablo II Children's Hospital, with the support of ASHA, has been able to carry out projects, such as the construction of a water treatment plant, replacement of the false ceiling, remodeling of the hospital roof, and installation of a solar panel energy system.

Annex 1: Green Building Details (by level)

Basement: The basement will be accessed by a ramp located in the garden area leading to an entrance tunnel to the parking lot. The basement will have natural light and ventilation with two windows below the ground floor and two skylights. The basement will include the following:

- 34 parking spaces for vehicles
- Hydraulic equipment room with hydropneumatic system and underground water tank
- Electrical room with main distribution panel and transformer
- Stairs and elevator

Level 1: This level will be raised to a variable height of 1 meter above the exterior sidewalk and will be level with the existing hospital floor, allowing for the smooth movement of patients on stretchers to the diagnostic areas located on the first level. Level 1 will include the following:

- 11 consultation rooms
- Waiting room and patient admission desk
- Stairs and elevator
- Social services office
- 3 cashier windows
- Public and staff restrooms
- Cleaning room
- Storage room
- Stairs and stretcher lift
- Security guard post
- Plaza

Level 2: Accessible by stairs and elevator from Patient Control on Level 1 via stairs or elevator. Contains the following areas:

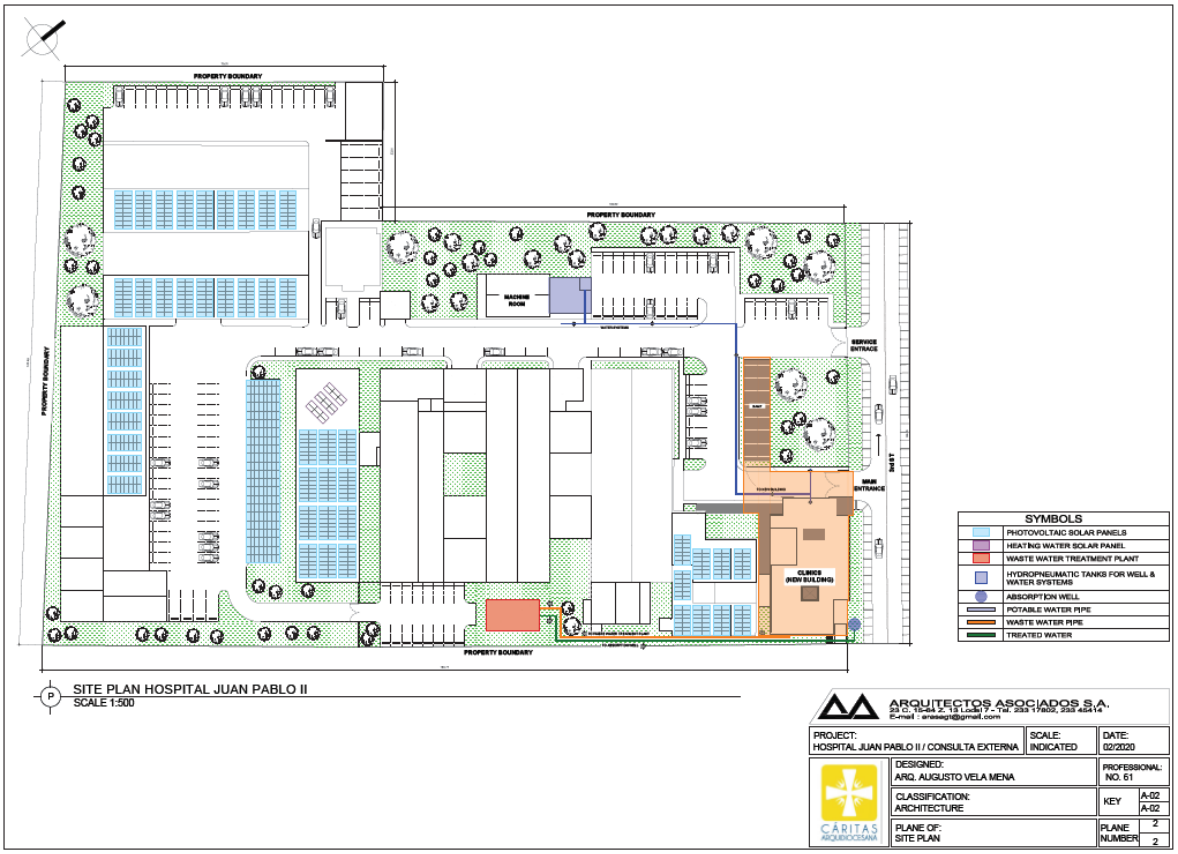
- 5 maternity consultation rooms
- Laboratory services: reception desk, three blood draw stations, and waiting room
- Children´s playground area
- Cafeteria
- Waiting room
- Nursing station
- Public and staff restrooms
- Cleaning room
- Storage room
- Stairs and elevator

Annexes/Plans

Level 3: Accessed by stairs and elevator from Patient Control on Level 1. Contains the following areas:

- 15 consultation rooms
- Waiting room and Patient Control
- Restrooms for the public and staff
- Cleaning room
- Storage room
- Ramps and elevator with capacity for stretchers
- Staff changing rooms
- Doctors' rest room

Annex 2: Location map



Annexes/Plans

Annex 3: Photomontage of the hospital

Annexes/Plans

Annexes/Plans

Annex 4: General activities carried out and pending execution

MAIN CONSTRUCTION ACTIVITIES CARRIED OUT

- Ground movement and land stability
- Column assembly
- Start of retaining wall construction.
- Basement slab foundation
- First level foundation
- Second level foundation
- Third level foundation

GENERAL PENDING ACTIVICTIES FOR THE CONSTRUCTION OF THE GREEN BUILDING

- Terrace foundation
- Wall erection
- Finishing (windows, doors, flooring)
- Electrical installation
- Plumbing installation
- Elevator installation

Annexes/Photos

Annex 5: Currently Photos of the construction Process