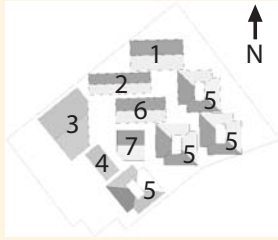


Port-Au-Prince Hospital



Design Criteria & Goals

- ~ Serve the Port-Au-Prince community during crises
- ~ Offer year-round services for general health
 - ~ Emphasis on triage care
- ~ Achieve high levels of energy efficiency and sustainability in the building's design and operation
- ~ Evoke a comforting and personal atmosphere
- ~ Respect and reflect the local culture in the building's design and interaction with the community



Design recommendations:

- ~ Natural ventilation
- ~ Pools and fountains provide evaporative cooling
- ~ Use vegetation to shade the structure
- ~ Screened porches and patios provide cooling as well as extend living spaces
- ~ High ceilings with high operable windows
- ~ Light colored building materials and roof
- ~ Open plan interiors to promote natural cross ventilation
- ~ Keep the building small



Site specifics:

- ~ 153000 ft²
- ~ Close proximity to Port-au-Prince Airport & several tent cities
- ~ On major thoroughfare, Avenida Mais Gate
- ~ Currently a brownfield infill site
- ~ No existing building to demolish



*Central Port-au-Prince is located at Point A. Hospital site is located at the red dot.



Site plan:

- 1: Staff Dorms & Laundry Facilities
- 2: Surgery Wing
- 3: Cafeteria & Kitchen
- 4: Lobby, Pharmacy, & Pharmacy Storage
- 5: Inpatient Wards
- 6: Exam Rooms & Labs
- 7: Triage Center

Statement of Need:

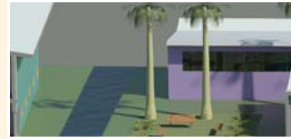
This project is an attempt to respond to the tragic natural disaster that struck Haiti just over one year ago. The sad truth is that the healthcare system in the country was already underperforming before the earthquake struck. My project, a hospital, to be constructed on a site close to the Port-Au-Prince airport, several major thoroughfares, and a currently overpopulated tent city, would hopefully alleviate some of the stress on the currently existing hospitals and clinics.

After the earthquake, there was a cholera outbreak in Haiti; this sort of endless rash of disasters is unlikely to end until the country gets on its feet. With Haiti's location in the Caribbean, hurricanes also come through rather frequently. Therefore, it is not unlikely for the building to be heavily occupied for most of its life. It will be imperative for the building to perform three functions efficiently and at a high standard: to serve the community, both for patients and visitors, and to function as a workplace for doctors, staff, and volunteers. This will require smart segregation of circulation routes, as well as different interior and architectural design to appeal to the different users.

Top Right: Instead of doing a conventional waiting room lit by fluorescent lights, the design offered a circulation space between buildings that was expanded to become a shaded outdoor waiting room. This offers visitors and patients a more relaxing atmosphere and appeals more the outdoor culture of Haiti.



Bottom Right: Courtyard and pool seen from the staff dormitory building.



Courtyards and Haitian Culture

The campus-style design of the hospital was motivated by a desire to appeal to Haitian outdoor culture, promote ventilation and evaporative cooling, keep the building designs simple for seismic design, and to allow for lots of public outdoor space.

Since Haiti is a developing country with a largely agrarian population, air conditioning is not common place. Many families spend most of their day outside, and spend their evenings socializing. This cultural desire for outdoor space eliminated any design that would keep hospital visitors indoors for their entire visit.

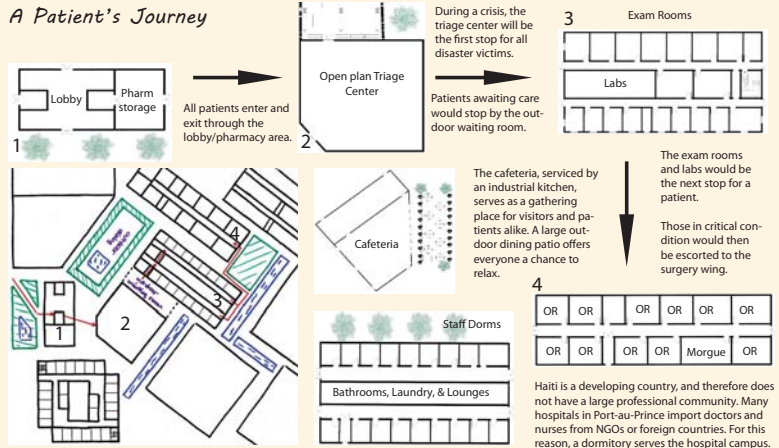
Courtyards have long been used tropical climates to let inhabitants escape the heat of the afternoon. Vegetation provides shade while pools and fountains aid in evaporative cooling. Screened areas promote ventilation but keep out solar gain.

Visiting a hospital can also be a very unenjoyable experience, so courtyards and other comfortable outdoor areas can help alleviate the stress while patients and their families go through their day.

Top: Inpatient Ward courtyard
Right: Outdoor dining patio



A Patient's Journey



Each inpatient ward is serviced by its own personal courtyard, where patients can relax without having to interact with the business outside.

All wards are two-story buildings monitored by two nurses stations on each floor. Every patient has access to an operable louvered window, and clerestories run along the second floor.

Left: Floor plan of inpatient ward
Right: Section view of ward



Left: staircase stone mashrabiya seen from exterior. Right: Staircase seen from interior.



Top: Mashrabiya screens of Masdar Institute, UAE
Bottom: wall & roof construction

Mashrabiya

An element of Arabic architecture dating from the middle ages, these wooden screens serve social, environmental, and architectural purposes.

Screens help keep areas private without sacrificing views. They can also denote separate social areas without completely sealing them off from the outdoors.

Mashrabiya give shade from the summer sun while also allowing cool air from the street to flow through, encouraging cross-ventilation and giving occupants the cooling effect of passing breezes.

Below: a view from inside the cafeteria looking out into the outdoor dining patio. The outdoor waiting area, with its stone mashrabiya and trellis for vegetation can be seen in the background.

Though not native to Haiti, mashrabiya are an architectural element that are very appropriate to Port-au-Prince's climate.

In the hospital's design, mashrabiya have been employed in the inpatient ward staircases, as well as the walls of the outdoor waiting room.

A trellis for vines and other shading vegetation covers the waiting room, giving it an even cooler and more shaded environment.



Above: Cut-through clerestory windows along the rooms in the inpatient wards and staff dormitories provide diffuse light throughout the building.

