

AESTHETICS

- Create a healing environment and an architecturally pleasing form while not compromising on the function.
- A modern looking facility portrays high-tech, but preserving the accessibility and visibility of information areas keeps it friendly if they are well placed, even though small.
- Understanding how decisions made planning a healthcare facility will affect the exterior 'skin' is key to the success of the building design as a whole.
- Design to environmental and regional context.
- Use indigenous materials inside and out.

CIRCULATION

- Be careful to organize the site and building entrances to manage external traffic well.
 - Separate wheeled and ambulatory traffic.
 - Keep the traffic and the entrance for material logistics receiving and removal away from public and patient receiving areas.
 - Keep the traffic and the entrance for emergency receiving distinct from visitor and scheduled patient entries, parking and circulation. Manage these major factors of hospital design proactively by good site design. If the site permits, vertical separation of the support services and clinical care services is always beneficial in healthcare facility design.
- Separate flow patterns as much as practical, including entrances.
- Separate pathways for inpatient and outpatients so the outpatients don't feel like they are being treated like "sick" people when they may be coming in for an outpatient procedure.
- Any OB or Women's Center services needs to be accessible by a door other than the Emergency room- provide a separate entrance if possible.
- Have an understanding of the patient pathway through the hospital -for various procedures.
- Develop separate movement pathways for public (outpatients and visitors) and service (inpatient wheelchairs and gurneys, staff and material transport) traffic.

Plan to keep public and service (patient) areas separate. Ideally they should not cross – Think Disney

- Develop open-ended circulation systems that can be expanded (i.e., don't place stairwells, mechanical/electrical spaces or plumbed rooms at the end of corridors that need to extend in the future, even though efficiency of the initial design may suggest this).
- Be very careful that inter-departmental circulation (between departments) does not pass through a single department (i.e., using intra-department circulation to get from one department to another by passing through another department). This practice, often used in rural hospitals to maximize circulation efficiency, is often disruptive to the operations of the affected department as it introduces excessive traffic through the service area.

CODE

- Codes and Standards are the first discipline of design. Know your limitations from the beginning.
- Know about and use the AIA Guidelines as a backbone for requirements for planning a healthcare facility.
- Do code research with regard to interior finish selection.
- Provide 8' corridors in any space where inpatients need to be or need to exit through in an emergency.

DEPARTMENTAL ADJACENCIES

- Adjacencies, adjacencies, adjacencies.
- Understand the relationships between the departments and their pros and cons.
- Consider the proximities of department locations within the facility to make the path easy for the patients, families and caregivers. E.g. Radiology near the Emergency room and OR; Sterile Processing Department accessible to Surgery - either on the same floor or connected via an elevator.
- Provide ambulatory and inpatient access to diagnostic and treatment services.
- Locate critical operational components where they optimize cross utilization (i.e. ED near radiology, CSR near surgery).

EFFICIENCY

- Provide plenty of storage, particularly for the OR and Sterile Processing Department.

- Provide convenient access to immediate supplies for the nurses by using nurse server casework on the In-Patient units. A recent article in Healthcare Design stated that caregiver functional space needs should take a high priority. Patient care is hindered if the caregivers are hindered in their ability to perform their job.
- Design patient care unit that reflect patient and staff efficiencies
- Don't let past bad architecture drive future operational processes. Design new architecture to promote best practices. Create opportunities for operational efficiencies.

FAMILY CENTERED CARE

- Provide space for families!
- Design amenities for families such as kitchens.
- Consider the importance of the patient's family in the healing process.
- Inpatient room space and waiting rooms need to accommodate more than one person/patient.
- Keep children who may be hospitalized and children who will accompany family members to the hospital in mind.

FLEXIBILITY

- Build in flexibility on three fronts: first, and foremost for a rural facility, flexibility in room use.
- Provide flexibility for small increments of growth that work with the initial construction (e.g., adding 4 beds to work with the original nurse station);
- Provide flexibility in structural system to allow ease of renovation (i.e., shear walls and load-bearing walls bring inherent draw-backs for future change).
- Design in flexibility for growth, change, and renovations as well as new technology replacing obsolete technology.
- Provide adequate vertical space (floor-to-floor heights) for future needs.
- This internet site below might help. (Concepts in Flexibility in Healthcare Facility Planning, Design, and Construction)
http://www.aia.org/aah_a_jrnl_0401_article6
- Keep future expansion capability in mind.

INFECTION CONTROL

- Provide a dishwasher in an area where community toys are shared by children for cleaning.
- Design to reduce nosocomial infections.
- Infection control issues - clean/soiled separation, compartmentalization of systems, handwashing.

INFORMATION GATHERING

- Identify the projects goals and needs of the project.
- Develop a plan to achieve those goals.
- Develop a concept that can organize the entire project.
- Coordinate your design with all the disciplines.
- Engage physicians and nurses in the planning if possible.
- Listen to the staff that will be using the facility.
- Listen to the patients of all ages.
- Watch and listen to the community. They know better than we, what they want.
- Understand the cultural differences, as there are differences from the USA.
- Accommodate cultural needs.

MAINTENANCE

- Extremely durable, rounded, easy to clean.
- Use very durable and easy to maintain finishes (ie...flooring materials - no wax products)

PRODUCTION

- Getting off to the right start from a production standpoint is most important. Ascertain these things as soon as possible. To have these pinned down at the earliest possible point will prevent big problems later on:
 - Thickness/composition of the exterior shell. This is the single most difficult thing to change later on in the project. It impacts upon virtually everything else.
 - Floor to floor dimensions.
 - All vertical openings for stairs, elevators, and necessary chases.

- Exact equipment sizes and mounting requirements to be able to plan adequate space for them. Find out how hospital staff prefers to position equipment.
- Draw accurate partition thicknesses (to the closest 1/4"), particularly at stairs, elevators, headwalls (med gases) and plumbing. ADA clearances can be compromised by having to do this later on.
- Canopy thickness. Think through the structural support system before designing something too thin, for example.
- Coordinate the MEP and structural systems.

PATIENT EXPERIENCE

- Integrate healing design concepts into your initial planning and programming
- Create a friendly-warm environment - inside and out!
- Design to reduce stress on patients, family and staff.
- Everything! should be handicapped accessible.
- Consider the Patient Journey at all times.
- Consumer orientation.
- Creating therapeutic environments for patients.
- Be sensitive to the patients' journey through time and space while they are in the hospital - starting at the campus entrance leading into the facility for public entrances)
- Design with clarity and preservation of privacy and human dignity in mind. Think about being the patient yourself, and ask - would I have privacy, feel respected and secure, and perceive that while I am compromised as a patient, that strangers will not intrude into my personal space? Think about this process horizontally - not just in plan view!
- Exterior vernacular and aesthetic composition are important; but to the patient, family, friends, and staff within the facility I truly believe the most important elements to planning a successful healthcare facility are to create a sense of place for healing within the interior with the appropriate colors, materials, spatial volumes, natural lighting, and artwork.
- Provide indirect lighting where possible

- Provide natural light to as many spaces as possible.
- Use warmer rather than cooler colors.
- Provide sound attenuation where necessary.
- Allowing the capability for the In-Patients to see outside and to go outside into a garden area or courtyard if they are physically able is vital.
- Provide a smooth finished walking surfaces in approaching the building and in the building. (avoid tile with big joints, avoid rock-salt finished concrete, etc.)

SAFETY

- Design for patient and staff safety.

STAFF EXPERIENCE

- Encourage staff retention and recruitment through efficiency and pleasing work environment
- Provide the staff a place of respite for their break times with windows if possible.
- Create amenities and efficiencies to lessen the pressures and stress on the staff.

TECHNOLOGY

- Integration of leading edge technology in the delivery of care.
- Incorporate available technology.

WAYFINDING

- Wayfinding should be a major driver in the overall design concept.
- Establish very clear points of access that inherently receive, organize and direct visitors well. Ask yourself, would I clearly understand where to enter, where I am upon arrival, and where I should go within this facility. Is there a place for my family, and can I see nature or daylight as I move through the facility? Think about this process horizontally - not just in plan view!
- Create an intuitive wayfinding environment supported by the layout and significant features, such as, interesting lighting concepts, flooring patterns and graphics architectural details that can act as important way finding elements Use universal symbols as not all people can read. Ask local representatives. (My inclination is to say, "natural mapping." Is there such a thing as natural-mapping wayfinding?)
- Easy accessibility and signage for the elderly, particularly to facilitate the admission process as many of them may be dropped off by relatives or friends.

- Signs and graphics are critical to getting people to properly use a facility. Perhaps a rural country hospital in Honduras is not big enough for a major sign program and the issues of literacy come into play, but even symbol systems for queuing to the right doctor's station may be helpful. If you have time, check out a study currently being conducted called Hablamos Juntos www.hablamosjuntos.org

The following comments are in regards to designing a facility in a developing country:

Often in third world countries, families act as "runners" for labs, transfer of patients, meals, etc and will stay with the patient throughout the hospital stay.

1. Operations -

- 1.1 You need to interview/observe/research the personnel/staff who are running the facility so as to better understand how they currently work.
- 1.2 Apply current industry knowledge to their level of technology so as to enhance/improve their current working methods.
- 1.3 Determine whether outside personnel (from US/Europe) will be using the facility and what their needs are (equipment, utilities, housing, unique services, etc.).

2. Infection Control -

- 2.1 Correct circulation/flow of work so as to reduce cross flow of soiled and clean items/personnel.
- 2.2 Select materials that are available, durable and dense so as to reduce bacteria build-up and will be easy to maintain/clean.
- 2.3 Do not rely on modern mechanical/ventilation/electrical systems; design spaces that will use natural air flow, lighting, etc. since utility distribution is not reliable.

3. Constructability -

- 3.1 Select materials that are local in regards to availability, cost, and knowledge/ease of installation.
- 3.2 Select materials that are easy to maintain/durable and design accordingly (ease/access of cleaning, proper space, etc.)
- 3.3 Determine availability and quality of utilities such as power, water, sewage, etc. and design accordingly. Even in second world countries, the availability of clean power (so it will not interfere with medical equipment calibrations) and clean water is difficult. Water tanks/cisterns and purification systems may be needed along with passive use of natural energy sources such as daylighting, natural ventilation in OR's requiring high ceilings, etc.

The following was suggested by Jain Malkin

1. Designers must understand the cultural issues associated with receiving healthcare (use of shamans, curanderos, superstitions); some of this could affect the design of the facility.

2. Utilities: electrical service is spotty and unreliable most likely; greatly affects performance of imaging equipment. Generators would cover this issue with respect to surgery.
3. If you have access to NICH (National Initiative for Children's Healthcare Quality) www.nichq.org -- current issue of "Expanding Perspectives" covers cultural issues well. It's the lead article. By telling personal stories, it will really help your students to understand the cultural overlay.
4. Become familiar with typical indigenous dwellings and try to emulate aspects of that construction in the clinic to make it more familiar. For example, in a hospital in the tundra, windows were designed as narrow wide slits to represent the glasses people wore to cut glare of the snow to a minimum.
5. Design motifs from textiles may provide patterns or compositions that can inform the building design.