Nizam's Institute of Medical Sciences, Hyderabad - Adding Speciality, Accident (Trauma) & Emergency Facilities

The Nizam's Institute of Medical Sciences is a 1000-bed premiere healthcare and teaching institute-cum-hospital in Hyderabad. The present project was to add a 300-bed Speciality Hospital as well as a 200-bed Accident (Trauma) & Emergency Facilities in the existing complex.

By Manchanda Associates, New Delhi

NIMS is located at the prime centre of the twin cities of Hyderabad and Secunderabad, and spread over an area of about 23 acres. It has the constructed area of more than six Lakh sq.ft. This Institute extends its services through 28 Departments. Out of them, 16 are Super and Broad Specialities and others are Supporting Departments.

The Institute has bed strength of 985 beds, out of which 684 are in General Wards, 117 in private rooms and 184 in emergency and post operative care. The average number of out-patients visiting the hospital per day are about 1275, and there are around 80 in-patients admitted everyday in the hospital. The average bed occupancy is over 89%.

Proposal

The profile of the proposed site and its inter-relationship across an internal road with existing development has determined the shape of two separated buildings to be connected by a link corridor at upper floor levels. Such an arrangement allows easy access to both Speciality Hospital and Accident (Trauma) Emergency Hospital while ensuring connectivity of similar functions of both blocks to draw required support from each other.

Circulation

Easy and unhindered movement of patients, doctors and visitors is of prime importance in the functioning of any hospital. The need for distinct entries and parking for doctors, visitors and service personnel for each

building has been achieved while ensuring overall integrated development. Internally a system of corridors connects vertical movement cores strategically located at all corners as well as in the middle of Speciality Block. A ramp has been provided connecting all levels for the convenience of physically handicapped persons as well as for evacuation of patients in case of fire.

Spatial Inter-relationships

"FORM FOLLOWS FUNCTON" this architectural adage is most valid in case of planning a hospital where inter-relationships of departments within a floor and between floors becomes paramount for its efficient functioning. The Stack Diagram explains these spatial inter-relationships.

- A link corridor between Spacility and Trauma Block has been provided between 2, 3, 4 & 5 floors which ensures quick and easy access between OTs, Diagnostic services and wards of two separate buildings.
- All functions of a particular department (OPD, Teaching & Wards) have been provided on the same level for easy functioning.
- A large Triage has been provided for quick and effective segregation in case of large scale calamities.
- The Diagnostic facilities (Imaging and Laboratories) have been provided on an independent floor so that these functions can be outsourced on PPP (Public Private Partnership).
- Provision of value added facilities like ATMs, florists, coffee vending machines, chemist, etc are provided at ground floor level.

The Structural Grid

The planning grid of both buildings has been based on 6600 X 6600 mm with 3000 mm for internal corridor space. These dimensions are within the recommended norms for hospital buildings and meet with most of the facilities required for various functions. It can accommodate a 6-bed general ward in one unit, 4-bed special ward with attached toilets or two reasonable sized rooms for doctors, nurses/staff change rooms, etc.

The floor to floor height has been kept as 3750 mm with 4200 mm height for O.T. floor to allow for additional space for numerous services. All floors will also have beam-free corridors to facilities running of various services above the false ceilings.

Each grid has been provided with a vertical shaft to accommodate all kinds of services including medical gases, etc. This will provide enough flexibility in expansion of services even at a later date and also ensure easy serviceability of installed services.

Broad Specifications

Public hospital wall & floor finishes and other elements require two very important basic premises i.e. low on maintenance and should not help breed infection.

To achieve the above, the following specifications were followed:

- seamless walls and floors in clinical and critical areas by using epoxy coatings, anti-bacterial coatings, etc.
- corners to be coved in all areas.
- ceramic and vitrified tiles finishes
- stainless steel counters
- flooring to be mix of Kota, Sahabad stone, marble & granite

Specifications for Operation Theatres

- Modular OTs with laminar flow and state of the art equipment & facilities having anti-bacterial coatings on walls and floorings.
- Special care for cable management for OTs with suitable equipment to avoid loose wires hanging around.
- Sensor operated stainless steel scrubs and hermetically sealed doors.
- Doors to consist of pre-laminated shutters fixed in aluminum frames with stainless steel fittings and fixtures.
- Windows & structural glazing to be in aluminum with judicious mix of insulated, tinted, low-e and normal glass panes.

Services

Electrical

Using the existing termination point of the 11 KVA line from APSEB and building electrical sub-station and DG Sets for backup power supply in the existing service zone.

Building information systems to incorporate efficient use of electricity by controlling, lighting, air-conditioning, lifts, pumps, etc.

Water Supply & Sewerage

A sewerage treatment plant is being installed to be able to re-cycle water and use it for HVAC make-up, flushing and garden irrigation.

Water supply has been split into following uses within the building

- Drinking water – Municipal supply
- General washing and bathing – Bore well supply after basic filtration and chlorination
- Flushing – recycled water

This strategy reduces the dependence on municipal supply.

Energy Efficiency Systems

- Use of solar panels both for heating water and generating electricity for non-crucial systems
- Use of cavity walls to reduce heat intake into buildings
- Use of Low E and insulated glass to minimize heat gain while still maintaining large glazing for increased day-lighting within buildings
- Use of waste water re-cycling
- Use of Building Management Systems to monitor and control all electrical appliances from simple water pumps to complex air-conditioning systems and lighting levels.

The objective is of developing a full fledged super speciality hospital for patient care, research and training and further developing the educational facilities of high order in the field of medical science in the existing super specialties and such other super specialties that may develop in future, including continuing Medical Education and Hospital Administration.

Project Particulars

Area: 4,00,000 sqft (Approx)
Architects:
Manchanda Associates
Team: R C Manchanda, Shamit Manchanda, Shweta Manchanda, Abhilash Kiran, Sameer IK, Sunil Sharma
Structure: Arohi Consultants
MEP: V S Kukreja & Associates
Project Managers: HSCC India Ltd
Contractors: Unity Infrastructure