

HEALTHCARE RADIUS

Aligning business and healthcare in India

SEPTEMBER 2018
Vol 6 • Issue 12 • ₹50

INFRASTRUCTURE
TURN DOWN NOISE LEVELS

OPINION
ORGAN TRANSPLANTATION



WE ARE ALL LIGHT

LIGHTING HAS TO CREATE AN ENVIRONMENT THAT IS VISUALLY SATISFYING
AS WELL AS EMOTIONALLY COMPATIBLE

in the 3,000 - 3,500K range and movement away from troffers in these spaces. "The diagnostic areas including surgery and the critical care areas have their own very specific lighting requirement in which both natural and artificial light is very carefully modulated," says Puri.

LIGHTING UP VARIOUS AREAS

A) Reception and Lobby

Lobbies no longer simply serve to guide patients from a parking garage or drop-off area into the hospital. Instead, hospitals are taking a cue from hospitality and are utilising lobbies to create a positive first impression. "Plenty of natural light should be used especially if we can have access to North or South Orientation; in other orientations this has to be modulated and controlled. The designer has to find balance between visibility, heat gain and natural light," says Puri. In artificial lighting, the trend is for warmer mood lighting with a combination of recessed can lights and decorative fixtures. "In most of our recent projects, we have moved away from troffers which earlier were a standard choice," says he.

Reception areas, since they are used for work should incorporate under-cabinet lights for the paper-work and none of the lighting fixtures, should cause an in-face glare. A comfortable lux level must be maintained for reading and writing activities.

Says Sumandeep Singh, Associate, HKS India, "In lobbies, where there is a need to provide a feeling of warmth and panic-reduction, warm lighting is considered to mellow down the frantic emotions of families and care-takers. Maximising access to natural light mixed with appropriate incandescent lighting would uplift the ambience of these spaces."

Global standards based on what is followed in the US, and referred to as the RP-29-16, recommend two lighting levels for the entrance of a general lobby, instead of one - one light level for daytime and one for night time. "These two lighting levels are designed to better accommodate the eye's natural



ability to adapt from bright and sunny outdoor conditions to more muted indoor illumination levels," says Puri.

In outpatient waiting areas, where waiting times can sometimes be long, day lighting should be maximised, as it is healthier than artificial lighting. Accent lighting can be used effectively for purposes of way-finding in waiting zones.

B) Nurse stations

Nurse stations are heavy work areas for nurses and should be brightly lit with cool coloured light. "Inside a nurse station there are zones for reading imaging films, blood glucose monitoring and even CCTV observation zones which must be enabled with optimum lighting levels," says Singh.

Work area task lighting with 4000 colour temperature and about 300-400 lumens, similar to an office space, is recommended for nursing station space, say experts. .

C) ICU

ICUs are crucial areas for lighting design in a hospital. "Daylight should be maximised, and if not possible, then artificial lighting must follow the natural 'Circadian Rhythm', patterns and lighting levels. This has been proven to have positive effects on the healing processes," says Singh. Surgical style ceil-

3. One needs to design the lighting of building using combination of daylight entering through window and skylight and electric light sources. Picture is of Nayati Medicity, Gurugram.

be through daylighting and the rooms should ideally face north or south in order to mitigate the heat gain associated with natural light.

In terms of artificial lights, it is found that many use dimmable recessed fixtures in the 3,500-4,500K range for the major part of the room especially the care giver side and to provide the ambient light. Controllable mood lighting associated with the patient headwall or footwall is provided, basis the design and budget. However, the trend is to move away from this as it seems a little superfluous and clients seem to be trending towards simplified headwall/foot-wall designs.

Often, there is one 6,500K troffer directly over the patient which provide white light for diagnostics. "However, care has to be taken in placement of this light for it to provide uniform workable illumination in the patient area while not serving as a source of glare directly into the patient's eye. A night lamp closer to the floor level for minimal lighting during night time is recommended for safety," says Puri.

G) Diagnostic areas

Diagnostic areas like MRI and CT rooms have very specific lighting design as the patient is lying down and looking at the ceiling. These days back-lit illuminated panels with artwork are used to keep the patient anxiety levels low. LED screens are being adopted to play soothing videos while the procedure goes on. This is of interest to patients and provided momentary relief. The general lighting in diagnostic rooms must have dimmable controls.

H) Corridors and passages

In corridors and passages, the lighting must assist in illuminating the path clearly and cool lighting is preferred. An important aspect of lighting design in passages is way-finding and signage. Lighting design must compliment the signage, so that it's easier to manoeuvre the path.

Current trends

Energy codes continue to become more rigorous, further requiring the elimination of wasted energy and more efficient system designs. The use of LEDs for general ambient lighting, task lighting, accent lighting and almost every other type of lighting has multiplied leading to substantial changes across the lighting industry. While LED lighting and lighting controls have become increasingly more efficient, lighting technology now plays a role that is central to safety and comfort of the occupant and even helping with sleep patterns by addressing circadian rhythms.

Night lighting is also an emerging trend. "At night, healthcare facilities are silent and still, with little or no activity or movement on the premises. To a visitor or patient who is already burdened with illness or injury, such an atmosphere might prove to be scary or psychologically intimidating. Well designed lighting can help ease the stress of the visitor in such a situation by providing clear and well-lit pathways, with the lighting aiding the visitor in way finding in conjunction with signage," says Malhotra.

At night, artificial lighting must follow specific use in the hospital. In the exterior,



Manu Malhotra
Director, RSMS
Architects

5. There is nothing better than daylight for IP rooms. Project picture of double room at Nayati Medicity.

