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Technology
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Trend
Evolution of home – health market

LIGHT MATTERS

STRATEGIES FOR CHOOSING THE RIGHT LIGHTING REQUIREMENTS FOR HOSPITAL LOBBY AND WAITING AREA

Plebeian lobbies and blunt, noisy waiting rooms are of a bygone era.

Today waiting areas serve many functions. The lobby and waiting areas are not necessarily exclusive to the front of the building anymore, but are evolving into destinations for education, engagement, and solace.

Therefore lighting requirement for the area is not a specific kind but a blend of ambient, task and accent lighting. Says Rang Emei, founder, Helix Architecture, "The quality and characteristics of interior environment lighting, especially in the arrival lobby / public waiting area, is often a subtle reflection of an organisation's values and ethos. Lighting affects human behaviour in many ways. It is necessary to first be cognizant of the functional purpose of a space. Lighting design must support the achievement of such a purpose."

Manu Malhotra
Founder Partner,
RSMS Architects

Besides basic functional lighting which supports the performance of specific tasks, the overarching objective of good lighting is ultimately sensory 'comfort'. According to experts, the primary purpose of the lighting concept in an entrance area is to lighten up the mood of people entering a hospital, enhance a welcoming ambience while making it easier for people to find their bearings. Lighting here should emphasise points of interest such as reception desks, signage and onward routes. Lobby including enquiry and patient reception, should make the patient and visitor feel welcome and provide both staff and visitors with good facial modelling through good vertical illuminance.

Says Dr Amardeep M Dugar, founder & principal, Lighting Research & Design, "Lighting was recognised as an imperative element in this health-caring movement to support doctors and therapists during treatments, and promote the healing process in patients with an increased sense of wellbeing. The right light at the right time in the right place was considered critical in this movement characterised by acute cost awareness and savings as a result of lower energy costs."

1. Lobby area of Chennai's MGM Hospital.

CASE STUDY

LIGHTING OF LOBBY AND VIP LOUNGE AT MGM HEALTHCARE, CHENNAI

With a built-up area of over 300,000 square feet, the 400-bed MGM Healthcare, a super-specialty hospital in Chennai, has been optimally designed to provide the most comforting ambience for healthcare. The myriad tasks and the vastly differential spaces and users demanded a variety of lighting treatments without compromising energy efficiency.

Says Dr Amardeep M Dugar, founder & principal, Lighting Research & Design, "Although utility in terms of way finding was non-negotiable, there was a lot of latitude to experiment with in terms of brightness, colour temperature and colour rendering. However, one general principle followed throughout the hospital was to make the effect of the 100% solid-state lighting as natural as possible, so as to provide a better sense of wellbeing among patients and staff. "

The preliminary brief was to provide the functionality and style of a hospitality environment, so as to elicit a certain emotional response from the hospital users. "Therefore, the lobby had to be inviting yet professional to complement the furnishings and decor for creating an overall appeal. While a well-lit lobby was essential, care was taken not to flood it with overabundant illumination that might create environments akin to an emergency room," says he.

The lobby was divided into entrance, reception and waiting areas, with each area receiving its own lighting treatment to provide a different 'feel' for every area. The reception desk is well-lit and prominently highlighted with a decorative pendant in 3,000K, so that patients and visitors know exactly where to go first, and have adequate illumination for reading and signing necessary paperwork.

The VIP lounge is a waiting area specially allocated for important guests and visitors. The lighting solution was to create a relaxed and soothing atmosphere. Ceiling-mounted cylindrical 3000K downlights with adjustable heads provide accentuated illumination, which can also be used to highlight the paintings on the walls.

"Decorative floor lamps and wall-mounted up-downlights in 3000K are added next to seating areas to enable guests lounge with a book or socialise. Gold-finish luminaires are specified to match the beige and gold colour scheme used in the entire lobby and lounge areas," says Dugar.

According to Rang, lobby lighting in health facilities must respond to the 'functional needs' of the patient (young, old, physically challenged / differently-abled), the family and the staff. Patients and the public must be able to easily identify people and objects in the interior environment and be able to comfortably read signage such as 'building directory', 'direction boards', fire & life-safety signage, public utility signage, artwork, filling registration forms, reading discharge bills, etc. Staff must be able to perform their tasks under adequate light. Illumination level must be adequate for staff while reading/ writing on paper and also ensure a glare-free environment while working at computer terminals. Whether it be artificial or natural light, design must support the performance of these functions. Reference can be made to healthcare facility illumination standards

2. The VIP lounge at MGM Healthcare.

and guidelines authored by various organisations / research groups.

Another aspect of lighting is 'aesthetics'. Lighting is a powerful tool to complement the design of the interior environment. It can be used to create visually powerful, positive distractions for patients as well as family members. It can delight viewers and 'lighten' up the environment.

Thirdly, lighting can 'modulate the sensory response' to the environment. "Most are aware that a brightly lit environment can cheer us up while a poorly (under-lit) environment can be a 'downer'. Too bright an environment can result in discomfort and may even elevate stress level. High illumination levels often result in increased ambient noise level vis-à-vis a softly lit environment. This is a subconscious response of users," says Rang. Lighting can calm and it can soothe the senses. So there is a need for a sensitive balance through appropriate and sensible lighting design.

Is the lighting requirement for lobby and waiting area different in healthcare? Says Manu Malhotra, founder partner, RSMS Architects, "Unlike conventional waiting space of some commercial complex, lighting in lobby and waiting area of a hospital tends to be quite critical, as the space is designed to address a variety of traffic as in patients, visitors, doctors, staff each varying in mindsets. From painful injury to birth of a new born, the entire space is filled up with different emotions."

Even the waiting areas across the hospital differ in character and usability varying from the OPD waiting area, where the user has to anxiously wait to see the consultant to the ICU waiting where one is stressed and stays overnight to get the every minute update of his loved one. Lighting of such emotionally charged up spaces is complex, as one needs to satisfy the varying levels of visual performance in order to achieve desired comfort level.

Recent trends in lighting

A. Modular and intelligent solutions

While designing lighting for healthcare facilities where an extremely wide range of requirements have to be met in order to

3. The lobby at Apollomedics Super Speciality Hospital, Lucknow.

create perfect conditions, modular lighting solutions which adapt flexibly to suit the way a space should being used.

One must also use intelligent lighting control such as sensor lighting system which not only adjust light to suit the visual requirements of the patient or doctor but also automatically switches light off when it is not needed.

B. Colour changing lights

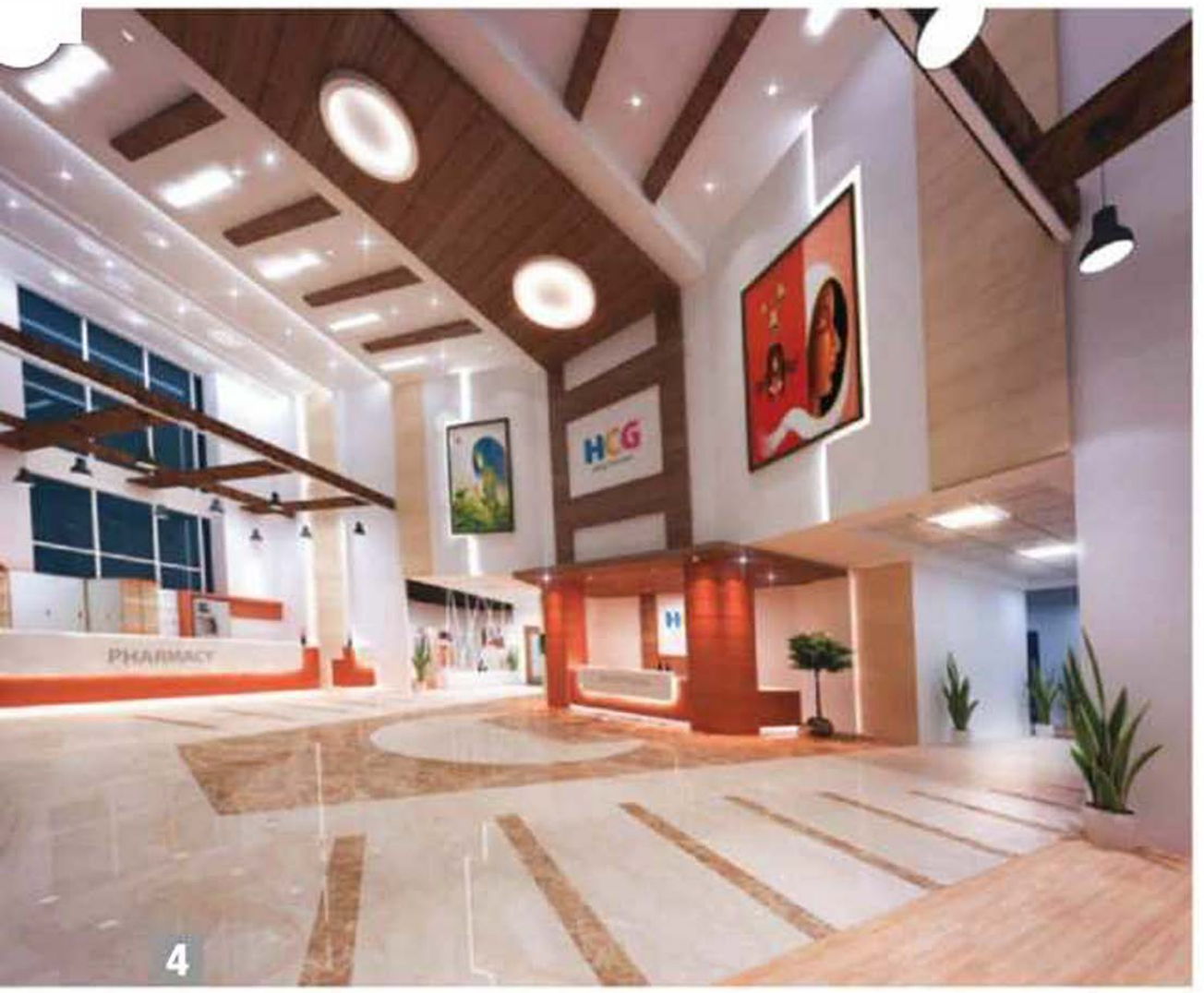
Several healthcare projects have started incorporating the concept of colour changing lights and festival lighting where one can choose from a variety of colours available in the lighting system to display a particular theme or character.

Colour changing lights enable one to add liveliness to the spaces such as:

i) Paediatrics waiting - By highlighting walls with bright and chirpy color schemes to distract the children from the uneasiness of seeing a doctor.

ii) LDR - By adding colour schemes in lighting to comfort the anxiety level of the mother and celebrate the birth of a new born. "In one of our recent projects in Kanpur, we designed the LDR on this concept where blue color scheme in lighting was used to portray the birth of a boy while pink colour scheme for the girl," says Manu.

4. The lobby at HCG NCHRI, Nagpur.



C. Materials impervious to bacteria

Infection control is of prime importance in all healthcare buildings. It is suggested that one uses luminaries that have the minimum area of horizontal surfaces on which dust may collect. "Prior to critical analysis, we select the luminaries which utilise materials impervious to bacteria, and are also designed with suitable ingress protection for dust and moisture," says Manu.

It is important to upgrade or modernise lighting solutions in design which tend to be economically efficient such as easy-to-install and durable LED luminaires, modern optics, lenses and reflector technologies which ensure maximum energy efficiency with equivalent or even better lighting quality.

D. Natural lighting

Sunlight is the simplest and most effective mood elevator! Natural light is essential not only for hospital lobbies, but also for all waiting areas. Says Arun Nalapat, founder principal, Arun Nalapat Architects, "We often tend to overlook the fact that much more time is spent by patients waiting at the OPD or diagnostics than in the main lobby of a hospital. The need for patients to wait in the main lobby, if at all, will tend to be in minutes, while in the OPD can be many hours."

Preference would be for natural light through windows or vertical glazing - single or double height - as it also helps to orient people. Seeing the outside, establishes a visual connect and allows people to be more centered and at peace while waiting for long periods, instead of going through mazes of corridors and being in the bowels

of an alien space.

"At present our codes and standards require only spaces where overnight stay is happening to have natural light. It would help if standards are brought in which makes natural lighting a mandatory requirement for all areas where extended waiting periods are happening. In planning a hospital this can be incorporated from the outset. It's all a matter of prioritising," says he.

Natural lighting is one of the main casualties of today's modern hospitals, where the entire facility is air conditioned and therefore more compact. Older hospitals were built on larger land parcels, which allowed them to be planned around courtyards and such which allowed plenty of natural light.

Common mistakes in lighting

Hardly any other application area demands such complex lighting solutions as healthcare facilities and this makes the area more prone to mistakes. While designing the lighting scheme one often fail to see the space in totality such as usability, furniture layout, colour schemes, other services fixtures etc, as a result even some basic needs of the space tend to remain unaddressed.

Even selection of material is critical as a shiny material can result in unwanted glare causing uneasiness in users while some dull material can absorb the light extensively resulting in uneven distribution and dark zones causing difficulty in way findings and increases chances of human errors (in reception/registration/pharmacy).

Future trends

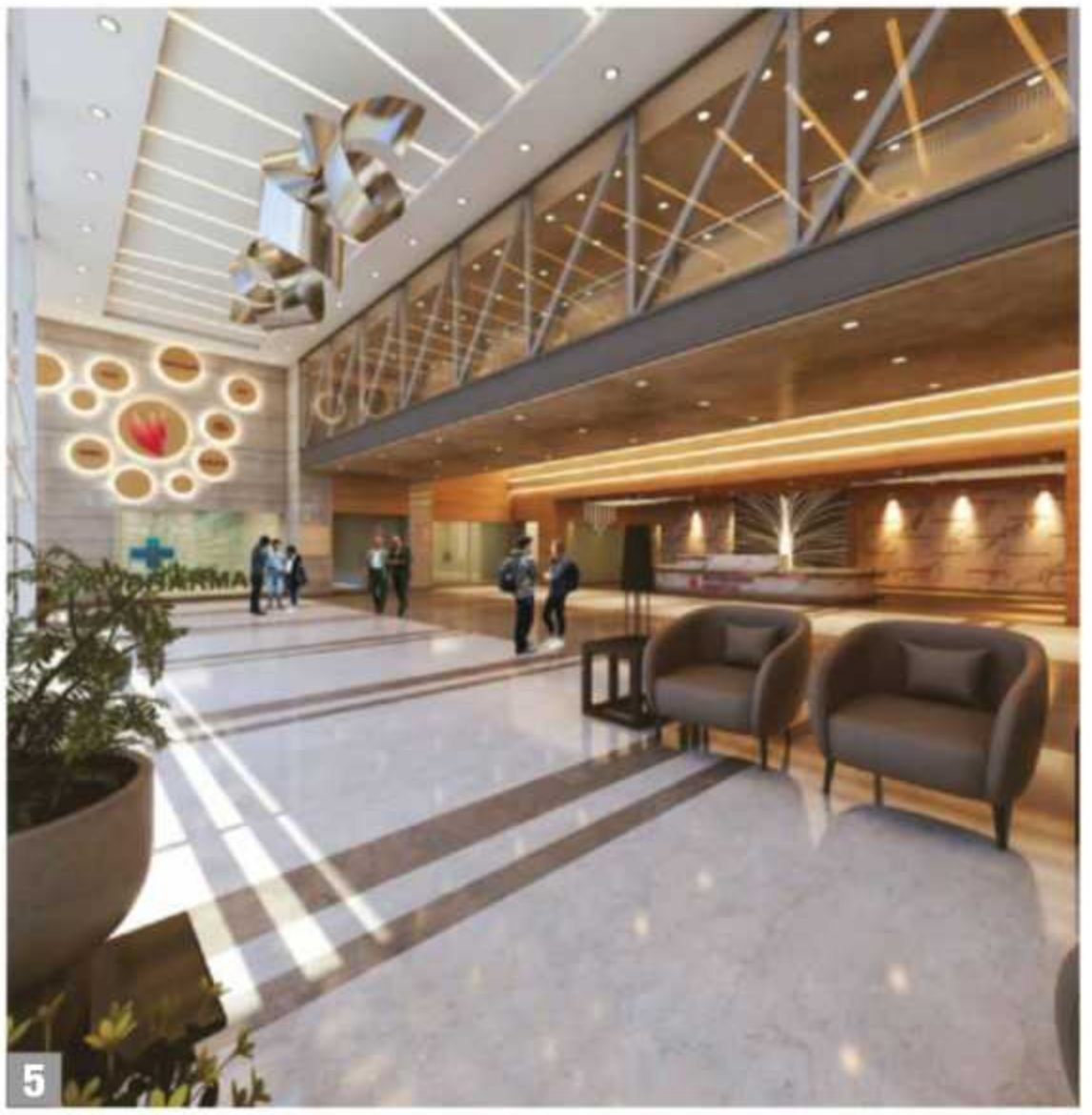
Technological advancements, as well as greater understanding of the impact of light on human health, make for a very dynamic time where one can expect many new exciting ways to use lighting in healthcare industry.

Achieving energy efficiency will always be considered to be vital while designing lighting. Cloud accessibility of the lighting systems is also expected. "Soon all LED fixtures will be digitally connected over some cloud or web portal where users will be able to turn on, turn up, dim or turn off lights or even change the colour schemes of lighting to create the desired environment using an app," says Manu

Bio-friendly or human-centric lighting systems is another trend to look forward to. Healthy lighting solutions that can align with the body's circadian rhythms will become increasingly mainstream.

The form factor for LEDs will lead to new designs, profiles and applications: Unlike traditional light bulbs LED lights offer tremendous design flexibility and this has opened new ways of using lighting in lobby and waiting areas in healthcare.

"Lighting design is moving toward slim profiles that are not only easy to retrofit and install but provide more light and flexibility, and require less space, as compared to traditional lighting," says Manu.



5. The lobby of an upcoming hospital in Kolkata.