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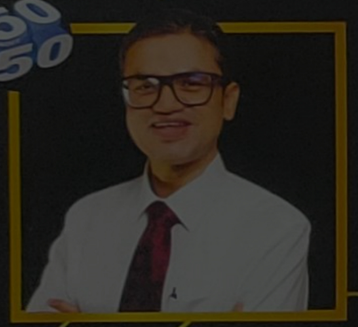

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AR. MANU MALHOTRA

DIRECTOR
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What project or accomplishment are you most proud of in your career?

Since most of my clientele is repeat clients, I find that my main accomplishment is that at end of every project, my clients always feel that they have partnered with me. In spite of intense discussions and challenges, they feel comfortable to return and reappoint me for their next project. This fact makes me proud that I am able to meet the expectations of my clients and I am able to create a trust that for their next project they appoint me as an advisor as soon as the project is born. On multiple occasions I have helped my client choose their site, worked with them on revenue model, guided with project and contract management and assisted in securing funding. As an architect, I find that I can contribute and assist all my clients in taking business decisions with confidence. Most of my clients find this as the greatest value addition.

I am proud to have spent the last two decades working on healthcare projects, designing and delivering over 100 healthcare facilities. As an healthcare architect, I have had the opportunity to collaborate with consultants in different countries and deliver projects seamlessly.

Worldwide, I have encountered diverse challenges and unique concerns, each requiring a fresh perspective to address effectively.

What are the essential elements that you believe are crucial in designing effective healthcare facilities?

Through my years of experience, I have learned that the most crucial elements are:

Partnering with my Client: The client who has appointed me is already experienced and has an idea/ plan in their mind. As an architect I see my role as a partner who understands their vision, challenges and improves on their ideas if needed and eventually compiles it on paper to built it into the design. These designs are further reviewed, discussed and improvised on one to one basis with my clients. I feel the most crucial element is to understand the responsibility of the faith that your client has on you not only as an architect but also as a partner to actualize and use your knowledge to build his vision.

Everchanging Requirements & Ensuring Flexibility: As an architect, the next crucial consideration for me is to accept that the client's requirements will change/evolve by the time the hospital is constructed. This realization compels me to ensure flexibility & adaptability to the new needs. My experience has been that by the time the hospital is constructed (usually 2-3 years), the client's team would have changed significantly or expanded and new team usually bring with them their operational experience (the way they want to run the department), at times this experience is significantly different from what was planned/envisaged.

By this time, the new emergent technologies/equipment would have become a current practice and there would be a need to accommodate them in the design. This could only be done if the scope of flexibility has been planned.

My approach to hospital designs is centered around these thoughts and I make provisions(my contracts, tenders, designs) to accommodate such changes.

- The structural loading is planned to accommodate adaptability to a new function;
- We establish department layouts that are similar in size so that if needed they can be interchanged from one zone to other.
- The designs always is done so that the manpower requirements are kept low.
- The life safety provisions (Stairs, Exits etc) are always planned higher than the min requirements specified in NBC.
- The building services are planned to be modular and adaptable to new use.

Such provisions allow the client to plan changes even at a later stage.

Designing for 1st generation Hospital Creators: The well established hospital chains have a fair idea of what works for them and what do they seek in their projects. However for the first timers, successful doctors who wish to collaborate and establish a hospital know how to deliver medical treatment but have limited knowledge of how an hospital functions. And when such doctors wish to establish a hospital, we use our past experience and insight to handhold them and help them arrive at a solution that works for them. We help them work out the scope for the medical planners, system designers and other consultants. We help them procure non-medical equipment and establish an infrastructure that would have an as-predicted performance. This only happens when a trust is entrenched in their mind that we as architects will protect and take care of their interests. As a consultant, I always strive to achieve their trust and consider this as the most critical element in any design exercise.

Operating Cost: Hospitals have a very long gestation period which is only increasing over the years. It takes immense planning and fine tuning to reduce this period. Hospitals are resource guzzlers in terms of "energy and manpower" which form major expense heads in any operating cost. I pay special attention in helping my clients recognize it and plan the building such that these expenses remain in control. Energy bills are a significant line item in which any saving can bring some good support to EBITDA

Staff Efficiency: Thoughtful effort goes into designing layout plan considering minimum travel distance and optimum work-flow for staff, which eventually reduces their fatigue and improves efficiency.

Patient Centric: Ensuring that the hospital is patient centric is the primary goal in any hospital design, and there are unending academic research that indicates that newer ideas keep emerging with time. I always consider the Patient's Journey. The Design is done for the entire patient journey, from arrival to discharge. This includes creating welcoming and accessible spaces, such as wider bathroom doors and family-friendly waiting areas. I as a designer try and maintain a minimalistic design. The building interior is planned for natural light and try to make a design that helps reduce the anxiety in the occupants. There would always be easy way finding and reduced chaos on the floors due to segregation of the movement of support staff from others.

We at RSMS believe that balancing these elements creates a facility that is functional, efficient, and conducive to high-quality EFFICIENT patient care and a profitable business operation.

How has technology impacted the design and functionality of healthcare facilities in recent years?

Technology impact on Design: As in 2024, most clients seek to create a tech-enabled environment. The application of tech is very diverse and can cause project cost to spiral out of control or wastage if these are not planned to integrate with Client's planned operation. The design philosophy for me is that Minimalist design, combined with technology, can lead to a clutter-free, efficient space

I use technology in visualizing the design and presenting ideas to my client decision makers and I extensively use AI generated image to test out new ideas internally during the initial project design stages and these allow the Client to take decisions confidently.

Today the tech allows us to coordinate the different consultant layouts, and we are able to achieve coordinated drawings faster and they help our tenders/BOQ stay consistent with the planning. Tech also helps us generate MIS and track & respond to RFI. New design software & processes are able to quickly generate and supplement the layouts with numbers that allow the client integrate in their financial models etc.

There is enough technology that directly have an impact on the functionality. These are mostly used in saving energy and sometimes taking autonomous decisions or making information available to people who take decisions.

Technology impact on Functionality:

Over the past few years, with introduction of new technologies, clients have changed/ evolved the operating system of the hospitals.

Apart from flow of Patient Data that is used by medical practitioners & administrators, the most common technology application towards building functionality is security. The movement across the building is now being controlled by technology. Access Control for staff & visitor, Remote monitoring, etc are the most common uses.

Technology is also being actively used in building automation, lighting control and climate control. Hospital operators are using technology in achieving staff efficiency, and overall hospital operations.

How do you integrate patient-centred design principles into your projects?

For me, patient-centric design isn't just about physical spaces (unlike others, for me patient centric does not mean making hospitals look less like hospitals but mimic hotels) ; it's about my design being able to support the hospital's adopted culture, communication, and empathy. I believe that, when hospitals prioritize patients' well-being, everyone benefits—from patients themselves to healthcare professionals and the entire community. However, my response to this question will be limited to just physical spaces.

My Approach to design is mostly driven by my experience of being a patient's attendant for almost 7 years and that exposure allowed me to observe things that cannot be taught in formal education or gained by merely designing hospitals. I feel that this sensitization/experience has ensured that by default my hospital designs remain "Patient Centric".

I ensure that the emotional needs are addressed and trauma in the mind of patients is lessened by ensuring easy wayfinding, and lesser chaos on the treatment floor. We always carve out multiple skylights at various levels to add comfort and reduce the stress and anxiety of the Patients. We strategically plan the rooms along the façade with toilets facing inwards ensuring maximum connection with the surrounding vistas. We create therapeutic gardens at various levels of facility for the Patients and relatives. We extensively work on our building orientation and facade design with the aim of unlocking the maximum views of surrounding Vistas and natural light into the building and offering green spaces on several levels of the buildings, breaking the monotonous facade. We design the interiors with a well-lit entrance lobby, strategically planned green areas, water bodies to enhance the overall aesthetics of the reception area, creating a more welcoming and comforting environment for patients, visitors, and staff.

In the OPD areas, Patients are able to find their way easily due to well maintained patient flows and experience smoother movement from one department to other. I ensure ample natural light, sound absorbing material finishes. I also ensure that hospitals don't smell like traditional hospitals (with chemical laden air).

However, I acknowledge that operational challenges that are faced by hospital operators often conflict with the patient centric measure we plan . We ensure that discussion on these topics are held at every design stage so that the client teams are always aware of this primary goal.

My experience tells me that mostly I would simplify the hospital operational functions and that can ensure patient centric designs.

How do you design spaces that are flexible and adaptable to future changes in healthcare practices?

For me, designing flexible and adaptable spaces in healthcare facilities involves the following few simple principles. In every design, I bear in mind the following:

- Ensuring provisions for accommodating evolving medical practices,
- Ensuring provisions for accommodating technological advancements,
- Accepting the fact that patient needs will be ever changing.

Using the above principles, most of the time, I use:

Modular designs: Using modular components allow my clients to easily reconfigure spaces. These include dry walls, modular furniture, and adaptable room layouts, enabling quick adjustments to meet changing needs.

Multi functional Spaces: Usually the rooms are sized/planned such that they can serve multiple purposes, such as consultations, telemedicine, or minor procedures. This approach maximizes space usage and ensures that rooms can be repurposed as needed. In all of our projects, we have multi-purpose rooms to accommodate diverse functions. Additionally, we design collaborative spaces to foster interdisciplinary care, adapting to new healthcare models.

Scalable Infrastructure: We always design the building's infrastructure, including electrical, plumbing and HVAC systems, to support expansion or adaptation to newer use. Infrastructure flexibility is key, with provisions for phased deployment of HVAC, electrical, and plumbing systems. To remain scalable, we choose equipment such that newer equipment can be added and just plugged in. For example, the electrical panel will have adequate space for adding new circuits/ capacity. This ensures the facility can adapt to new equipment and growing patient volumes. Plumbing system service points are so planned that newer facility can be simply planned. In all our High side services, we keep provisions for adding up additional transformer or generators to allow phased additions.

Future-proofing: We plan for future expansions by establishing the right sized column grid as the step1. The loading on slabs is often considered as the primary element that would change, so we adopt a suitable loading factor after discussions. We also establish the stairs and life safety requirements so that the future needs can be planned. In consultation with medical planner and Client team, we ensure the appropriate stacking arrangement and departmental arrangements are adopted as independent zones

. The infrastructure planning is done to support these distinct zones. This ensures that whenever the client reconfigures the existing facility, the infrastructure planning is never a cause of concern.

These can be considered as the basic steps we take to ensure flexibility and making them adaptable to any future requirements.

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