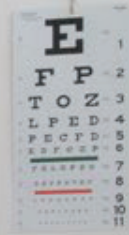




إتحاد المستشفيات العربية
ARAB HOSPITALS FEDERATION

get well



New vision for
the Healthcare
facilities design
in the Arab world

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ACKNOWLEDGEMENTS

The Healthcare facilities design has been one of the essential paths and one of the major points mentioned in the 2022- 2025 Arab Hospitals Federation Strategic plan. Our aim is to launch a New Vision for Healthcare facility that outlines the aspects affecting the performance of services in hospitals and determining its impact on patients, staff and visitors. Whether Healthcare facilities are looking to renovate existing Buildings or build new ones, it's essential to take into consideration the pillars detailed in this document.

The Executive Council in the Federation has worked on the elaboration of this unique vision to dedicate it to the Arab Healthcare sector as our facilities deserve to be the best in the world and to follow all trends, as well to overcome all challenges.

AHF would like to thank the Executive Council Member Dr. Bassam Kaddissi for his efforts and contribution to the preparation & development of this Vision.

AHF would also like to express gratitude to the AHF President MP. Fady Alame, the General Secretary Prof. Tawfik Khoja, the Chief Executive Officer Ms. Alice Yammine Boueiz and all Executive Council Members, partners, supporters and AHF team Office for their involvement and efforts to reach this vision.

INTRODUCTION

Health is seen as valuable in its own right, but also as a key factor supporting Arab economic growth, and should be recognized as an important investment for the Arab countries.

The purpose is to help establishing a strategy for the new vision for the design of healthcare facilities in the Arab world, so that the Arab Healthcare facilities all new and old will be effortlessly as one with their settings.

Such harmony can be achieved through a deep understanding of the problems, and integration of the different design systems in compliance with applicable already set codes and standards.

The new vision for the design of healthcare facilities in the Arab world should be a design resource and a prompt to create developments that are particular and responsive to each country's constraints and requirement.

We seek to promote Healthcare developments that engage in an intelligent dialogue with context and place, and not a monologue of individual styles and tastes.

The key goals are to:

- Foster Design Flexibility
- Promote Sustainability
- Promote WELL Certification
- Ensure Adaptation to Climate Change
- Adaptation to New Medical Equipment and Smart Systems

In order to ensure that existing and future Healthcare developments reflect the intended new vision, these goals provide different ideas to enhance the livability and aesthetics of the Arab communities as well as provide direction on architectural design, integration of certification, new modeling and integration of smart systems.

The AHF is not proposing a Guideline rather than a design vision to ensure existing and new developments are in harmony all over the Arab world, especially after the Post-Covid experience and are presented as preferred or suggested design approaches in all Healthcare sectors.

There is no mandatory requirement, rather that the integration or reflection of the strategy goals to comply with each of the Arab Countries' applicable codes and standards.

Implementing these goals is an investment in the quality of Health for future generations.

EXECUTIVE SUMMARY

Why do we need a New Vision for Healthcare Facility Design?

The planning and design of healthcare facilities has evolved over the previous decades from "function follows design" to "design follows function."

Facilities stressed on their functions as healthcare providers without fully considering patient experience and satisfaction, in addition that facing the challenges of Covid- 19 pandemic has led the healthcare Institutions to rethink their current and future space needs.

The design process has already progressed to the point where the first impression a hospital makes on its patients and community is now the most important consideration.

The Healthcare facilities must be safe, smart, green, friendly, comfortable, and express a commitment to the well-being of the patients. They must also be prepared to meet any emergency or disaster situation.

Rapid changes and emerging technologies are key factors to consider while designing a facility. Without flexibility, hospitals face quicker obsolescence if designs are not forward - thinking.

Paving the way forward to a Safe hospital, Smart hospital & Green hospital, this Vision is an exceptional paper and reference that the Arab Healthcare Facilities need to advance Health in Arab Countries.

PURPOSE

A functional Healthcare design can promote skill, economy, conveniences, and comforts, while a non-functional design can impede activities of all types, detract from quality of care, and raise costs to intolerable levels.

The built environment of hospitals and healthcare buildings plays an important role as it is the main pillar supporting the system of treatment and healthcare for patients and creating a good work environment for the employees.

Throughout the development or expansion of hospitals over the last decades, there is a need now to evaluate the performance of the basic functional elements of existing hospitals and to plan for the new ones.

Therefore, the aim of this new vision strategy is to define the factors affecting the functional performance of the basic elements in hospitals and to identify its impact on users like patients, staff and visitors.

Data collected and presented in this strategy were collected using reviews of the factors affecting the functional performance of spaces and the study of their design requirements.

Lessons learned and field visits are essential as well; while site observation and interviews with the users and operators are a way to apply post-occupancy evaluation of the building to compare the actual performance of spaces with the desired performance and identify deviations and draw attention to the implications of these deviations.

The results obtained can be used to change the design process by improving the built environment to support end-users of the spaces, to provide an appropriate working environment for the employees and a supportive healing environment for patients' health.

GUIDING PRINCIPLES

This Vision is built upon the following set of five guiding principles:

One: Beyond aesthetics, hospitals are seeking architectural updates that improve safety, patient and staff satisfaction, and security. The Healthcare facility design should focus on helping Institution create a safe, functional, and supportive environment for patients, visitors, and staff. A safe Hospital will implement practices to control hazards and risks, Prevent accidents and injuries and maintain safe conditions.

Two: Design today for tomorrow's challenges. The healthcare facility must not only address today's issues but have vision toward future challenges and pandemics. The Flexibility of the design will allow hospitals to respond urgently to any unforeseen circumstances or crisis. As well as take into consideration the adaptation to Innovative technologies & Equipment's.

Three: Sustainability Roadmap for Hospitals . "Hospitals have long understood the special role they play as environmental stewards in their community. Setting a Sustainability Roadmap for Hospitals will allow them to integrate sustainable practices into the health care environment by reducing energy use, waste, and costs; enhancing the environment for patient care & introducing green initiatives and environment friendly practices into the design, building & management of Healthcare facilities.

Four: Improving the interaction between building and human health. One of the Five Principles of this vision is to promote the concept of WELL certification that optimizes health and wellness both for the staff, patients and visitors, thus enhancing the holistic view towards healthcare design, construction and operation.

Five: A smart hospital becomes a high priority, long term goal for new and existing hospitals. With Internet of things (IoT), artificial intelligence (AI) and other rapidly developing technologies & Innovation, healthcare facilities can be truly smart, able to sense the needs of the users and respond accordingly. There is tremendous potential to achieve truly smart healthcare facilities able to improve clinical outcomes, increase productivity and lower operational costs, enhance staff and patient satisfaction as well to secure the data protection.

FRAMING & RECOMMENDATION

The new vision for the design of Healthcare facilities framework and recommendation is not limited to the following components:

FOSTER DESIGN FLEXIBILITY

Most of the existing Healthcare facilities in the Arab world has shown un-readiness for unforeseen pandemics, and the need to act quickly in order to hospitalize patients in need.

There was a high learning curve during the last COVID experience that the Arab Healthcare Sector shall refer to and learn from.

Our vision in relation to fostering design flexibility shall lessen the impact of changes to adapt to new situations and pandemics, and to act fast in response to the unforeseen healthcare changes.

The flexibility shall not be limited to master planning and architectural functionality, but also to engineering services and the ability for expansion either vertically or horizontally in line with applicable building codes and International standards.

This flexibility requires the right utilities and other infrastructure elements be in place for maximum flexibility in the future.

Flexible design for the future will need to allow hospitals to quickly pivot to a pandemic response posture when a next pandemic happens. Adaptable spaces allow hospitals to quickly convert a room or area to accommodate new requirements as they arise.

There is no doubt that delivering quality care is expensive, and building a business case for major capital improvements can be difficult. As we emerge from the pandemic, health systems might ask themselves: How can we best address the needs of the community moving forward while maintaining fiscal responsibility?"

Any extra spending might seem like a big ask, but COVID is forcing governments and healthcare providers to make major investments today, and this shall be reflected on building with non-flexible spaces.

In brief, Foster Design Flexibility Vision can be achieved through:

- Cooperation between Arab Hospitals to foster the ability of facilities and pathways to respond quickly to potential changes affecting its value delivery, in a timely and cost-effective manner.
- Promote Evidence base design.
- Ensure expansion for Field Hospitals as much as possible.
- Conduct regular meetings/workshops for sharing experiences, lessons learned.
- Collaboration with Authorities, Syndicates and MOHs for the implementation.

PROMOTE SUSTAINABILITY

Healthcare sustainability has captured great attention in the recent era globally, in view of economic and social crises that developing countries are recently facing. Therefore, it is necessary to generate value and integrate sustainability in the healthcare sector with consideration of all stakeholder demands.

Sustainable healthcare systems can be defined as “Systems which deliver high quality care and improved public health without exhausting natural resources or causing severe ecological damage”.

Investing in a sustainable future has no alternative. The healthcare sector in some of the Arab countries has failed to achieve sustainability objectives.

Knowledge management (KM) is a concrete application of sustainability in healthcare, as Hospitals that manage their knowledge assets will gain sustainable competitive advantage. Several organizations in developed countries are moving towards the adoption of knowledge management so that they can manage their knowledge well and improve their performance.

Due to the effective implementation of KM in developed countries, developing countries are also considering adopting KM in their healthcare.

Sustainability promotion can be achieved through:

- Implementation of Knowledge Management.
- Collaboration to reduce energy consumption.
- Foster Evidence-based design.
- Introduction of green initiatives and environment-friendly practices into the design, building and management of healthcare facilities.
- Ensure the deployment of environmentally driven strategies (reducing power consumption, utilizing alternative energy generation, and through the recycling and conservation of resources).

PROMOTE WELL CERTIFICATION

WELL Certification is scientifically developed and an independently verified tool to help design buildings and measure and monitor their impact of the health and well-being of the occupants. WELL certification is recognized worldwide throughout the architectural and building communities. Certification aligns with LEED using a similar certification system of Silver, Gold and Platinum levels and based on a points system.

Building from the ground up allows organizations to look at health in every aspect. The spaces we live and work in everyday have a significant impact on people. By examining the amount of exposure to light, air quality, thermal comfort and mental health strategies, the existing and new hospitals will be able to better align the relationship between its surrounding environment and health.

The importance of the implementation of the WELL certification in the Arab Healthcare sector is to ascertain a better quality of care for both the patients and the staff, as the main components consist in the consideration of the following through the design process:

- 1- Air
- 2- Water
- 3- Nourishment
- 4- Light
- 5- Movement
- 6- Thermal Comfort
- 7- Sound
- 8- Materials
- 9- Mind
- 10- Community

Each of the above 10 listed concepts aims to improve building design, operations and the overall impact on the occupant's specific body systems such as Cardiovascular, Digestive, Endocrine, Immune, Muscular, and Respiratory.

Promoting for the application of the WELL certification can be achieved through:

- Foster energy consumption reduction.
- Focus on wellness...to be transformed into welcoming spaces.
- Collaboration with Authorities, Syndicates and MOHs for the implementation.

ENSURE ADAPTATION TO CLIMATE CHANGE

Climate change has been identified as the biggest global health threat of the 21st century. Health care facilities play a critical role in reducing health impacts from climate change by treating illnesses and injuries attributable, at least in part, to climate-related hazards, caring for patients during and after disasters and actively participating in community efforts to adapt to and mitigate climate change.

Healthcare pressures in communities will increase with climate change and are expected to occur coincident with important socio-economic changes (e.g., ageing population, increased urbanization) and environmental degradation that can further increase health risks in populations and demands on health care facilities.

Healthcare facilities need a comprehensive tool to support climate change resiliency. This strategy describes the methods undertaken to produce a climate change resiliency assessment toolkit for use by health care facility officials.

The toolkit consists of:

- Ensuring the usage of suitable building materials, site adaptation/expansion (horizontally instead of vertically) for increased water level in future years.
- Monitoring of rainfall and sea level.
- Collaboration with Authorities, Syndicates and MOHs for the implementation.

ADAPTATION TO NEW MEDICAL EQUIPMENT AND SMART SYSTEMS

According to Healthcare facilities requirements, service expectations related to Healthcare buildings are evolving over the course of time, while the equipment that are used for various purposes in the existing operational facilities are subject to aging and erosion.

The main duty of smart buildings, compared to conventional buildings, is making enhancement and functional efficiency for its users and owners by using data and information communication technology. The development of smart buildings is tied to the advancement of smart technologies and this has brought many new phenomena into the construction industry that change ownership, user and management environments.

Optimal and truly functional smart buildings incorporate engineering and non-technical aspects that should be taken into consideration throughout all life cycle phases.

By changing the perspective of productivity and facility management, smart buildings provide useful, integrated and intelligent services that create the lowest environmental impacts and costs throughout the life cycle of the building. Hence, careful preparation within the building planning and highly professional management and maintenance during operation are the key roles in the adaptation of the old and new constructions and that can be achieved through:

- Integration of BIM to enable real-time monitoring conditions of buildings.
- Promoting collaboration with medical equipment suppliers & consultants.
- Cater for the implementation of smart systems.
- Collaboration with MOHs for the implementation.

TECHNICAL SOLUTIONS

STATE OF PLAY

In part one the new vision highlights the importance of design flexibility with evidence based design approach and how by fostering these points, healthcare facilities can be able to adapt quickly to the changing needs and requirements. In addition, it promotes sustainability and green buildings leading hospitals to be part of the solution facing the climate change challenge.

This vision encourages the development of healthy hospital environment by adopting WELL certification standards, so that hospitals would have a positive impact on users like patients, staff and visitors. Furthermore, it supports the adaptation to new medical equipment and smart systems, which provide useful integrated and intelligent services that create the lowest environmental impacts and costs throughout the life cycle of the building.

In order to look forward the current situation of the healthcare facility must be assessed specially after the COVID-19 pandemic, it was clear that not all the hospitals were ready to face this challenge and few were capable to adapt quickly to the new situation. despite the enormous efforts to slow down the progression of this virus and to raise the hospitals capacity to the maximum. This pandemic has put some health systems under immense pressure and stretched others beyond their capacity.

But this situation could be seen as an opportunity because it put the focus on the healthcare system as a whole and urged the need to further invest in the development of this sector. This would allow to build a sustain and strong health system capable to deal and respond fast to future pandemics. Hence the need to encourage investment is essential and plays a critical role in the evolution of the healthcare system. After all being prepared is the most time and cost-effective way to handle global health risks.

THE CHALLENGES FACING THE HEALTHCARE FACILITIES

In order to help the hospital owner and government sector to get optimal funding for their project and to lower the risk of surpassing the budget, it will be beneficial to reconsider the current standard and push toward a new one that puts quality first, and focuses on delivering a high-quality design for new healthcare projects and the assist in the adaptation of the existing buildings.

Assuring a high-quality design for these types of projects can guaranty that the project would fulfill all the necessary requirements which are numerous and sophisticated. In addition, it can guaranty also that project has surpassed various types of studies and simulations from financial, cost/time estimation to architectural programming layout, engineering design studies, MEP system coordination studies, and environmental analysis.

By adopting and applying these principles set by the new standard, healthcare facility owners and government officials should be able to develop new hospitals projects with high-end engineering quality all by reducing the estimated time for delivering the project, hence cutting down both construction and operation costs.

Due to the complexity of healthcare facility projects, and their spider web of interconnected functions; and in an age where these facilities are expected to operate under full efficiency during emergencies or pandemics, it is never easy to apply new fundamental design standards. However, it is always feasible to apply these standards on a new built up design rather than integrate it into an existing design. Therefore, and to reach the intended goal with the second mentioned scenario and to achieve a high-end quality, it is required that all involved parties and stakeholders cooperate to the fullest extent. In other words, it should be an open workshop between all professionals in the fields engineering in collaboration with the medical sector personnel.

TOWARD A GLOBAL DIGITAL DESIGN STRATEGY AND SMART HOSPITALS

In reference to the complexity and the challenges mentioned above, there is one efficient way to tackle this issue and it's by adopting the digitalization of the healthcare facility.

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