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Research paper

Healthcare and the Medical Architecture of Total Wellness

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Abstract

The quest for knowledge of how our body works has become preoccupations habit to most people; with the development in digital technology, one could find numerous website that discuss about healthcare with a click away. Awareness of one's personal health, prevention of illness has become a culture, especially for the people whom concerns on their health and beauty. Healthcare facilities too is moving towards a reform and people who go to the doctor do not necessary suffer from acute illness. These phenomenon is fast approach and it is crucial to review the approach in planning and design of healthcare facilities and the medical architecture; combining both art and science of medicine and architecture towards a total wellness of healthcare environment.

Keywords: *healthcare facilities; total wellness environment*

1. Introduction

Medicine is the science and "art" of maintaining and/or restoring human health through the study, diagnosis, and treatment of patients (*Wikipedia - medicine*). Architecture, on the other hand is the art and science of designing the built environment from the macro-level of town and urban planning, buildings and structures design; landscapes planning and design; … to the micro-level of construction details; interior decorating and even the furniture.
'The *practice of medicine combines both science as the evidence base and art in the application of this medicine knowledge in combination with intuition and clinical judgment to determine the treatment plan for each patient*. .(*Wikipedia-medicine*) Vitruvius the author of De Architectura wrote in his book: "*Architecture is a science arising out of many other sciences, and adorned with much and varied learning: by the help of which a judgment is formed of those works which are the result of other arts*." (*Wikipedia- architecture*)

2. Analysis

Art and Science both exist in Medical and Architecture; medical consultants and architects has different field to carry out their practice; but they meet where the medical system is being carry out. Health care delivery services happen in the built environment; be it primary care medical services; secondary or tertiary care. It happens in clinics, nursing homes, hospitals, schools or home (visits), specialist centre; wellness centre; therapeutic institutions and many more.
Healthcare facilities have to be specially design to fulfill the needs of medical care and maximizing the efficiency of the whole medical system; it is also crucial to plan all spaces well so it will minimize the travelling of patient within the facilities; to maximize the efficiency of the integration of each related facilities. It is always a challenge for architects to design healthcare facilities; the knowledge of medical care and the medical systems is essential to begin with the planning process. What more when it comes to the whole infrastructure and integrated medical systems. Leading to what it should be called Medical and the Architecture and Built Environment of Total Wellness.

3. The Healthcare System: Malaysia Perspective

Much research related to Healthcare Systems has been conducted in Malaysia; but only a few are directly related to architecture and the built environment for the medical systems. Healthcare buildings should be designed to suit the practice of medicine physically, emotionally and spiritually. Medical research today has led to a lot of development in technology which has improved the practiced of medical services; development of technology too has led to advanced machinery to improve in the medical and healthcare system; but just how have healthcare facilities, the built environment prepares of the constantly expanded medical system. Even diseases development with the technology, outbreak which are unexpected that needed ad hoc and immediate changes of spaces, required flexibility of planning arrangement to cater for all these. Apart of these, it is also utmost important to provide the right environment for the right care; both for the patient and the healthcare provider. Just how architects could create an environment that not only allow practice of medicine means of healing but allowing comfort, emotionally stable and spiritually at ease.

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From the research of 50 years of Public Healthcare in Malaysia: Evaluation of Architecture Design Ideas, Planning and Development by N.A. Goh (2007-2010); healthcare facilities in Malaysia is yet to meet up with the requirement of patient orientated environment; lots of improvement and studies need to be conducted to achieved a total wellness environment; be it physically, emotionally and spiritually. These applied also to the care providers: the medical doctors; the nurses; the supporting care provider and related staff practice and working in our healthcare environment; it needed substantial review and studies to achieve the right environment. Data from interviewing conducted to a group of nurses has shown that there are facilities and environment which have not improved for the past 10-20 years.

4. Medical and Architecture and the Healing Environment

The medical and architectural profession has special meanings to the community as both have its own method of healing people. The former through medical care and the latter through built environment. Most often the case, medical buildings are designed to incorporate functions which physically support the medical profession such as highly advanced medical rooms and various supports for medical care. However, seldom are they architecturally designed to stimulate the body, mind and soul and to assist in the recovery of patients.
Taking the cue of this awareness, studies conducted on alternative healing and architecture; potential of integrating environment of therapeutic healing and others has seen the potential that it is possible to explore the crossing point between medical services delivery systems and architecture and the built environment. The potential of exploring healing architecture and healing environment: physically, emotionally and spiritually in the development of healthcare facilities in Malaysia. The utmost important findings shown creatively and innovatively exploring these, believed could lead to a better sustainable and affordable Medical Healing Environment.

5. Role of Art And Architectue in Medical And Healing System

The poetics of today's architecture belongs to the most demanding category, which has as its goal the highest aesthetic aspirations and the satisfaction of the broader expectations of humanity. Stimulate the body, mind and spirit through architecture intervention. Architecture is about the creation of place and space that contains meaning and connection.
To create healing facilities of total wellness, the researchers have look into local traditional architecture as precedent studies. Studies was done to the Malaysia Traditional Architecture which highly valued the responsive environmental ecology with critical evaluation on site and surrounding; the studies of community processes which relate to human values and socio culture, human needs as well as the technological application on the buildings: the detailed of its complex structure. The research extended also into the site selection, site planning as well as formal and informal public interaction spaces. Application that involves energy efficient, the impact of passive and active design in architecture which response to our tropical climate and environment, site and topography, and most importantly how is the sustainability and green implementation of disabled friendly environment could be integrated to it towards achieving an environment of total wellness. One very interesting findings is that "Raised Houses reduce mosquito bites" (J. Derek etl); these has shown that traditional houses of Malaysia which mainly are raised floor has a function of healthcare.

6. The Holistic Approach of Architecture of Total Wellness

A complete definition of alternative medicines is difficult to derive as it means different things to different people. In general terms, Alternative therapy is all those modalities and techniques of healthcare which are not provided by the conventional allopathic practitioner. It is and all-encompassing term for systems of medicine like ayu-verda, acupuncture, homeopathy, Reiki etc. In fact, the World Health Organization estimates that between 65 and 80 percent of the world's population (about 3 billion people) rely on traditional ('alternative') medicine as their primary form of health care.
There is a growing acceptance that health is more than just 'the absence of disease' and involves more than just the physical body. As Alternative Therapy treats one as a person who is a part of the nature rather than just a case of a particular disease, it has brought more and more people to the folds of Alternative Therapy. Gleneagles Intan Medical Centre in Kuala Lumpur Malaysia now offers Energy Day Spa's Therapeutic Spa Services; it could be a beginning of a Total Wellness Healthcare Facility. Integrating both environment for medicines healing and alternative healing in a holistic approach open to a lot of opportunity in medical and healthcare architecture development in Malaysia.

7. The Potential of Total Wellness

There are plenty of issues to explore in the interfacing between medical and architecture, of which the following presents some key interest:

- Strategic planning for healthcare facilities development by establishing a basis of design brief for the development and construction of new buildings or the adaptation of existing medical buildings.
    - Development of healthcare facilities shall always start with determined the type of facilities and medical system which intended to be provided
    - Determine focus group; every patient has different needs, physically, psychologically, emotionally and spiritually
    - Both services provided and patient are to be included in the planning of the facilities
    - Integrating outdoor (Therapeutic Garden or wellness garden) and indoor space
    - Considering alternative healing facilities:
        - Integrating all possible alternative healing in one space is not easy; Malaysia very own 1980s nucleus planning for public hospital could be a good practice as it provides multiple integrated courtyard space between wards make possible of various therapeutic garden for different wards
        - Urban healthcare facilities which going tall could incorporate sky garden to complement medical treatment; but this is yet to be studied for its impact towards patients as its environment is in the mid-air.

- Establishing the role of Architecture in the creation of Total Wellness System.
    - Architects and Medical provider shall work hand in hand from day one to determine all needs for both the provider and environments requirement; be it indoor or outdoor, as medical supporting equipment's and technology developed and grown fast; it is also important to involve the support group from the early days of the planning and development of any healthcare facilities.

- Creating medical architecture that is therapeutic, sustainable and responsive to future change.
    - Today's most talk about issue: global warming which lead to the vogue of sustainable design practice; green building; zero energy and many more is utmost important to be incorporated into the healthcare facilities design.

        - IAQ is the most important issue, as every corner of the healthcare facilities could be area of fungus; microorganism, or any unwanted particles harvesting ground; proper material should be developed and choose to avoid possible grown of them. Therefore, the choice of building material will have to be considered from the day of design.
        - As for outdoor garden, carefully choose plants, sculpture, paver, tactile and other landscape features will give different therapeutic impact to the patient.

There is so much potential that can be studied and developed to provide a total wellness healthcare facility, be it in public sector or private sector in Malaysia; below is what suggest issue which need to study and to search for the good practice in approaching to a "TOTAL WELLNESS FACILITIES'

- Evaluation of the existing architectural design quality in healthcare facilities.
- A logical analysis of the particular identity of each individual location and the sense of the surrounding landscape, highlighting the friendly qualities of the setting, micro-climate and eco-system.
- The incorporation of the everyday living requirements and desires of the client -however insignificant -into the individual architectural components of the building, thereby enhancing the quality of life of the resident/user.
- Combination of the most sophisticated technology with traditional techniques to create a unified construction -a building fully integrated into its historical setting.
- The poetic architectural instinct informs every aspect of the design management -employing construction materials as an expression of philosophical values.
- Calculated improvisation of the various architectural ideas ensures that human activities are harmoniously adjusted to the environment.
- Design tools -which enable the new ekistics reality to be created within the existing environmental setting -are the primary principles underlie all Poetic Architecture.

8. Conclusion

The medical profession has always been considered as providing healthcare facilities in a systematic and efficient configuration. Architecture of healthcare facilities on that note, are often designed to complement these configurations. Medical architecture however, should be directed towards the provision of a total wellness system through a physically, emotionally and spiritually enhanced built environment condition. Designing a total holistic wellness healthcare facility needs further detail studies; and it will not be an easy approach; planning and designing of medical centre or healthcare facilities is always and difficult task; with the alarm of global warming; the essential of incorporating the green and sustainable features play a big crucial part and it will be a daunting task for the stakeholders of healthcare facilities but though a high potential for researcher in search for the right approach.

References

[1] David Drakakish-Smith, (1979)., in the HS Murison and JP Lea., Housing in Third World Countries., The Macmillan press.
[2] The Architectural Review, March 2002 Volume CCXI No 1261; Emap Construct, London, UK Hospital, Wikipedia, the free encyclopedia; http://en.wikipedia.org/wiki/Hospital; Medical, Wikipedia, the free encyclopedia; http://en.wikipedia.org/wiki/Medical:
[3] Miller R.L, Swenson E.S. Robinson J. Todd, AIA; Hospital and Healthcare Facility Design, Third Edition, Norton; 2011
[4] Steven R. Winkel, FAIA, PE, David S. Collins, FAIA, Steven P. Juroszek, AIA, Francis D. K. Ching Building Codes illustrated for Healthcare Facilities: A guide to Understanding the 2006 International Building Code Wiley April 2007
[5] Richard L.Kobus, Ronald L.Skaggs, Micheal Bobrow, Julia Thomas, Thomas M. Payette, Stephen Kliment Building Type Basics for Healthcare Facilities Wiley September 2000
[6] Christine Nickl-Weller, Hans Nickl, Hospital Architecture, Verlagshaus Braun, 2007
[7] T. Monk, Hospital Builders, Wiley Academy, Great Britain, 2004
[8] Architecture Malaysia, Journal of Pertubuhan Akitek Malaysia, Vol. 20 issue 2, PAM (Malaysia Institute of Architects) Editorial, April 2008; 1998; 1991
[9] Santhy Muthali, Article in Utusan Malaysia," Poliklinik Tanglin terus dikunjungi selepas 110 tahun",19 Sept. 2007
[10] Norwina M. N. Recent Development Healthcare Architecture in Malaysia : refelecting the 50 year of independence 1957-2007, 5th GUPHA forum, Tokyo, Japan, 2007
[11] Norwina M. N. Hospital Design in Tropical Malaysia- Towards a Green Agenda; Healthcare Forum, Totonto, Canada, 2013
[12] M. Philip, Construction and Design Manual: Medical Facilities and Health Care; Dom, 2011