

# **INCULCATING TRADITIONAL VALUES IN THE DESIGN OF HEALTHCARE FACILITIES FOR SUSTAINABILITY- A Malaysian scenario**

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**Abstract:** Words of wisdoms from our forefathers were based on experience and practicality. Human behaviour and inculcated culture do not change but get adapted in the circumstances. Sustainability is about coming to terms with conflicting presentation in our facility design and the need to change our paradigm of preconception to sincere evaluation of our real day-to- day users' needs. This paper studies usage of spaces to needs in selected hospitals in Malaysia. The objective is to gather traces of adaptation and innovation by users in their daily routine in hospital environment to sustain operation for patient care in respective locality. Literature review and post occupancy evaluation based on the period from 1997 to date were used for this study. The findings should provide a retrospect on how design decisions were done and imperative for planners and designers (1) to use them as basis for decision making in future hospital projects; and (2) to engage in further research for more practical and customized planning and design solutions for contextual sustainability in the future.

**Keywords:** Practical, Culture & Behaviour

## **Prelude**

The idea of a hospital of the future has been many times quoted and researched in the western world to accommodate constant change from current environment of the state of the art hospital to something beyond ones imagination. Once upon a time a picture of a hospital depicted a stark and sterile environment. Now with evidence based designs of the 21<sup>st</sup> century, hospitals are no longer a place of depression but more of a mall, a resort, or a hotel to support the healing process.

For the developing countries, where resources are scarce and the sick are a plenty, the scenario may be somewhat different from the west although the aim may be similar. The question of sustainability in the developing countries would perhaps be how far the government can stretch their resources to do the best for their people and keep going! Poverty along side traditions die hard in most developing countries. The distance, the facilities, accessibility and supplies takes precedent over form or design in order to reach the people. Although the magnitude from one country to another is different, the ruling government is always responsible for the people's healthcare. Those with choices may seek alternative services either from the public or private healthcare for their well being. Affluent others may even go beyond ones boundary to seek best healthcare as part of health tourism.

It is important to note that with globalization, emerging disease and disease trend that knows no boundaries and the effect of the global environment, both western and eastern healthcare providers may be dealing with the same constraints of sustainability in determining the concept of healthcare design for the future.

To be able to perceive the future, one has to look at the past and take stock of what one has at present. The paper, thus seek to define sustainability in the context of healthcare facilities in Malaysia and how each of these hospitals, from briefing, planning and design stages, survived in operational world of uncertainties. Lessons learnt from these case studies would perhaps be able to assist planners and designers to review some of the planning and design constraints practice then, in the light of new requirements for sustainable Malaysian healthcare buildings of the future.

## INTRODUCTION

Healthcare facilities as defined by Cox. A et al (1981) are "buildings provide for healthcare. It fulfils many functions and accommodates the whole life span of Man. They shelter services for the promotion of health and prevention of illness, for assistance of natural functions such as childbirth, the cure of disabilities and the support of those who a variety of ways are afflicted or incapacitated." It therefore shelters, observe and treat and monitor patients appropriately.

Modern healthcare facilities especially hospitals are among the most expensive and complicated structure to plan, design, construct, commission, operate and sustain. Studies had shown that conventional implementation of a hospital may take 7-10 years from planning to operation. Once completed the up-keeping and maintaining the hospital to its original intention and purpose is again another uphill struggle all the way. Shortage of appropriate human resource, renewable energy, up scaling operational cost, unforeseen disease trends, emerging technologies, medical breakthrough, human migration and the varied culture of the users have impact on the facility. The surviving hospitals witnessed today are testimony to their ability to sustain various aspects of change to date. The future is yet unknown.



Fig. 1 Location of Malaysia in South East Asia.

Malaysia (refer Fig. 1), as a developing nation is no exception. With a national target to achieve a develop nation status by 2020, the people is geared to literally work their way to fulfill the mark of a 'developed' nation on time. The nation strived for a developed nation using own mould as a yardstick and not of the West. Thus the scene in Malaysia may not complement the western perception of a developed nation.

Even in healthcare services, Malaysia practices a five year development plan for planning and development. A mid term review of the process provide a retrospect on the needs for effective healthcare services delivery and alternative planned facility to be improvise for better outcome. Macro planning is carried once in every five years as an overall planning guide for major decision making. The design guide or standard for facility provision, however remain unchanged and subject to debate with respective authorities project by project basis. With Malaysia discontinuing the implementation of standard healthcare facility designs, the country is currently swarmed with completed one-off new ultra-modern hospitals built within the within the last five years. How sustainable are they, are yet to be answered in the next few years. Apart from replacement hospitals, new hospitals are now feeling the pinch of low human resource, high energy consumption and the demand for care from the people of all walks of life.

## **Definition of sustainability in context**

*"He has raised the Heaven on high, and He has enforced the balance. That you exceed not the bounds; but observe the balance strictly; and fall not short thereof." (55:7-9)  
"Mankind! Your transgression will rebound on your own selves." Quran (10:23)*

Allah SWT draws our attention to the balance which places everything in order, and He warns that any upsetting of this balance in whatever direction, whether to increase or decrease an item, might destroy it altogether and lead to the worst possible consequences

*"Excess and deficiency are equally at fault." Confucius*

Our grandmother, grandfather has all the wise sayings for which when young we followed through respect but rarely understood. It has to do with the wisdom of knowledge, age, maturity and experience - the common sense. Confucius sayings concur with the Al Quran and further defined by United Nations Development Programme that it has to do with "creating an environment in which people can develop their full potential and lead productive, creative lives in accord with their needs and interests." (Prugh & Assadourian, 2003)

To achieve sustainability requires sustainable development, which was most famously defined by the Brundtland Commission in 1987: roughly, the ability to meet our needs without compromising the ability of future generations to meet theirs. This definition, however, is open to interpretation. (Prugh & Assadourian, 2003)

Eventually, sustainable development and sustainability itself are about collective values and related choices. Different choices will lead to different outcomes Thus the notion of what is sustainable will never be static. (Prugh & Assadourian, 2003)

In architecture for health facilities context, sustainability, can again be redefined as to be able to meet the changing demand of function, organization, operational policies, varied users, changing care, efficient use of energy, less maintenance, user friendly and many other aspects for particular locality. The slogan, "THINK GLOBAL AND ACT LOCAL" is very true for Malaysia. Although Malaysia had undergone rapid physical development in its physical infrastructure since its independence in 1957, the lagging behind of the populace in terms of mindset that is reflected in the aftermath of healthcare project commissioning is the focus of this paper. For Malaysia, the concern for sustainability will dwell on the facilities provided in the selected hospitals built within the period of 1997-to date and how it is functioning today against what was earlier planned and designed.

## **PART 1 : THE STATE OF THE MATTER**

### **Malaysian Traditions and Values**

Malaysians are a thankful lot and rarely ever complain of discomfort or inconvenience. We had a hard life before the advent of modern structures like today. Thus experiencing discomfort or discrepancies in our new modern facilities is normal and acceptable. We simply take it into our stride to accept the inevitable, adopt and adapt it to a certain standard so that life goes along as usual. Suing and arbitrating issues is relatively a new attitude and very much a 'Western' attitude. If problems can be settled without causing much uproar outside the court and away from the media, things can quickly go back to a 'normal' pace. Malaysian loves peace and this forgiving attitude keep the real issue at bay. Although this nature is applaud-able, for advancement and professionalism in the challenging industry, Malaysians will need to review its value in the right context.

### **The Designer's Fallacy and Constraints**

The process of planning and design of physical facilities for healthcare in Malaysia has not changed except for the use of computers and mode of procurement. The fast turnover of staff in the client department and the lack of healthcare architects and healthcare related technocrats in the industry had dismally affected the continuity and process of delivery. Ironically, however, despite all else, designers continue to live in an ideal make believe environment of fulfilling standards and norms embedded in the project brief of clients for ease of approval and funding. Like a machine, rushing for lost time, as the client "wants the project yesterday", has led designers to put aside the fundamental value of being real planners and designers. Rarely questions were raised on the objectivity of the facility to be designed. Its appropriateness, scale and size are often subject of pre-set hierarchy based on sets standards traditionally practice over the years. Designers are either not duly concerned or fear to think of how these facility will work once it is commissioned and operationalised. Due to nature of practices, most designers will quickly seek and secure another job to sustain their practices. Rarely in this scenario of "Design and Built" would the client-contractor be considerate enough to allow designers to do beyond their optimal scope of work on real concern.

### **Planners Uphill Battle for Sustainability**

This nature of accepted-complacency transcend in the whole process of healthcare facilities delivery without much ado. Although the client-user (Ministry of Health (MoH)) tries their level best to coax continuity on improvement of healthcare facility planning by giving training and exposure to younger staff, the sustainability of the process itself is virtually up to the management and concerned individuals. Similar scenario appears in the public works sector and none at all in the private sector.

### **The End-User-Client dependence**

The End-user-client at the end of the process line is the recipient of the facility. Their participation is not continuous and very much similar to the same situation faced by all government departments in terms of turnover of staff. Current (2006) MoH requirements require the end-users to prepare project brief based on the generic brief given to them by MoH as their requirements. This action was meant to allow End-Users to put up their real requirements and be responsible for their proposal. However, lack of expertise in the preparation of brief, the process of planning and design of these facilities met many variations along the way without much control.

### **Needs and Cost Balance**

Needs was the initial basis in project proposal to the government for approval of the projects. However, using rule of thumb project costing of cost 'per bed', as well as due to distribution and priority of the projects, all hospital projects are eventually designed to cost. The briefs based on needs prepared after project approval provide nightmares for project implementers to sustain the balance of cost to needs.

Scanning the above scenario on the planners, designers and users, the outcome of the delivery is the facility. In all Malaysian healthcare design, functionality and cost takes precedence above other criteria. The objective of this study is to review in brief how expansive the planning and design criteria used by healthcare architects as basis for their designs in comparison to how these completed facilities were used on the ground. The study will involve reviewing outcome of previous Post Occupancy Evaluation to briefs and real needs of the facility as case studies. The findings hope to provide a retrospect on how design decisions were carried out and imperative for future planners and designers to consider them as basis for decision making in future hospital projects. For sustainability, healthcare architecture in the future thus relies on the opportunities of further research on more practical and customized planning and design solutions in the right context.

The paper thus will describe vividly in context what Malaysian traditional values are, history of hospital design aiming for sustainability before embarking on the selected case studies on the 27<sup>th</sup> International UIA-PHG Seminar, Beijing Friendship Hotel, Beijing, China 1-6<sup>th</sup> July 2007.

need to study the Malaysians (human behaviour) and their practical values for facility sustainability.

### **Definition of Traditional Values for Malaysian**

Wikipedia Encyclopedia (2007) defines traditional values as refer to those [beliefs](#), [moral codes](#), and [mores](#) that are passed down from generation to generation within a [culture](#), [subculture](#) or [community](#).

Lee S.H (2000) defines Asian values into four (4) categories. For Malaysian and Singaporean, these values falls into 'C' category i.e. *Asians who talk about Asian values in terms of post-colonialism*. In search of its own identity after years of colonization, the discussion of Asian values in these countries were focused on harnessing these values into a positive means by which to overcome negative colonial legacies. Comprised of multiple ethnic, religious, and linguistic groups, both countries have felt a strong need for powerful leadership as well as for ideological convergence in the course of achieving national integration. The values represent attempts to defy imperialistic imposition of Western values as universal values in all corners of the globe as we still need traditional values to relieve the modernization problems that arise from overstressing individualism and materialism. Thence, in promoting traditional values, one must exert efforts toward institutionalization and re-demarcation sectors where traditional values can effectively function as well as where they fail to do so, with a view to identifying areas in which traditional values can properly interface with the systems of contemporary society. Tradition" can be regarded as a new source of "reflexive modernization as well as a self-sustaining progress that considers the indigenous conditions of our separate regions.

Hirai.N (1999) states Prof. Hideo Kishimoto differentiation of Westernisation and Modernisation as follows :

- Westernization would mean that a certain indigenous cultural element of the traditional East is replaced by the penetrating Western element, and the functional role of the former is taken over by the latter.
- Modernization, on the other hand, basically means to remold a cultural system into a new mode.

In Malaysian context, the above definitions on traditional values and its constant need for assessment for modernization is real and active. While we carved our future basing on predictions and projections, we still hold dearly to our values for some sort of assurance shared by members of the society as a shared responsibility. Malaysians are proud of their modernization programme towards a develop nation status, however, the reality of general society's fast adaptation is another story. Current Prime Minister of Malaysia once said in the local papers that Malaysians have enviable "1<sup>st</sup> class facilities but 3<sup>rd</sup> Class Mentalities" on how the facilities were utilised. Healthcare facilities are among those facilities facing this phenomena of change and adaptation. Architects and planners would recall the famous sayings "we shaped the environment and the environment will shaped us". Thus, we keep on building new and modern facilities adopted from the 1<sup>st</sup> world hoping that society will be shaped by them. The case studies on recent facilities showed constant mismatches of needs and provisions when they are operationalised. It is deemed that the process of design has yet to capture these transient elements from the start. Man and his/her behaviour is the key. Unless time is given for designers to study their own people to provide them with appropriate facilities, mismatch will not be able to be minimize.

### **Evolution of Healthcare Facilities Design in Malaysia**

The provision of modern healthcare facilities in Malaysia begins with the introduction of western medicine along side colonisation by the British from 1700. The infrastructure of small rural health centres and midwifery clinics serving the rural folks to the construction of city hospitals (refer Fig 2) in the major cities of the Straits Settlement became the basis of healthcare architecture for the 27<sup>th</sup> International UIA-PHG Seminar, Beijing Friendship Hotel, Beijing, China 1-6<sup>th</sup> July 2007.

colonial masters and the people. The design and construction of these facilities denote the local culture of the people who loves to visit and stay with their relatives at any time in their daily routine to market. Pavilion structures (refer Fig. 3) with big verandahs as well as accessible in all directions from town were the common design trend of the time. Being in the tropics, climatic elements were seriously considered. The presence of long roof eaves for shade and shelter, ventilation blocks and timber slits for natural ventilation at high and low levels of the wall, huge casement windows with adjustable louvers for privacy and natural light had remained sustainable for many years. New sophisticated requirements for clinical procedures, equipping and the expansion of workload demand the change.



Fig. 2. Sultanah Aminah Hospital, Johor Bharu (1000 beds) high rise pre independent hospital architecture and a replica of Nankin Hospital in China



Fig. 3 Tanglin Hospital, Kuala Lumpur (now Health Clinic) Low rise - pre Independence hospital architecture. (Courtesy of Malaysian Archives)

After independence, rapid turnover on facility building to serve the people in all corners of the country were embarked. Process of designing these standard facilities (refer Fig. 4) was basic and rather utilitarian in nature. Although the semblance of pavilion type architecture was present, the operational policies had changed. The people had not changed. They still visit the sick at any time despite visiting hour roster and allowable numbers. The relatives still access the respective wards, if not through doors, they will communicate through windows.



Fig. 4 Sik Hospital (100-150 beds) Example of post independence hospital architecture

Now, all designs provided are one-off/customised. Exposure to international healthcare design scene and requirements had inadvertently caused drastic change to the design approach and procurement method. Then, Post Occupancy Evaluation (POE) was used to evaluate the former facilities as revision to new proposed hospital design brief and requirements. However, recently no POE was conducted (with exception of feedback during the maintenance period) and yet many more hospitals need to be built. From current experience, up until now, although patient is the



object of focus, patients are never directly consulted in the planning nor design of the facility. Project briefs were prepared by ground staff and vetted by the MoH. Generally, apart from the written policy, the planning and design of the facility are derived from staff experiences of what the patients and service needs.



Fig. 5 Ampang Hospital, Kuala Lumpur (500 beds), Example of customized design hospital (internet)

### **Achievement thus far**

Towards a developed nation in ones own mould, Malaysia had achieved and still sustaining the following development:

- Customised design to customise briefs for each facility from a generic brief;
- Additional new hospital beds for the 1 bed : 2000 population norms from new hospitals
- Reduce acute beds per hospital from 1000 bed to 600-500 beds for tertiary hospitals
- Network of super speciality hospitals
- Improved bed bays from 6 to 4 bed bays for non air-conditioned or third class wards with ensuite toilets
- Improved isolation cum single rooms units within standard wards;
- Multi bed, different stage space to single one location Labour Delivery Rooms
- Decentralized special clinics to community clinics – hypertension , diabetics, etc
- Additional new clinics for super-specialty in selected hospital
- Improved hospital environment with gardens, view, daylight and facilities
- Improved operational policies with additional services
- Infection control strategy
- Information Communication Technology (ICT) integration
- Other

### **The Challenges**

Architecturally, the challenges not only occurs in the introduction of codes, regulations and design challenges but also the question of post design maintainability; the Green building requirement (including healing environment, value engineering and energy conservation; recent seismic consideration to structures; Industrialised Building System (IBS) application to national agenda to reduce dependence on immigrant workers and quality workmanship; inclusive design for disable people and design to Cost.

Health Services are addressing the emerging and reoccurring of Infectious Disease nationwide; continuity in assessing needs and appropriate integration of Information Communication Technology in various stages to all new hospitals; continuity in providing facilities for Day care services in all hospitals; addressing Lifestyle diseases from smoking, obesity, accidents, diabetic; common episode of Cancer with special Cancer Research Centre; Rehabilitation hospital; Women and Children hospital and units nationwide; teaching facilities and updating facility and operational standards.

## **The Issue**

Sustainability is about continuity in sustaining the appropriate service to meet the needs of the people. On healthcare facilities, there are many inter-related issues that they themselves needed sustaining in order to achieve balance in the outcome. There is a need for :

- (1) continuing presence of healthcare design professionals to prepare and interpret briefs; to translate needs to physical facilities;
- (2) procurement process in relation to quality in design process and quality in delivery service;
- (3) sustainability of design and
- (4) sustainability in relation to its utilization.

## **PART 2: RETROSPECTIVE OF ISSUES**

### **The Process Cycle** (Refer Fig 2 below)

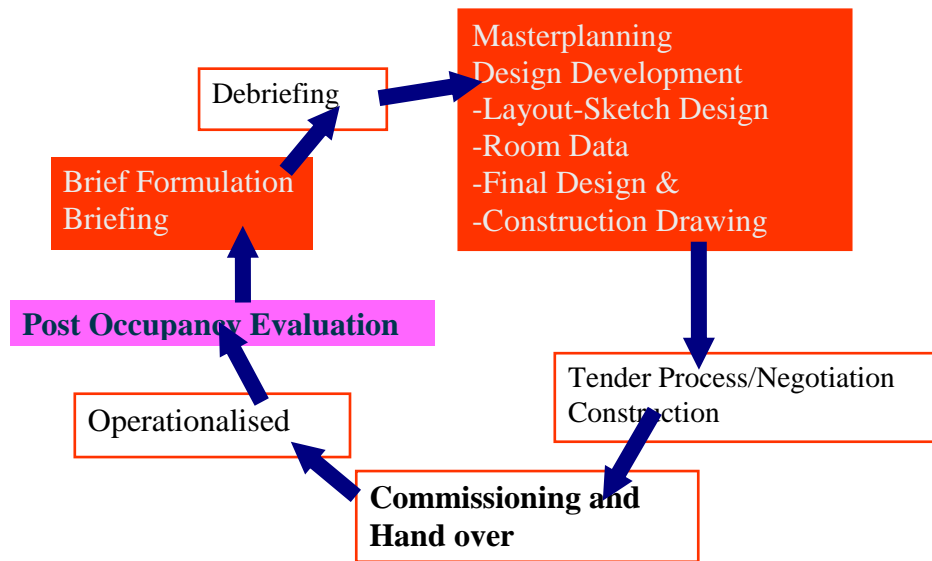
The healthcare project cycle in Malaysia follows the sequence from MoH's project brief formulation in justifying for the project creation prior to preparation of medical/functional design brief for project design. To bridge the gap from the medical /functional design brief to design, the process of debriefing needs to be done with architects and health facility planners/architects from the contractor/consulting design team. The debriefing translates the briefs to graphical representation of spatial, work or operational flow as well as planning adjacencies and priorities. The master-planning process and design development of respective departmental layout followed this sequence. Each departmental layout after agreement of its flow and adjacencies goes into room/space data discussion for further detail on the interior including equipping and environmental considerations. Final layout for construction drawings follows suit. The decision making at each step of the process is important for progress. The team members should know their respective role and communicate effectively at each stage. The tender or construction stage will depend on the type of procurement process the project was initiated. Conventional project will tender the project for competitive cost. Design and Built or negotiated contract type of contract will prepare for price negotiation.

On award of the tender with an agreed sum, construction takes place. Again depending on the contract, there will be a period where the user-client of the MoH will be requested to decide on certain product, colour, spatial configuration or equipment after inspecting mock-ups. Prior to commissioning of the project, the user-client will prepare staffing members and specific team for the take over. The contractor and the consulting/design team will prepare manuals for stages of commissioning to the user-client. It is at this period that each discipline of the user-client will be taught, trained or briefed on the spaces provided and how it is designed to be used. Upon take over at the end of the commissioning period, the user-client will gradually open the hospital by services. The contractor, depending on the type of the contract is responsible for the overall maintenance for a certain period. Once fully operationalised, the hospital is required to take note of the warranties, maintenance schedule, the running of clinical and administrative functions and provide feedback of the operation to the planning team in the MoH. The planning team of the MoH will prepare for Post Occupancy Evaluation (POE) visit. Usually, the evaluation criteria will be based on the requirements stated in the initial brief. The findings of the POE provide feedback on the degree of effectiveness from function, flow, operation, equipping, services, ergonomic, furniture, building materials, colour and others. The feedback is used for briefing of the next project or inserted in the future guidelines.

It is important to note that the period for each stage of the project process varies from one project to another depending on the complexity and project importance. The effectiveness and the smooth running of the process depend very much on the experience and the commitment of the consulting/design team and the planning team of the MoH. Although the architect plays a lead role as coordinator of the project, for healthcare facility project, the multi-disciplinary team composing of engineers, quantity surveyors/cost consultant, equipment planners, interior



designers, landscape architect and other specialist is required from the start to work as a team. In most design and built contract, a project manager is assigned for the day to day running of the project along side the architect.



**Fig.6 Project Process Cycle**

The above cycle can be an effective process cycle if the human resources that participate in the process from both the user-client and the consulting team are sustain. Current scenario in Malaysia witnessed the decreasing number of these specialists through natural retirement, job changing and other without planned replacement.

**REVIEWING PRODUCT OUTCOME  
(Redefining who we really are through case studies on outcome)**

Malaysia in a hurry towards a developed nation status using WHO guideline as facility to population criteria performance need to provide healthcare facilities for the nation. Targeting 1 bed: 2000 population, to date (2005 figure) Malaysia has 122 hospitals<sup>1</sup> with over 30,000 beds to 114 hospitals with 28,000 beds in 1999. Malaysia’s current population is over 26 million with an annual growth rate of 2.1. However, with the introduction of day care services and the reduction of acute beds for new hospitals, the bed per population target would have to be reviewed.

Traditionally the older hospitals are located within the city for big cities, by the sea, or on a gentle hill for smaller district. They were located within walking distance from public transport as part of the urban fabric and ease for visitors/relatives visits. However, in the replacement and new construction of hospitals, the location within the city is no longer a priority. While the existing hospitals were transformed to Health Clinics in cities following the new policy of segregating primary care from secondary care, the public had to travel to the outskirts of the city to visit their relatives in hospital. With exception to existing hospitals in Kota Bharu, Kota Kinabalu, Kuching, Taiping and many more are located within the urban fabric, where the relatives can still access the patient conveniently as part of daily routine; other new and replaced hospitals have been displaced into far corners of the catchment. Visitors have to literally make a point to visit their relatives using own or public transport. Visiting to some is no longer a routine phenomena at lunch hour or on the way to market but need to be planned and arranged.

<sup>1</sup> MoH’s published statistics. Current unpublished number of hospital in various stages of operation is 130. 27<sup>th</sup> International UIA-PHG Seminar, Beijing Friendship Hotel, Beijing, China 1-6<sup>th</sup> July 2007.

As designers, architects have no say in the decision of its location unless they were consulted. In Malaysia, the location of hospitals are preempted either in the local plan of the new cities by urban planners or politically displaced as catalyst for development in the outskirts. Thus new hospital projects have to cater for various infrastructure needed to function including new substation, new water supply, drainage, roads, bus stops. These items are added to the overall cost of the project at the onset.

Consulting team received project briefs with the sites clearly identified. The task begins simultaneously for the team to identify constraints and potentials of the site to the requirement of the propose facility function as a hospital to identified catchment population and its referrals. In design and built /turnkey contractual procedures for which the case study will be based on, the consulting team has only three (3) months to submit the first proposal and the next three to five (3-5) months to submit the final proposal before negotiation. These submissions include proposed masterplan, zoning and departmental layouts, typical room data, equipment list, catalogues of building materials and finishes. The brief given at the onset has no schedule of accommodation nor flow chart but functional requirements of spaces, indication of capacity and flow as well as adjacencies. The architect has to figure this out before other consulting team set in. In Malaysia, the client requires the architect to work with the "medical planner"<sup>2</sup> to transcribe functional needs to spatial concerns.

With the above constraints, the architect has to put together jobs that took normally 9 months -1 year within the space of three to four (3-4) months. With the process shortened and the client needs are getting higher and higher in standards and expectations, the project team including the consulting team need to be resourceful and innovative. The results of the findings from the selected case studies below reflect these constraints.

### **Methodology Use for Case Studies**

Case studies use for the purpose of this paper is based on recent walk through observation visits, real life living experiences as well as observations and random unstructured questionnaire to staff, patient and visitors/relatives. The purpose of the study is to evaluate within the perceive constraints, how far designers/architects were able to capture the needs of the user-staff, patient, support staff, administrators, visitors and relatives whom themselves are multi ethnic Malaysians in the light of providing supportive environment to otherwise clinical environment to fellow Malaysians present and future. The case studies findings will be describe through pictorial caption and end summaries for each case studies. As time is limited the finding is further summarised to give a gist on the crux of the matter.

### **Case Study 1: Hospital Sg.Buloh (national referral, tertiary-trauma hospital)**



Fig. 7 Hospital Sg.Buloh  
(620 beds). Selangor.  
Located in Sg.Buloh about  
12 Km from Kuala Lumpur  
Hospital

<sup>2</sup> A misnomer term but commonly use in Malaysian healthcare industry to describe Health Facility Planner or Architect with a task of translating the project brief to spatial requirements and assist architects to work out on master plan, departmental layout, room data and others. There are no specific requirements to the discipline with exception of experience in previous job which may be dangerous and misleading to the client. The profession is not regulated and thus not liable.

Design Brief : Customised (IT hospital)  
 Design Development : Turnkey  
 Construction : Turnkey  
 Operational/In Use : Just open in late 2006  
 Selected department/area : Circulation and Emergency Department  
 Date of Visit : November 2006 (hospital planning and design 2006 workshop visit)

**Fig.7a The Corridors**



**Fig. 7b The Linking Bridge**



**Fig. 7c The Garden Courtyard**



**Fig 7d. Resus bay,ED**



**Fig.7e Observation Beds,ED**



**Fig. 7f Staff Base, ED**



**Fig. 7g Entrance, ED**



**Fig. 7h Ambulance Bay, ED**



**Specific Findings:**

**Circulation Area**

Still early to speculate, but the distance from one department to another is rather far although easily identifiable by signages. The corridor, at the moment is without any decoration. Rain still comes in despite wide overhang. The corridor is quite dim if not lighted. This is the result of getting the wide overhang to avoid rain in order to be naturally ventilated.

**Emergency Department**

On observation and being informed the department is relative new and some areas were still not in use. The entrance did not look inviting by normal standards and only the ED staff will know where to enter the department. The department is well equipped for any eventualities. The Labour and Delivery Entrance at the far end have to compete for attention for emergency mothers.

**Case Study 2: Selayang Hospital (IT hospital / general hospital)**



**Fig. 8 Selayang Hospital, Selangor (960 beds)**

Design Brief : Customised  
 Design Development : Turnkey  
 Construction : Turnkey  
 Operational/In Use : In operation since 2000  
 Selected department : Circulation Area, Ward, ICU  
 Date of Visit : June 2006 (Observation and interviews made during accompanying patient-late father)

**Fig. 8a The Corridor to the ward-long walk**



**Fig 8b the Core-no reception/security**



**Fig 8e The make do waiting spaces at OT/ICU/HDW corridors**



**Fig 8f The 4 bed bay, Ward during after visiting hours Fig. 8g Prayer Time**





**Fig. 8h ICU environment**



**Specific Findings:**

**Corridor:** The patient/relatives can recognized the main entrance to hospital although deliberate mistakes/advantage may happen during clinic hours to enter the ward areas. From the atrium leading to the main lift core is easy although rather distant for the disable and elderly. The lift core on each level of the ward is quite bare. Signages were present but the spaciousness of the space gives a sense of waste if not fully utilized. Patients/relatives bring many visitors through these lifts and the wide space becomes a play area for the children. The distance from wards of another wing is very far (about 100 metres..impression). No interest is posted on the wall for education or take away boredom and anxiety of the waiting relatives. Visitors wanting to use toilets and prayer rooms from the visitor's area of this wing, if under maintenance, may have to walk very far. Patients also use this facilities when accompanying the relatives or on their own. There is no security guard at the ward reception or visitors area of the ward. Normally relatives stayed and sleep in the praying room as the visitor's chair is not comfortable. Bathing is also done in the visitor's toilet if patient's toilet in the ward is not free or when a female relative is accompanying male patient in the male ward.

**Ward:** Although there is no written policy for accompanying relative for patient, relative of the patient will insist on waiting and assisting the patient by staying day and night. Non written policy allowing this tradition is good as patient is constantly supervised by the relative and indirectly assist the nursing team (which is already short staff) of supervision. The facility, however, do not cater for such requirements thus relatives have to bear the discomfort of sleep, toilet use, storage and others. Patient, depending on their ailments stays for 1-2 weeks in hospital. The amount of stuff brought from home and presents/gifts by visiting friends will not able to fit the space allocated. Most of these gifts are brought home as the wardrobe can only take so much. Hospital food is not always palatable, so visitors will buy or brought home cook food as replacement. Some support staff, knowing the predicament of the relative who cannot leave the patient's bedside, sells breakfast cake and rice discreetly early in the morning. Doctors round in the morning will see some commotion at the bed areas to keep the bed clean. Privacy is kept through curtains, use of own bed-head lights. Visiting hours open to all kind of frenzies as number of visitors is not stated. Chairs of other patient's relatives were taken or given. Most ward occupants are friendly and became the best of friends as they leave. Prayers are said together within the ward area before surgery. Disable patient will do their prayer in bed. Some came back to visit their mates upon their discharge. Relatives of other patients help other relative to keep an eye on their respective relative-patient while they went to toilet or buy food. Cooperation among the relatives of respective patient sharing the same grievances is evident. Towels, bags and others are shoved behind or under the bed when doctors come for their rounds. When patient has to leave for surgery, storage of personal items was kept in the store room. Other costly items are kept by the relative.

**ICU**

Relative entering ICU during non-visiting hours will need to call the staff base and state their patient's name and his/her relation to the patient. Muslim or non Muslim patients constantly craved to be next to their relative even though nothing much can be done except prayer. Limited

visiting hours to ICU allows for only two people at one time to say their prayers or read Quran. Relatives are called in into the ICU at other times in the event of cardiac arrest for last minute prayers. If x-ray is required for the next patient in the ICU, relatives of the other patient are advised to shield themselves behind the staff taking the x-ray. The bed of the other patient was shoved to one side to allow entry for the machine. Bathing period, relatives are not allowed to watch for whatever reasons so as not to obstruct what staff needed to do to the patients. Curtains are covered around the patient for privacy. On observation, the young staff has still a lot to learn to respect the patient what ever age. Patient, even in coma can listen. Most nursing staff talks among to each about their personal life without care. With the use of IT, staff stay put at their desk without observing the patient unless one of the alarms went off.

### **GENERAL FINDINGS**

Although there are mismatch of spaces and use, distance and flow, the people and staff have adapted well although to their own inconvenience. The loop holes in the system assist the public as described above. People are happy with the relaxness of visiting hours and number. General comment by general public in relation to older hospital is very good in terms of convenience for prayer, toilets, visitor's space, parking and staff. Wastage of space and the lengthy corridor is of concern. Generally, human and humane touch with the presence of love ones is important to make the stay comfortable.

Apart from the above case studies, visits to other new hospitals were deducted.

### **What do the new facilities had in common?**

Although the above findings are not conclusive, however observations made can conclude that we had constantly import alien culture which consider as modern and advance into our midst without much studies on its impact to our users.

### **Modern Design Elements**

- Atrium
- 4 bed bays with ensuite toilet
- Long and wide corridors
- Air Condition spaces
- Visitors facilities
- Staff facilities
- Gardens
- 'Healing' interior environment
- Colours
- Finishing
- etc

Patients, relatives and staff are oblivious to the provision as they expect them to happen in urban hospitals. Most fear about payment to the service if it may equate to private sectors. With exception to some enquiries to level of their destination, every visitor find their own way. They do not show dislike or like to the new environment except for personal comfort and access.

### **What the facility lack**

From the above studies through observation and random questionnaire, although Malaysia had improved tremendously in providing healthcare facilities for its people, perhaps it is about time we should reflect on the quality of life, the caring society mission in our goals towards a developed nation from our own perspective. Our traditional values, as a source for "reflexive modernization as well as a self-sustaining progress that considers the indigenous conditions of our separate regions" as Lee (2001) said should be integrated into our environmental design.



## **RECOMMENDATIONS**

The state of our facilities built in a hurry among other resurfacing problems, are the non research areas of patient friendly care. We adopt and adapt. The major patients and staff for Malaysian hospitals are Malaysian themselves. Visitors to these patients are also Malaysian from all walks of life. Apart from the relative few immigrants in the country from Indonesia, Burma, Myanmar and Bangladesh that seek healthcare in public hospitals, Malaysians, themselves are made of many ethnic group with varied cultures that define comfort, sadness, hope and jubilant in their respective ways. Observations and interviews to these people revealed common hopes, comfort, expectations and moment of sadness for which designers can tapped from. Towards a better and conducive environment for the users, perhaps the client (MoH) should be inclined to allow provisions to certain aspects of care without detrimenting to clinical nor safety of both staff and patients as well as visitors. Patients and visitors know their limits intuitively. They will ask if unsure and hope to be comforted with kind words and not apprehended. They silently demand respect.

### **Rerunning of Ideas**

In redefining sustainability, Architects as designers has to relook at the process, Architects are not strange to the process of research as basis of their design process. Thus rerunning of ideas in the design process into studying human behaviour and culture, ergonomics, operational policies, environmental concerns and many other though-to- be trivial things should be incorporated. Designers have to give themselves time to do the job right every time. Client must participate for fulfillment of common objective. Do POE on existing and on your own projects to avoid mistakes re-happening no matter what the outcome will be as it is always a learning process.

Remind one self to THINK GLOBAL ACT LOCAL as one embark on ones project in the future serving for your own people and your nation. We need identity and we need to be recognized. So have a Rerun.

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