**Building Life Cycle-Problem and Opportunities exist**

Building born from demand of man to get service either for shelter or to house properties, product, asset or the building itself is asset. Generally there are 3 major mode of buildings; housing for residential, commercial for office building, shop, hotel and factories for industries. The size of the building is varied from large to medium to small which is determined by zoning density. Usually high density zoning is for high towers or massive building. No matter what the different, all building has the same life cycle process. Basically there are four major phase; design, construction, operation and finally renovation or demolitions.

Imagine the life of the building is a man life; the life of the man shall be difficult if he not manage his life with wisdom and proper care. The building is similar to that therefore it is not that complex to be understood. A building that embedded with intelligent system will go through a life cycle that isn’t difficult but convenient for the user and environment and owner money. Just like an intelligent man who has everything figured out for his life he manages to get fortune and health with less effort.

The sense of intelligent should be considered as early at siting and design stage. The siting is about to gain positive benefit from the orientation of the building while adapting the proper standard eg. Uniform Building By law (UBBL) to ensure the siting doesn’t only ensure benefit for itself and have affect the other building. The example of this is case is the siting of the infamous “Penang Twin Tower” condominium ‘THE VIEW’, which from my personal opinion disturb the skyline of University Sains Malaysia.

A building siting and orientation should be comprehends sun path. The objective is to harvest light but reduce heat so the building operation uses less energy for cooling (for hot climate country). The wind direction also must be considered because this is source of ventilation. Intelligent building is not always about the use of electronics and sensor but also to use passive resource, in this case natural ventilation. We don’t want a heavily mechanical ventilated building.

Next on the design, the designer and engineer must take account the building operations once the building constructed. The building structure and layout plan must already include the location to house (if required) the automation system, HVAC system, water pump and many more other equipment for the building operation. This is to ensure the building structurally sufficient to support the load and impact (noise, vibration, moisture or leakage) of these equipments.

Once the design is completed and approval acquired, the construction can immediately commence. Intelligent building construction must also exhibit intellectual by emphasize on sustainability. Sustainability means to have low impact on environment and surrounding. These include method of piling which have doest effect nearby structure. The uses of pile drive into ground by hammering or vibration can propagate vibration through ground and affect other existing structure nearby. The use of construction material which from Industrialized Building System (IBS) such as formwork, panel, beam is recommended as it more efficient – use less labor, high quality, and not make site clearer.

With the current condition considering the availability of raw material, rapid growth of other industry and energy crisis the building today need to cope with all this and learn from other industry if not will be lag behind others. For management of building operations, professionals in building construction have to make use the opportunities of the advancement of information technologies network and hardware which has reduced in size and price. Sensor also will become common embedded in building system to increase the building performance especially in energy control but doesn’t affect the performance but improve it,