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What are challenges in developing sustainable, practical and cost effective designs vis-à-vis a traditional building designing methods?

One of the appeals of sustainable development is its long term cost effectiveness.

However the same cannot be said for sustainable design. While traditional design follows a seemingly simple linear process, where each stakeholder hands over responsibility without much insight on what the others require, sustainable design follows a centric process where all stakeholders converge and agree from the beginning of the project. Sustainable design requires a considerable amount of additional engineering effort and therefore the "soft cost" is considerably higher.

However this is only because most people are used to the traditional way of thinking and find that easier to implement. This is now changing over time as new standards restrict more and more the margin to stray away, people are getting more exposed new methods and sustainable design becomes the streamline.

Another challenge of course is the resistance to change from various parties, but most of all from owners: clients and financing institutions. I see that this is also changing at a fast pace in the region.

As per your interaction with the developers and construction companies, how has implementation and of Building Automation Systems helped achieve the desired results of building efficiency?

I have seen through the years how building automation has become a core discipline in the building industry. It has proven to be an essential control and management tool for operation and maintenance. Not only building automation consolidates the efficiency of building systems but it also contributes to a tremendous reduction of the running cost. A great majority of developers now realize that and strive to implement building automation on every level.

How important is building-to-district level low energy urban planning in order to support and achieve the Green Economy for Sustainable Development initiative?

It is undoubtedly gaining momentum. With the innovations of smart cities on one hand and the technological advances in building automation on the other, developers, municipalities and campuses had to adopt these technologies not only to implement sustainability and cost control more efficiently, but also to streamline the central management of their portfolios of buildings.

I can see in the near future a deeper integration between smart buildings and smart infrastructure such as smart grid and smart metering for example. This is now here and being implemented and will continue to evolve.

What role energy modelling plays in order to make the buildings optimize the resources and earn LEED certification?

An energy model is an approximation of the reality and in no way can it give actual or accurate account of the finished building energy consumption. That said, energy modelling is an awesome tool for architects and engineers that help in determining how factors affect the energy consumption and response to the environment.

In LEED and other point-based sustainable building certification, the design case is compared to a baseline to see how much a building would reduce energy consumption. All of these certification standards like LEED, ESTIDAMA and BREEAM assign weightage to credits. And in all of them the energy efficiency credit has the highest weightage. These credits rely heavily on energy modelling to obtain tangible results. Some of the most used popular modelling software that I have come by are eQuest and Carrier Hap



among others. They use ASHRAE Standard 90.1 as energy efficiency standard.

Automation strategies include HVAC control and monitoring, light controls, leak sensing and so on can be modelled into the design case. When that is done and the model is compared to a baseline, the result is always a tremendous amount of energy saving. In addition, with the advances and evolution of baseline standards, the requirement threshold is rising over time. This means in the future we will see the requirements of energy efficiency credits rise and the efficiency with it.

There are other software that can be used in energy modelling such as AutoDesk Green Building Studio, but these will not accomplish all the requirements of the energy efficiency credits. They can give a preliminary energy report and can be used to optimize passive elements such as windows and shades, in lighting studies and in life cycle studies.

What are your expectations from the summit and how do you rate the topics of the discussion at the summit?

Undoubtedly the summit will be a platform of exchange and of ideas. The topics discussed are a main subject of current trends in the construction and facility management industries.

What is always expected from such events is to provide a catalyst and they always are the fulcrum on which the industry lean to step upwards.

The contribution of professionals across the spectrum of the building industry will definitely drive the market to better itself.

