

## Building Automation System



Aesthetics is one of the core factors that play an integral part in a normal layman's perception about the built environment therefore the architect has been very conscious to evolve aesthetically pleasing built environments. However with recent paradigm shifts and typology of buildings being commissioned to meet the urbanisation trends. An architect has more frontiers of technology to conquer to make projects more appreciable and feasible after execution. The need of the time is in understanding and evolving appropriate approaches by properly utilizing technology during design evolution of urban built habitat. In this context the awareness of Building Automation System plays a critical role.

A building automation system (**BAS**) can be related to a digital control system. A computerized intelligent network of electronic gadgets that monitor and control various service oriented aspects of a modern building leading to optimum efficient performance. More specifically it could be termed as a comprehensive automated control of major building system functions required in a facility, such as HVAC Systems, Lighting, Elevator/Escalator Network Management, Security Systems and more.



### Building Automation System Applications:

Equipment Monitoring - the key reasons to monitor service systems is to be aware of effectiveness in efficiency output as well as to prevent potential failure due to malfunction.

Energy Consumption and Environmental Bridge – sensory interface provides real time and mean values based on existing conditions/documentated values recorded over a period of time. These analyses of

energy using end devices and environmental monitoring devices provide effective synchronization of the concerned system for balanced performance.

Equipment Time Sharing – multi tasking is effectively applied in a digital interface environment interlinked and synchronized by an intelligent control – Information Technology enabled system. A particular gadget not only provides information on a stipulated activity but also indirectly gets involved with other tasks.

Disaster Mitigation – Proper enhanced monitoring and detection systems provides for nullification of failure of service systems and if at all a situation of failure props up, specific service personal oriented communications and alarms are generated.

Remote Access – Wi-Fi enabled control and operational interface enables better access to overall management of the various systems at divergent scenarios. This feature also helps in reducing the overall maintenance cost and provides for optimum use of manpower directly.

Asset Tracking and Location – provides real-time location of tagged equipment and people as they move about in the facility. The wireless IR/RF tags transmit low-power signals to receivers so movements are continually tracked, saving time and being consciously aware of the location of user.

Enterprise System Integration – enterprise architecture wholly focuses on system interconnection, electronic data interchange, product data exchange and distributed computing environment management.

Lighting Control and Retrofit – provide lower energy consumption as well as energy bills while maintaining or improving lighting levels. System monitoring would also result in fewer short –term lighting quality issues, improved colour, less flicker, and great working environment.

HVAC Maintenance Services – optimum comfort levels and proper integrative maintenance scheduling can be achieved by effective functioning of one or more HVAC systems linked to the BAS



INTEGRATED BUILDING AUTOMATION SYSTEM ATTRIBUTES

**Integrated Building Automation Systems** are designed to simplify the management and protection of industrial, commercial, and residential buildings. These systems provide for greater overall efficiency with operational cost savings to property owners and managers. Integration of building systems affordably and in a customized manner requires proper integration of architectural – engineering domains. Highly qualified and trained professionals play an integral role in initial installation of the system. The technical side consists of management of various system interfaces by connecting building actuators and sensors to data networks and enabling computer control. However these systems are also prone to cyber attacks, research is also happening in this scenario to thwart security breaches.