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ntelligent Buildings

The term Intelligent Building was first used in the United States in the early 1980's and a definition given by the Intelligent Building Institution in Washington is "An Intelligent Building is one which integrates various systems to effectively manage resources in a coordinated mode to maximise technical performance, investment and operating cost savings, and flexibility."

The Chartered Institute of Building Services Engineers (CIBSE) describes an intelligent building as "one that provides a productive and cost-effective environment based on three basic elements People (services users/facilities management), Products (fabric, structure, facilities) and Processes (automation, control, systems, maintenance, performance) and the interrelationships between them."

Intelligent Buildings help building owners, property managers and occupants to realise their goals in the areas of costs, lifetime energy management, well-being, convenience, safety, long term flexibility and marketability to achieve buildings which have high social, environmental and economic values.

21st Century homes and buildings need to perform significantly better in environmental, social and economic terms than their forefathers. The essence of Intelligent Buildings lies in the application of control technologies which allow the integration, automation, and optimisation of the services and equipment that manage and serve the environment of the building concerned.

Programmable Logic Controllers (PLC's) formed the original basis of these control technologies while later developments in commercial and residential applications were based on 'distributed-intelligence microprocessors'.

The use of these technologies allows the optimisation of various site and building services, often yielding significant cost reductions and large energy savings. Building services within buildings can be controlled by time based systems which provide heating or lighting services, etc., only when required, and optimiser parameter based systems often utilising a representative aspect of the service, such as temperature for space heating or luminance for lighting.

Intelligent Building enthusiasts believe that the sixth utility - smart technology and infrastructure systems delivered by broadband - can help significantly not only in reducing CO2 emissions through energy management and monitoring systems and information systems that provide 'sustainable choices' but also with a critical role to play in making homes and buildings fit to support the UK's aging population.

CIBSE has an active Intelligent Building Special Interest Group. Details can be found at <http://www.cibse.org/Networks/Groups/Intelligent-Buildings>