

DEVELOPMENT OF AN INTEGRATED INTELLIGENT BUILDING
CONTROL SYSTEM THROUGH AN AUTOMATED SCENARIO
BASED APPROACH

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DECLARATION OF THE CANDIDATE AND THE SUPERVISOR

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ABSTRACT

Integrated Building Control Systems (IBCS) may consist of public address and pipe music systems (PAPMS), elevator management systems, fire/life protection and detection systems, CCTV systems, access control systems, and building energy management systems (IBCS). So, the Integrated Intelligent Building control system has a major influence on energy efficiency, indoor environmental variables/parameters, analysis & survey, health and safety. It is well acknowledged that an Integrated Intelligent Building control system may improve a building's environmental and economic performance. Basically, automated high-rise buildings can regulate /control its inside environment parameters using a computer in view of improved cost effective energy usage, building users satisfaction, safety, and productivity. Energy, Safety and comfort management, as the principal function of a high rise defence building control system, seeks to resolve the tension between increasing user wellbeing including safety and lowering building operating costs. This thesis presents a novel method for Intelligent Building Control systems that use an intelligent facility manager to autonomously regulate the building environment. This thesis discusses the present problems facing when constructing the Integrated Building Control System and further explains available and required facilities and the importance of acquiring information from sensors through common architecture with a common protocol (Communication language). Further, this describes how Building Control System architecture (including all required facilities) utilizes its sensory data to understand and identify exciting/ real time situations from the behaviour /scenario of persons and systems whilst always providing a fast, safe response to any situation. Finally, this report shows how deep can utilize this system for early warning and firefighting of high-rise defense building

Keywords: Building Automation, Facility Management, Defence Building

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LIST OF ABBREVIATIONS

Abbreviation	Description
AHU	Air Handling Units
ASHRAE	American Society of Heating, Refrigerating and Air-Conditioning Engineers
BACS	Building Automation And Control Systems
BCS	Building Control Systems
BEMS	Building Energy Management Systems
BMS	Building Management System
CEA	Central Environmental Authority
CNP	Control Network Protocol
DGI	Daylight Glare Index
DGP	Day Light Glare Probability
EHS	European Home Systems Protocol
HBES	Home and Building Electronic Systems
HTTP	Hypertext Transfer Protocol
HVAC	Heating Ventilation and Air Conditioning
IBCS	Integrated Building Control Systems
IEC	International Electrotechnical Commission
IIBCS	Integrated Intelligent Building Control Systems
IoT	Internet of Things
IP	Internet Protocol
ISA	National Standardizing Associations
ISO	International Organization for Standardization
NEA	National Environmental Act
NGO	Non Government Organization
OSI	Open Systems Interconnection
PAPMS	Public Address and Pipe Music System
PICS	Protocol Implementation Conformance Statement
PIR	passive infrared Detectors
PL	Power Line
PMV	Predicted Mean Vote

PPD
SCADA

TCP
WHO

Predicted Percentage Of Dissatisfied
Supervisory Control And Data
Acquisition
Transmission Control Protocol
World Health Organization