

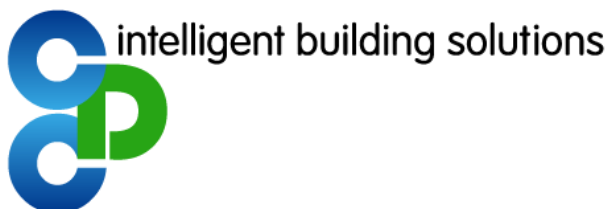
Welcome to a world where technology flows
through the heart of your business environment

Welcome to CDC



Building MANAGER

Powered by **Integra**



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Overview

Building management is a major component of the overall management of real estate facilities and deals with the control of mechanical and electrical equipment (such as heating, air-conditioning, refrigeration, security, life safety and lighting and increasingly IT and communications) to provide optimum operational conditions within the building.

The challenge is to provide an intelligent system that can utilise the functions and features of the existing systems, whilst able to be replaced when operational budgets permit technology upgrade, notably.

- inter-operate with existing BMS, security, energy, fire, life and safety systems.
- interface with both new and legacy electro-mechanical systems and equipment.
- use common networking and communication standards.
- with multiple buildings, to communicate across a geographically dispersed real estate portfolio and
- enable inter-operability with enterprise business management systems.

CDC's **Building Manager** meets the challenge of integrating building management systems with access control, fire, life & safety systems, incident detection, video monitoring and communications, location awareness and event management into a single management user interface allowing for efficient and effective functional management of all sub-system devices, data and images from a single point of reference or from many different positions.

The CDC **Building Manager** is a network-based information management software system that is designed to seamlessly manage the electro-mechanical and other operations in a building. It is able to interface with all legacy and future systems to provide a fully integrated operational environment working with defined cause and effect response plans.



Building Management

Building management is a major component of the overall management of real estate facilities and deals with the control of the mechanical and electrical equipment (such as heating, air-conditioning, refrigeration and lighting) to provide optimum environmental conditions within the building.

The challenges to designers in planning the systems side of

Access Control	High Pressure Hot Water Plant
Air Cooled Condensers	Intercom
Air Handling Plant	Intruder Detection
Asset Tracking	IT Assets & Network
Automated Number Plate Recognition	Leak Detection
BMS Systems	Lifts & Escalators
Boiler Plant	Lighting Control
Cameras Analogue & Digital	Oil Storage
Car Park Entry / Exit Barriers	Paging
CDC Integra Operating System	Panic Alarms
Chiller Plant	People Counting
CO Monitoring & Extract	Perimeter Intruder Detection
Coal Fired Boiler Plant	Power Factor
Compressed Air	Power over Ethernet
Conference Room Systems	Presence Detection
Contamination Monitoring	Public Address
Control Room Displays	Pumping Systems
Cooling Tower	PV Solar Panels
Digital Image Recording	Queue Management
Digital Signage	Remote Management
Domestic Hot Water Services	RFID Tagging
Effluent & Drainage	Seismic Detection
Electrical Switchboards	Smart Card
Electricity Metering	Standby Generators
Emergency Lighting	Steam Generating Plant
Emergency Lighting	Surveillance Cameras
Explosive Particle Detection	Tamper Detection
Facial Recognition	Telephony
Fingerprints & Biometrics	Thermal Wheel
Fire Alarm & Detection	Trace Heating
Fire Suppression	Under Vehicle Scanning
Gas Metering	Uninterrupted Power Supply
Geo-Thermal Plant	Ventilation Plant
Heat Pumps	VESDA
Heating & Air Conditioning	Voice Evacuation
	Water Metering
	Water Treatment

buildings is exemplified by the array of different systems features and functionalities that need to be considered.

The solution becomes more complex, however, when the requirement is for an existing building, or needs to be incorporated in an existing real estate portfolio of buildings, all with disparate legacy electro-mechanical services evident within each building. It is simply not cost effective to replace all the legacy electro-mechanical systems and equipment in each building to enable a desired IBMS solution. CDC's **Building Manager** provides the answer, see the **Building Manager** Fact Sheet



CDC Building Manager

CDC's **Building Manager** powered by CDC Integra™ meets the challenge of integrating building management systems with access control, fire, life & safety systems, incident detection, video monitoring and communications into a single management user interface allowing for efficient and effective functional management of all sub-system devices, data and images from a single point of reference.

The CDC **Building Manager** is a network-based information management system that is specifically designed to manage building electro-mechanical operations. It is able to interface with all existing and future systems and provide a fully integrated operational environment in accordance with defined cause and effect response plans.

The CDC **Building Manager** provides an effective alternative solution to traditional building management operations, proving easier to design, update, and operate i.e.

User Interface

The graphical interface presents all monitored "points" such as heating, ventilation, air-conditioning and cooling systems, security, life safety, etc in a geographic display that allows for areas to be zoned and monitored from a single command station. The interface presents conditional information to the main controlling workstation and does not compromise the integrity of the existing system configuration.

Zone Control

Geographical and logical zones can be created graphically to easily monitor and manage environmental conditions in any given location.

Incident / Event Detection

Information from detectors and alarms can be captured, categorised and displayed graphically within the incident zone allowing for visual confirmation via video or by inspection. Responses can be generated automatically or manually.

Threshold Monitoring

Multiple minimum and maximum threshold environmental conditions along with security status can be pre-set, monitored and automatic responses can be triggered if

conditions vary outside of these parameters

Cause and Effect

The CDC **Building Manager**'s rule based cause and effect logic engine is optimised to establish intelligent inter-operability between connected systems and manage any Standard Operating Instructions (SOI) that are already in place. Operators can be easily guided by the very straightforward Graphical User Interface (GUI) to respond to all types of incidents in the most appropriate manner. All alarms, system and operator actions are maintained in an audit log and regular operational analytics and statistics are available in report format for Management and Supervisory enquiry.



Key Features & Benefits

CDC **Building Manager** has a wide range of features and functionalities, all contributing to operating cost reduction and improved systems operational performance.

Monitoring

- Automated monitoring of all the security, energy & environmental monitoring and control systems, conditional sensors and external contributory factors
- Electricity, gas, oil and water meters.
- Examination of the effects of external factors on building performance such as weather conditions, external temperature, transportation, occupancy and footfall rates etc.
- Graphical and geographical representation of a managed controllable zones of operation, the entire site, or sites.

Analytics

- Automated carbon emission calculations.
- Powerful analytics tools which can be applied to the real time data so as to have actual operating data and performance for comparison with plans and targets
- Automated alerts and alarm handling set against pre-defined thresholds
- The audit trail allows for powerful unbiased "forensic" analysis after real incidents have taken place to contribute to future security policy design and to support corporate governance and best practice methods.
- Dashboard provision of key security, energy, facilities and sustainability operational performance indicators.
- Year on year statistics and trend analysis for improved budgeting, planning, forecasting and capital allocation.
- Benchmark comparison across a portfolio by geography, time of day, property type, and more....

Control

- Consistent "out-of-tolerance" alarm trapping, and handling functionality across a wide range of connected systems and monitored domains.
- Automated control responses to alerts and alarms
- Intelligent automated responses to event driven alerts and alarms, providing the ensuing cause and effect control strategies, which can be applied to any and many points on an connected system

Connectivity

- Operational teams can operate from dispersed different locations yet still remain in constant communication.
- Connectivity to a wide range of different systems, involving different vendors, and both legacy and new systems. Integration of existing sub-system with the capability
- Access to seamlessly and inexpensively add new sub-systems when required
- Incorporates integrated digital images, voice and data including video surveillance and digital video recording solutions.
- Scenarios can be simulated and the resultant audit trails examined for continuous improvement and training purposes.
- Accessibility from LAN, WAN and Intranet or Internet networks. Operational teams can operate from dispersed locations yet still remain in constant communication.
- Eliminates the multiplicity of paper based plans to ensure that all plans are current and readily available online.
- Scenarios can be simulated and the resultant audit trails examined for continuous improvement and training purposes.
- Normalisation of interval data from multiple sources to provide a comprehensive database that can be interrogated to provide:
- Profile generation – analysis and comparison of performance over selected time intervals.
- Centralised command & control operations reducing operational space requirements and the need for remote / satellite control stations.
- Integration of building sub-systems into one simpler graphical interface reduces resource and training requirements.
- Sub-systems can be replaced or upgraded without loss of functionality within the controlled environment.
- As a software solution, there is no requirement for specialist or proprietary equipment, hence significant capital outlay can be avoided.
- Integration occurs at the CDC Integra server level, therefore individual sub-system maintenance and operating agreements are unaffected.
- The solution contributes to "good practice" management and compliance standards for building management.

Powered by Integra™

The CDC Integra™ software solution is a uniquely flexible interface and control system, designed to allow for integrated communication and operational control between the different sub-systems that support the operation of any type of facility.

All types of facility sub-systems are presented in an easily comprehensible graphical format to integrate all operational management services into a single control environment. The solution operates across, and groups together, management solutions for:

- Heating, Ventilation and Air Conditioning (HVAC).
- Environmental Monitoring and climate control.
- Energy management and carbon reduction.
- Physical and site access security.
- CCTV and Digital CCTV recording.
- Fire, Life and Safety systems.
- Lighting and shade.

Versatility is the key to the CDC Integra™ concept. Instead of attempting to force adoption to a particular standard, its success as an approach to system integration lies in being sufficiently flexible to adopt whatever communications media and protocols are already employed by the



proprietary sub-systems.

CDC's approach is to integrate the site sub-systems so that the functional autonomy of the individual systems is unaffected. This approach also preserves confidence and integrity in the independent operation of all the sub-systems.

CDC Integra™ hosts a suite of applications called CDC Server Services that each have a clearly defined role in terms of the discipline or function to which they relate

(such as Fire, Security, BMS etc). Each Server Service applies discipline-specific rules to maintain the integrity of the systems they control.

CDC Integra™ Server Services have the following characteristics:

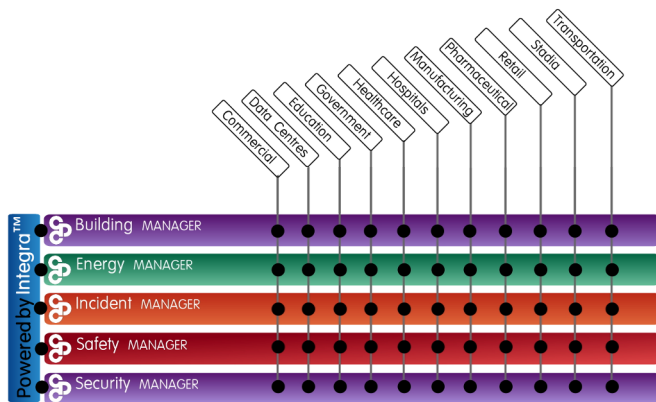
- A **Grouping Service** used to combine management tasks from the different Server Services on a location basis. This allows, for example, Fire Objects (detectors and text messages) to be grouped into a Room, and Rooms to be grouped into an Area, and Areas to be grouped into a Section, and Sections into a Floor, and so on. Graphical representation of the state of any Group is displayed, which in turn represents the state of its constituent components.
- The **Logging and Report Generating Service** provides audit trail information, and also acts as a central report storage facility.
- The **Alarm Management Service** receives alarms and allocates them into a prioritised Alarm List. It also builds a Response Plan for each received alarm to provide clear operator instructions.
- The **Response Plan** method of integration is designed to analyse a large number of different alarm conditions. Each plan creates “easy to interpret and follow” instructions in response to particular alarm stimuli. The response plan can automate some response actions, and assist operators or operational managers in completing others.
- The **Analytics Service** receives All performance information which is captured, from either polling or from receipt of alarm/incidents, is able to be passed in real time to the Analytics Service, which carries out computational / analytical tasks on the date. The outputs from the Analytics can take the following form
 - Used as an action trigger for the Response and the Rules Based Logic Modules
 - Form the basis of Reports, Graphical display, Dashboards and more..
 - Passed to Third Party ERP and other software applications

Response Plans are designed to provide operations and management teams with a tried and tested operational procedure when an alarm situation occurs, and to record their actions and feedback to an audit trail.

Integra™ Applications

The CDC Integra™ Manager applications build upon the Integra™ software platform to provide an interconnected suite of feature rich applications designed to monitor, control and group together disparate building sub-systems. The main CDC Integra™ applications are:

- **Building Manager**
- Energy Manager
- Incident Manager
- Safety Manager
- Security Manager



Additional CDC Integra™ Manager applications are also available for specific operational solutions such as Vehicle inspection & parking management and Production control & automation.

About CDC

CDC is one of the pioneers of the intelligent buildings concept and has been a market leader since its inception in 1988. An international network of offices in London, Dubai, Istanbul and Beijing supports our activities as a leading authority in existing and new build projects.



CDC solutions are used in over a 1,000 global locations and we are solution partners with many of the world-renowned organisations in the provision of intelligent building solutions.

A founder member of the Intelligent Buildings Group, CDC also continues to invest in R&D at leading universities to help drive the market and develop new technologies.

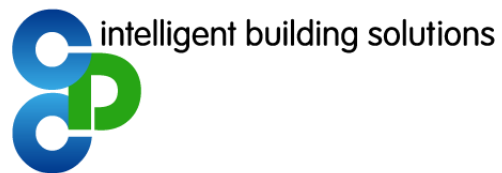
CDC provides many intelligent building management solutions covering sectors such as Healthcare & Hospitals, Retail Malls, Commercial, Industrial, Pharmaceuticals, Transportation, National & Local Government and Education.

CDC is an associate member of the IPD Eco-Ledger.

IBG is an international not for profit organisation dedicated to the improvement of the built environment, through research into building intelligently an intelligent building. IBG is supported by government and affiliated with sister organisations in China Asia, Europe, US and more

Eco-Ledger Associate Members are licensed and approved by IPD to carry out Eco-Ledger related services such as data collection and quality audits. We can offer advice to support Eco-Ledger and help you improve your buildings' environmental performance.





CDC intelligent building solutions

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