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Welcome to CDC

 Intelligent Solutions

Powered by **Integra™**

Intelligent Campus Management **Urban**

 intelligent building solutions



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## Overview

The Urban campus is a broad description of a real estate portfolio which has been established over time and comprises a wide spectrum of different building types located in one or many sites; all with varying building technology systems.

The traditional method of managing and controlling these facility assets involves deploying staff (both in house and maintenance contractors) dedicated to each building; and demanding that these people resources be the experts in the individual systems and technologies in the buildings in which they work. This approach is fraught with corporate risk and increases operational costs.

The Urban campus seeks to provide an accessible, comfortable, flexible yet controlled and secure environment for its tenants to benefit from the use of the campus facilities.

The Urban campus is the most diverse property challenge – how do you provide flexible, efficient and integrated campus management with adequate safety & security, whilst maintaining costs, across such disparate property types and functions?

The CDC Intelligent Campus Management solution meets this challenge. It is designed to provide flexible, efficient, intelligent, integrated management of all building sub-systems across a campus. It is unique in its design philosophy – providing the capability to identify any property (or part of a property) as a managed “zone”.

The CDC Intelligent Campus Management solution provides a hardware independent open centralised monitoring system designed to integrate and control the disparate and proprietary sub-systems evident in campus operational control and monitoring environments - a solution that can be extended to manage multiple campus operations. A rule based centralised management system allows for “management by exception” with the ability to group together separate sub-systems for optimum performance management. It automates the management of response plans and event management for campus operators (including Major Incident Management and Low Carbon energy planning).

The CDC Intelligent Campus Management solution encapsulates Intelligent Building principles in which the building fabric, space, services and information systems can respond in an efficient manner to the initial and changing demands of the campus and its population; thus increasing performance, improving management and

reducing costs.

The CDC Intelligent Campus Management solution is powered by CDC Integra™ software - 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.

The CDC Intelligent Campus Management solution is provided by CDC, an employee-owned company specialising in the application of intelligent building solutions since 1988, with offices in London, Dubai, Istanbul and Beijing.



## The Urban Campus

The Urban campus is a broad description of a real estate portfolio which has been established over time and comprises a wide spectrum of different building types located in one or many sites; all with varying building technology systems.

The traditional method of managing and controlling these facility assets involves deploying staff (both in house and maintenance contractors) dedicated to each building; and demanding that these people resources be the experts in the individual systems and technologies in the buildings in which they work. This approach is fraught with corporate risk and increases operational costs.

The Urban campus seeks to provide an accessible, comfortable, flexible yet controlled and secure environment for its tenants to benefit from the use of the campus facilities. These facilities often include:

- Offices.
- Retail units.
- Public areas.
- Distribution and storage areas.
- Restaurants & catering.
- Data centres and secure operational centres.

There is often an obligation for 24x7 operational hours and a corporate responsibility for the wider community. This unique environment creates exceptional facility performance issues:

- Heating, Ventilation and Air Conditioning (HVAC) must be independently controlled and monitored in each specialist area to ensure a comfortable working environment. Exacting environmental monitoring and climate control systems are essential in areas that demand precise temperature and humidity ranges (e.g. catering and refrigeration units, storage, waste management areas etc.). Effective and controllable lighting and shade is also a major factor in HVAC management, as well as a safety feature.
- This demand for variable HVAC is balanced by a considered approach to energy management and carbon reduction regimes.

- Paramount in many facilities is the need for sophisticated physical and site access security. With many staff, service and visitor types the access to individual buildings and units needs to be very carefully controlled. To assist with this monitoring responsibility, it is often a requirement to exploit the capabilities of CCTV and Digital Video recording.

Equally important are the services and procedures required for effective Fire, Life and Safety operations. Many of the larger urban campus facilities are also closely co-ordinated with emergency service agencies to effectively manage major incidents.

Thus the design and operation of an urban campus is challenged to provide centralised management control across the portfolio of property assets for:

- Exacting environmental monitoring and climate control.
- Control of carbon emissions and a sustainable cost effective energy management regime.
- Balanced easy access with strong perimeter and “zoned” security.
- Exemplary management of all types of fire, life and safety control systems.
- Management of major incidents using tried and tested methods and effective forward planning supported by clear reliable integrated communication, location and signage systems.

An overall monitoring capability in real time to operate effectively, monitor performance and provide pertinent information for planning operational efficiencies.

The Urban campus is the most diverse property challenge – how do you provide flexible, efficient and integrated campus management with adequate safety & security, whilst maintaining costs, across such disparate property types and functions?

## CDC Intelligent Campus Management solution

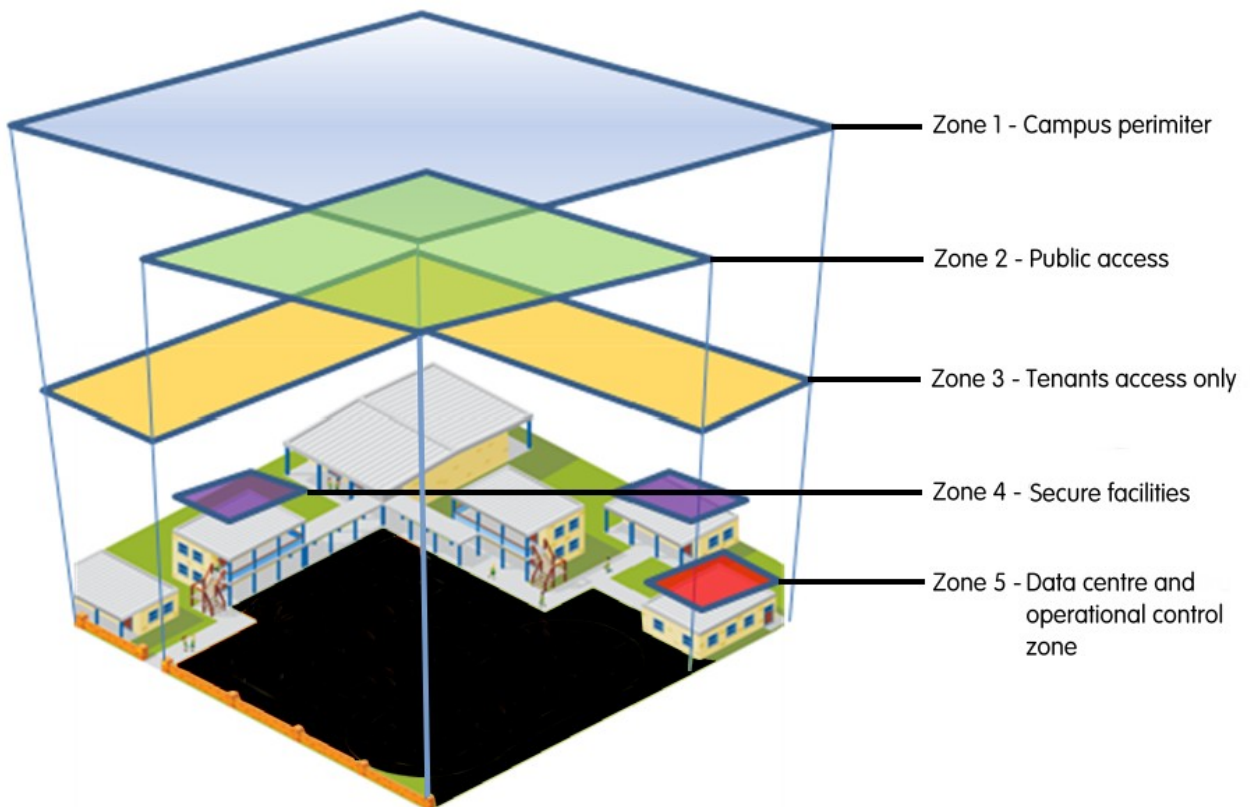
The CDC Intelligent Campus Management solution meets this challenge. It is designed to provide flexible, efficient, intelligent, integrated management of all building sub-systems across a campus.

The CDC Intelligent Campus Management 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 with CCTV and Digital Video recording.
- Fire, Life and Safety systems.
- Major incident management.

unique in its design philosophy – providing the capability to identify any property (or part of a property) as a managed “zone”.

Each zone may have its own management and security characteristics. All building sub-systems contained within the zone may be controlled by an established set of rules as illustrated below.



The CDC Intelligent Campus Management solution is

## Key features

The CDC Intelligent Campus Management solution overcomes the problems of campus facility management by providing:

- A hardware independent open centralised monitoring system with the ability to inter-connect disparate and proprietary sub-systems evident in campus operational control environments. This distributed processing capability is used to collect both operational sub-system information and alarm events, and can be reversed to issue automated commands to individual sub-systems in a controlled and sequential manner.
- A solution that can be extended to manage multiple campus operations both nationally and globally.
- A rules based centralised management system that allows for “management by exception” with the ability to group together separate sub-systems for optimum performance management.
- Response plans and event management guidance for campus operators (including Major Incident Management and Low Carbon energy plans).

A complete audit trail of all sub-system performance for management reporting, service level monitoring and performance analysis, which can contribute to budgeting, forecasting and compliance reporting systems.

## CDC Integra™ software platform

The CDC Intelligent Campus Management solution is powered by the CDC Integra™ software platform, 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.

It offers a flexible workstation interface that allows communication between different manufacturers' sub-systems and presents information and control facilities to the campus operator in an easily comprehensible graphical format.

CDC Integra™ is designed to monitor field equipment over an IP network and other transmission media (e.g. PSTN, ISDN, and WAN data services).

CDC's approach is to integrate the building sub-systems at the "front-end" (user-interface end), so that the functional autonomy of the individual sub-systems is unaffected. This preserves confidence in the independent operation of all the sub-systems.

### CDC Integra™ Interface Library

Versatility is the key to the CDC Integra™ concept. The CDC Integra™ Interface Library provides Satellite Communications Drivers for connection via Network Interface Units (NIU) to the hardware connected to each of the building sub-systems. The satellite communication drivers are internally based on the OSI ISO Communications Model framework, and certified by the sub-system manufacturer or issuing software house where appropriate.

## Benefits

The key benefits of the CDC Intelligent Campus Management solution are:

- Major operational cost savings achieved through collaborative centralised monitoring and management, eliminating the need for multiple control rooms or individual sub-system monitoring stations.
- Existing legacy sub-systems inter-connected with new developments thus extending their operational life-span and eliminating major costs associated with sub-system replacement.
- The addition of new sub-systems (such as enhanced digital video recording technologies or vehicle management systems) can be easily integrated into the existing management solution.
- The ability to operate across geographically dispersed locations, both national and international; and accessible from LAN, WAN and Intranet or Internet networks.
- Incorporates all types of communication systems (IP telephony, cell and wireless networks, SMS and email messaging etc.) Incident and operational teams can operate from dispersed locations yet still remain in constant communication.
- Access to campus operational information is in real-time and all relevant information is available from a single source. Scenarios can be simulated and the resultant audit trails examined for continuous improvement and training purposes.
- The audit trail allows for powerful unbiased “forensic” analysis after real incidents have taken place to contribute to future planning design and to support corporate governance and best practice methods.
- Encapsulates Intelligent Building principles in which the building fabric, space, services and information systems can respond in an efficient manner to the initial and changing demands of the campus and its population.

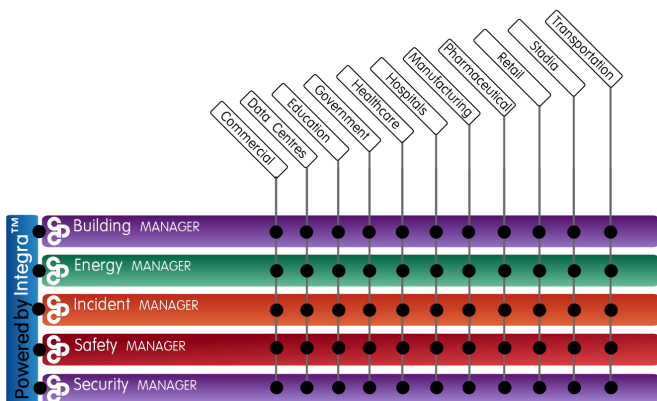


## Integra™ applications

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
- Security Manager
- Safety Manager
- Incident Manager

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



## 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.

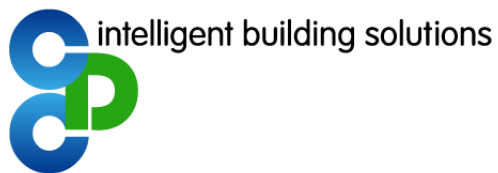


CDC solutions are used in over a 1,000 global locations and we are solution partners with many of the world-renowned organisations in the provision of intelligent building solutions.

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.





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