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Welcome to CDC

 Intelligent Solutions

Powered by **Integra™**

Intelligent Stadia Management

 intelligent building solutions



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## Overview

Deriving from the ancient Greek and Roman measure of paced length, Stadia now describes any modern large structure (and their associated campus) used for athletic games.

The stadia challenge – how to provide a superior entertainment experience for the presentation of sporting events to large visitor numbers within a defined period of time in a controlled environment with exemplar safety & security?

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

The CDC Intelligent Stadia Management solution is unique in its design philosophy – providing the capability to identify any part of stadia as a managed “zone”.

The CDC Intelligent Stadia Management solution provides a hardware independent open centralised monitoring system designed to integrate and control the disparate and proprietary sub-systems evident in stadia operational control and monitoring environments - a solution that can be extended to manage multiple stadia operations.

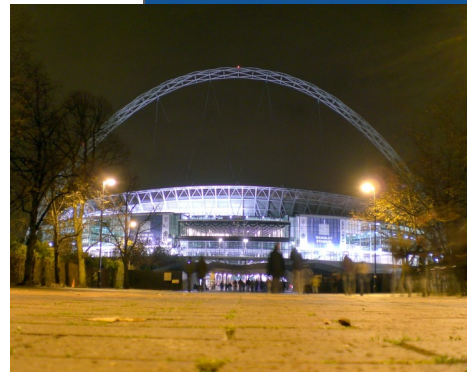
A rule based centralised management system allows for “management by exception” with the ability to group together separate sub-systems for optimum performance management. It automates the management of response plans and event management for stadia campus operators (including Major Incident Management and Low Carbon energy planning).

The CDC Intelligent Stadia 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 stadia campus and its population; thus increasing performance, improving management and reducing costs.

The CDC Intelligent Stadia 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 Stadia 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.



## Stadia

Deriving from the ancient Greek and Roman measure of paced length, Stadia now describes any modern large structure (and their associated campus) used for athletic games which are typically played out-of-doors.

More recently advances in technology has enabled the construction of the overhead protective dome or retractable roof, thus blurring the distinction between stadia and arena, the term commonly used for smaller structures at which indoor games are played.

All Stadia seek to provide easily accessible entertainment venues for the presentation of sporting events within a defined period of time in a controlled environment.

The design and operation of a stadium or stadia campus is challenged to provide:

- Strong perimeter security enabling freedom of movement within a safe & secure boundary.
- Adaptable entry and ticketing management.
- Flexible and dynamic crowd management using effective directional signage, visitor information systems and CCTV monitoring.
- An accessible, consistent and unified communication system
- An ambient and comfortable environment managed through comprehensive and integrated fire, life and safety systems.
- Supporting services catering for the individual and group needs of sports teams & players, visitors and multi-media news services.

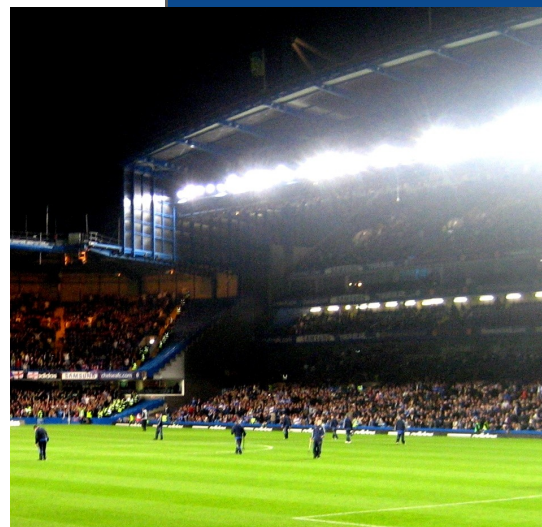
Unlike many other real estate structures or campus operations, a stadium campus benefits from vacant occupancy periods in which maintenance and service improvements can be performed.

The significant and unique management challenge is the co-ordination of movement of large visitor numbers, within a relatively short time span, often to a strict timetable.

The stadia dilemma – how to provide a superior entertainment experience for the presentation of sporting events to large visitor numbers within a defined period of time in a controlled environment with exemplar safety &

security?

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



## CDC Intelligent Stadia Management solution

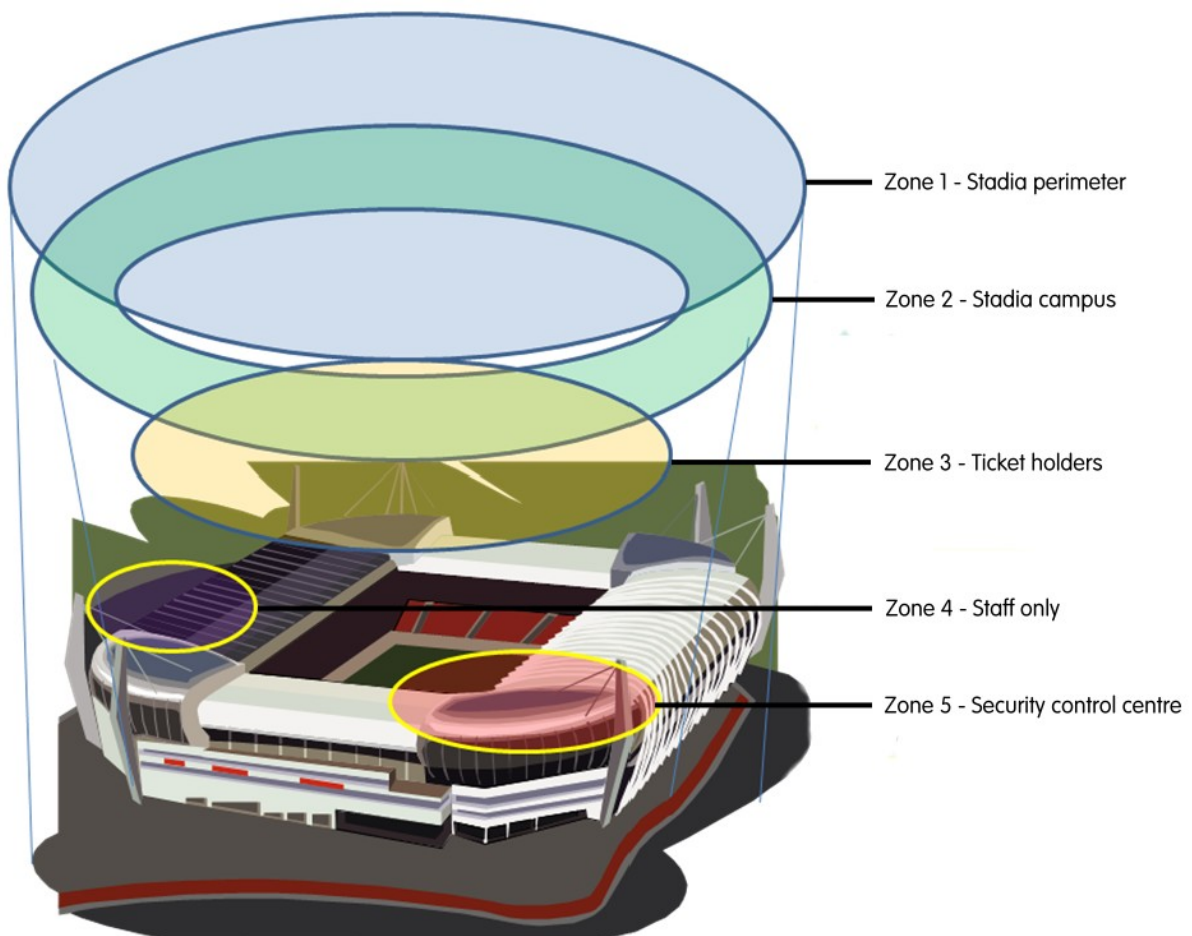
The CDC Intelligent Stadia Management solution meets this challenge. It is designed to provide flexible, efficient, intelligent, integrated management of all building sub-systems across a campus.

The CDC Intelligent Stadia Management solution operates across, and groups together, management solutions for:

- Perimeter and access security.
- CCTV and Digital CCTV recording.
- Fire, Life and Safety systems.
- Integrated communication systems.
- Environmental monitoring and climate control.
- Energy management and carbon reduction.
- Major incident events.

The CDC Intelligent Stadia Management solution is unique in its design philosophy – providing the capability to identify any part of stadia 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 and plans as illustrated below.



## Key features

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

- A hardware independent open centralised monitoring system designed to control the disparate and proprietary sub-systems evident in stadia operational control environments.
- The ability to inter-connect disparate and proprietary sub-systems evident in stadia 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 stadia operations.
- 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 stadia 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.

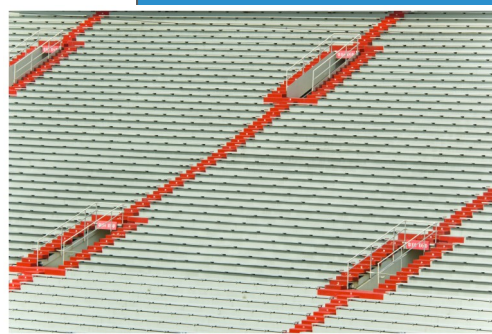
### CDC Integra™ Interface Library

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 Stadia 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 CCTV or digital video recording) 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, email messaging, social networking etc.) Incident and operational teams can operate from dispersed locations yet still remain in constant communication.
- Access to stadia 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 stadia and its population.

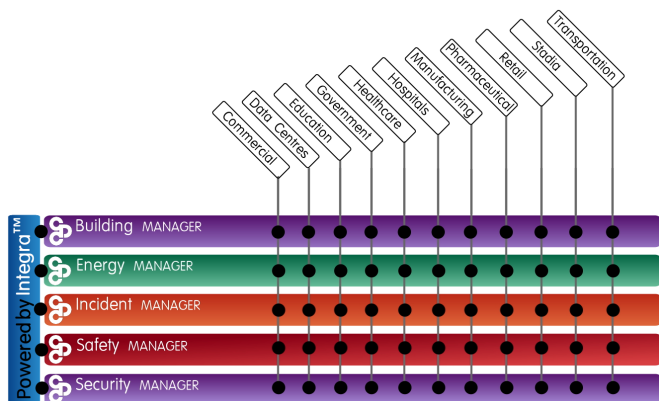


## Integra™ applications

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.

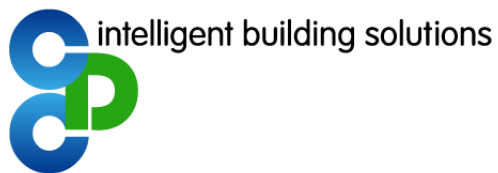


CDC solutions are used in over a 1,000 global locations and we are solution partners with many of the world-renowned organisations in the provision of intelligent building solutions.

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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