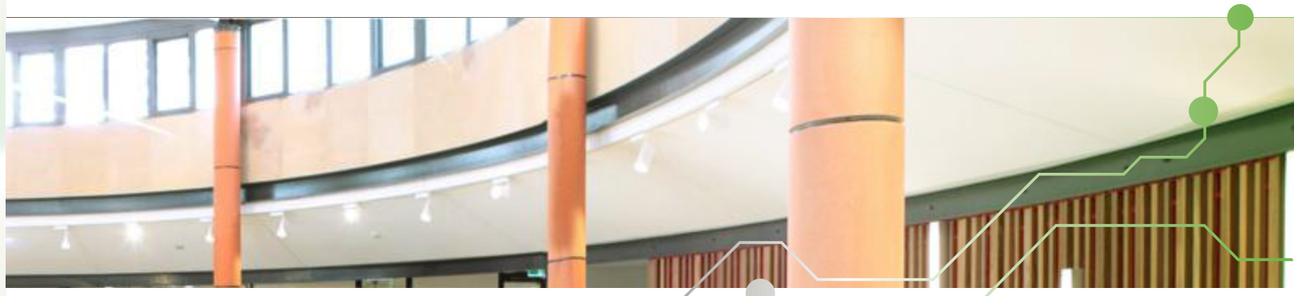
mySmart
INTELLIGENT ENVIRONMENTS

THE KING'S SCHOOL
Science Learning Centre

CASE STUDY

mySmart

THE KING'S SCHOOL SCIENCE LEARNING CENTRE



PROJECT DETAILS:

Location	North Parramatta, Sydney NSW, Australia
Type of Building	Educational Facility
Architect	Cox Richardson
Builder	Denham Constructions
Electrical Consultant	Building Services Engineers
Electrical Contractor	Direct Electrical

ABOUT THE BUILDING

'People like to wonder and they call the adventure Science.'
Ralph Waldo Emerson (1803 - 1882)

Founded in 1831 The King's School is Australia's oldest and one of its most prestigious independent schools. Located on 148 hectares in North Parramatta, The King's School is home to around 1,500 students from Kindergarten to Year 12. In 2014 the school officially opened its $20M Science Learning Centre, a centre that exceeds the school's commitment to excellence in learning and sustainability.

The Future Project as the centre is known operates as a learning and research facility with up to 16 full-time academic and industrial research scientists and aims to give students the opportunity to experience science and engineering in a new and exciting way. The school's students will partner with these scientists for some of their research.

"The Future Project is about embedding a working, university grade research precinct within The King's School's unique Science Centre. The result is that genuine scientific enquiry is unfolding at the very heart of teaching and learning science."

Roger Bennett
Deputy Head of Science, The King's School

The centre also presents students with a unique opportunity to learn about the design and operation of sustainable buildings as it uses a KNX based energy control and management solution developed by mySmart which the boys will utilise as part of their studies. mySmart is thrilled to have been an integral part of bringing this building to life and we look forward to seeing what The Future Project will deliver.

A WORLD CLASS KNX AUTOMATION SOLUTION

As befits a building delivering cutting edge scientific research and education, The King's School Science Learning Centre has at its heart a cutting edge mySmart KNX solution.

As the worldwide standard for home and building control KNX brings together products from over 400 manufacturers under the one open-source and vendorneutral operating platform.

FAÇADE CONTROL – EXTERNAL VENETIAN BLINDS

External Venetian Blinds around the building are controlled using the KNX Weather Station and a sun-tracking algorithm in the Head-End Software. When the ambient light exceeds a defined threshold the blinds will tilt through a range of positions depending on their location on the façade. As a safety precaution should the wind speed exceed a defined level the blinds are retracted and held in the raised position until the wind reduces.

LIGHTING CONTROL

The KNX lighting control solution throughout the Science Learning Centre uses local switching points in laboratories and seminar rooms. These allow users to quickly configure the lights and ceiling fans in these areas to suit their immediate needs at the touch of a button.

Motion sensors are also used in these areas configured in absence detection mode and automatically turn off all lights and ceiling fans should no movement be detected for 30 minutes.

In smaller rooms such as offices lighting is totally controlled using motion sensors configured in presence detection mode. Lights will turn on when users enter the room and off again 30 minutes after vacating.

External lighting operates using inputs from the KNX Weather Station on the roof of the building. Lights automatically turn on when the ambient light level drops below a pre-set level.

KNX HEAD END

The KNX Head End PC operates NETx Automation Voyager Server software which is used to monitor and control the field devices. This includes;

- Monitoring and control of all lighting channels/ zones with real time status and time scheduling
- Control of external blinds based on sun position with manual override control
- MARs module for analysing KNX energy and hydraulic meters
- Visual display of KNX metering information on the mySmart enGauge atrium display panel
- High level interfacing to mechanical services and window automation via BACnet server

METERING

Energy meters across each floor of the Science Learning Centre measure both power and instrument values whilst hydraulic meters measure gas and water as well as alarms on the water retention tanks. All values are communicated to the Head End PC via KNX meter interfaces.

ABB Motion Sensor

KNX Head End

KNX Weather Station

HIGH LEVEL INTERFACING

Mechanical Services are linked to the mySmart KNX Head End PC using a BACnet /IP interface on the KNX IP Ethernet backbone.

The KNX Head End PC is able to read the current room temperatures and air conditioning run status as well as read and write the room temperature set points.

The window automation system is also linked to the KNX Control System via a KNX/IP interface enabling the reading of room humidity, system status and the starting and stopping of the AC. This is particularly important as the control of the AC system is linked to both the status of the window automation system and the presence of people in that room.

This shows the true power of a KNX based system, whereby different devices can easily share common infrastructure including switch points, sensors and weather stations with absolute certainty as to their operation and compatibility.

mySmart

INTELLIGENT ENVIRONMENTS

mySmart is an Australian company at the forefront of creating intelligent environments across a wide range of sectors from smart buildings to smart agriculture. Our solutions are customer centric and incorporate innovative technologies and the latest sensor design, control, functionality and analytics.

Our highly trained, industry qualified Consultants and Smart Building Specialists design, optimise and service environments to enhance user comfort and productivity, whilst minimising operational costs and resource consumption.

mySmart, originally established as Complete Technology Integrations (CTI) in 2001, is a wholly owned Australian company. With a national footprint and over 60 employees, mySmart operates across a multitude of markets including commercial offices, residential, industrial & agriculture, government, retail, hospitality, health & aged care, education and leisure.

Our solutions include:

- Lighting Control and building automation
- Asset Performance Analytics
- Energy Management
- Smart building systems
- Guest Technology
- System Management Programs
- IoT Applications
- mySmart Sensors and associated products
- Unique custom solutions

mySmart. Building smart cities one mySmart Building at a time.

mySmart
INTELLIGENT ENVIRONMENTS

1300 697 627
mysmart.com.au

info@mysmart.com.au

SERVICE HOTLINE
1300 881 583