Exploring World Class Technologies for Healthcare

Michel Methot

Introduction

- Honeywell’s Healthcare presence in Canada
  - Installed solutions in over 25% of all hospitals across the country
  - Leading automation, security and fire solutions provider for new healthcare construction
  - Over 500 automation and service technicians across the country servicing our healthcare customers
  - 7 Healthcare P3 sites currently under construction or in operations
  - Leading provider of laboratory controls solutions
  - Market leader in scanning and mobility devices for the healthcare applications

Healthcare Industry Trends

- Rising operating costs
- Escalating energy costs, carbon and energy security
- Infection control
- Patient safety and security
- Retention of Staff
- Shortages of qualified workforce
- Conflicting priorities for available capital
- Economic uncertainty
- Environmental policies
- Aging facilities and deferred maintenance
- Reduced levels for investment in new infrastructure
- Improving access and wait times
Auckland City & Greenlane Hospital - New Zealand

Project Overview
- Location: Auckland City, New Zealand
- Facility: 140,000 m², 710 Beds
- Project Integration: 2013 to 2016
- General Contractor: Fletcher Construction

System Integration
- Integrated BAS, Enterprise Building Integrator
- Laboratory controls
- Security access control, digital video, 300 CCTV cameras
- HVAC monitoring
- Campus wide staff security
- Nurse call system integration
- Card access integration to car park systems
- HVAC controls

This project consolidates Auckland City and Greenlane (including the National Women's Hospital) services hospitals into a single managed site. The Hospital's BAS system allows operators to run and monitor facilities from any PC with the correct permissions. This optimizes plant allocation and benefits the hospital in terms of managing the automation of all systems across the sites, including maintenance of 8 different DDC protocols across 2 sites in 12 buildings.

Fiona Stanley Hospital - Australia

Project Overview
- Location: Monash, Australia
- Facility: 105,264 m², 768 Beds
- Construction Period: Sept 2010 to June 2014
- General Contractor: Brookfield Multiplex

System Integration
- Integrated BAS, Enterprise Building Integrator
- HVAC Controls
- Intelligent fire alarms
- Laboratory controls
- Security access control, digital video, CCTV
- Intrusion detection, visitor management
- Elevator and lift integration
- Nurse call
- Patient bedside systems
- Sprinklers

When opened in 2014, Fiona Stanley Hospital will be Western Australia’s flagship health facility. The Hospital will have 8,300 rooms, 768 beds, including 140 rehabilitation beds and will integrate state-of-the-art technology into every level of the hospital. Leverage an open and fully redundant ICT infrastructure ensures operational control, systems optimization through integration and future proofing of systems. Operations efficiency is achieved through utilization of a web-based user interface, connecting clinical, non-clinical and building management functions.

Qingdao East Hospital - China

Project Overview
- Location: Qingdao, China
- Facility: 80,000 m², 21 floors, 900 Beds
- Construction Period: 2004 to 2006

System Integration
- Integrated BAS, Enterprise Building Integrator
- HVAC controls
- Intelligent fire alarms
- Laboratory controls
- Security access control
- Visitor management
- Housekeeping

Built in response to increasing demands for medical services in the region – including the demands of the Beijing Olympics – it is one of the most modern healthcare facilities anywhere in the world.

The multi-purpose facility comprises a main building, consulting rooms, operating theatres and hospital wards on an 80,000 m², 21 floor site.

Leveraging an integrated BAS, the hospital’s access control system links to HVAC and other environmental controls to optimize building performance, temperature, lighting, housekeeping and staffing.

The Value of Integration

Canadian Healthcare Engineering Society - Société canadienne d’ingénierie des services de santé

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Digital Hospital - IP Convergence

Everything connected over IP

An example - Communication Cable

60 m 18G 2 kg

Production

60 m 0.09 kg

Fibre optic cable

So What Does this Mean?

Retrofitting systems with new

<table>
<thead>
<tr>
<th>System</th>
<th>Cable (ft)</th>
<th>Fibre</th>
</tr>
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<tbody>
<tr>
<td>Building Automation</td>
<td>258,000</td>
<td>23,000</td>
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<tr>
<td>Security</td>
<td>205,000</td>
<td>104,000</td>
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<tr>
<td>Nurse Call</td>
<td>314,000</td>
<td>45,000</td>
</tr>
<tr>
<td>Lighting Control</td>
<td>85,000</td>
<td>12,000</td>
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<tr>
<td>Power Management</td>
<td>55,000</td>
<td>4,000</td>
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<tr>
<td>Intercom/Paging</td>
<td>134,000</td>
<td>39,000</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>1,141,000</strong></td>
<td><strong>277,000</strong></td>
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</tbody>
</table>

The Impact...

- New systems saved 680,000 feet in COPPER communication cabling.
- New systems added 277,000 feet of high-bandwidth fibre optic cables.
- Net environmental savings of 6738 tons of greenhouse gas emissions by recycling the copper.
**Summary**

Leveraging integrated solutions to drive building and operations efficiency

Linked to improved patient care and service

World of global best practices and references to leverage