

How to make a connected buildings a reality

- RP's experience

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Overview

- Introduction of RP's new campus
- RP's strategy for the connected buildings
- Services connected
- Our experience & lesson learned
- Future enhancements

Introduction of RP's New campus

- RP was formed in 2002
- Ramping up to 13200 students by 2010
- We started with “paperless” strategy
- Today we are operating in a paperless mode
- All information are exchanged in electronic way, even for our building management people
- The laptop computer is the office
- The buildings are managed from the laptops of building management people

Introduction of RP's New campus

RP's strategy for connected buildings

- One physical network for all services
- All sub-networks are partitioned
- All the access among the sub-networks are controlled
- Dual core network and dual paths fiber optics
- IP all the devices
- Every staff and students carry a laptop computer
- All estate officers use laptop computer to manage the building

RP's strategy for connected buildings

- IP devices
 - BMS, Door access, CCTV (IP cameras), PA

A typical concerns of such strategies

- IT Security issues
- Performance issues (such as bandwidth)
- Management responsibilities

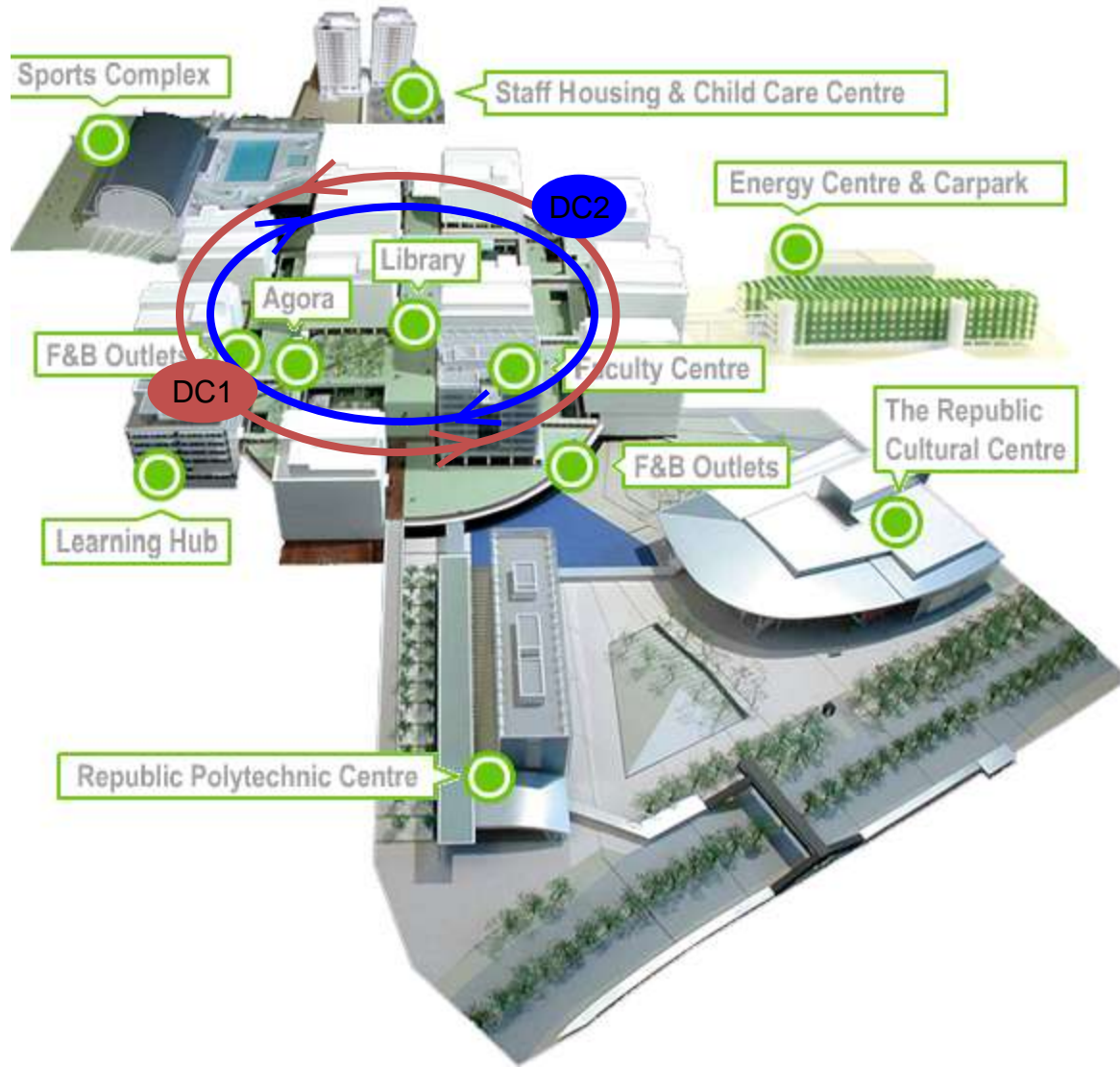
Answers to those concerns

- IT Security issues
 - The ‘partition’ features offered by the network devices
 - Many other security devices are available to address such concerns
 - Multi-factor authentication
 - Network access control and monitoring
- Performance issues (such as bandwidth)
 - The network offer up to 200-700 Gigabit bandwidth
- Management responsibilities
 - Service level agreement
 - Outsourced management

One Network for All

- Shared backbone for:
 - Wireless network for all staff and students
 - BMS
 - IP cameras (CCTV)
 - Door access
 - Projectors

Fiber Optics Layout



Key Success Factors

- Collaboration between IT and Estate departments
- Planning for the cabling, network, and partitioning
- Tech/IT Savvy workforce

Lessons Learned

- Things we did it right
 - Dual network core switches located at two extreme end of the campus
 - Dual fiber optics paths
 - Wireless for end users
 - IP based CCTV, BMS, Door Access, etc.
- Lessons learned
 - More collaboration among the IT people and building people during the building tender stage
 - Engage an IT consultant under M&E consultant team

End