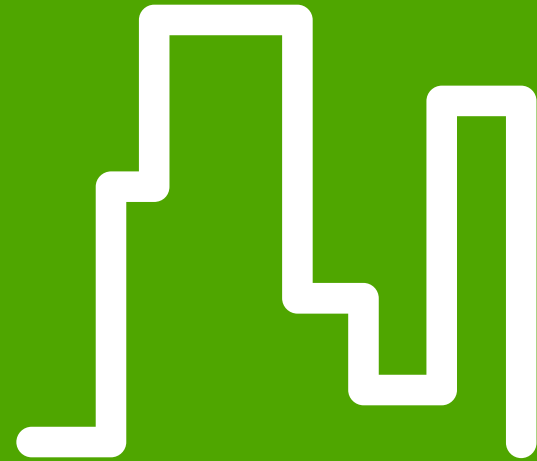


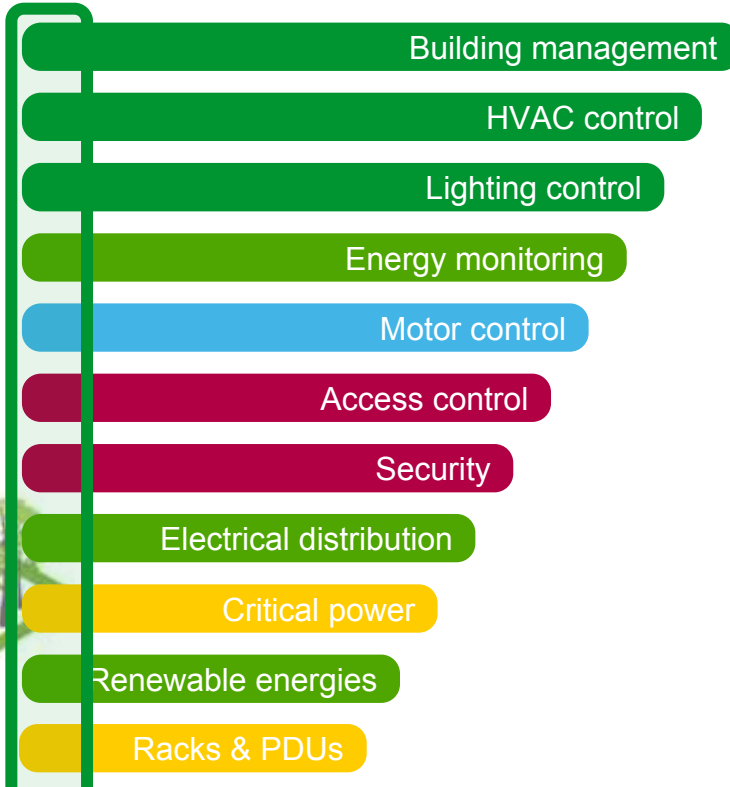
Building and Power Management

The Value of Integration

Richard Henzie
Director, Business Development
Power Solutions for Buildings



The biggest source of efficiency is Integration



- Education
- Hospitals
- Hotels
- Offices
- Retail

Simple Integration Interoperability and openness to third party systems **EcoStruxure™**

Reliability

- Continuity of service of Electrical Power

Efficiency

- >30% energy saving
- Optimised Capex & Opex

Productivity

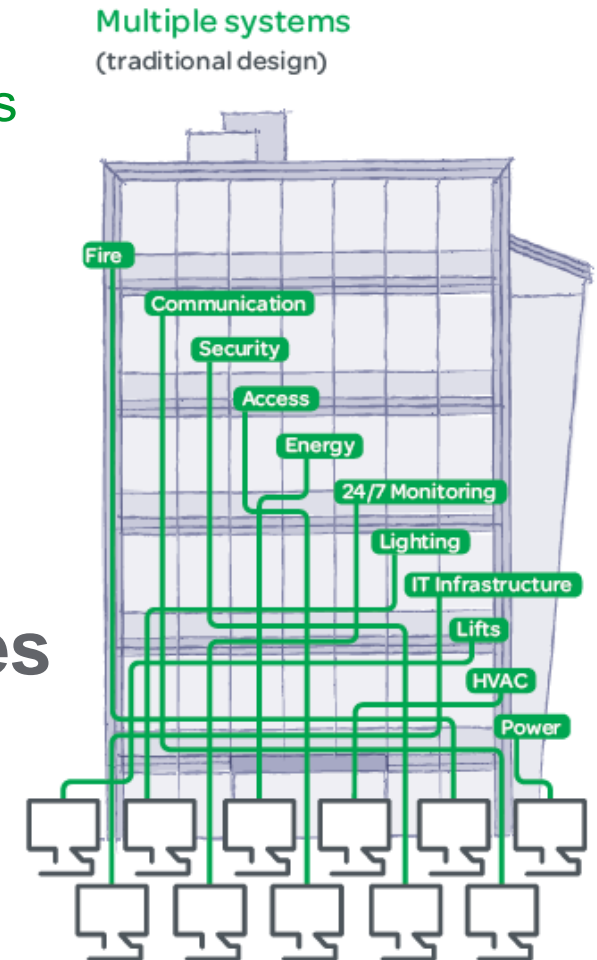
- Productive work places

Green

- Connection to renewable energies

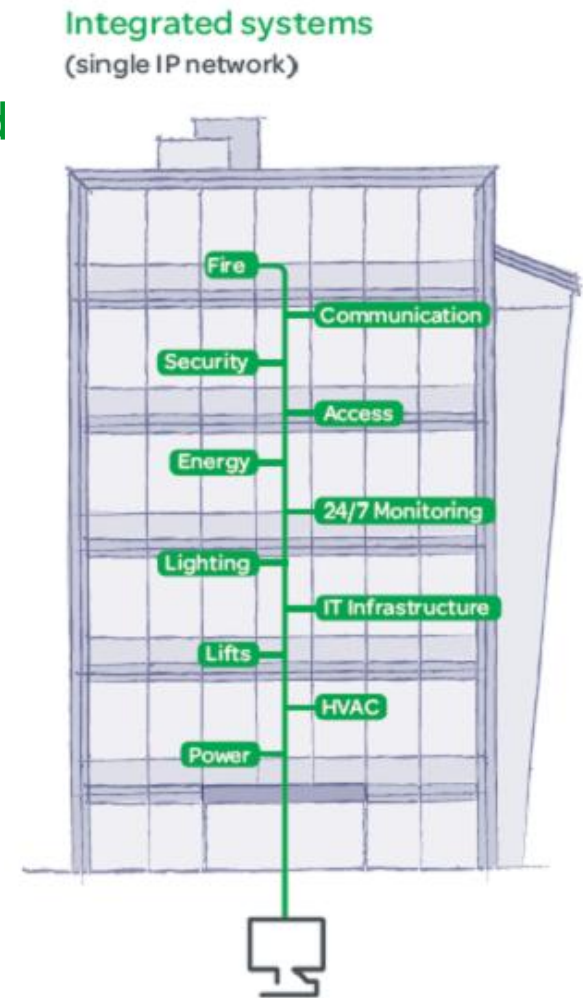
Today - Multiple silo systems in the building

- > **Multiple networks** from multiple vendors
- > **Too many systems** to learn
- > **Complex** troubleshooting
- > Higher capital and operational **expenditures**
- > **Obstacles** to achieving energy efficiency



Tomorrow – Creating Business Value

- > **Reduce costs** – both initial investment and ongoing facility operational expenditures
- > Increase **employee productivity**
- > Capitalize on **long-term** financial value
- > Enhance building asset **value**
- > Improve the **customer experience**



Industry Leading Management Systems



Enhanced value & performance

with integrated building solutions

Power and BMS data can be monitored and managed from “one” common user interface:

- > Graphs and Reports can be created and distributed showing values from both systems – ensures accurate and timely information
- > PowerLogic values can be monitored and controlled through BMS – leverage advanced power meters to monitor more than Kwh
- > Web interfaces can be embedded providing one platform to monitor and control building
- > Alarms delivered to one system increasing efficiency and response time for facility personnel.

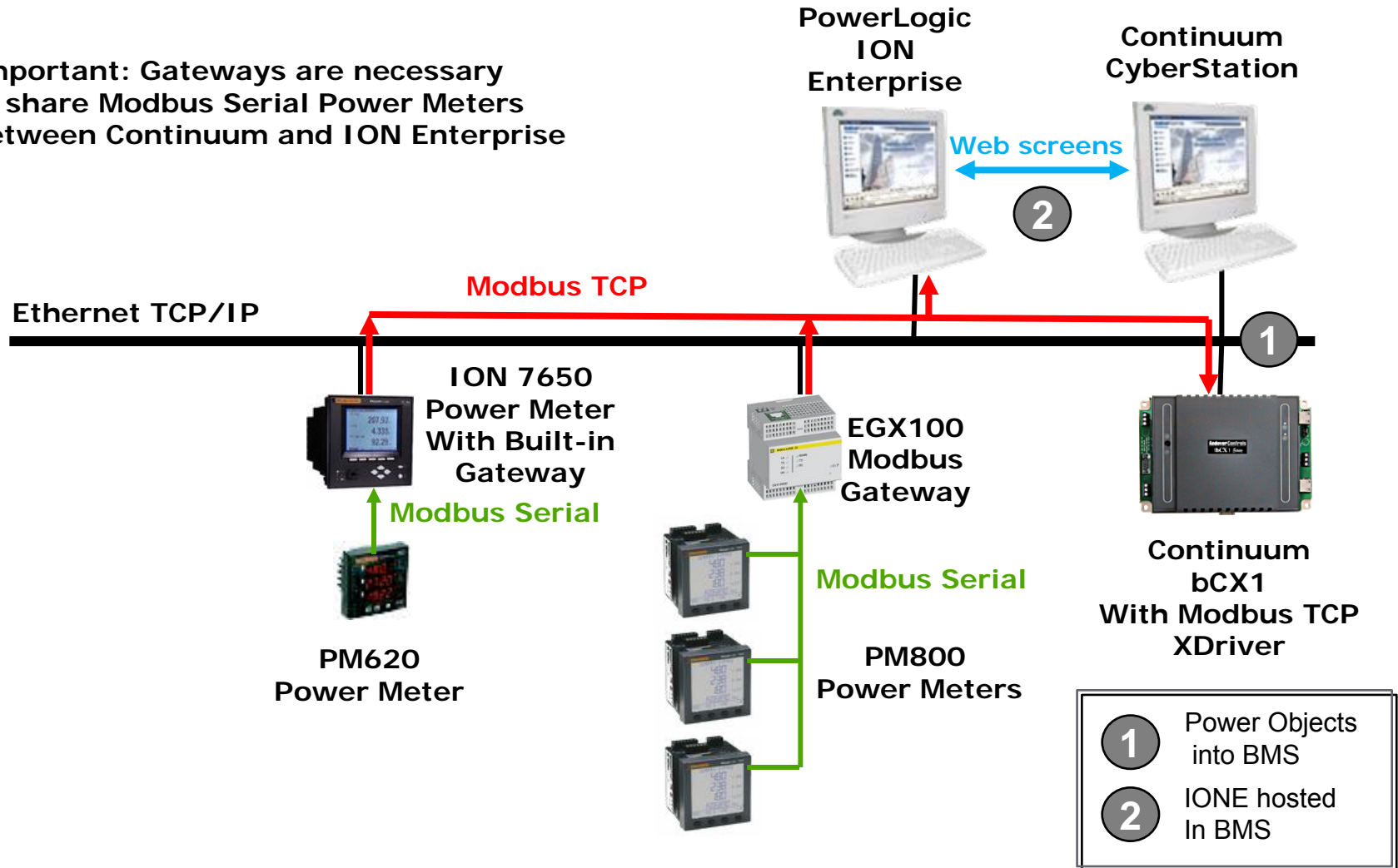
System-wide controls can be synchronized using data from both systems

- > BMS equipment can be scheduled to run more efficiently based on energy usage feedback
 - Apply schedule to HVAC equipment based on metering data
- > Programs can be customized to run devices based on actual values
 - Dim lights or lower equipment levels if peak energy levels are reached

What does this look like?

Integrated System Architecture

Important: Gateways are necessary to share Modbus Serial Power Meters Between Continuum and ION Enterprise



What does the User see?

Building Management view

The screenshot displays a web browser window titled "Pinpoint - [Root \ION Enterprise Integration]". The interface is divided into several sections:

- Power Metering Integration via Modbus:** This section contains three data panels for different power meters:
 - ION 7650:** kW Total: 1.0, KVAR Total: 1.0, KVA Total: 2.0, Battery Voltage: 77.0, Battery Alarm: 77.0, Aux Battery Bank: Off. Voltage and current readings for A-N, B-N, C-N, and L-N Avg are all 120.0.
 - ION 6200:** kW Total: 131.0, KVAR Total: 25.0, KVA Total: 133.0. Voltage and current readings for A-N, B-N, C-N, and L-N Avg are 421.0, 422.0, 409.0, and 421.0 respectively.
 - PM 850:** kW Total: 636.0, KVAR Total: 805.0, KVA Total: 1034.0. Voltage and current readings for A-N, B-N, C-N, and L-N Avg are 124.0, 124.0, 124.0, and 124.0 respectively.
- Floor Plan Diagram:** A schematic of a building layout with various rooms and equipment. Key elements include:
 - A central area labeled "Real Power Total : 650.0 kW" with "PM 850" and "PM850" icons.
 - A room labeled "774.0 kW" with "PM850 + ION6200" below it.
 - Another room labeled "Real Power Total : 124.0 kW" with a note: "This value is read from the ION6200 via Modbus Master on the ION7650".
 - A room with a red "Alarm!" box and a green "R1 State" indicator.
 - A red cross icon in a room on the left.
- Log/Status Bar:** At the bottom, a red bar displays the date and time: "Wednesday, November 19, 2008 10:46:07 AM". It also shows system status: "Network1\Infinity1\ION7650_BattAlm On Alarm 0 Expression Battery Voltage Failure Emergency Alarm Battery".

Logos for "t.a.c" and "Schneider Electric" are visible at the bottom left of the interface.

Note: This is a web screen from ION Enterprise embedded into a Continuum Pinpoint Graphic control with the appropriate URL

Note: All information shown from Power Meters is read into Modbus Points in Continuum Controllers

What does the User see?

Power Monitoring view

PowerLogic Values

Meter Model	kW Total	kVAR Total	kVA Total	Battery Voltage	Battery Alarm	Ap. Battery Bank
ION 7650	269.0	120.0	312.0	106.0	On	Off
ION 6200	115.0	22.0	117.0	-	-	-
PM 850	21.0	39.0	41.0	-	-	-

PowerLogic ION Enterprise meter template showing real-time energy values

The main display area shows a circuit diagram with the following real-time data:

- Phase Voltages: 120 V ea, 120 V eb, 120 V ec, 120 V ea, 120 V eb, 120 V ec
- Phase Currents: 127 A c, 129 A b, 129 A a
- Phase Powers: 8 kW c, 8 kW b, 8 kW a
- Power Factor: -91.6 %
- Frequency: 60.01 Hz
- Wattmeter: 0.0 %
- Voltage Average: 0 V
- Current Average: 127 A
- Power Quality: 28 kW, 39 kVAr, 46 kVA
- Phase Voltages: 128 V ea, 128 V eb, 120 V ec

Device Time: 3/18/2008 15:09:14.000
Device Type: m655

Schneider Electric logo and navigation buttons (Logs, Weather min/max) are visible at the bottom.

Quiron Hospital, Spain

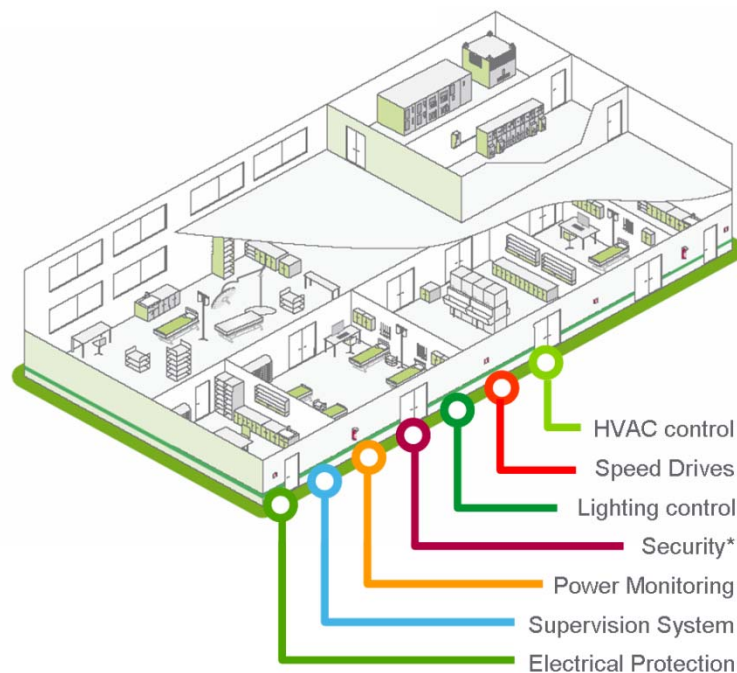
Adding tangible and sustainable value for our customers

● Customer needs

- Reliability
- Continuity of service Guarantee
- Maintainability
- Monitoring
- Comfort and Safety
- Cost effectiveness

● Customer benefits

- - **35% in power consumption** vs initial average consumption
- - **30% operating expenses**
- **Interoperability** thanks to open communication systems
- **Flexibility** for future expansions & upgrades



*Security: surveillance, fire detection, technical alarms

Make the most of
your energy™



Schneider
 Electric