



Convesso Apartments by Lend Lease

A sustainable luxury residential apartment tower

Executive Summary

Lend Lease is a leader in sustainable building construction and actively advocates environmental and sustainability initiatives. Switch Automation collaborated closely with Lend Lease to design and deliver an integrated building solution. The Convesso apartments in Melbourne’s Victoria Harbour sets the benchmark in multi-residential Green Star projects.

Business Drivers

- Reduce material costs by utilizing the existing voice and data fibre optic network backbone to deliver building services
- Unified platform to manage Video Intercom, Access Control, Lighting Control, Air-Conditioning and Energy Monitoring
- A platform that is flexible and easy to expand as new technology emerges
- Continue to adopt the latest technical innovation to maintain Lend Lease’s commanding lead in providing the world’s most sustainable living and working environments
- Monitor and manage energy utilization remotely
- Provide granular reporting, trends and patterns
- Improve Lend Lease’s sustainability programs



- Provide data to positively affect future designs and help maintain market leadership in sustainability
- Cater to residents with differing needs and technical skills
- Control HVAC and Lighting to reduce energy usage



Location: Melbourne, Australia
Industry: Building & Construction
www.lendlease.com

“Switch Automation is able to bring together a platform solution that covers a range of currently disparate technologies.”

Bruce Duyshart,
Head Technology in Property, ICT, Lend Lease



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The Solution

The Switch Platform is delivered over a Cloud framework that requires minimal capital investment. Energy consumption trends can be plotted providing visibility into the usage of energy and water. All services are delivered over industry standard IP optic fiber cable ensuring that additional services can be added with ease.

- Switch Automation Building Gateway
- Switch Automation Platform – services for energy management, lighting and power, video intercom, security and access

In-Wall Display

Convesso residents have an unrivalled understanding of their energy and water consumption. The Video Intercom provides convenient access controls for residents and guests.



Convesso residents are able to easily manage and automate lighting and other environmental variables, creating a more pleasant living space and delivering immediate savings in energy costs.

Intercom Touch Door Station

A large door station features in the foyer, while smaller units are situated at the bike store and the loading dock. Visitors have a highly intuitive user experience that allows hands free audio and crystal clear video. The user interface has been accredited as being disabled friendly.



Green Building Dashboard

The Switch Green Building Dashboard is located in the Convesso foyer area to promote awareness and the sustainability initiatives of the property.



Summary

As energy costs soar, commercial and residential tenants seek new ways to reduce the quantity of energy consumed without sacrificing comfort or functionality. To balance these needs, Lend Lease requires technology that complements the green design and construction techniques they have pioneered for more than fifty years. The Switch Platform will ensure ongoing reductions in energy usage.

- Reduced carbon footprint improves overall environmental sustainability
- Lower energy consumption stretches budgets and adds to the resale value of the investment in sustainable residential property

About Switch Automation

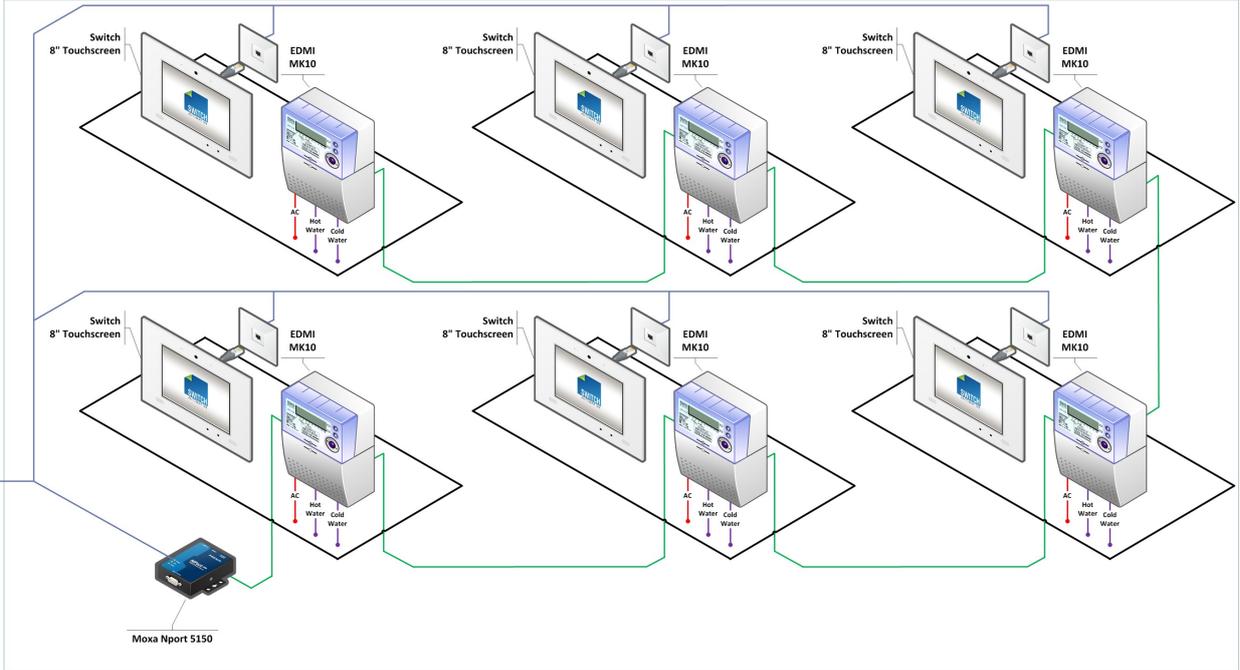
Switch Automation (Switch) is a market leading provider of automation solutions for commercial, industrial and residential property. We lead the industry delivering our service platform through a flexible and scalable cloud-based global framework.

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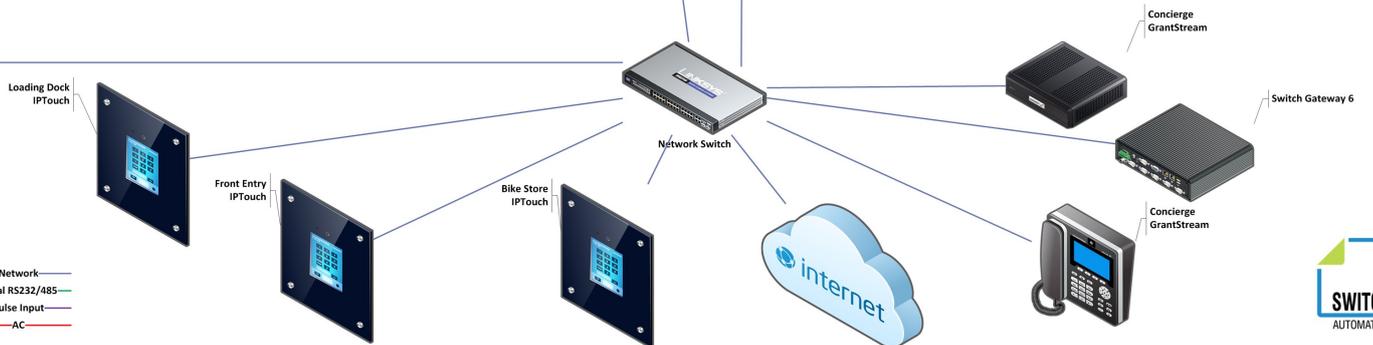
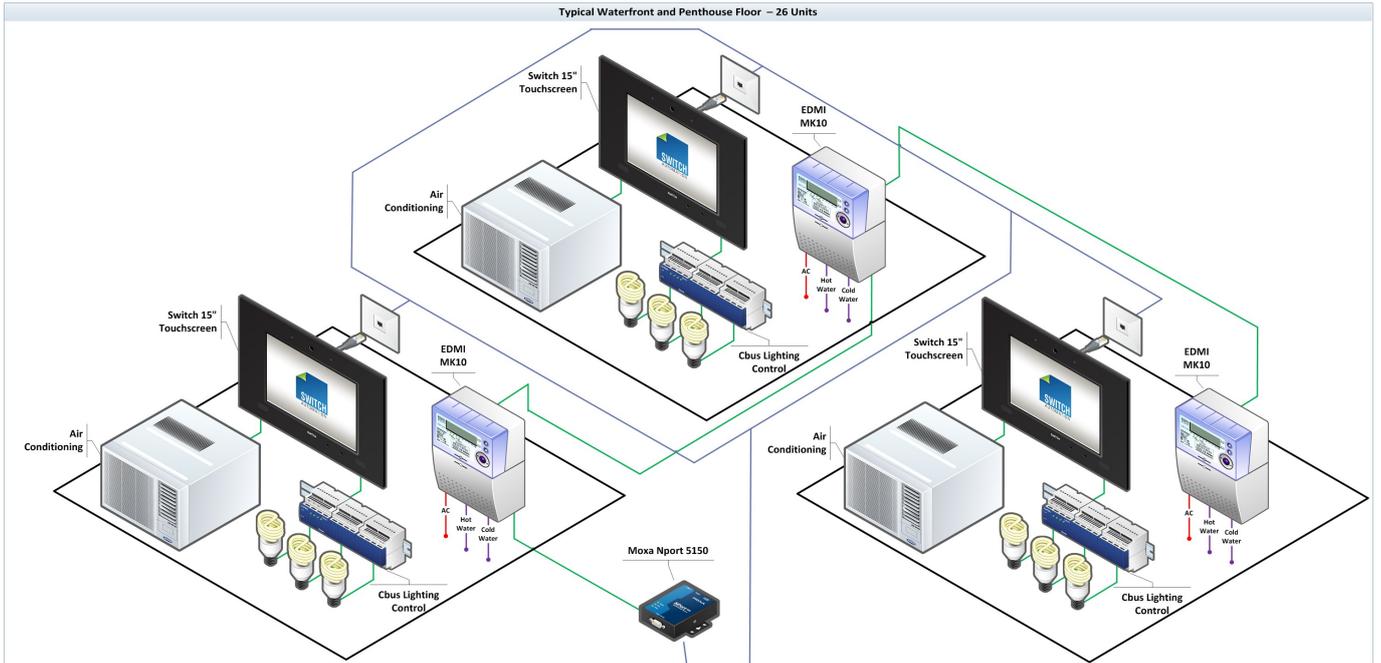
USA: (415) 466 5200
 Australia: 1300 204 802
 +61 2 8399 1919
www.switchautomation.com



Typical Bourke St and Tower Apartment – 194 Units



Typical Waterfront and Penthouse Floor – 26 Units



- Network
- Serial RS232/485
- Pulse Input
- AC



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Technical overview and schematic

Helping you understand the project implementation details

[\[Click on the brackets to jump to the Switch Automation Wiki article\]](#)

[Intercom]

Convesso features a full Switch Automation SIP intercom solution, including 3 touch door stations, SIP PBX to route the calls, SIP phone for the concierge and answering stations integrated into the in home display within each and every apartment. The intercom system connects to the Inner Range Concept 4000 security and access control system via RS232 to open doors and unlock lifts to levels. Running over a standard Ethernet network, cabling costs and duplication are minimized while maintaining a very high quality of video and audio.

[Touch Door Station]

The touch door station, manufactured by Switch Automation in-house, is a unique component of intercom system that sets this project apart. By using projective capacitive technology for through-glass touch, waterproofing and vandal resistance are built in to a visually stunning piece of hardware. The user interface can be customized along with the colour of the back-painted glass.

[In Wall Display]

The in wall display touch screen, in both 8 and 15 inch variants were used for different grade of apartments, both for cost and differentiation purposes. Regardless of model, functionality can be the same. The core functions in all apartments were intercom and energy display while the additional features offered in premium apartments were a floor plan view, one touch control (welcome/goodbye scenes) and control of C-Bus and HVAC control through the integrated RS232 ports.

[EDMI] Smart Meter

The EDM I smart meters are put in parallel with the supply authority meters and are owned by the owners corporation. In deploying such a network, duplication was a necessary step because an embedded network was not an option for this particular building. An RS485 multi-drop communications bus connects multiple EDM I smart meters together to one Moxa NPort media converter that connects the meters to the Ethernet network. The SA gateway then connects via a TCP/IP socket and talks native EDM I command line to poll for current values across a range of registers. Commonly available parameters include watt hours (Wh), watts, volts, power factor amongst others. Convesso uses whole current meters for apartments as they were under 100A, while a main incoming check meter was CT based due to high amperage.

[Moxa] NPort

Moxa NPort are a media converter that allows RS232/RS422/RS485 serial devices to live on the Ethernet network. They also allow remote serial networks to be connected to, be it on site or off site.

[Clipsal C-Bus]

Clipsal C-Bus is the lighting control system for premium apartments. Connection to C-Bus is via RS232 directly from the in wall display to a C-Bus PC Interface. As well as having full control from the in wall display, bi-directional feedback updates the in wall display; for example by pressing a C-Bus light switch to turn a light on or off is immediately reflected on the in wall display.

[HVAC]

The heating ventilation and air conditioning system is an Automated Logic solution with a central plant on the roof with reticulated chilled water and individual fan cooler units in each apartment. Each apartment includes an Automated Logic thermostat and controller that is connected directly to the in home display via Modbus protocol over RS232. In addition to full zone by zone control, bi-directional feedback is provided of operational state and current room temperatures. A boost button is provided on the in wall display to rapidly bring temperatures to their desired level.

Ethernet

A fibre to the home network was designed and installed by Fujitsu and through this all building services were joined by residents internet and phone connections, as well as MATV and Foxtel. All building services outlined in this case study were run over the same Ethernet layer, with head-end services housed in a dedicated precinct wide data-centre. The data centre is due to service additional Switch Automation projects in conjunction with Fujitsu and Lend Lease.

[Switch Automation Wiki]

The Switch Automation Wiki has detailed information on all of the above topics and much more. Reading this on paper? Visit <http://wiki.switchautomation.com> for more information, search using bracket terms.

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