



VRT Integrated Building Solution

Technological advancements have overtaken traditional approaches to delivery of modern buildings.

Where packages like electrical, mechanical and hydraulic services were once considered discrete and able to be delivered independently, modern buildings require these systems to be integrated. Attempting to achieve integration of these systems without co-ordination of systems integration activities is a recipe for disappointment.

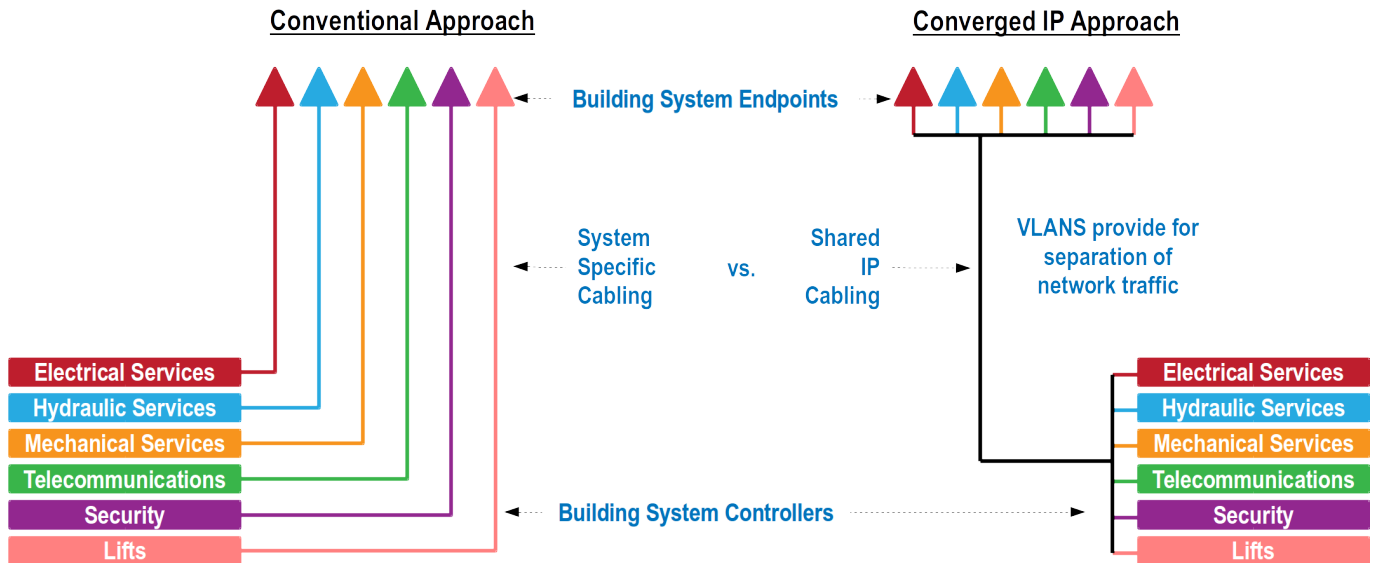
Converge, Simplify, Save

Large scale construction projects are complex, and one way this complexity is managed is by breaking down the problem into manageable packages of work. There are traditional approaches to this that separate many of the packages containing the various building services – mechanical, electrical, hydraulic, fire & security. In recent years, technological advances in these fields have lead to the increasing use of data networks within these packages, and the commercial separation of these deliverables means that there are often parallel data networks, with replication of switching equipment, cabling, and the associated termination efforts.

While there are good reasons for this historically, modern buildings (particularly multi-dwelling units – MDU) are increasingly seeking to provide greater integration of these services. With conventional approaches to contract letting, this integration often gets messy, complex and expensive, and often fails to deliver the desired outcomes.

Modern networking technologies such as VLANs (to segregate traffic) and passive optical fibre networks (GPON), along with a change in project delivery practices (the use of MSI, BSI and NSI) are enabling the delivery of more integrated building services, at a similar or sometimes lower cost than traditional approaches (through drastic reductions in cabling, termination, and network equipment).

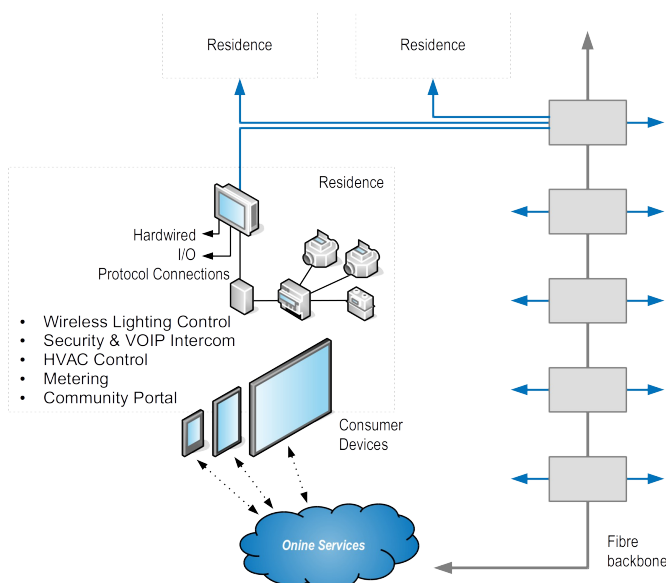




Integrate Tenant Services

Residents increasingly expect “smart” features in their homes. Integrated HVAC control, energy information displays, smart lighting controls, video intercom for access control. Without a converged network, these systems all require separate cabling, and often their own master control interfaces, switches and touch screens.

With a converged network, all these existing services can be integrated, as well as bringing together a range of other information sources and services that enhance the tenant experience (and by taking advantage of shared hardware and software) often at a lower cost than traditional approaches.



Tenancy Control & Monitoring

- Security & Intercom
- Lighting Control
- Climate Control (HVAC)
- Energy & water monitoring (including benchmarking tenancies to encourage energy efficiency)

Building & Precinct Integration

- Owner's manuals
- Repair and maintenance reporting and request management
- Bookings for shared facilities (gymnasium, tennis courts, sauna etc.)
- Smart control (public lighting, outdoor facilities)
- Demand management (control shared HVAC plants to reduce energy demand charges)

Community Connection

- Community news & events
- Resident feedback
- Clubs and social groups
- Governance / Body Corporate / Building Management
- Outside community (neighbourhood, city, region)

Sustainable Outcomes

With an increasing focus on achieving Green Star and NABERS ratings for buildings, many building owners are looking at cost-effective ways to improve building performance and gain additional ratings points.

While it is relatively easy and cost-effective to achieve four of the six green star credits available for energy monitoring (base building and tenancy metering), the final two require in-unit display of consumption with cost implications. Installing display equipment for this purpose alone can be expensive, but with an integrated solution, the same touch panel used for access control and other tenancy control functions, can provide feedback to tenants on their consumption patterns and performance from a sustainability perspective.

In addition to sustainability monitoring, an integrated solution also offers opportunities to actively reduce consumption, through features such as a “master shut down” function that residents can activate when leaving, and this ensures all lights, HVAC and other non-essential loads are powered down while the unit is unoccupied. This is just one example of the use of intelligent control that is possible with an integrated solution – if you have any ideas or specific requirements of your own, we’d be pleased to discuss these with you.

Tenant Engagement

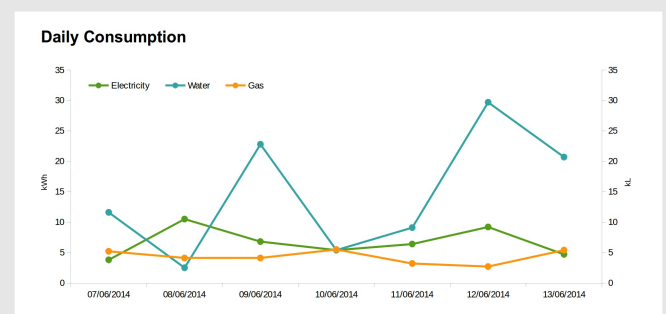
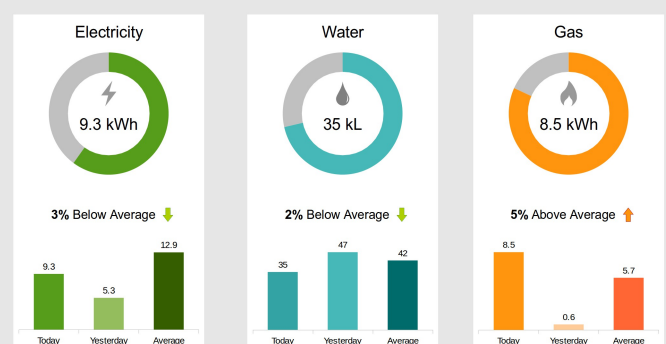
Integrated solution that spans fixed touch panel (wall-mounted unit entry) mobile devices (phone, tablet) and web – access from anywhere:

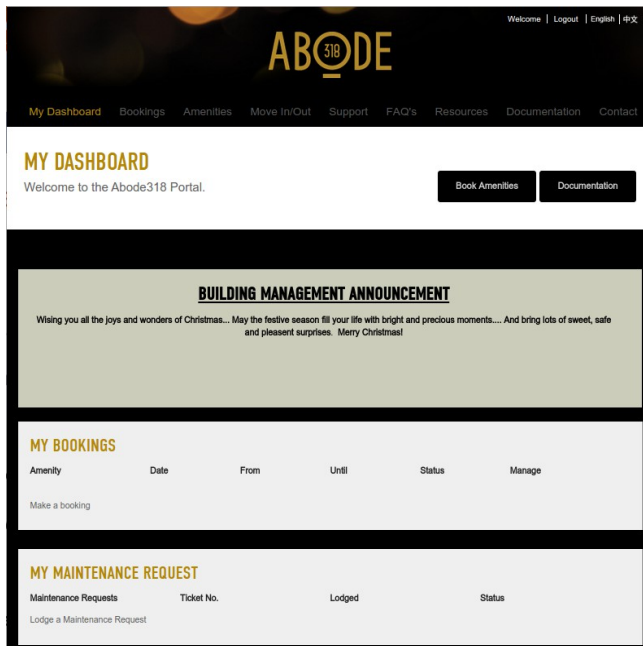
- Tenancy monitoring & control, including the option to offer “smart home” capabilities such as “master shut down” and remote access to controls.
- Sustainability performance (including benchmarking against other tenancies)

- Unit owners manual – user instructions and warranty information for tenancy fixtures and appliances
- Maintenance request tracking, common areas maintenance notifications.
- Body corporate proceedings – a place to publish and manage body corporate governance (minutes of meetings, general resolutions, announcements etc.)

Reduce Complexity & Risk

Agreement among the key stakeholders (owner, developer, architect, planner etc.) to an integrated services architecture is an essential pre-requisite to achieving the potential benefits available. However, the conventional design/construct model will not deliver these benefits. A new delivery methodology is required. This involves new functions such as the MSI, BSI and NSI as detailed below to complement the traditional “trade” contractors.





Building Systems Integrator

- Provides services in relation to the integration of building systems.
- Detailed design, shop drawings, final specifications, test plans
- Installation, commissioning, testing, handover
- Hired by the contractor as a specialist sub contractor.
- Works the subcontractors to co-ordinate various building systems integration activities.
- Co-ordinates with the MSI to ensure that design intent is followed through to completion.

Master Systems Integrator

- Provides technology assessment of requirements and a technology development brief
- High level concept design, schematics, functional requirements.
- Co-ordinates with consultants
- Hired by the developer and works in the interest of the development.
- Provides oversight of the project during the project implementation stage.

Network Systems Integrator

- Provides services in relation to the building networks and telecommunications related systems.
- Detailed design, shop drawings, final specifications, test plans
- Installation, commissioning, testing, handover
- Hired by the contractor as a specialist sub contractor.
- Works the building systems integrator to ensure network is designed to requirements.
- Co-ordinates with the MSI, BSI, electrical contractor to ensure that design intent is followed through to completion

Benefits

Building Owner

- Reduced build cost – less cabling, less equipment, less termination effort, less integration risk. For example, in a Brisbane commercial building (with far less demanding cabling requirements), a converged services network netted an \$80k saving in cabling and switching equipment – this is at the very low end of what is achievable in many MDU complexes. Even the savings from in-unit equipment using the converged approach can reach or exceed \$2,000 per apartment – for a 600 apartment tower this can easily save \$1m or more on the build cost (excluding cabling savings).
- Reduced documentation cost – production of hard copy unit owner's manuals can run to \$300 per apartment. Delivery of these electronically through a community portal can halve this cost, and deliver additional services.
- Branding – look and feel of community portal, mobile experience and in-unit displays can all be tailored.

Building Manager / Body Corporate

- Direct channel to contact residents for announcements and notifications.
- Streamlined work flows – tenant move-in/out, maintenance requests, facility bookings.
- Improved visibility over building operation.
- Increased opportunity to improve building performance (smart controls can pave the way to intelligent operations – adaptive controls, demand response etc.)

Tenants

- Simple and convenient single point of contact for all things related to their unit and the surrounding community.
- Advanced control and monitoring options from the tenant's choice of device.
- Access to comprehensive sustainability performance information and comparative benchmarking against other tenancies to self-manage consumption.



SOLUTIONS ENGINEERED FROM EXPERIENCE

38b Douglas St
Milton QLD 4064

T +61 7 3535 9696
F +61 7 3535 9699
E sales@vrt.com.au

www.vrt.com.au