



FREEDOM FOR BUILDING OWNERS AT LAST

ibms))

Introduction to IELVS

A fully Integrated Extra Low Voltage system (IELVS) operates on a common platform for the purposes of collecting, exchanging and archiving data. The IELVS facilitates a common web interface for monitoring display, archiving, reporting and controlling the ELV services and providing value added tenancy services such as on-line billing, building performance displays and after hours requests.

Typically an IELVS will incorporate:

- Building Management System (HVAC controls)
- Security and Access Control
- Lighting Control
- Utility Metering
- CCTV
- People Counters
- Nurse Call
- Fire Monitoring
- Any other Extra Low Voltage System in the facility
- Structured Cabling and IP networks to support the above

Traditionally each of these ELV systems have been installed separately as part of another services contract, HVAC controls with Mechanical Services, Access control and lighting in Electrical Services, Fire Detection with Fire Plumbing etc. This led to a wide variety of different systems all designed and operating in isolation. When it was necessary to get these systems to operate together it proved to be difficult, expensive and time consuming.

This traditional approach does not exploit the synergies between the systems. It prevents the stakeholders in a building: - the developers, owners, operators and tenants, getting real value out of their investment. Whilst these systems may only make up a small proportion of the construction costs, they have a disproportionately large impact on the efficiency and operating costs of any facility.

IBMS reviewed several recent premier developments and identified that they are not capitalising on today's technology. One facility had ten separate ELV systems installed independently. This meant a cumbersome and expensive solution with ten separate software applications on ten separate PCs plus duplicated hardware, software and cabling networks.

In another case, the energy costs of another new premier building were running at approximately **\$29m²/pa.** compared to **\$24m²/pa** for similar buildings. Recommendations were provided to the client that should realise savings in energy costs of **\$5m²/pa** without additional capital outlay.

Both the above situations could have been avoided with careful design and planning of the ELV systems before the buildings were constructed.

Traditional vs Integrated

An example of the traditional approach to the ELV systems is shown in **Figure 1**. As can be seen, all systems are independent with separate computer hardware and software. Integration, if any, is typically done via High Level Interfaces which are expensive, problematic and difficult to maintain.

Figure 2 shows a fully integrated system that can be implemented using current open systems technologies available today. When buildings are designed with integrated ELV systems using this approach, many benefits can be realised compared to the traditional approach. Some of these benefits are detailed in Table 1

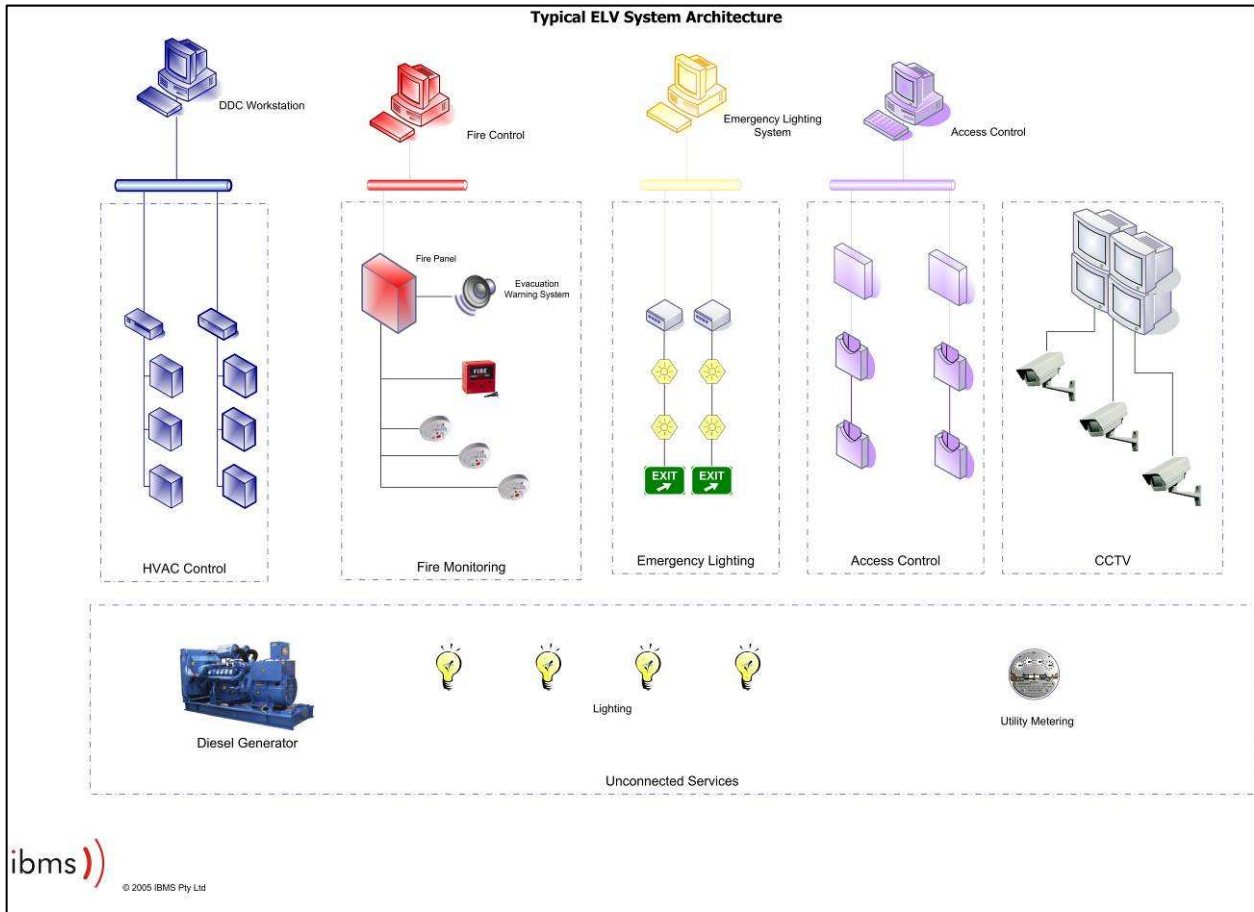


Figure 1 – Traditional Architecture

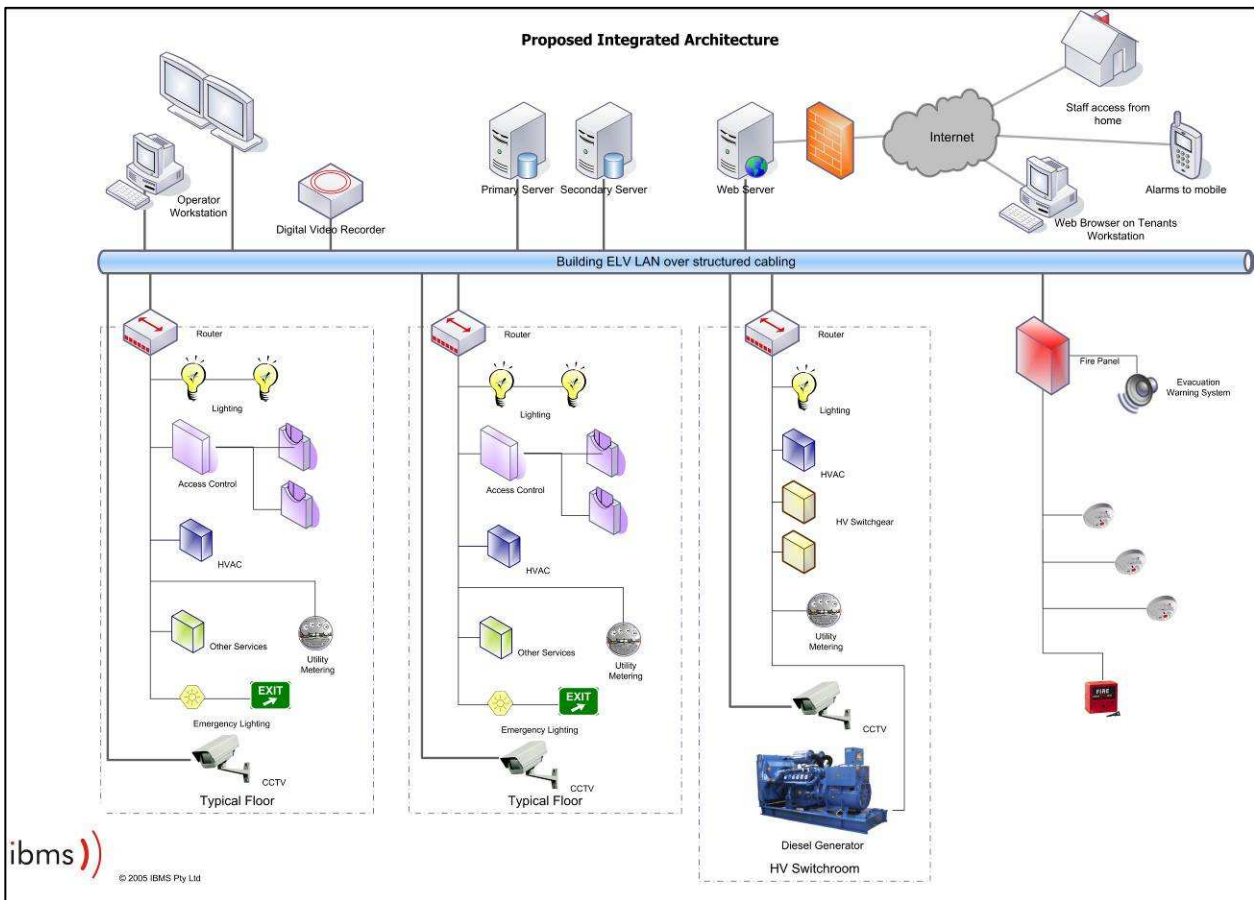
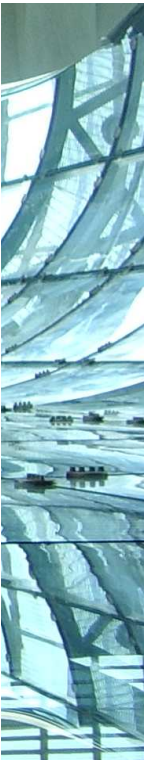


Figure 2 - Integrated Architecture

Features and Benefits of Integrated Approach:

Single User Interface for all Systems – not 6 or 10.	<ul style="list-style-type: none"> – Less software costs – Easier to maintain and upgrade
Web based User Interface	<ul style="list-style-type: none"> – Easy access to anyone with authority. – Less Training costs – Minimal cost to give access to tenants and other users – Simplifies remote access
Energy efficient strategies easily implemented	<ul style="list-style-type: none"> – Able to achieve improved energy performance and meet compliance with BCA Annex J – Improve ABGR, NABERS and Green Star™ ratings – Reduced operating costs – Common system simplifies reporting for monitoring targets for ABGR and NABERS
Utilise Open Technology – Futureproof Building	<ul style="list-style-type: none"> – Not locked into original suppliers – Expansions, upgrades and maintenance can be put out to competitive bidding – Reduces fit out costs
Reduced equipment requirements (hardware, software and networks).	<ul style="list-style-type: none"> – Life cycle cost savings
Common open database for gathering information and reporting.	<ul style="list-style-type: none"> – Improved response to faults and problems – Improves productivity of building management team – Provide quality reports to building management, building owners and tenants – Easier to generate new income streams from tenants – Eases compliance monitoring of essential services (fire, emergency lighting, etc)



IBMS believe that by avoiding the traditional piecemeal approach to definition, design and delivery of ELV systems, it is possible to greatly enhance their effectiveness as tools for the management of a building or facility. Additionally, such integration from concept phase forward, simplifies the construction coordination task and enhances the link between the system intent and the operational philosophy.