ABSTRACT

The role of BAS in intelligent buildings has changed over the years. The ongoing and accelerating changes in technology have provided many new features, along with opportunities for convenience and cost reduction. Today building owners and facility managers want to upgrade their properties to prevent obsolescence, make them competitive in today’s rapidly changing technology environment and satisfy the true needs of the tenants. This has contributed to the rise of high technology retrofitting works in the commercial real estate market and any building fifteen years old or more will be a potential candidate for upgrading works. It is anticipated that most retrofits will take place in highly competitive leasing areas such as Raffles Place and Tanjong Pagar and this will generate a specialized market within the construction business.

This dissertation aims to study the requirements and importance of retrofitting using a case study and highlight the fact that buildings do not have to be new to be made intelligent. The retrofitting of older buildings also ensures that they do not become uncompetitive amidst the emergent of new, sophisticated buildings. A LonWorks control network was chosen for the case study as the backbone of the upgrade, creating the possibility for equipment from different manufacturers to work together while sharing network wiring. The result of the retrofit supports interoperability as the use of LonMark certified devices are guaranteed to be interoperable. Interoperability is also the current evolution of building automation and owners will gain from being able to choose from a variety of vendors for future replacements, upgrades and maintenance contracts.