ABSTRACT

The unprecedented advances in information technology has brought together two separate technologies of office automation and building automation into a single system, which we call the "intelligent building". We must also not forget that such advances in information technology has also brought with it undesirable effects to the building environment.

Today's intelligent office buildings are equipped with sophisticated electronic equipment, but all too often, these buildings are unable to achieve maximum benefits expected for the organisation and users. Perhaps, a pure technical outlook detracts from their real "intelligence". The author believes that architectural responses play an important role to counter balance the negative effects of technological advancement. The objective of this dissertation is thus to lead one to identify these critical responses.

The dissertation begins by assuming greater importance of architecture in intelligent buildings, despite the belief that engineering science forms the essence of the "intelligent building concept". The work develops to re-examine the definitions of intelligent buildings, in order to gain a better understanding of the intended role of the concept and its underlying problems. Recent emerging trends are also identified through a literature review.

Upon identifying these 'failures', mainly due to the impact of information technology, the author then proposes architectural responses to improve the harsh machine environment. These responses range from all levels of the building shell in order to tackle the physical and mental needs of the office organisation. ie responses in consideration of the new spatial needs to the changing work culture of the cyber-age.

Towards the end, a case study of Republic Plaza is made to illustrate (un)successful attempts to respond to the impact of information technology while at the same time, identify further possible efforts.

The dissertation concludes that architecture plays a vital role in intelligent buildings, through emphasis on the user environment because buildings, after all, are meant for people rather than machines.