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Supporting Education through Effective Life Cycle Management

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This paper critiques historical approaches to the estimating of asset replacement costs over the design life of a property and then considers methodologies that are becoming more popular.

Examples of these historical approaches include:

- Budgeting a consistent percentage of the insured value of the portfolio each year;
- Budgeting a broadly similar amount each year based on the previous years spend; and,
- Using the asset lists prepared and maintained for accountancy purposes to forecast and budget for asset replacement.

It looks at the benefits of these approaches including predictable budgets and a transparent calculation methodology.

However it also identifies shortcomings which are ultimately leaving these strategies poorly placed to support the availability and maintenance of facilities to clients going forward. The shortcomings mean that over time a miss match arises between available funds and funding requirements, consequently:

- The availability of funds reduce;
- Backlog maintenance issues increase;
- Asset reliability is compromised;
- Responsive repairs costs increase;
- Unscheduled service interruptions occur;
- Incidences of premature asset failure occur; and,
- Overall value for money is compromised.

What's more, when using the traditional approach to life- cycle budgeting:

- There is no direct causal link between estimated life cycle costs and the actual performance of the assets; and,
- Estimated life cycle costs assume external factors such as extreme weather events or changes in utilisation do not impact asset life.

For these reasons, when changes occur that compromise the life cycle of the assets, it is challenging to reflect the impact of changes in the budgeted life cycle costs in a transparent intuitive way. In the dynamic, accountable and scrutinised world in which we all operate this causes understandable frustration.

The paper goes on to look at the more scientific and granular methodologies that are beginning to find favour. For which key drivers have included the PPP industry and the increasing scarcity of capital.

Perceived benefits are considered as is the role that they can play in ensuring the provision of the Right Facilities for our educational clients going forward.

Key features of current best practice life cycle modelling include the ability to:

- identify and estimate for life cycle works on the basis of the most likely methodology of asset replacement; either like for like e.g. for boilers and chillers; or composite prices e.g. for toilet or kitchen refurbishment;
- develop estimates for life cycle works based on a practical view of site considerations e.g. demolition, disposal, 'works in connection with', obsolescence and professional fees;
- statistically model asset failure behaviour;
- provide reports in standard MS Excel format enabling clients to manage capital budgets over the long-term and recalibrating funding requirements through condition auditing;
- apply differing financial models e.g. sinking fund calculation to lifecycle works or net present values of differing investment options;
- reflect the variances in life cycle performance of assets due to environmental and use factors;
- risk rank asset replacement based on criticality to core business allowing works to be prioritised in a way that is meaningful to the client;
- model the postponement of replacing selected assets; and,
- model the replacement of a comprehensive range of assets.

The various evolutionary steps described in the development of life cycle modelling are illustrated with a number of case studies including:

- Pre-schools, schools and universities;
- Hospitals and Aged Care facilities;
- Prisons and correctional facilities;
- Aquatic centres;
- Commercial office buildings; and
- Houses, apartment complexes and retirement villages.

A detailed case study shall be offered up to illustrate the approach described through the first hand experience of Peter Lockett of Flinders University. Peter shall talk about his key role in implementing the strategies discussed previously at a major local authority in South Australia and subsequently at Flinders University. He shall highlight benefits of the approach that he championed including:

- Managing the expectations of the executive;
- Identifying and re- prioritising works based on funding availability including grants and other forms of third party finance;
- Applying robust, consistent, standarised life- cycle budgeting principles to a widely geographically disparate portfolio; and,
- Informed business cases to which the ROI on life cycle works can be fully considered.

The paper will consider future implications for life- cycle modelling such as carbon pricing and the shift towards creating shared value for all stakeholders from the utilisation and maintenance of assets.