

Life Cycle Cost (LCC) Estimate for Budgetary Purposes at Etwall Leisure Centre

Assumptions made over the average lifetime costing for the infrastructure of the main building structure:-

Foundations:	Lifetime
Vertical/Horizontal Elements:	Lifetime
Site Area:	Lifetime
Roofing (steel):	Lifetime
Roofing – Membrane Insulation:	30 years
Building Exteriors – windows/doors:	30 years
Electrical (1 st fix):	Lifetime
Plumbing (1 st fix):	50 years
Fire Protection Systems:	40 years
Fire Detection Systems:	20 years
Built-in Equipment:	25 years
HVAC Equipment and Controls:	20 years
HVAC Distribution Systems:	40 years
Main Plant (Heating/Pumps):	18 years

The above assumptions are based on general replacement life cycles for the building and equipment installed within the building. The break-down of service costs and replacement costs within the LCC are detailed within the spreadsheet with a summary graph displaying costs over time.

While present day capital costs can be estimated with some degree of accuracy the cost of maintenance [planned or otherwise] and other operational costs are not quite so straightforward.

The amount of money spent on planned preventive maintenance of a building is determined far more by the current policy of the organisation[s] responsible for the maintenance programme than by any quality inherent in the materials. Major expenditure on repairs is usually brought about by faulty materials or bad workmanship rather than by predicting overall ageing, making it rather difficult to forecast.

Given that the building is already 6 years old the baseline for the LCC has been taken ‘as today’ with replacement capital items being identified from the baseline date for a period of 25 years (giving a

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total building LCC of 31 years for the purpose of this exercise). As an example boiler replacement would be considered at approximately 15 – 18 years, on the LCC spreadsheet it is shown at year 12 which is 6 + 12 giving an actual age of 18years for the boiler.

A qualitative and quantitative analysis has been carried out by reviewing previous spend at the centre for the last four years using Aggresso. The data cannot be assessed for its qualitative outcomes due to its ambiguity however; quantitative analysis does allow the establishment of an average budget/year shown at the bottom of the spreadsheet and used as the basis for 'normal yearly spend'. There are two average budget figures given within the spreadsheet, the first figure removes the 'Outliers' data and the second includes the 'Outliers' data (shown in yellow), giving a lower annual average budget figure.

The analysis makes no attempt to offset any cost/s against any derived income [or profit] from the building during the LCC period. The focus has been purely against the need to understand the implications of ageing capital against the facility with no payback calculations included (for example, installing solar power may derive a benefit in being able to 'sell-back' power to the grid). All costs given are based on average weighting for a particular item of capital/or repair at 'today's cost' and exclude any inflation/depreciation value of the capital asset/s.

No estimates have been given for replacement of 'electrical control systems' as the document provided (contract) states that the responsibility for replacement is that of the Contractors (Item 9d). However, if it were to be included for the duration of the LCC period then due to obsolescence of electronic control systems a budget figure of at least £100k would need to be added.

No estimates are given for maintenance and replacement of Fire Detection Systems as this is the responsibility of the Contractor. The fixed wiring is outside the time period for the LCC exercise so is also excluded.

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