

Extending the life of a building

Accurate Life Cycle Costing Analysis and the
importance of Planned Preventative Maintenance.

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Changing Mind Sets

Interest in Life Cycle Costing Analysis (LCCA) is growing.

Responsible building owners and designers are increasingly turning their attention to the durability of buildings. In a fluctuating economic climate, carrying out a Life Cycle Costing Analysis (LCCA) and carrying out Planned Preventative Maintenance, will ultimately prolong the life of a building and ensure a smaller or delayed capital expenditure. In an environmentally conscious world, a sustainable building reduces a company's carbon footprint.

It is therefore no surprise that when questioned, an overwhelming majority of 70,000 building professionals agreed that LCCA should be evaluated for building materials and maintenance measures prior to commitment.*

However, whilst many building professionals are increasingly interested in learning about the Life Cycle Cost of key building components, few tools currently exist to help compare the varying factors that exist from building to building.

We believe that our 30-years' experience working on a multitude of industrial and retail sites means we are ideally positioned to ensure the most accurate LCCA can be conducted.



Addressing Challenges

Perhaps the biggest challenge faced when LCCA is carried out is the lack of consensus regarding the service life of many modern roofing systems. As an expert roofing contractor, our vast knowledge of such systems and their performance capabilities from a maintained and non-maintained perspective means we can overcome such a challenge.

Building owners are often unaware of the published warranty offerings of manufacturers and the maintenance required to uphold such warranties. This is because they are typically addressed within O&M Manuals and can be difficult for the non-construction professional to identify. As a result, the overall longevity of the roofing systems is affected. This is an area with which we can assist when carrying out roofing assessments. Another LCCA issue frequently highlighted is the variance on the costs associated with different systems. Again, whilst other contractors can find this difficult, as a registered installer of the majority of roofing systems, we can provide comparison costings easily and efficiently.

The final industry concern for LCCA relates to the common methodology used to calculate Life Cycle Costs. An accurate LCCA requires all anticipated costs to be converted at the present value and these should include initial costs of installation, periodic maintenance expense and the eventual removal and replacement cost of a roof.

The industry recognised formula is as follows:

$$\text{IIC} + \text{MC} + \text{RRC} = \text{LCC}$$

Initial Installation Cost + Maintenance Cost + Removal & Replacement Costs (based on current rates).

Such methodology is well proven, however it is only applicable to new buildings that currently have no life history.



We believe that with our knowledge in the installation, maintenance and replacement of roofs we are also able to carry out LCCA on existing buildings. This involves also considering required upgrade works and responsive repairs to address inherited leaks from a lack of previous maintenance – this then enables us to assess the remaining life of a building's roof and the cost to arrive at that point.

Our BESPOKE formula is therefore:

$$\text{IIC} + \text{MC} + \text{UW} + \text{RR} + \text{RRC} = \text{LCC}$$

Initial Installation Cost + Maintenance Cost + **Upgrade Works**
+ **Responsive Repairs** + Removal & Replacement Costs (based on current rates).

This method can then be used to draw a comparative LCCA for a new building and a similar building that has not been maintained for a set period of time.

Life Cycle Case Study Completed in 2012

LCCA in Practice

We applied the aforementioned thinking to a new distribution building in Rochdale for one of our main retail clients. Part of our brief was to conduct an LCCA that enabled the client to see the expenditure required throughout the building's 25-year warranty period in order to prolong its life. The outcome saw a saving of over £1m when Planned Preventative Maintenance was carried out.

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Is LCC all about money?

No. There are many other factors at play that may not cost money, will have an impact upon a business as a whole.

These include:

- **Health and Safety issues or slip hazards.**
- **Damaged stock.**
- **Loss of production times.**
- **Out of hours working.**
- **British standards.**
- **Amount of natural daylight.**

The life of a building requires professional and accurate assessment.

The correct approach will ensure building owners are not exposed to unnecessary expenditure.

Key Cost Comparisons

Based on Full Maintenance

Roof Type	Assumed Service Life	Installation Initial Cost	25 Year Basic PPM Maintenance Cost	Dilapidation Upgrades Cost	Call Outs Costs	Current Over Roof Cost	Total Life Cycle Cost
Metal	25 Years	£415,867	£265,700	£0	£0	£537,840	£1,219,407

Based on Zero Maintenance

Roof Type	Assumed Service Life	Installation Initial Cost	25 Year Basic PPM Maintenance Cost	Dilapidation Upgrades Cost	Call Outs Costs	Current Over Roof Cost	Total Life Cycle Cost
Metal	5 – 10 Years	£415,867	£0	£1,050,840	£225,000	£537,840	£2,229,547

Total Saving £1,010,140





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