Case Study

LCAM | Benefits of Life Cycle Asset Management to our client in the Financial Industry

MCP Consulting Group Limited
Blythe Valley Innovation Centre
Blythe Valley Park
Central Blvd
Solihull B90 8AJ

0121 506 9032

mcpeurope.com

Life Cycle Asset Management

introduction

Regardless of the industry you are in, Life Cycle Asset Management (LCAM) should form an essential part of your overall maintenance programme and capital expenditure. In fact, it could even dictate what that programme should be.

From brand spanking new to scrap, the entire journey of your assets should be observed, tracked, maintained and managed effectively to get the most out of its life cycle.

MCP has partnered with many clients in the food, drink pharmaceutical, utilities and commercial industries to help them establish solid processes, provide training and facilitate LCAM systems to build realistic capital expenditure and life cycle management programmes.

In this Case Study, we explain the challenges faced by one of our financial industry clients who, upon completion of an AMIS audit, decided to re-assess their asset register to enable them to begin their journey from reactively maintaining their assets, to employing predictive technologies to optimise the use of maintenance resources and critical spares requirements.

about LCAM

The life cycle of an asset has four different stages:

- Acquisition
- Utilisation
- Maintenance
- Renewal/Disposal

While these lifecycle stages may appear simple on the surface, in practice it can be significantly harder to maintain all your assets according to and throughout these stages, especially when they are spread over a number of sites. Sometimes, over a number of countries and continents.

the client

MCP has worked with this particular client over a number of years and were commissioned to perform an AMIS (Asset Management Information System) audit to provide a benchmark for how their physical assets were being maintained and performing.

The overall score was low and the maintenance approach was classed as Reactive. The key initial findings included:

- The asset register contained numerous errors
- The proposed asset replacement schedules did not reflect the latest estate management strategy
- There was a need to develop maintenance management and technical strategies
- Work planning and control systems were weak and predominantly paper based with a large clerical demand for data entry into the CMMS
- There was a need to develop an effective stores management system
- General awareness of maintenance and asset management best practices needed to be improved
- There was no continuous improvement process

The clients maintenance regime was supported by a CMMS (Computerised Maintenance Management System) which was under utilised, with poor integration between their help desk and preventative maintenance modules. It had a poor history, with a lack of reporting and no improvement processes in place.

the next steps

Following the initial findings, our client understood that their current maintenance approach did not support their company vision of being ‘The Best in the City’ and commissioned MCP to perform further studies to:

- Verify the asset register of approximately 6,645 assets
- Identify critical assets by means of an Asset Risk Assessment
- Identify capital replacement requirements and develop a replacement schedule
- Review the existing maintenance regime and recommend improvements
- Review the need for critical spares

asset register

Findings

The asset register contained a total of 6,645 assets and non -assets across the estate. Within the register there were 760 errors, therefore, the register was only 88.6% accurate.

The common issues identified that there were many work orders were being generated against non-assets. This was creating a false impression of the number of assets held within the CMMS.

There were no clear definitions of what constitutes an asset and many had vague location descriptions , making it difficult for the maintenance team to locate the asset. The assets were not properly tagged and the tag descriptors were inconsistent.

Electrical panels had been blocked by permanent and semi-permanent fixtures, this would be a breach of regulatory requirements.

Recommendations

- The asset register needed to be updated with the omission, additions and changes in name plate data identified
- An agreed definition as to what constitutes an asset needed to be established
- Multiple assets needed to be identified separately and should be assigned an asset number then added to the asset register
- Assets should be marked with their asset number. The labels must contain the asset number in a format that is readable by humans but may also contain a bar code or RFID identifier so that it can be easily read by portable data readers
- Physical locations needed to be labelled so that they were easily findable (e.g. rooms and cupboards should be numbered)
- Collection of asset history needed to be improved and preventive, corrective and reactive maintenance histories collated
- The difference between asset type and building services system needed to be clarified

asset condition and risk assessment

Findings

The probability of an asset failing in service and the resultant impact on business activities was determined by assessing an asset against a set of pre-determined criteria.

Assessments were made by the physical inspection and review of existing information such as vibration analysis, specialist survey or thermographic reports. Assets were given an A, B, C (high, medium and low) categorisation for probability and impact from which the overall risk to the business was determined. The overall risk was also given an A, B, C categorisation. The results for all the buildings surveyed are shown below:

By Impact			By Probability			By Risk		
A	B	C	A	B	C	A	B	C
484	333	1711	288	160	2080	635	77	1816
66	296	469	16	62	753	72	36	723
18	93	430	18	93	430	55	39	447
15	61	294	3	68	299	3	32	335
27	103	292	4	88	330	30	14	378
14	181	225	7	154	259	20	82	318
11	62	105	8	36	134	18	13	147
15	42	53	0	17	93	20	49	41
11	66	113	4	16	170	14	7	169
10	21	83	4	11	99	6	12	96
6	37	51	2	26	66	5	25	64
6	123	496	31	140	454	37	53	535
7	78	137	33	43	146	38	22	162
690	**1496**	**4459**	**418**	**914**	**5313**	**953**	**461**	**5231**

The analysis revealed that assets at certain sites represented the largest risk to the business because of both their impact on business activities and their condition.

Recommendations

The criticality categories needed to be used within the work planning system and critical spares identification programme. They should also be used when determining capital replacement needs and the development of the proposed maintenance regimes.

capital replacement schedule

Findings

We provided details of how much the client may have to spend over the following 6 years to replace assets across the estate. This was just short of £4 million. We recommended that any item that did not require immediate replacement be reviewed at a future date to reduce the initial replacement estimate to just a quarter of the original figure.

Recommendations

- The capital replacement schedule needed to be reviewed by building managers and actioned appropriately
- Where advised, in depth surveys should be performed by specialists
- Capital replacement schedules should be reviewed every two years

maintenance regime

Findings

With the overall approach to maintenance as being Reactive, there was no formal work planning system. There was a need to establish normal operating parameters for equipment and procedures for raising maintenance requests.

The preventative maintenance regimes that were in place followed the SFG20 guidelines, these make little use of predictive technologies. This means that asset criticality and risk is not taken into account and could mean that low criticality items were being over maintained.

A Review of Existing Maintenance (REM) was conducted on the SFG20 routines to establish if maintenance tasks were worth completing, using a risk based approach.

A comparison was made between the current manning levels and the manning levels that would be required under the revised maintenance regime. This would see a substantial reduction in the maintenance workforce required.

In order to be able to move to a new maintenance routine there was also a need to improve the technical skills and competencies of the tradesmen.

Recommendations

- The revised maintenance schedules needed to be reviewed, any necessary revisions made and a plan developed for implementation
- A revised organisation structure was required which would be capable of delivering and supporting the new maintenance regimes
- A restorative programme needed to be undertaken for all assets that were identified as requiring immediate maintenance
- Fixtures needed to be removed immediately to allow access to electrical panels and fixed electrical installation checks completed to ensure they complied with the Electricity at Work regulations (1989)
- Asset history needed to be recorded for all assets.
- Predictive technologies needed to be employed to optimise the use of maintenance resources but also needed to be preceded by a feasibility and cost benefit analysis.

spares

Findings

A review of the spares lists suggested that the list was based on the manufacturers recommended spares and not a critical spares listing. This meant that if the client purchased all the items suggested, it would be a significant expenditure and would not appreciably reduce the risk of equipment failure.

The spares were not managed effectively across the estate and inspections performed suggested there was an over stocking of easily obtainable items. There was an immediate need to develop clear stock holding policies and control procedures.

Recommendations

- Create bills of materials for all assets
- Identify critical spares requirements
- Develop procedures for the management, parts and materials
- Establish processes for making stock/no-stock decisions
- Establish processes for setting appropriate stock levels

the benefits

By adopting our LCAM approach our client saw, not only substantial financial benefits, but a myriad of non-financial benefits also.

The Financial Benefits

The financial benefits were realised from two streams:

- Avoidance of capital expenditure
- Reduced contract costs through reduced labour requirements

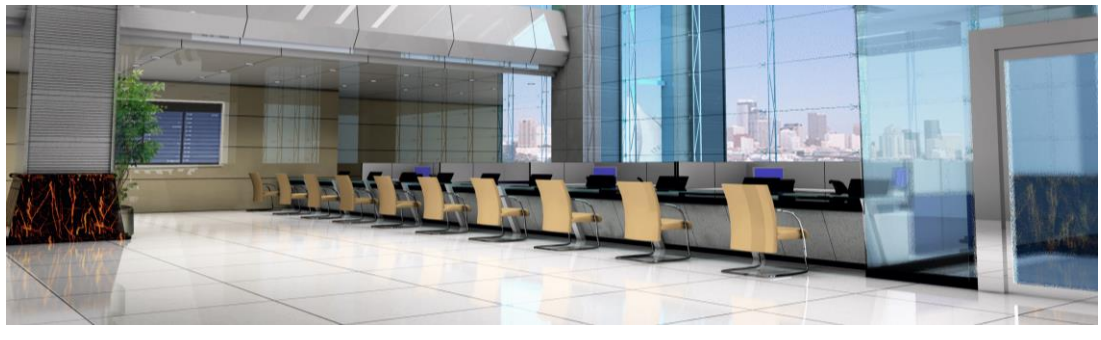
Capital Avoidance: Savings would be made across the estate if the proposed capital expenditure schedule was followed.

In light of the findings a condition survey at one of their London sites was agreed and a number of planned replacements cancelled. The estimated savings for this alone was £1.2 million.

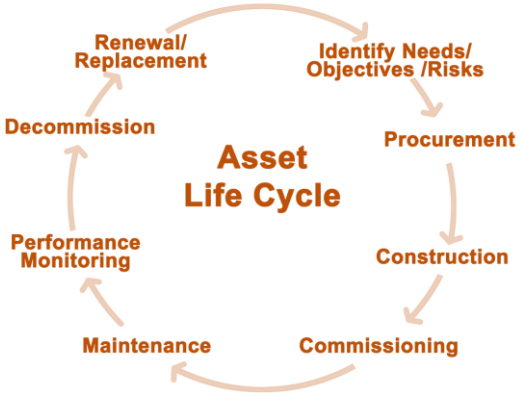
Labour Savings: It was shown that the maintenance workforce could be reduced across the estate by 15 full time employees, assuming total employment costs of £30,000 per annum, the total saving would be £600,000.

The Non-Financial Benefits

- Improved asset register which gave rise to:
- Improved plant performance and reliability
- Improved efficiency and accuracy in creating work orders and reporting of actuals
- Improved life cycle cost information Improved asset history and reliability information
- Greater use of predictive technologies and improved integration of results with overall maintenance objectives. In turn this would give improved warning of potential asset failures and therefore avoidance of lost opportunity costs of potentially £600k per hour
- Compliance with regulatory requirements
- Reduced risk of failure of standby and emergency support systems
- Improved skills and competencies of maintenance tradesmen. This would give improved response to breakdowns by improved fault finding and diagnostic skills, more ‘right first time’ repairs and a better quality of repair
- Reduced risk of prolonged asset breakdowns by development of an effective stores and stocking of critical spares



supporting you with LCAM



To boost the life cycle of your assets, there are some simple best practices which can be utilised.

It all starts with an honest audit of your existing practices and how you can improve. Where are the common pitfalls? What do your workers have to say about your assets and about the practices surrounding them right here, right now? Where are the biggest failings? Where are the biggest gains? Do you have the infrastructure you need, or is your overall system out of date and clunky?

After an audit, you are equipped to see where there is room for improvement. You also will have the data to back up the necessary changes and to provide documentation for why they are being proposed and implemented.

Finally, check your policies and see if they are limiting your growth. Are they outdated? Are they holding you back from making the improvements you need? Why do they exist in the first place and do they need an update? Many companies do not move forward because their policies do not allow them to.

understanding your asset life cycles

The arrival or replacement of an asset, the life cycle of this can affect every part of the business. When properly maintained, an asset can bring a greater return on investment. However, if poorly maintained, the reverse is true. Understanding your asset life cycles should form an integral part of any maintenance strategy which in turn will increase return on investment, total productivity, worker satisfaction, as well as customer satisfaction.

Are you looking to incorporate an LCAM strategy into your maintenance regime or have already started and uncovered some hidden stumbling blocks along the way, then we can help.

MCP consultants have the skills to help you each step of the way. They are Institute of Asset Management accredited and can support you in developing better awareness of your assets, help to create an asset life cycle management plan and deliver positive business change.

Blythe Valley Innovation Centre
Blythe Valley Park
Central Blvd
Solihull B90 8AJ

0121 506 9032

mcpeurope.com