



Full Business Case (FBC)

LED Lighting Upgrades (000373)

Service Unit: Technical Services

Risk: Low

Prepared by/Project Manager: Kevin Smith **Date:** 29/10/12

Document Approvals - All Business Cases for projects over £25k must be approved by the following people listed in this table prior to being approved by the Transformation Board and Executive Gateway Board (EGB).

Officer/Member/Group	Name	FBC Approval Date	PID Approval Date
Project Owner	Roger Ball	13/11/12	
Executive Director	Bill Cotton	13/11/12	N/A
Portfolio Holder	CLlr David Smith	01/11/12	N/A
Portfolio Holder comment	Initial upfront investment in projects like this will eventually result in considerable savings for the Council as well as helping us achieve our carbon reduction targets.		
Transformation Board (Transformation Projects Only)		N/A	N/A
Executive Gateway Board		5/12/12	N/A
Cabinet		N/A	N/A
Project Board		N/A	

Other Elected Members & Officers Consulted

Name	Position	Date
Carbon Reduction Team (CRT)	Officers from across the Council	

Document Revision History

Version	Author	Changes	Date



1 Executive Summary

Through its Carbon Management Plan (CMP), The Council is committed to reducing its carbon emissions and related costs by 1/3 by 2014. Reducing energy consumption and costs will help protect The Council's frontline services.

The project set out in this business case is to replace existing lighting with the more efficient LED type in as many of the Council buildings as possible. At the same time upgrades to the lighting controls will also be carried out where appropriate.

Whilst the service unit, building managers and users will be consulted, the decision to carry out the works will be controlled centrally and authorised by Corporate Property Officer. The estimated savings in energy costs will be used to repay the funding.

To date energy efficiency measures have been implemented at the request of the service unit or a particular building. A more centralised approach will allow The Council to benefit more quickly from the savings of a wider roll-out.

It should be noted that it is only recently that LED lighting technology has developed to a stage that it's cost effective to be installed in Council buildings. This includes the ability for LED lighting projects to meet the 5 year payback required under The Council's Local Authority Energy Financing Scheme (LAEF) that it currently operates.

The main benefits from installing LED lighting and controls are -

- Reduced energy consumption, carbon emissions and costs
- Reduced CRC (carbon tax payments)
- Reduced maintenance costs

The projects will be predominantly funded from The Council's own Local Authority Energy Financing Scheme (LAEF). Operated by Salix this scheme enables The Council to loan funding to services to make improvements to reduce energy consumption. The interest free loan is repaid by the estimated reduction in energy costs. Once the loan is repaid the savings in energy costs remain with the service.



2 Strategic Fit: The Strategic Case

This proposal to install LED lighting and controls across Council corporate buildings supports the Corporate Priorities - 'An Efficient Council' and 'An Improving Environment' by way of reducing costs and the Council's impact on the environment.

The Council's Carbon Management Plan (CMP) was signed off by Cabinet in April 2010. It sets out a target to reduce the Council's carbon emissions by 1/3 by 2014, from a baseline year of 2008/09. Whilst the target refers to carbon it also represents a large reduction in energy costs to the Council, of around £1m per year based on current prices.

The Council is also required to take part in the Government's CRC Energy Efficiency Scheme. Organisations are required to buy allowances for their carbon emissions. For Bournemouth this was £151k for 2011/12 period.

The Carbon Reduction Team (CRT), made up of officers from across the Council, was formed to work on the CMP in 2009; predominantly to identify and implement measures to meet the CMP target.

A number of carbon reduction projects have been implemented in a number of Council buildings which have reduced the Energy costs. And whilst some good progress has been made in setting up processes to monitor and promote carbon reduction, a significant increase in the rate of measures implemented is required.

The measures implemented to date have been on a site by site basis. To meet the target a Council wide approach is required.

LED lighting technology has been available for a number of years. Only recently has the technology developed and costs decreased to make it a viable option for many Council buildings. This project is to replace lighting with LED type in as many Council buildings as possible. Whilst this work is undertaken the controls of the lighting will be improved where appropriate. Lighting controls can sense both occupancy and also natural light levels ensuring lighting will only be on when an area is occupied or there is insufficient daylight.

Installing LED lighting and automatic controls has clear benefits -

- Reduces energy demand by over two thirds

- Reduces energy costs by over two thirds

- A reduction in the cost of allowances required under the CRC scheme

- Reduced maintenance costs - the LED type lighting last 4 - 5 time longer and with less 'on' time from the controls the life expectancy will be extended further.

- Controls will reduce staff resources whereby staff that normally spend time checking lights are off at the end of the day can carry out other duties.



2.1 Business Needs and Project Background

The Council is committed to reducing costs and its impact on the environment. This project meets these objectives.

2.2 Benefits, Objectives and Strategic Alignment

Council Strategic Objective / Corporate Priority (taken from Corporate Plan, Service Plans etc...)	Project Outcome	Benefits expected as a result of achieving outcomes
Corporate Priority - An Efficient Council	LED Lighting and controls installed in Council corporate buildings.	Reduced costs to the Council in terms of energy bills, estimated to be £250k over 5 years. Reduced CRC allowances required. Reduced maintenance costs
Corporate Priority - An improving environment	LED Lighting installed in Council corporate buildings.	Reduced energy consumption and the related carbon emissions, estimated to be 230 tonnes CO ₂ per year.
Corporate Priority - Community Action	LED Lighting installed in Council corporate buildings.	Leading by example, and setting an example to the wider community. Particularly in more community active buildings such as, libraries and day centres.

2.3 Scope: (In/Out)

The project is to install LED lighting and controls in as many appropriate Council operated buildings as possible.

This will require a survey of the building to ascertain suitability for lighting upgrades.

Inclusions:

The installations will take place in Council corporate buildings including offices, libraries, day centres.

Exclusions:

BH Live, Schools (community and academy status).

2.4 Strategic Risk

Risk	Mitigation Strategy	Owner
Project(s) does not deliver the savings anticipated.	Trials carried out on TH Annex car park confirmed savings are delivered.	Kevin Smith
Negative impact to users and staff.	Trials will be carried out to ensure the technology meets the requirements of particular buildings and staff needs.	Kevin Smith



Risk	Mitigation Strategy	Owner
Council energy costs decrease and estimated savings not realised.	Energy costs have risen over the years. Market data strongly indicates that there is very little chance that energy costs will decrease. A decrease in energy costs will reduce the Council's spend and hence there is no risk associated.	Kevin Smith
Upgrades to buildings which are then released and hence the Council no longer benefits from the estimated savings.	Consult with Property Services and appropriate Service Unit to ensure the site is remaining in Council control.	Kevin Smith

3 Options Appraisal: The Economic Case

Energy costs are increasing and this trend is likely to continue. The Council's electricity costs have risen 10% in each of the past two years. This project and the more centralised approach will ensure wide scale roll-out of LED lighting and controls to keep spend on energy down.

Option 1

Do nothing. This will not assist with increasing energy and related costs nor will it help to reduce The Council's carbon emissions and carbon tax (CRC) cost.

Option 2

Continue with the approach by which a small number of improvements are made and The Council's costs and carbon emissions remain relatively unchanged.

Option 3

Agree to the proposal. This will ensure the Council makes larger reductions in energy and related costs. The Council's carbon emissions are reduced and so is its carbon tax (CRC) cost.

3.1 Summary of Approach

3.2 Options Appraisal

3.3 Preferred Option - Option 3

Agree to the proposal. This will ensure the Council makes large reductions in energy and related costs from lighting. The Council's carbon emissions are reduced and so is its carbon tax (CRC) cost.



4 Affordability: The Financial Case

The projects will be predominantly funded from The Council's own Local Authority Energy Financing Scheme (LAEF). Operated by Salix this scheme enables The Council to loan funding to services to make improvements to reduce energy consumption. The interest free loan is repaid by the estimated reduction in energy costs. Once the loan is repaid the savings in energy costs remain with the service. This revolving fund has been in place since 2005.

Salix who support the LAEF scheme can make additional funding available as one off loans for energy efficiency projects. The Salix Energy Efficiency Loans Scheme (SEELS) is a one fund that is made available for all public sector organisations. The fund is allocated on a 'first come first served' basis. The criteria for the interest free loan scheme is similar to the Councils own scheme in that interest free and projects must have a five year payback.

This and the Council's Invest to Save Scheme may be used to fund further projects.

4.1 Quantification of Risk and Associated Contingency

4.2 Running Costs

It is estimated that the running costs will be reduced by £50,000 in electricity consumption costs and a further £2,700 from CRC allowances required.

There will be also a reduction in maintenance costs from the less frequent lamp changes required. It is difficult to estimate this cost however given LED lamps will last 4-5 times longer it is expected that maintenance in terms of tube replacement will be a quarter of what it currently is.

4.3 Savings

The relevant service which pays the energy bills unit repays the anticipated savings each year to pay off the capital cost for the project. Once the funding has been repaid the service unit will retain the savings in reduced energy bills. The billing data will be monitored by the Energy Team to ensure that the anticipated savings are achieved.



4.4 Spend Profile and Cash Flow Please detail when the costs will occur and the savings will be made. This is required for financial purposes.

The table below shows a list of proposed sites and the estimated costs from installing LED lighting. Further sites will be identified for lighting upgrades following further site surveys.

Building	Estimated Annual Savings (£) (based on current electric costs)	Estimated Installation Costs (£)	Payback Period (Years)	Estimated Reduction in Annual CRC Allowances (£)	Year Five Estimated Annual Savings (£) (at 5% increase in electric prices per year)
Town Hall Main (old) Offices	8,000	35,000	4.4	480	9,600
Town Hall Annex offices only	6,500	32,000	4.9	220	7,800
Richmond Gardens CP	25,000	58,014	2.3	1,500	30,000
North Bournemouth Local Office	3,000	14,000	4.7	100	3,600
Wallisdown Heights	2,000	10,000	5	100	2,400
Southbourne Library	500	2,500	5	36	
Pier Arcade	2,000	6,000	2.5	140	2,400
Southcote Rd Depot	3,500	12,000	3.5	136	4,200
Totals	50,500	169,514		2,712	60,000

Notes - CRC Allowances, the Council is currently required to purchase allowances at £12 per tonne of carbon that it emits through energy use each year. The cost per allowances is expected to increase significantly in future years.

The services annual loan repayments will be 85% of the estimated annual savings as indicated in the table above. The 85% is used to build margin into the estimated savings and ensure services are not 'out of pocket'. An additional year is needed to repay the difference.



4.5 Source of Funding

The projects will be funded from The Council's own Local Authority Energy Financing Scheme (LAEF). Additional funding will be sought as required see table below.

Source of Funding	Total (£k)
Salix, Council's own Energy Efficiency loan scheme	102
Salix Energy Efficiency Loan Scheme (SEELS)	67
Total	169

Previously Awarded Feasibility Funding

Date Awarded	Description of Funding Usage	Total (£k)
N/A		

5 Achievability: The Project Management Case

5.1 Project Approach

The project will be implemented through the Building Maintenance Team, and supported by the Energy Team.

5.2 Evidence of Similar Projects

The Town Hall Annexe Car park lighting was upgraded to LED type. The pre project and post project energy consumption data is available. The data clearly shows a reduction in electricity consumption which can be attributed to the car park lighting upgrades.

5.3 Resources Required

5.4 Benefit Realisation

Benefit	How will the benefit be Measured?	Frequency of Measurement
Reduction in energy consumption and costs.	Log of installations completed and estimated savings.	Monthly from January 2013
Reduction in energy consumption and costs.	Analysis of building energy data.	Quarterly dependant on installation date
Reduction in maintenance costs	Monitor maintenance spend on buildings that have lighting upgrades.	Annual



5.5 Critical Success Factors

5.6 Assumptions & Constraints

Assumptions

Constraints

5.7 Interdependencies

Consideration will be given to any proposed changes to buildings such as the work on staff accommodation. These changes could impact on the project delivery timescale.

5.8 Key Stakeholders

5.9 Project Management Organisational Structure

Project Team	Name	Appropriate Skills and Experience
Project Manager	Kevin Smith	Delivery of a number of energy reduction projects.
Project Board	Name	Appropriate Skills and Experience
Project Owner (SRO)	Roger Ball	
Project Assurance	Beccy Brookwell	
Senior Supplier	Kevin Smith	
Senior User	Roger Ball	Corporate Property Officer
Portfolio Holder	David Smith	

5.10 Timescales and Project Plan

Project Start Date	Project End Date
January 2013	April 2014

ID	Phase / Activity	Estimated Start	Estimated End



5.11 Progress Monitoring and Reporting Process

The project will report on a regular basis following the Council's mandatory project management process. It will use the standard progress report that captures progress against the key activities / milestones, top risks and issues, progress against benefits targets and an overall summary

6 Appendices

Business Case

- Initial Risk Assessment (Template available on PPMO BIZ Pages)
- Equality Impact Needs Analysis (Template available on BIZ - contact Sam Johnson for advice)
- Health & Safety Impact Assessment - submit to h.safety@bournemouth.gov.uk
- Whole Life Costing (if applicable) (Template available on PPMO BIZ Pages)



7 Project Initiation Document

7.1 Key Deliverables and Milestones - **PID ONLY**

ID	Title & Description	Owner	Planned Date

7.2 Project Meetings - **PID ONLY**

Name of Meeting	Details of Meeting	Frequency
e.g. Project Team		Weekly
e.g. Working Group		
e.g. Project Board		

7.3 Issue, Risk and Change Management - **PID ONLY**

The project will follow the Council's mandatory escalation procedure and change process.

Risk	Mitigation Strategy	Owner

Issue	Handling Strategy	Owner

7.4 Quality Management - **PID ONLY**

Project Output/ Product	Define any standards that need to be met (eg. BREEAM, CDM Regs, Building Regs etc)	How do you intend to meet quality expectations	Who will review the quality of the product and when?



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7.5 Communications Plan - **PID ONLY**

8 Appendices

Project Initiation Document (PID)

- Detailed Gantt Chart (Project Plan) (see PPMO Handbook for an example)
- Benefit Maps / Profiles (Template available on PPMO BIZ Pages)
- Issues Log (Template available on PPMO BIZ Pages)
- Risk Register (Template available on PPMO BIZ Pages)
- Communications Strategy & Stakeholder Analysis (Template available on PPMO BIZ Pages)
- Detailed Communications Plan