

Summary Sheet

Council Report

Cabinet/ Commissioner Decision Meeting – 11 April 2016
Cabinet Member: Councillor Lelliott
Commissioner: Commissioner Kenny for decision

Title

Riverside House LED Lighting Upgrade

Is this a Key Decision and has it been included on the Forward Plan?

No

Strategic Director Approving Submission of the Report

Caroline Bruce – Interim Strategic Director of Environment and Development Services

Report Author(s)

Paul Smith – Corporate Property Manager
Corporate Property Unit
Paul.Smith@rotherham.gov.uk
01709 254061

Ward(s) Affected

Boston Castle

Executive Summary

This report is looking at the feasibility of replacing the existing Riverside House lighting with more energy efficient LED technology lighting, resulting in an estimated 69% saving on the annual lighting cost for the building.

Recommendations

Commissioner Kenny is asked to:-

- 1.1 Approve the inclusion of the Riverside House LED lighting upgrade in the Capital Programme (2016-2021).
- 1.2 Approve the funding of the project through a combination of £262,000 prudential borrowing, over a period of 20 years and a loan of £78,000 from the Salix Local Authority Energy Financing (LAEF) fund.
- 1.3 Note that this investment will achieve savings of £863,924 over this period (£47,748 per year from 2019/20).

List of Appendices Included

Appendix A - Calculation - Riverside LED

Appendix B – Annual Revenue Savings

Background Papers - None

Consideration by any other Council Committee, Scrutiny or Advisory Panel

No

Council Approval Required

No

Exempt from the Press and Public - No

Main Report

Riverside House LED Lighting Upgrade

1. Recommendations

Commissioner Kenny is asked to:-

- 1.1 Approve the inclusion of the Riverside House LED lighting upgrade in the Capital Programme (2016-2021).
- 1.2 Approve the funding of the project through a combination of £262,000 prudential borrowing, over a period of 20 years and a loan of £78,000 from the Salix Local Authority Energy Financing (LAEF) fund.
- 1.3 Note that this investment will achieve savings of £863,924 over this period (£47,748 per year from 2019/20).

2. Background

- 2.1 The current energy efficient compact fluorescent lighting in Riverside House has now been superseded by more efficient LED technology. It is proposed that the existing lighting is replaced point for point with new LED lighting, resulting in energy efficiency and carbon savings. This will equate to an overall 69% reduction in lighting consumption, saving approximately £68,000 per year on electricity costs. See Appendix A for detailed calculations.

Replacement of:

Amount	Current Light	Replacement Light
1,153	4 x 24W recessed luminaires	25W LED
381	4 x 24W emergency luminaires	25W LED
1,253	2 x 26W down lights	20W LED down lights
503	2 x 26W emergency down lights	20W LED

3. Key Issues

- 3.1 RMBC corporately has adopted a target of reducing CO₂ emissions by 2% year on year. Energy efficiency is a key contributor to achieving this target, alongside the financial benefit of reducing energy costs.

4. Options considered and recommended proposal

- 4.1 Various light fittings have been sampled and installed in Riverside House to consider their stability and suitability. The manufacturers tested were Thorlux Lighting, Apollo Lighting, Profile Lighting, Luceco Lighting, Whitecroft Lighting and ASD Lighting.
- 4.2 Corporate Property Unit has carried out a period of trials and market testing to arrive at the specified light fittings, to which the Rhapsody Fitting by ASD Lighting has been selected as the preferred system; this selection is based on many factors:

- Cost of the fitting (competitively priced) many other manufacturers were more expensive.
- Suitability and aesthetics of the luminaire for an office environment, in accordance with Chartered Institute of Building Service Engineers guidelines.
- Efficiency of both the opal diffuser and the LEDs providing excellent lumens per circuit watt, far in excess of the building regulations requirements.
- Luminaires use good quality and reputable LEDs and drivers (Tridonic) and as such a 5 year guarantee against failure is included.
- Quoted burning hours for LEDs of 100,000 and 50,000 hours for the drivers, this is a big improvement over the current fluorescent lighting technology installed.
- There is a very quick lead time for delivery of luminaires (several days to a week) compared with other manufacturers quoting between 6 and 12 weeks.
- 30+ years of UK manufacturing (based in Rotherham) employing over 200 people.

4.3 On approval of the project, the RMBC Mechanical and Electrical Section will be procuring a contractor via the YORbuild framework, to purchase and install the fittings and the contractor will also be allowed to tender appropriate alternatives.

5. Consultation

5.1 There has been no formal consultation. The new fittings have been sampled in key areas of the building without complaint.

The fittings comply with the required Chartered Institute of Building Service Engineers (CIBSE) lighting design criteria LUX levels and levels will be monitored during installation with our electrical engineers.

6. Timetable and Accountability for Implementing this Decision

6.1 On completion of the tender process, installation will begin as soon as possible and will be completed during out of hours to avoid disruption to the building and should take 6 months from start to finish.

6.2 Post installation the energy consumption on each floor/wing will be monitored and a report produced to evidence energy savings achieved.

7. Financial and Procurement Implications

7.1 The current total estimated cost is £340,000 (including fittings, labour, project management fees and a 5% contingency). It is proposed that the project is included in the 2016-2021 Capital Programme as an Invest to Save Scheme and funded through a combination of £262,000 prudential borrowing and £78,000 from the Salix LAEF fund. The prudential borrowing will be over a period of 20 years, which is consistent with the asset life assumed in the street lighting invest to save initiative. The

annual revenue cost arising from prudential borrowing of £262,000 is £20,349. This becomes payable from 2017/18. The Council has sufficient headroom within its approved Prudential Indicators and Limits for 2016/17 to 2018/19 to enable it to use prudential borrowing for this scheme.

- 7.2 The Local Authority Energy Financing (LEAF) scheme is a ring fenced 'Invest to Save' fund with 50% financed by the Carbon Trust and the remaining 50% match funded by RMBC, totalling £440,000. The scheme provides loans to finance energy saving projects and repayments are made from energy savings. LAEF is administered by Salix Finance on behalf of the Carbon Trust and they set spending targets each year. Failure to achieve the spending targets could result in Salix Finance claiming all or part of the match funding back. There is a requirement to confirm the spending target will be met (£78,000) by the end of 2015/16. There are no other projects that are sufficiently advanced in their development, which would enable this target to be met. Therefore, it is proposed to use this LAEF funding for the Riverside House scheme.
- 7.3 The prudential borrowing and LAEF repayments will be made from savings achieved through the electricity operating budget, as per the repayments schedule set out in Appendix B. The full annual energy savings have been estimated to be £68,097 per annum. Based on the installation programme, it has been estimated that 50% of these savings, £34,049 will be available in 2016/17, as there are no loan repayments in that year. In 2017/18 there will be a small cost to revenue of £3,324 as a result of the requirement to repay £51,073 of the LAEF loan in that year, along with the cost of prudential borrowing. In 2018/19 the remainder of the LAEF loan, £26,266 becomes repayable, leaving a revenue saving of £21,483. The full year's revenue saving of £47,748 will be available from 2019/20.

The table below summarises the annual estimated revenue savings to the Riverside House budget, arising from this scheme. The detailed information is provided in Appendix B. These are savings that have not currently been factored into the Council's revenue budget and MTFs, so they will need building in and the achievement of these savings monitored as part of the Council's revenue budget monitoring process.

NET SAVINGS AFTER LOAN PAYMENTS

Year	Annual Revenue Savings
2016/17	£34,049
2017/18	-£3,324
2018/19	£21,483
2019/20 ongoing	£47,748

- 7.4 The energy savings have been calculated using the current electricity contract rates. Current market estimates are that electricity prices will continue to rise over the next 5 years in the region of 30% in total, so the saving is likely to be higher than that currently projected.

7.5 Riverside House is leased by the Council under PFI arrangements to 1st September 2046 and therefore the loan will be repaid before this date.

8. Legal Implications

8.1 If approved, these works will be added into a Licence for Alterations to be granted by the Landlord of Riverside House. This is currently being prepared for other ongoing works. We are required to pay the Landlord's reasonable legal fees, but these will not increase as a result of the inclusion of the lighting works.

8.2 Compliance is required with CIBSE and Health and Safety guidelines. All contractors must be National Inspection Council for Electrical Installation Contracting (NICEIC) approved.

8.3 Disposal of all equipment must be compliant with Waste Electrical and Electronic Equipment (WEEE) Directive.

9. Human Resources Implications

9.1 Lighting levels will not change, but the colour rendering will be improved with a white light output.

10. Implications for Children and Young People and Vulnerable Adults

10.1 None

11 Equalities and Human Rights Implications

11.1 Reports have been produced highlighting the beneficial impact of LED lighting against fluorescent lighting stating 'Researchers maintain that individuals with autism are more vulnerable to the sub-visible flicker of direct fluorescent lighting, which can cause headaches, eyestrain and increased repetitive behaviour.' The National Autistic Society recommends reducing fluorescent lighting to reduce potential problems.

White light output is beneficial to people with visual impairments, however if complaints of difficulties are raised (as they have with the current lighting) solutions will be found on a case by case basis.

12. Implications for Partners and Other Directorates

12.1 This will have a positive effect on the Authority's Environmental performance by reducing electricity consumption, which will help achieve the 2% year on year reduction target on carbon emissions.

13. Risks and Mitigation

13.1 The replacement programme may take longer than estimated, due to the manufacture of the fitting taking longer or installation times increasing more than estimated. The risks will be mitigated through contract management processes.

14. Accountable Officer(s)

Approvals Obtained from:-

Strategic Director of Finance and Corporate Services:- Stuart Booth

Director of Legal Services:- Stuart Fletcher, Service Manager

Head of Procurement (if appropriate):- Helen Chambers, Senior Procurement Category Manager

This report is published on the Council's website or can be found at:-

<http://moderngov.rotherham.gov.uk/ieDocHome.aspx?Categories=>

Appendix A - Calculation - Riverside LED

Building Name	Riverside House																																																						
Project	LED Lighting Upgrade																																																						
Loan ID Code	14-013																																																						
SEERS Project No.																																																							
Description	LED Lighting upgrade of T5's and CFL with point to point replacements of fittings.																																																						
Information	<table border="1"> <tr> <td>Utility Acc</td> <td>Electricity</td> <td></td> <td></td> </tr> <tr> <td></td> <td>37841346</td> <td></td> <td></td> </tr> <tr> <td></td> <td>Rate</td> <td></td> <td></td> </tr> <tr> <td>Rate</td> <td>£0.08122</td> <td>£0.06820</td> <td></td> </tr> <tr> <td>Consumption</td> <td>3,172,069</td> <td>kWh</td> <td>Day</td> </tr> <tr> <td></td> <td>767,501</td> <td>kWh</td> <td>Night</td> </tr> <tr> <td>Total</td> <td>3,939,570</td> <td>kWh</td> <td>Total</td> </tr> <tr> <td></td> <td></td> <td>£0.05230</td> <td>Red 541,724</td> </tr> <tr> <td></td> <td></td> <td>£0.04780</td> <td>Amber 1,813,140</td> </tr> <tr> <td></td> <td></td> <td>£0.00270</td> <td>Green 1,584,619</td> </tr> <tr> <td></td> <td></td> <td>£119,279</td> <td>Total Cost GSP</td> </tr> <tr> <td>Co2 Factor</td> <td>0.43</td> <td>Electricity</td> <td></td> </tr> <tr> <td>Cost</td> <td>£429,258</td> <td>per Year</td> <td></td> </tr> </table>			Utility Acc	Electricity				37841346				Rate			Rate	£0.08122	£0.06820		Consumption	3,172,069	kWh	Day		767,501	kWh	Night	Total	3,939,570	kWh	Total			£0.05230	Red 541,724			£0.04780	Amber 1,813,140			£0.00270	Green 1,584,619			£119,279	Total Cost GSP	Co2 Factor	0.43	Electricity		Cost	£429,258	per Year	
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Overall Reduction	126.6 %																																																						
New Estimated Consumption	3,396,101 kWh																																																						

Type	Length	Watts	Circuit Watts	No.	Total kW	Hours	kWh	Ave p/kWh	Cost
T5	2ft	96	105.6	1534	162.0	3000	485,971	12.530	£60,893.00
CFL	n/a	52	57.2	1756	100.4	3000	301,330	12.530	£37,757.10
				3,290	262.4		787,301		£98,650.10

Type	Length	Watts	Watts (inc losses)	No.	Total kW	Hours	kWh	p/kWh	Cost
LED Rhapsody	2x2ft	25	27.8	1534	42.6	3000	127,936	12.530	£16,030.54
LED Down lights	n/a	20	22	1756	38.6	3000	115,896	12.530	£14,521.96
				3,290.0	81.3		243,832		£30,552.51

kW 181.2 kWh 543,469 Save £68,097.60
69.03%

Appendix B - Loan Agreement (Repayments)

Financial Year	Estimated Energy Savings	Funding Sources		Annual Loan Repayments	Annual Revenue Saving
		£262,414 Prudential Borrowing	£77,338 LAEF		
2016/17	£34,049			£0	£34,049
2017/18	£68,097	£20,349	£51,073	£71,421	-£3,324
2018/19	£68,097	£20,349	£26,266	£46,614	£21,483
2019/20	£68,097	£20,349		£20,349	£47,748
2020/21	£68,097	£20,349		£20,349	£47,748
2021/22	£68,097	£20,349		£20,349	£47,748
2022/23	£68,097	£20,349		£20,349	£47,748
	£442,631	£122,091	£77,338	£199,429	£243,201

Est. Annual Saving **£68,097.00**

Based on current contract rates, these are set to rise and saving will be greater than projected.

Due to the install process taking 6-months to replace the fittings across the whole of the building savings will start to be realised from day one of the project, increasing to the full saving at the completion date.

These have not been taken into consideration as it is hard to quantify savings on a rolling install programme.