

# ROYAL BERKSHIRE FIRE AUTHORITY REPORT



<b>COMMITTEE</b>	<b>MANAGEMENT COMMITTEE</b>
<b>DATE OF MEETING</b>	<b>22 JULY 2024</b>
<b>SUBJECT</b>	<b>LED LIGHTING PRIORITY 2 PROJECT</b>
<b>LEAD OFFICER</b>	<b>PAUL BROOKS, HEAD OF ASSETS</b>
<b>LEAD MEMBER</b>	<b>COUNCILLOR SHEPHERD-DUBEY</b>
<b>EXEMPT INFORMATION</b>	<b>NONE</b>
<b>ACTION</b>	<b>FOR DECISION</b>

## 1. **EXECUTIVE SUMMARY**

- 1.1. The Authority is committed to reducing the impact of the organisation's operations on the environment and reducing its carbon footprint. The estate contributes 65% of the Authority's carbon output (1,524 tCO<sub>2</sub> per year) so, recognising there is a global climate emergency, investment is needed to reduce the negative impact our buildings have on the environment.
- 1.2. Estate strategic sustainability planning included the production of estate heat decarbonisation plans (HDP) using specialist consultants, which was funded by central government using the Low Carbon Skills Fund (LCSF) in 2023. The HDPs stimulated planning for investment in sustainability initiatives at 11 of the 17 sites in the RBFRS estate portfolio using building fabric upgrades and a range of modern technologies including, inter alia, heat pumps, solar photovoltaic (PV) and LED lighting. Planning crystallised with Authority approval on 22 April 2024 for the £1.77M RBFRS Sustainability Programme Phase 1 at five 'priority 1' sites using combined Public Sector Decarbonisation Scheme (PSDS) and Strategic Asset Investment Framework (SAIF) capital (see background papers at paragraph 14).
- 1.3. This paper focusses on the remaining six sites (of the 11 introduced above and listed in paragraph 3.3), annotated as 'priority 2' sites in the phase 1 programme, which is further divided into LED lighting and solar PV requirements depending on building construction and viability to be meaningfully improved.

- 1.4. This report seeks approval for the release of £0.225M in core funding for the LED Lighting Priority 2 Project as set out in the SAIF as approved by the Authority in February 2024. Much preparatory work for delivery has been completed, with RBFRS commissioning Laser professional net zero consultants<sup>1</sup>, via a publicly compliant framework, to carry out comprehensive surveys of all sites. Laser is stood by to support procurement, project management and warranty aftercare.
- 1.5. Looking ahead, the Solar PV Priority 2 Project within the phase 1 sustainability programme will be the subject of a separate paper to the Management Committee in 2025.
- 1.6. Regular updates will be provided to Members and Officers via the Estates Development and Sustainability Working Group, Estates Development Group and the Service Programme Board.

## **2. RECOMMENDATION**

That the Management Committee:

- 2.1 **APPROVE** the capital expenditure budget of £0.225M for the delivery of the 'LED Lighting Priority 2 Project', as provided for in the SAIF.
- 2.2 **NOTE** that delivery of this project will be concurrent with the PSDS funded element of the RBFRS Sustainability Programme Phase 1 as approved by the Authority on 22 April 2024, but it is distinctly separate in respect of funding and governance.

## **3. BACKGROUND**

- 3.1 The Authority is committed to reducing the impact of the organisation's operations on the environment and reducing its carbon footprint as confirmed in the signing of the Emergency Services Environment and Sustainability Group (ESESG) Charter by the Fire Authority in February 2023.
- 3.2 Strategic planning in 2023 included the production of an estate HDP using specialist consultants Faithful + Gould (now Atkins Realis<sup>2</sup>). This work was funded by central Government using the LCSF administered by Salix. The outcome of the work was a roadmap to help the Authority achieve its 'Net Zero' (defined in paragraph 3.5) carbon ambitions by 2050, in line with the UK Government target, at 11 of the 17 sites in the portfolio. Notably, the 11 sites selected for the roadmap were prioritised on annual energy usage, fossil fuel utilisation for heating, building age and condition of the buildings (including the current and ongoing maintenance costs). Priority 1 sites were then selected and went forward to qualify for Salix PSDS funding which was the subject of the paper approved by the Fire Authority on 22 April 2024 (see paragraph 14).

---

<sup>1</sup> <https://www.lasereenergy.org.uk/our-solutions/net-zero-frameworks/>

<sup>2</sup> <https://www.atkinsrealis.com>

3.3 The remaining sites were to be assessed and picked up within other projects, and specifically, the subject of this paper, to deliver the LED Lighting Priority 2 Project. **The sites in scope for this project are:**

- RBFRS Headquarters
- Wokingham
- Bracknell (areas not previously redeveloped)
- Caversham Road (main station)
- Lambourn

3.4 Sites out of scope for this project, along with the reasons why, are as follows:

- Langley, Newbury, Reading Caversham Road (accommodation annexe), Reading Wokingham Road and Whitley Wood (fire station) are included in the 2024-26 PSDS / SAIF project
- Hungerford, Mortimer, Theale, Crowthorne, Maidenhead and Ascot are already fitted with LED
- Whitley Wood Training Centre is being redeveloped 2024/25
- Slough was redeveloped 2023/24
- Windsor is small in scope and being upgraded to LED under a separate SAIF project, but to the same specifications as this project

3.5 LED Lighting technology has developed rapidly in the last 10 years and will deliver significant energy savings with a good return on investment. Upgrading to LED lighting is considered a 'quick win' as the implementation is fast, and the consumption reduction is realised immediately. LEDs are highly efficient in their technology and typically have a longer life<sup>3</sup> than older lighting technologies and also emit less heat and reduce, thereby reducing requirements for cooling and maintenance. The expected benefits of delivering the project include reduction in carbon output and energy usage, along with lower bills.

3.6 Net Zero' for the Authority will be formally defined and globally agreed in the emerging RBFRS Sustainability Strategy, but for the purposes of this report and the programme, Net Zero Carbon has been defined as:

*“The carbon emissions associated with operational energy consumption across the estate are zero or negative on an annual basis. Most of the fuel and power is supplied from on-site and off-site renewable energy sources, with any remaining carbon balance offset.”*

---

<sup>3</sup> 14-45 years depending on switching cycles and ambient temperature.

## 4. REPORT

4.1 The Authority has made a commitment as a signatory to the ESESG Charter and by making provisions in the SAIF to make the estate more environmentally friendly by completing initiatives and upgrades to reduce our carbon output and realise potential revenue savings on utilities and maintenance as a result. The measures include improving building fabric and investing in modern technologies to provide efficient and appropriate workplaces for all site users.

4.2 As a mature technology with continuous control improvements, LED lighting is known to provide rapid and tangible benefits as they consume over 50% less energy than fluorescent bulbs. This energy saving is without detriment to the lighting output and has a reduced impact on the environment in terms of longevity and waste, making them a sensible and credible investment for the Authority. Table 1 below details the predicted benefits of this project.

Site / Detail	HQ	Lambourn	Caversham Road (main station)	Bracknell	Wokingham	Totals
Current No. of light fittings	685	41	111	62	82	981
New No. lighting fittings	686	42	94	64	85	971
Current usage (kWhrs)	132,660	11,930	26,743	16,071	14,346	201,750
New usage (kWhrs)	64,231	5,063	7,474	6,002	7,758	90,528
Annual carbon savings (kg CO <sub>2</sub> )	17,325	1,739	4,879	2,549	1,668	28,160
Total project costs	£116,370	£8,357	£25,671	£10,266	£15,193	£175,857
Existing annual lighting cost	£33,165	£2,982	£6,686	£4,018	£3,587	£50,438
New annual lighting cost	£16,058	£1,266	£1,868	£1,500	£1,939	£22,631
<b>Savings per annum</b>	<b>£17,107</b>	<b>£1,716</b>	<b>£4,818</b>	<b>£2,518</b>	<b>£1,648</b>	<b>£27,807</b>
Payback period (years)	6.8	4.9	5.3	4.1	9.2	6.06 average

**Table 1** – Predicted annual carbon, energy and cost savings, plus payback at RBFRS sites by installing LED lighting.

4.3 Replacement will be defined as ‘like for like’ and will not require the redesign and delivery of a new system. As verified in the stakeholder engagement process, there will be no dimmer switches in any areas on stations. Most of the lighting will be on passive infra-red (PIR) sensors to ensure lights are not left on, therefore reducing opportunity to waste energy. Where switches have already been installed (predominantly in sleeping areas), they will remain in place.

Emergency lighting has been included in the proposal and will be replaced from its present state to LED and will remain in line with the current regulations.

- 4.4 To support good governance and delivery consistency, the LED Lighting Priority 2 project will run concurrently with, and support the outcomes of, the joint PSDS/SAIF RBFRS Sustainability Programme Phase 1 projects.
- 4.5 Looking ahead, and in accordance with the phase 1 programme and SAIF, there is one more project to launch – solar photovoltaic – which will be the subject of a paper to the Management Committee in 2025. Beyond the current programme of work, it is intended to have a ‘RBFRS Sustainability Programme Phase 2’ in 2026-28 as per the SAIF, which will aim to upgrade remaining sites to reduce carbon and operating costs.
- 4.6 **Financial position.** The summary financial forecasting, position is in Table 2. The forecasted figures are the result of a detailed cost proposal from Laser consultants following their site surveys and data gathering exercises, but it is deemed prudent to include a reasonable contingency. The capital expenditure budget, which Members are being asked to approve, is in line with the provision in the SAIF for this programme of works.

Site	Total cost	Materials	Labour	Management	Best value supplier
Headquarters	£116,370.82	£42,350.09	£61,090.64	£12,930.09	Mears Group
Lambourn	£8,357.63	£2,907.18	£4,521.82	£928.63	Mears Group
Caversham Road	£25,671.07	£6,598.82	£14,357.16	£4,715.09	Delron Services Ltd
Bracknell	£10,266.21	£3,243.81	£5,683.33	£1,339.07	Mears Group
Wokingham	£15,193.84	£5,385.23	£7,826.80	£1,981.81	NCS Technology
<b>Totals</b>	<b>£175,859.57</b>	£63,485.13	£93,479.75	£21,894.69	
<b>Budget (rounded)</b>	<b>£225,000</b>				

**Table 2 – LED lighting cost breakdown.**

- 4.7 **Procurement strategy.** The procurement approach for the project has been to utilise the public sector framework professional Net Zero provider Laser, who can manage the project delivery from inception to completion. The Laser framework is a publicly compliant route to market that helpfully packages the professional services and main contractor fees into a single element, along with facilitating early planning work at no cost to RBFRS. The service is inclusive of:
- Site surveys
  - Project specification with energy saving calculations
  - All design packages

- Management of the procurement process for suppliers and materials
  - Comprehensive project management service, including health and safety requirements
- 4.8 This approach reduces delivery risk and ensures there is a professional project management thread throughout the project, including procurement, post contract administration, defect liability periods and warranties.
- 4.9 **Project governance and scheduling.** The project will be governed under normal RBFRS arrangements – see **Appendix 1** for details. The detailed programme with phasing for each site will be completed following the award of respective contracts, but estimated timings and nominated suppliers are in Table 3 and Table 4.

Site	Number of fittings	Timings	Supplier
HQ	686	6 weeks	Mears
Bracknell	64	1 week	Mears
Lambourn	42	1 Week	Mears
Wokingham Rd	85	1 week	NCS Technology
Caversham Rd	94	1 week	Delron Services

**Table 3:** Estimated timescales for project delivery.

Date	RIBA Stage
March 2024	RIBA Stage 1: Preparation and brief
April 2024	RIBA stage 2: Design and specification to be developed based off stakeholder feedback
April 2024	RIBA stage 3: Co-ordination
May 2024	Draft paper to go to SLT
July 2024	Paper to go to management committee
August 2024	RIBA 4: Pre-project planning and mobilization
September 2024	RIBA 5: Works to commence on site
November 2024	RIBA 6: Handover
December 2024	RIBA 7: Post-project activities

**Table 4:** Estimated timescales of RIBA plan of work stages<sup>4</sup>.

- 4.10 **Disruption to sites.** As appliance bays will be affected for short periods of time, a phasing plan will be developed for each site to minimise disruption wherever possible. The stations in scope have sufficient space for crews to maintain business as usual while the works are carried out. The phasing plan will detail specific work times that RBFRS crews need access to areas and contractors will work around those routines. If there is any unresolvable conflict, then contractors can work out of hours by mutual agreement and additional cost that would be absorbed by budget contingency. In all cases, the key to understanding the operational impact for each site will be through stakeholder

<sup>4</sup> <https://www.architecture.com/knowledge-and-resources/resources-landing-page/riba-plan-of-work>

engagement with the primary users. To facilitate this, there will be a formal project group stood up to determine the requirements and de-risk delivery.

## **5. NEXT STEPS**

- 5.1 Once funds are approved, the project team will formally stand up with a start-up meeting held with key stakeholders to establish the project delivery structure, detailed programme/ phasing and key milestones.
- 5.2 Key stakeholders will be updated on progress and milestones via the RBFRS Estates Development Group and other communications channels as required. Key actions and discussions will be discussed in this group, while the member non-executive Estate Development and Sustainability Working Group will be kept apprised when they meet.
- 5.3 Looking further ahead to the next project in the RBFRS Sustainability Programme Phase 1, there will be a Management Committee paper on the provision of solar PV at priority 2 sites in 2025.

## **6. CONTRIBUTION TO STRATEGIC COMMITMENTS**

- 6.1 **Commitment 5: Sustainability.** We are committed to ensuring that we provide a financially sustainable Service and take meaningful action to help address the climate emergency.
- 6.2 **Commitment 6: People.** We will support our staff by providing a safe and inclusive environment for them to thrive in, building a diverse organisation that is engaged with, and accessible to, our communities.

## **7. FINANCIAL IMPLICATIONS**

- 7.1 The capital expenditure budget, which Members are being asked to approve, is in line with the provision in the SAIF for this project.
- 7.2 The payback period is 6.06 years.

## **8. LEGAL IMPLICATIONS**

- 8.1 This is a low-risk re-provision of lighting and lamps project, but appropriate legal advice will be sought on procurement, planning and delivery aspects if required.

## **9. EQUALITY AND DIVERSITY IMPLICATIONS**

- 9.1 An Equality Impact Assessment has been completed as part of the project process. The key benefits of installing LED are as follows:

- **Reducing headaches and eye strain** – Light sensitivity can be a common cause of headaches and eyestrain. Flickering fluorescent bulbs and a lack of appropriate lighting can cause negative side effects which are mitigated by the implementation of sufficient LED lighting.

- **Reduction in seasonal affective disorder (SAD)**<sup>5</sup> – Lack of sunlight can cause behaviour and mood changes which can lead to increased stress, anxiety and can contribute to SAD. LEDs have the ability mimic natural light and have therefore been associated with decreased levels of stress and anxiety in indoor environments.
- **Improved productivity and learning** – Old fluorescent lights can be associated with unpleasant flickering and insufficient brightness, causing lack of focus. Modern LED lighting technology provides more effective brightness, reducing the amount of lighting required and creating a more pleasant environment for staff. As a result, this can improve overall productivity and performance.

## 10. **RISK IMPLICATIONS**

- 10.1 This is a relatively low-risk lifecycle replacement project, with all risks assessed as low or fully mitigated. There is a high degree of confidence in Laser's surveying and cost proposal work to date and an appropriate amount of contingency has been included for the delivery of the project.
- 10.2 Although highly unlikely, there is always a possibility that risks could mature leading to increased costs when considering the age and condition of our buildings. This has been mitigated in the current plan by Laser's internal cost control processes, with internal contingency built-in should their surveys not have picked up all requirements. Cost control will remain a feature of project management throughout the delivery phase.

## 11. **SUSTAINABILITY IMPLICATIONS**

- 11.1 Sustainability implications are seen as wholly positive with the use of modern LED technology contributing to our sustainability agenda and helping us reduce our carbon footprint and our energy bills. An additional benefit is that fluorescent and incandescent light bulbs generally contain mercury and other harmful chemicals, whereas LED lighting does not, so this environmental risk is fully mitigated.

## 12. **CONSISTENCY WITH DUTY TO COLLABORATE**

- 12.1 As an RBFRS site-specific refurbishment initiative, opportunities to collaborate with partners, including other FRS Neighbours have been discounted for this project.

## 13. **PRINCIPAL CONSULTATION**

---

<sup>5</sup> <https://www.nhs.uk/mental-health/conditions/seasonal-affective-disorder-sad/overview/>



- 13.1 The Chief Fire Officer, Deputy Chief Fire Officer and Head of Finance and Procurement were consulted during the preparation of this report.
- 13.2 The Lead Member for Strategic Assets and Sustainability, and the Monitoring Officer were consulted during the preparation of this report.

**14. BACKGROUND PAPERS**

- 14.1. [RBFRS Sustainability Programme: Phase 1](#) (Fire Authority Paper April 24)
- 14.2. [Strategic Asset Investment Framework \(rbfrs.co.uk\)](#)
- 14.3. [RBFRS Heat Decarbonisation Plan 2023](#)

**15. APPENDICES**

Appendix 1 – RBFRS Project Organogram and Governance Structure.

**16. CONTACT DETAILS**

Paul Brooks, Head of Assets (Estates, Fleet and Equipment) [brooksp@rbfrs.co.uk](mailto:brooksp@rbfrs.co.uk)

Corey Gilbert, Estates Manager [gilbertc@rbfrs.co.uk](mailto:gilbertc@rbfrs.co.uk)

Sophie Fox, Capital Projects Sustainability Co-Ordinator [foxs@rbfrs.o.uk](mailto:foxs@rbfrs.o.uk)

# Appendix 1 – RBFRS LED Priority 2 Project Organogram and Governance Structure

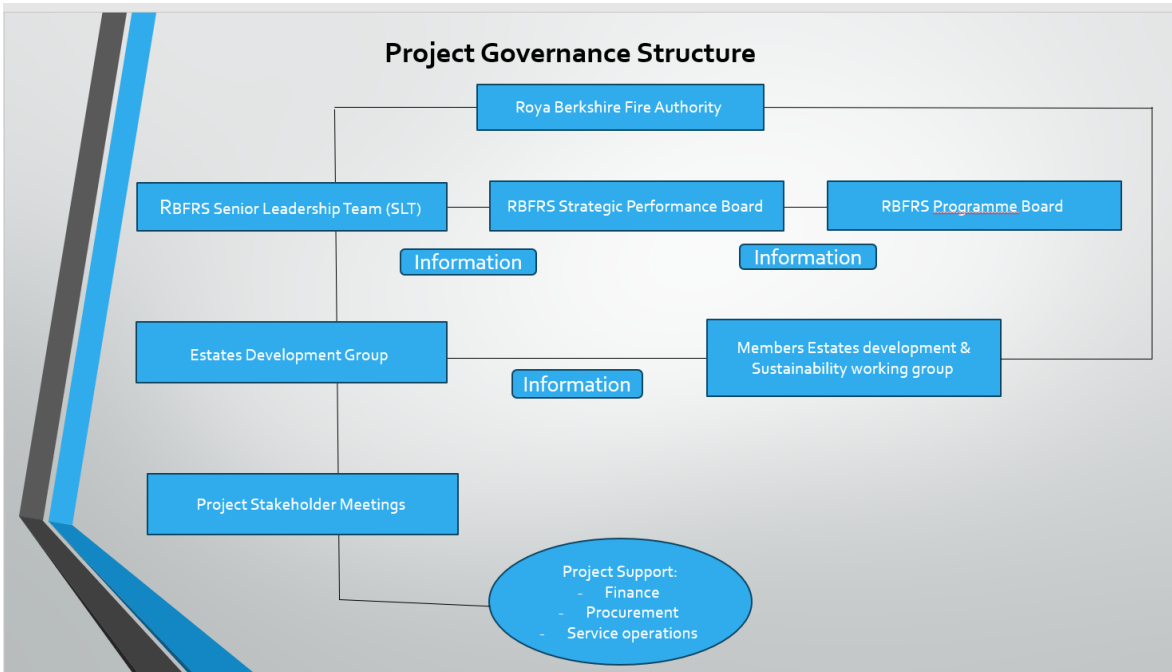


Figure A1 – Project governance structure.

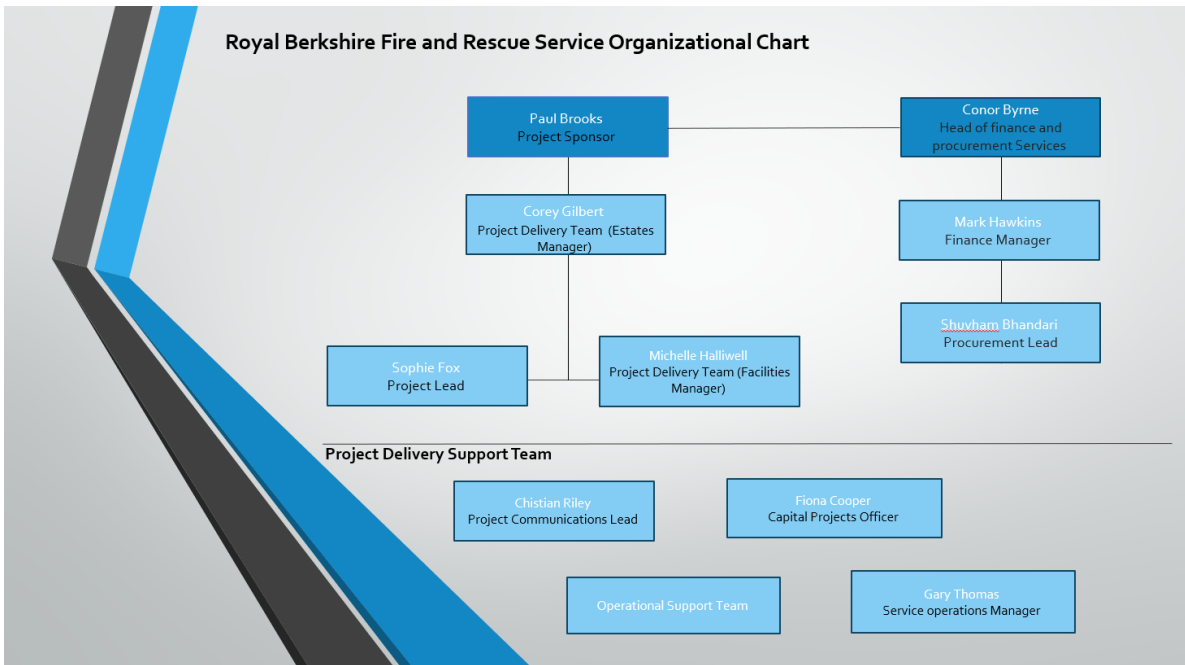


Table A2 – RBFRS Project organisation chart.