

Corporate Policy and Resources Committee



8th of July 2024

Title	Implementation of a Solar Canopies over the 'Eclipse' leisure centre carpark.
Purpose of the report	To make a decision
Report Author	Timothy Snook, Sustainability and Flood Risk Officer
Ward(s) Affected	Staines
Exempt	Report and Appendix D – No Appendices A-C - Yes
Exemption Reason	<i>Appendices A-C contain exempt information within the meaning of Part 1 of Schedule 12A to the Local Government Act 1972, as amended by the Local Government (Access to Information) Act 1985 and by the Local Government (Access to Information) (Variation) Order 2006 Paragraph 3 – Information relating to the financial or business affairs of any particular person (including the authority holding that information)</i>
Corporate Priority	Resilience Environment Services
Recommendations	Committee is asked to: <ol style="list-style-type: none"> 1. To support in principle progressing a solar canopy scheme for the Eclipse leisure centre car park 2. If agreed to progress to confirm whether the preference is for a steel or glulam structure.
Reason for Recommendation	The Solar Canopy will realise a potential carbon saving of 137 tCO ₂ e/annum (tonnes of CO ₂ equivalent) and through potential financing options suggested could represent a considerable cost saving to the operation of the 'Eclipse' Leisure Centre over its lifetime or, it could form an avenue of revenue generation through the selling of electricity generated.

1. Summary of the report

What is the situation	Why we want to do something
<ul style="list-style-type: none"> • The current leisure centre plans include a carpark of around 300 spaces. 	<ul style="list-style-type: none"> • This will enable the generation of clean, renewable, local energy to potentially power the 'Eclipse' leisure centre and/or surrounding buildings.

<ul style="list-style-type: none"> • There is the potential to construct an array of solar panels above this carpark, without losing spaces. • There is opportunity to create a complementary project to the Passivhaus leisure centre, that supports the sustainability credentials. 	<ul style="list-style-type: none"> • The scheme will represent an electricity cost saving of an estimated £5,520,000 over its lifetime and a carbon saving of 137 tonnes/annum. • It will be in keeping with the Council’s commitment to tackling the climate emergency and would neatly complement the standards set by the Passivhaus development.
<p>This is what we want to do about it</p>	<p>These are the next steps</p>
<ul style="list-style-type: none"> • This is a high-level report detailing options on both design and finances that we are seeking committee approval for which will enable full detailed proposals to be provided including a specification for tender. • Subject to a paper produced for September CPRC it is hoped the Council can develop a solar canopy over the proposed carpark to potentially power the ‘Eclipse’ Leisure Centre, and the Knowle Green Council offices. 	<ul style="list-style-type: none"> • Initiate the project, seek funding and update committee in September on progress, potential procurement options and a detailed timeline of implementation dovetailing into the demolition of the old leisure centre. • Develop a detailed specification to tender for a contractor to develop and install the Solar Canopy into the ‘Eclipse’ Leisure Centre carpark, within development Phase 2 timeline for the Eclipse leisure centre to bring back to committee in September.

1.1 Below is a QR code that will link you to a video of a very similar project located in 5 rivers leisure centre, Salisbury operated by Wiltshire Council.



- 1.2 This report seeks a decision from Committee to agree on the initiation of a project, for the installation of a solar panels, fitted upon a canopy that will cover a large section of the proposed 'Eclipse' leisure centre carpark, seen in **Appendix A**. The solar canopy will produce renewable electricity to potentially power the Leisure Centre and any associated electric vehicle charge points within the car park. This project if agreed to move forward on will comply with all legal and regulatory requirements, including seeking planning permission. This report and its figures are based upon those provided by the company 3ti, this is due to their proposal being the most comprehensive of the 3 indicative quotes received, and that they are representative of a middle ground option in terms of scope and cost.
- 1.3 Below is an image of a mock-up design of the solar canopy at the leisure centre.



2. Key issues

- 2.1 The current proposed designs for the 'Eclipse' car park do not include a solar canopy covering the carpark.
- 2.2 Development of a solar canopy would enable the generation of clean, zero carbon energy for the 'Eclipse' Leisure Centre and/or surrounding buildings. This acts in accordance with the climate emergency, declared by the Council

in 2020 and will provide electricity at a reduced cost to the market. This project fits well with the ethos of the Passivhaus leisure centre and given the reality of climate change an adaptive measure by providing shade for cars.

- 2.3 If it is agreed to progress this project, there will be a need for close co-operation with the demolition contractor to ensure the base plate work undertaken is appropriate for a solar canopy structure.

3. Options analysis and proposal

- 3.1 Solar car park specialist installer, 3ti, were approached for an initial proposal and design assessment of the 'Eclipse' Leisure Centre site to provide ideas on feasibility and cost. Following this, a 36-page presentation and proposal was presented to officers on the 4th of April 2024 which has informed this report. This proposal can be read in full in **Appendix A**. In addition, two other suppliers were contacted, and they provided initial proposals and costs that were in line with 3ti. This therefore gave officers confidence that the 3ti proposal was in line with the industry average.
- 3.2 The solar canopies would be connected to the new electrical infrastructure, installed as part of the Eclipse leisure centre development. In addition, the electricity generated by the solar canopies could be utilised by the Eclipse Leisure Centre, and potentially Knowle Green civic offices.
- 3.3 The solar car park could reduce the electricity costs associated with running the Eclipse Leisure Centre, whilst ensuring the electricity is sourced through locally generated renewable energy. The solar carpark will produce around 668,000 kWh per annum. As an example of use the 'Eclipse' Leisure centre will use an estimated 1,200,362 kWh per annum. Therefore, the solar canopy could account for 55.64% of the required electricity and be beneficial in terms of local generation thus supporting our actions under the climate change strategy.
- 3.4 The design of the frame which suspends the solar canopies can be made from a glulam timber frame (Wood) construction technique or a steel frame. The glulam timber frame is a more sustainable construction material with a lower embodied carbon value than steel. The development of the solar canopy using the glulam timber frame would further complement the Passivhaus design of the 'Eclipse' Leisure Centre and support the Council's commitment to addressing the climate emergency. However, this option includes a 30% increase in the capital cost of the project. It is however, considered that this option potentially provides the best value in terms of design, carbon saving and cost saving of the project.
- 3.5 Below is an image comparison between the two frame designs:

Glulam Timber Frame	Steel Frame



- 3.6 3ti offer a standard warranty of 25 years on the structures to align with terms of projects. However, this is dependent on the projects impacts via external factors (such as saltwater proximity etc). A maintenance schedule for any required sanding and protective wood finish treatment from 5-10 years will be included in Glulam or steel projects as required for the lifetime of the contract. For Capex, this is estimated to be £9,000 per year in addition to cleaning the panels which is conducted typically once or twice a year costing around £5,000 per annum. Glulam wooden structures can have a lifespan of 50 plus years with the correct maintenance schedule. These warranties are estimated to be in line with industry standards.
- 3.7 Officers met with the Technical Lead Major Energy Projects at Wiltshire Council, as Wiltshire Council are finalising the installation of their own leisure centre solar carpark with 3ti. This can be seen through the QR code in paragraph 1.1. They spoke of their project and experience with high regard and recommended that this is a good way to power a leisure centre sustainably.
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- 3.8 **Option 1:** Preferred:- Agree to progress with the project on installation of a solar canopy and return to the September CPRC meeting with appropriate detail on a specification for procurement, planning and timelines. It is also proposed that the Council seeks funding options including capital, power purchase agreement and strategic Community Infrastructure (CIL) funding. For the latter as the annual bidding deadline was 30th June, an initial application has been progressed, ahead of this committee. However, if the Committee is not supportive of the proposal the CIL bid can be withdrawn.
- What is the preferential design option:
- A. Glulam Timber design (preferred)
 - B. Steel frame design
- 3.9 **Option 2:** Do nothing, which would cause the Council to miss an opportunity to develop a significant scheme which has the potential to provide electricity to our developments at a reduced cost and go towards meeting our carbon reduction targets identified under our agreed climate change strategy.
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4. Financial management comments

- 4.1 Although we have given below a high-level breakdown, providing indicative financial information on the potential funding options we will work this up and report back in September. However, a high-level financial analysis and breakdown has been produced; this is available as an excel document in **Appendix C**.
- 4.2 This project has been considered as a strategic CIL (Community infrastructure levy) fund application. If this were agreed, then there is the potential for the project to be funded in part or as a whole through the CIL. If this is successful, then the project will present no financial risk to the Council. The CIL funding balance is high enough to cover the cost of the Glulam recommended option.
- 4.3 The options available to the Council around funding if the CIL application is not successful include that of capital borrowing and the use of a power purchase agreement (PPA).
- 4.4 Under capital borrowing, the project will represent a pure saving of £5,520,000 revenue over 27 years. This is not inclusive of any profit that can be made through the contractual arrangement with the new 'Eclipse' leisure centre operator, rather just a representative saving against that of a corporate tariff of the 'do nothing option' as detailed in the table below.

Under a PPA, the council will not have any upfront costs, and instead will be within a contract with the owner of the solar canopy to purchase the electricity generated at a fixed rate for the PPA term, in the example this was 27 years. This represented a saving of £3,840,000 against that of a corporate tariff of the 'do nothing option' as detailed in the table below. A Power Purchase Agreement, (PPA), is a contract between an electricity generator and an electricity buyer and often means a renewable energy project supplying electricity to an organisation. PPA's play a pivotal role in the transition to cleaner and more sustainable energy sources. It provides an opportunity for organisations (large and small), to access renewable energy without the need for significant upfront investments in energy infrastructure.

The highlighted figures can be broken down by the 3 options over a period of 27 years, these figures are based on rounded indicative costings provided by 3ti, these figures are indicative and could change as a result of the outcome of a procurement exercise at the next stage if the project is supported in principle:

Options	Initial Capital Cost	Undiscounted Cashflow	Discounted Cashflow *
Do nothing	0	-£13,648,320	-£6,887,305
Capital Project	-£1,357,181	£5,520,056	£2,113,255
PPA route	0	£3,838,211	£1,936,863
Capital Project (Wooden)	-£1,764,335	£5,112,902	£1,706,101

(*) The discounted cashflow accounts for assumptions around the cost of financing. A 5% discount factor has been used.

- 4.5 A 10% contingency has been included in the high-level financial evaluations of each option for any potential increase in costs.
- 4.6 Solar panels have a minimum lifespan of 25 years and will comfortably work for 35 years. The structure either steel or wood, is designed to be retained when the solar panels need replacing. Glulam Timber can last for over 50 years with proper treatment, as can steel. Warranties from manufacturers such as 3ti have been quoted at 25 or 30 years. These can be negotiated through contracts and tenders to be extended. A rough estimate places this cost at around £9,000/annum.
- 4.7 If the project is to be funded through capital borrowing, the Council will need to consider a supplementary estimate for the Capital Programme for 2024/25 of £1.9m All other options will not require additional variations.

5. Risk management comments.

- 5.1 There are a number of potential risks associated with the development and management of a solar car park. The risks are centred around the themes of legal, procurement, technological, financial, accessibility, anti-social behaviour and weather. These are covered in **Appendix D** but we will develop a full risk register if the project progresses.

6. Procurement comments

- 6.1 Solar panel installations have a good supply base. The variety and maturity of the supplier market will stir competition and ensure the council, through a competitive tender appoint a provider that will offer best value. Given recent progress in technologies, it is suggested any procurement design- service takes into consideration the whole life costing, from design, installation, maintenance and the cost of decommissioning the service. Additionally, due consideration will be given to the ability of the preferred supplier to adapt their technology as we evolve, to ensure the installation is flexible and adaptable to meet future needs. This will ensure that the installation is not in dispute before its lifespan ends.
- 6.2 If the project concept is supported procurement will work with the service area to identify associated risk, develop a detailed specification and if the project then moves to the next stage in September 2024 use the appropriate procurement route to let the contract.
- 6.3 The Council is under a statutory duty to deliver best value pursuant to the Local Government Act 1999. The Council's Contract Standing Orders require the Council to competitively tender the procurement from a minimum of 3 providers (paragraph 22 of part 4(e) of the Constitution).

7. Legal comments

- 7.1 Part of the Eclipse leisure Centre car park falls within title number MX433568. The land is held by SBC for the purposes of the Public Health Act 1875 and the Physical Training and Recreation Act 1937. Middlesex County Council ('MCC') contributed one-third of the expense of acquiring land in this title in 1961. Surrey County Council ('SCC') is MCC's statutory successor. There is a Contribution Agreement dated 8 December 1961 which affects land within this title number and places restrictions on how the land may be used.
- 7.2 Contribution Agreement the Council covenanted with MCC (now SCC) can be found in **Appendix D**.

1.1 On the 10th of May 2024, the Council received correspondence from the Principal Estates Surveyor at SCC, which stated that SCC has indicated that it would provide consent to the solar development on the condition that SCC's surveyor and legal fees were paid for by Spelthorne Borough Council to address the historic Middlesex agreement.

7.3 The Legal Services (g.legal@spelthorne.gov.uk) will provide advice and assistance on the negotiation of the contractual documentation and will obtain specialist external advice where necessary.

8. Other considerations

8.1 There are none.

9. Equality and Diversity

9.1 The provision of disabled parking spaces will be included and enforced within the design. Implementing green technologies encourages job creation within the green economy. By provisioning locally sourced renewable power we can ensure greater security for the local area, at a reduced cost.

10. Sustainability/Climate Change Implications

10.1 The Council declared a climate change emergency in 2020 and adopted a subsequent climate change strategy in 2022. This project aligns with the commitments made in the strategy, to deliver clean, renewable energy on Council sites where viable.

10.2 This project would create CO₂ savings of 137 tCO₂e/annum thus contributing to the Council's net zero target of 2030. This is equivalent to 11.47% of the Council's entire scope 1 and 2 carbon footprint (2019). The scope 1 carbon footprint refers to all combustion related activities that occur onsite, whilst scope 2 refers only to carbon emissions associated with grid electricity generation for electricity used onsite.

10.3 This project supports the Council's EV infrastructure strategy adopted in 2023, by creating EV charging facilities on site at the car park, also powered by solar generation.

11. Timetable for implementation.

11.1 If it is agreed to progress the project a detailed timeline will be produced dovetailing in with requirements for the demolition of the existing leisure centre and other requirements. This will be part of a more detailed report to Committee in September which will also provide information on the procurement process and progressing a planning application that would have to be conducted concurrently with the procurement process so as to award the tender to a supplier before January 2025. In discussing with assets, it should be possible to slot the development of the solar canopy in line with the proposed works of the demolition of the old leisure centre and construction of the new carpark and so we are liaising with our professional advisors to see how this project can be fitted into the project plan for demolition. Further indicative timetables can be found in **Appendix A**. An initial estimate could be that the solar carpark could be operational by July 2025.

11.2 A CIL application has been made for the strategic CIL funding round which ended at the end of June 2024. If the committee decides to go ahead with the project, this application will continue and will be determined by December

2024 (or earlier) by the Environment and Sustainability Committee. If the committee decides not to go ahead, this application will be withdrawn.

12. Contact

12.1 Tim Snook, Sustainability and Flood Risk Officer

12.2 T.snook@spelthorne.gov.uk

Background papers: *(These are unpublished papers upon which you have relied in preparing this report). If none state, There are none.*

Appendices:

Appendix A (Part 2) – Presentation and Proposal by 3ti on solar canopy installation and financial breakdown of the capex model, provided by 3ti.

Appendix B (Part 2) – Quotes from other suppliers of solar canopy installation.

Appendix C (Part 2) – Financial breakdown and analysis of both models by SBC finance team

Appendix D – Additional Information