

PV Proposal Document

Project: 4263

Carterton Leisure Centre

Broadshires Way, Carterton
Oxfordshire

OX18 1AA

Client:

Mears Group PLC



1.0 Outline Description

Langley Eco offers our clients a full solution; we can guide our clients through their renewable energy needs and offer them an unrivalled expertise in the renewable technologies industry. We offer a full range of products, unrivalled technical service and funding options to suit client's individual needs.

It is our technical and customer based focus, partnered with our financial and funding strength, which makes our offering stand out from the crowd.

Budget Proposal Document

This proposal is to show the benefits of installing Solar Photovoltaic (PV) arrays, and is for one site as outlined above, indicating the supply and fix costs, the funding possibilities and the gross and net returns.

Our figures take no account for the carbon reduction, apart from advising the level of reduction you will receive over the 20 year period, thus any fines or costs associated with these are of benefit to the client.

We propose to generate electricity via the PV system and thereby produce substantial savings by using the electricity that is generated but also in addition, producing substantial income from the current Feed-in Tariff and export bonus.

Therefore the proposal is designed to;

- Reduce energy bills
- Generate income from Government FiT and export bonus
- Lower carbon emissions

At this stage a preliminary budget survey has been carried out to determine the potential to install PV systems on the proposed site. This proposal is intended as a guide only to establish the potential benefits that may be generated, and we recommend a full survey is produced for this project to determine actual system size and yields.

We have assessed that there is potential to install a quantity of PV panels to the site; however, due to time frames and the ever moving Feed-in Tariff, we have limited the size of programme to one we feel can be completed within these limiting parameters.

This proposal will detail the option of installing 250W Photovoltaic Panels to the site giving an approximate size of **100 kW** in total, and this proposal will give an indication of the figures for the site as a whole.

2.0 Energy Obligation

The Energy Companies Obligation (ECO) is an energy efficiency programme that was introduced into Great Britain at the beginning of 2013. It replaces two previous schemes, the Carbon Emissions Reduction Target (CERT) and the Community Energy Saving Programme (CESP).

ECO is intended to work alongside the Green Deal to provide additional support in the domestic sector, with a particular focus on vulnerable consumer groups and hard-to-treat homes.

The scheme proposes to cut UK carbon emissions by 1.2 million tonnes of carbon per year by 2020.

Another important consideration is Fuel Poverty. The current situation is that in the UK a significant amount of people are now faced with fuel poverty. A household is said to be fuel poor if it needs to spend more than 10% of its income on fuel to maintain a satisfactory heating regime.

The key to this is energy efficiency and the reduction of emissions. Organisations will have to devise a carbon abatement strategy, consider energy efficient measures, monitor, assess and manage their carbon emissions.

We can help through installations of renewable technologies on properties within the UK.

- Photovoltaic's
- LED Lighting
- Heating - Infra-red Radiators, Biomass, Air Source, Solar Thermal, Ground Source
- Heating Controls
- Insulation



It is vital that we have a focus on our obligations to help with energy savings including carbon reduction and Affordable Warmth Strategies to aid in the reduction of fuel poverty.

This proposal provides calculations that show the possible CO² reduction the installation could provide and fuel poverty reduction to homeowners and tenants of social landlords.

CO2 reduction over 20yrs (tonnes)	781.82 tonnes
Fuel Poverty reduction after 20 years to the tenant	N/A

3.0 Funding Models

Langley Eco can provide different funding options to suit each individual client's requirements or situation. The funding models we can provide are;

Capital Expense

Customer pays for the goods and all the Financial Benefits (Feed-in Tariff, Export Bonus and power savings) are theirs.

Free Install

Customer pays nothing and receives the power savings generated by the solar panels. The customer does not receive the Feed-in Tariff or the Export Bonus.

Lease Purchase (on balance)

Customer leases the goods and the Financial Benefits pay for the costs of the lease (cost positive). There is usually a balance left for the customer from year one, at the end of the agreed lease period the customer pays a token fee and the goods and ongoing Financial Benefits are theirs.

Operational lease (off balance)

Customer effectively rents the equipment, thus deeming it off balance, the Financial Benefits go towards the costs and usually leave the customer with a small profit for years 1-7; after year 7 the customer can continue to rent the equipment and the costs are reduced leaving the customer with a larger profit.

Hire Purchase

Customer takes out a loan and the Financial Benefits delivered by the PV installation and saving generated, go towards their quarterly costs.

Please note that all finance is subject to approval.



4.0 Calculations Assumptions

For the purposes of this initial report the following assumptions have been used within the calculator;

Quantity of Installations	1
Size of Installation - kWp	100kWp
Percentage Performance	85%
Total output in kW hours p.a. at 85% capacity	85000kWh
<i>% of electricity consumed in property</i>	80% = 68000kWh
<i>% of electricity exported to the Grid</i>	20% = 17000kWh
FiT Rate - pence per kWh	10.34p
Purchase price of electricity - pence per kWh	10p
Export bonus paid - pence per kWh	4.77p
Estimated Rate of RPI Inflation	2.60%
Estimated Rate of Energy Cost Inflation	7.00%
Information Calculated on	12 year term, 0% deposit and 5% interest rate
<i>Additional costs may apply where applicable</i>	
Asbestos Survey	£1,500.00
Witness Testing	£1,000.00

In order to provide robust figures for you and taking into account locational factors, we have reduced the potential of the panel from 100%, down to 85%.

PV panel efficiency is based on 100% (of 85% performance), reducing gradually to 85% (of 85% performance) after 20 years degradation.

The Feed-in Tariff has been established based on retro-fit installations. Photovoltaic Budget Assessment calculations are based on projects if they are installed before 31/12/2014.

The performance of Solar PV systems is impossible to predict with certainty, due to the variability in the amount of solar radiation (sunlight) from location to location and from year to year. However these assumptions should produce robust and achievable returns on your behalf rather than 'Promising the Earth'.

Ofgem FiT Rates

Size	Description	For Eligible Installations with an Eligibility Date on or After 1st July 2014 and before 31st December 2014 (p/kWh)	
> 4 kW	Solar photovoltaic with Total Installed Capacity of 4kW or less, where attached to or wired to provide electricity to a <u>new building</u> before first occupation.	Higher rate	14.38
		Middle rate	12.94
		Lower rate	6.38
> 4 kW	Solar photovoltaic with Total Installed Capacity of 4kW or less, where attached to or wired to provide electricity to a building is <u>already occupied</u> .	Higher rate	14.38
		Middle rate	12.49
		Lower rate	6.38
4.1 kW to 10 kW	Solar photovoltaic (other than stand-alone) with Total Installed Capacity greater than 4kW but not exceeding 10kW.	Higher rate	13.03
		Middle rate	11.73
		Lower rate	6.38
10.1 kW to 50 kW	Solar photovoltaic (other than stand-alone) with Total Installed Capacity greater than 10kW but not exceeding 50kW.	Higher rate	12.13
		Middle rate	10.92
		Lower rate	6.38
50.1 kW to 100 kW	Solar photovoltaic (other than stand-alone) with Total Installed Capacity greater than 50kW but not exceeding 100kW.	Higher rate	10.34
		Middle rate	9.31
		Lower rate	6.38
100.1 kW to 150 kW	Solar photovoltaic (other than stand-alone) with Total Installed Capacity greater than 100kW but not exceeding 150kW.	Higher rate	10.34
		Middle rate	9.31
		Lower rate	6.38
150.1 kW to 250 kW	Solar photovoltaic (other than stand-alone) with Total Installed Capacity greater than 150kW but not exceeding 250kW.	Higher rate	9.89
		Middle rate	8.9
		Lower rate	6.38
250 kW >	Solar photovoltaic (other than stand-alone) with Total Installed Capacity greater than 250kW.	6.38	
Ground Mount	Stand-alone (autonomous) solar photovoltaic (not attached to a building and not wired to provide electricity to an occupied building).	6.38	
EXPORT TARIFF		4.77	

5.0 Proposed Solar Photovoltaic Arrays

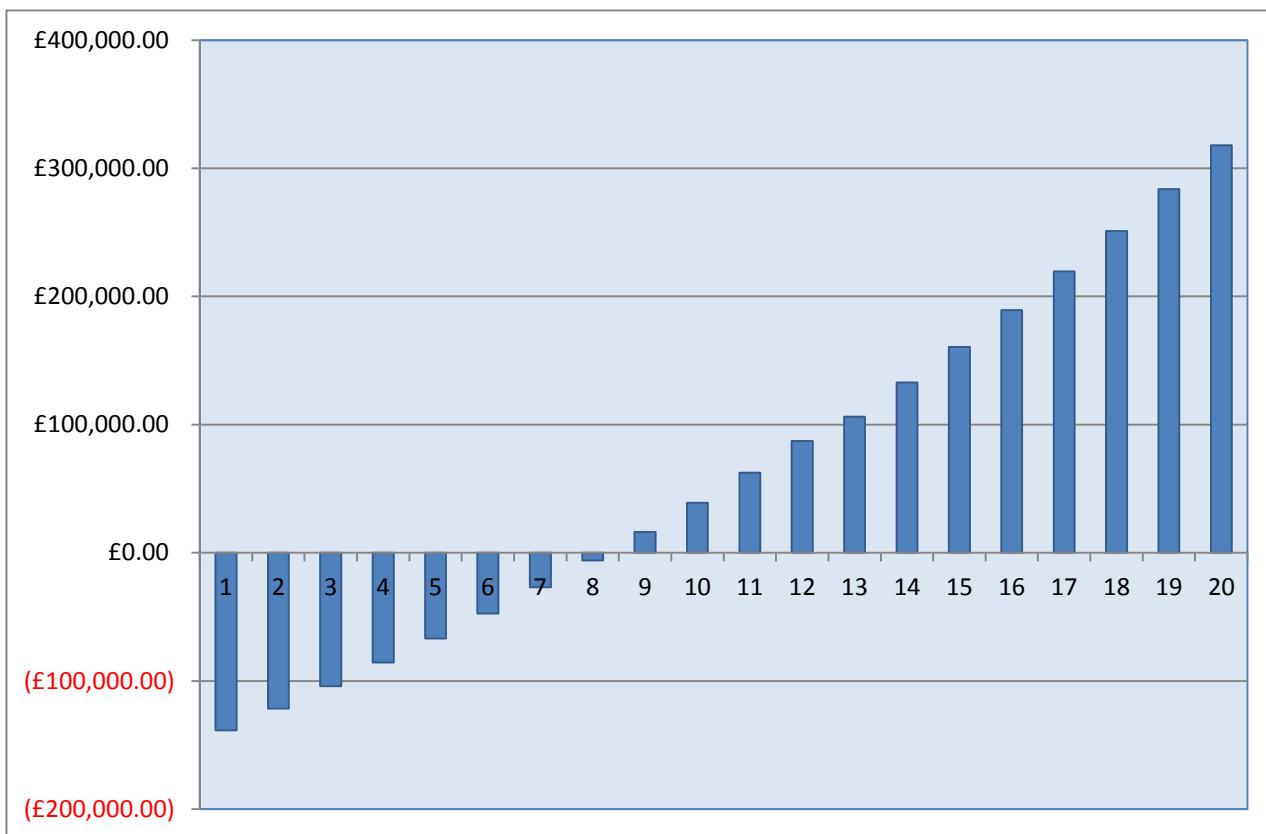
PV Funding Options

Langley Eco can provide different funding models to suit. For this proposal we have provided figures from our calculator for our range of funding options, based on budget calculations using a 100kWh system. All figures are approximate.

1) Capital Expenditure

Pay for the system from existing funds.

Installed budget cost	=	£155,000.00
Income received (approx.)	=	£480,494.91
Gross Profit (approx.)	=	£325,494.91
Estimated maintenance costs	=	£7,583.43



Graph showing R.O.I over a 20 year term including maintenance costs.

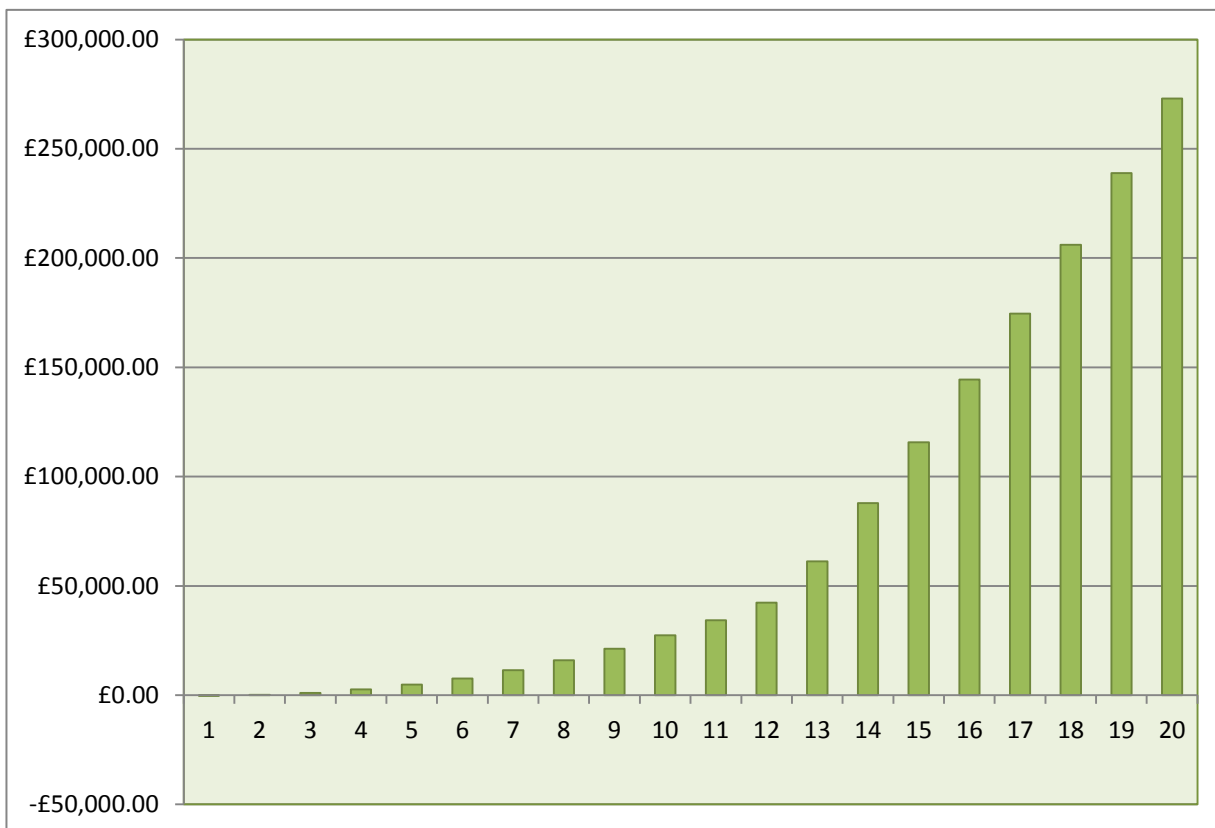
Year One includes installation costs/expenditure so that revenue is at -£138,600.10 for the first year. With income received from the Feed-in Tariff you should break even in Year 9, and with the continued revenue you would see a total gross profit at the end of year 20 of approximately £317,911.48 after maintenance costs are applied.

PV Funding

2) Funded Expenditure

Pay for the system using funds provided via a lease/purchase system.

Installed budget cost	=	£0.00
Income received (approx.)	=	£480,494.91
Finance costs (approx.)	=	£199,862.15
Gross Profit (approx.)	=	£280,632.75
Estimated maintenance costs	=	£7,583.43



Graph showing R.O.I over a 20 year term including maintenance costs.

With no initial installation costs to pay a positive revenue is achieved on most occasions from Year One, with income received from the Feed-in Tariff. With the continued revenue you would see a total gross profit at the end of Year 20 of approximately £273,049.32 after maintenance costs are applied.

Maintenance and monitoring contracts are to be confirmed prior to commencement of contracted works and are optional.

Please note, all finance figures quoted are to be confirmed by others. These are indicative numbers for comparison purposes only and do not represent a quote.

Finance Payments				
Based on 12 year term, 0% deposit and 5% interest rate				
Year 1	Year 2	Year 3	Year 4	Year 5
£16,655.18	£16,655.18	£16,655.18	£16,655.18	£16,655.18
Year 6	Year 7	Year 8	Year 9	Year 10
£16,655.18	£16,655.18	£16,655.18	£16,655.18	£16,655.18
Year 11	Year 12	Year 13	Year 14	Year 15
£16,655.18	£16,655.18	£0.00	£0.00	£0.00
Year 16	Year 17	Year 18	Year 19	Year 20
£0.00	£0.00	£0.00	£0.00	£0.00

Client Income				
Based on a 20 Year Term not inclusive of finance payment as above				
Year 1	Year 2	Year 3	Year 4	Year 5
£16,399.90	£16,990.21	£17,608.23	£18,255.46	£18,933.50
Year 6	Year 7	Year 8	Year 9	Year 10
£19,644.00	£20,388.72	£21,169.53	£21,988.40	£22,847.38
Year 11	Year 12	Year 13	Year 14	Year 15
£23,748.66	£24,694.54	£25,687.46	£26,729.98	£27,824.78
Year 16	Year 17	Year 18	Year 19	Year 20
£28,974.72	£30,182.80	£31,452.18	£32,786.17	£34,188.30
All finance offers are subject to final approval by the funder.				

PV Funding Option

3) Free Install

No payment from the client, system is installed free of charge.

Installed budget cost	=	£0.00
Income received (approx.)	=	£0.00
Finance costs (approx.)	=	£0.00
Electricity Savings over 20 year period	=	£158,149.13

With no money to pay, this option allows for the system to be installed with no outlay or finance costs.

These budget figures for a free installation are based on 50% of the electrical usage being charged at £0 value. Any additional usage may be charged at a fee via a Power Purchase agreement (PPA), to be negotiated.

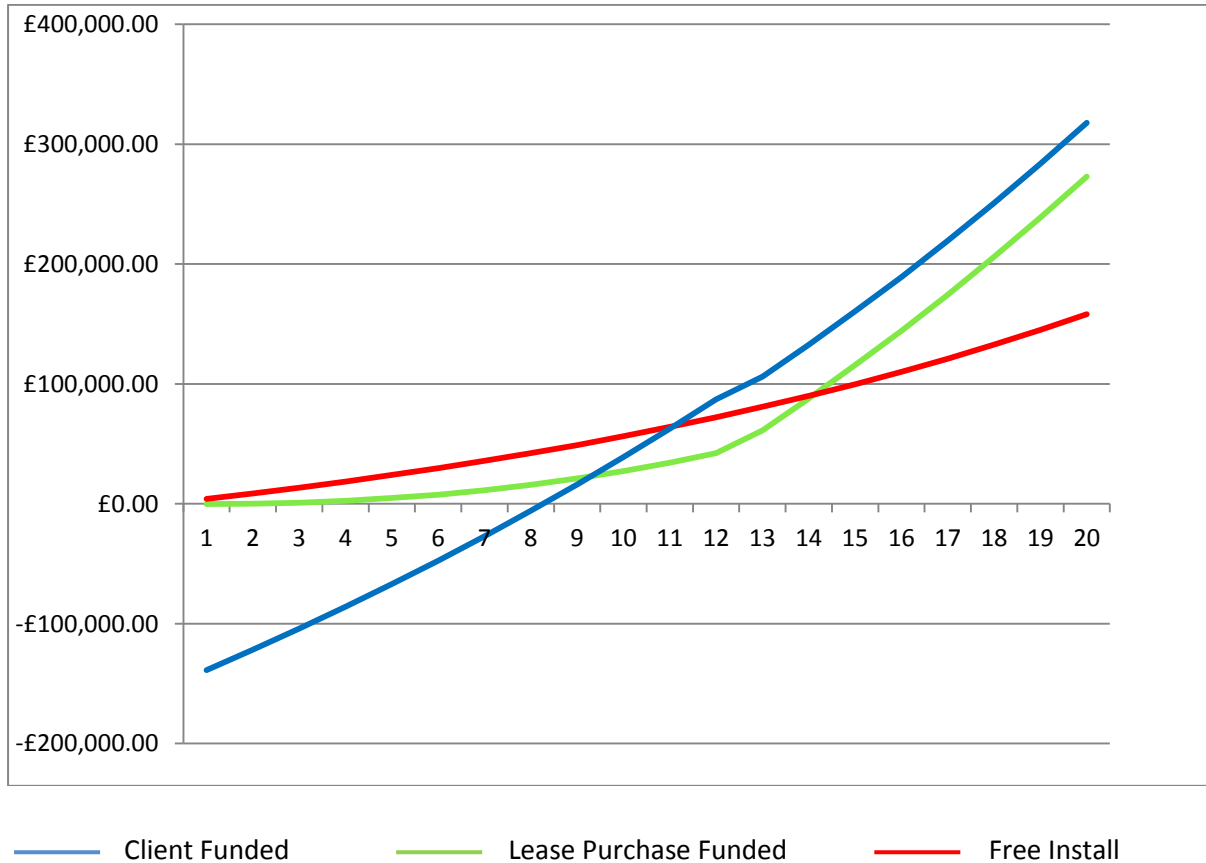
Please note, all finance figures quoted are to be confirmed by others. These are indicative numbers for comparison purposes only and do not represent a quote.

Electricity Savings

Based on a 20 Year Term, at 50% usage rate of the system output.

Year 1	Year 2	Year 3	Year 4	Year 5
£4,250.00	£4,511.57	£4,788.94	£5,083.04	£5,394.84
Year 6	Year 7	Year 8	Year 9	Year 10
£5,725.39	£6,075.78	£6,447.17	£6,840.79	£7,257.92
Year 11	Year 12	Year 13	Year 14	Year 15
£7,699.92	£8,168.25	£8,664.41	£9,190.00	£9,746.73
Year 16	Year 17	Year 18	Year 19	Year 20
£10,336.37	£10,960.79	£11,621.99	£12,322.05	£13,063.17

PV Funding Comparison showing ROI for each Finance Model



Feed-in Tariff Calculator

There are several Feed-in Tariff calculators available from various sources including the Energy Savings Trust and alternative suppliers. The Langley Eco Returns and Finance Calculator have been developed alongside our banks and have been tasked with providing robust assessments of the possible outcomes.

The calculation system spreadsheet has been established to ensure that the Client has the opportunity to adjust the relevant figures to suit his or her own requirements. This allows Langley Eco to remain completely impartial whilst the Client achieves the most suitable option for their business model. The calculation spreadsheet is available on request.

6.0 Location



Carterton Leisure Centre

Broadshires Way, Carterton
Oxfordshire

OX18 1AA

7.0 Our Solution

From conception, through installation to completion, Langley Eco guides our clients through their renewable energy requirements. In fact, it is the close partnerships we have with clients that allows us to offer such a comprehensive service. We have an enviable supply chain and offer technical support that is second-to-none. We have an enviable supply chain and offer technical support that is second-to-none.

With long-standing industry experience, we are the experts in renewable technologies and as with all our system offerings, we strive to give our clients the very best of the technological expertise they have come to expect, while simultaneously helping reduce both energy consumption and carbon emissions.

- **Full Suite of Funding Options**
- **High Quality Products and Manufacture**
- **Performance Requirements Calculations and Specifications**
- **Contract Management**
- **After Sales Service and Support**
- **Warranties and Guarantees for products and FiT**



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8.0 Introducing the Solar Shield Green Energy Warranty

Going Green

Green energy is here to stay. Property owners are investing in the installation of solar panels to provide themselves with renewable energy and earn Feed-in Tariffs (FiT) as a long-term investment. Property owners making these investments need to know that the equipment installed is guaranteed and, most importantly, that such a guarantee is backed by an insurer.

Long Term Protection

The Solar Shield Green Energy Warranty provides insurance cover for up to 12 years from the date the solar panels are installed, providing long term protection.

Wide and Flexible Insurance Cover

The cover provided automatically includes damage as a result of defective installation, materials and design, meaning that the damage is insured comprehensively.

Cover Extended to Include Existing Roofing

Where solar panels are fitted to existing buildings, the insurance can be extended to include damage to the existing roof as a consequence of a defect within the new installation.

Feed-in Tariffs

Cover can be extended to include the loss of, or reduction in, Feed-in Tariff as a result of an insured defect.

Quality Control

Each installation will be independently inspected by specialists appointed by the insurers. This provides reassurance that the installation will be right first time.

Partners

Working in partnership with key suppliers, manufacturers and installers, we are able to provide a 12 year Solar Shield Warranty and provide Feed-in Tariff cover as an extension, where requested.

Contact Us

If you would like a quotation for cover, or have any queries, please contact James Russell on:

Building and Land Guarantees Ltd. Judith Ann House, 1 Cross Street, Wigston Magna, Leics LE18 2HE
Telephone: 0116 281 2201
Facsimile: 0845 652 0901
Email: james.russell@buildingandland.co.uk

This is intended only as a guide to the cover available. A copy of a Policy Wording is available upon request. Building and Land Guarantees Ltd is an appointed representative of Ten Insurance Services Ltd, which is authorised and regulated by the Financial Services Authority.





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