Solar Pannel installation at Tawelfan, Llwynmawr, Llangollen, Wrexham, LL20 7BD

Heritage and Design and Impact statements

14.09.2026 **Rev 1.0**

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1.0 Heritage Statement / Statement of Heritage Significance

1.1 Introduction

Tawelfan is a Grade II Listed Building, formerly known as **Llangwryd Uchaf**, and is listed by Cadw under reference number **80886**. The building was formally listed on **18 February 2003**.

The listed building comprises a substantial early 19th-century agricultural cow-house, together with associated cart-shed and stable ranges. The building has subsequently been sensitively converted to residential use.

The following description of the listed building is taken from the Cadw listing:

1.2 Historic Development

The principal building is a large early 19th-century cow-house, shown on the **1839 Tithe Map**. The masonry to the lower section displays evidence of alteration. A cart-shed and stable range were subsequently added to the western end in two phases.

1.3 Exterior

The principal building is a large cow-house constructed of rubble stone, with loft accommodation beneath corrugated iron roofs. The front elevation incorporates three doorways, each fitted with split doors beneath segmental brick heads. The central doorway is raised and provides access to a threshing/feeding passage.

The loft areas incorporate three ventilation slits to either side of the central passage, together with further infilled ventilation slits below. Late 20th-century metal-framed windows with ventilators are positioned at either end of the principal elevation.

To the western end is an attached cart-shed and stable range, constructed of rubble stone beneath a shallow-pitched corrugated iron roof. The cart-shed has a wide opening with a rough timber lintel, with a loft door above and a small two-light opening with a hatch to its right. A further stable, with loft hatch above, was subsequently added to the western end.

The rear elevation contains a similar doorway, with a segmental brick head providing access to the through-passage, together with a lower doorway with a flat head. Boarded loft hatches are located to either side, with additional ventilation slits towards the western end. The later stable range is slightly set back and incorporates a loft hatch, raised doorway and further ventilation slits.

1.4 Interior

Internally, the central through-passage retains a flagstone floor and stone side walls enclosing the loft areas. Small doorways at the rear of the passage provide access to feed passages arranged at right angles. These are separated from the former animal stalls by slate partitions, some of which remain in situ.

The roof structure retains sawn king-post trusses.

1.5 Reasons for Designation

Cadw identifies the building as being of special architectural and historic interest as a **well-preserved early 19th-century cow-house with attached stables and cart-shed, retaining its historic character**. The building also benefits from **group value with the farmhouse to the north**.

Accordingly, the significance of Tawelfan derives principally from its surviving historic fabric, agricultural form, plan arrangement, architectural details and its contribution to the historic group of buildings.

1.6 Conversion of the Listed Building

Planning permission was granted in **2013** for the conversion of the former barn to residential use under planning application reference **GLY/P/2013/0114**.

The approved scheme also included the construction of a detached timber-framed garage and workshop to the rear of the property, incorporating a slate roof.

The conversion of the barn and construction of the associated garage were undertaken between **2018 and summer 2020**.

The detached garage is positioned approximately **10 metres to the rear of the converted barn**. Its location means that it is not generally visible when approaching the property from the front. Furthermore, the ridge height of the garage is lower than that of the converted listed barn, ensuring that the principal listed building remains the dominant element within the site.

2.0 Heritage Impact Assessment

2.1 Proposed Works

The proposed installation of solar photovoltaic panels forms part of a wider approach to improving the electrical resilience, sustainability and energy efficiency of the property.

The proposal has been developed in response to repeated power cuts experienced in the local area since the property has been occupied. Some outages have continued for periods in excess of **24 hours**. The proposed solar installation will therefore assist in providing greater electrical security and continuity of supply during future power outages.

2.2 Relationship with the Listed Building

Particular consideration has been given to the heritage significance of the Grade II Listed Building and the need to avoid physical intervention or visual harm to the historic fabric.

No solar panels or associated plant will be installed on, within, or attached to the listed barn conversion.

All associated equipment and plant serving the solar photovoltaic installation will be accommodated within the existing detached timber-framed garage. Consequently, there will be **no physical intervention to the listed building** and no requirement for works to its historic fabric.

The proposal has therefore been designed to ensure that the significance and architectural character of the listed building are preserved.

The application is only required by default as the garage sits in a reasonable proximity and within the curtilage of the listed (principle) building, but does not form any historical significance / value in isolation.

2.3 Solar Panel Arrangement

A total of **10 solar photovoltaic panels** are proposed.

The panels will be installed on the **west- and south-facing roof slopes of the detached garage**. This arrangement has been selected to maximise the efficiency of the installation while ensuring that the panels are physically separated from the listed barn.

The positioning of the panels also substantially reduces their visibility from the public highway running along the front of the listed barn. The principal views towards the listed building will therefore remain largely unaffected.

The east-facing roof slope of the garage is shaded by established trees located within the adjoining property and is therefore unsuitable for the installation of a solar panel array.

The proposed panels will have a **black finish**, selected to integrate visually with the existing slate roof. A solar skirt will be installed around the perimeter of the array to conceal the supporting/fixing frame and provide a neat and visually recessive appearance.

2.4 Assessment of Heritage Impact

The proposed works are considered to have **no material adverse impact on the special architectural or historic interest of Tawelfan**.

In particular:

- No works are proposed to the listed barn itself.
- No solar panels will be installed on the roof of the listed building.
- No associated plant will be located within or attached to the listed building.
- The solar array will be located approximately 10 metres behind the listed barn on an existing detached garage.
- The garage is lower in height than the listed barn and remains visually subordinate to it.
- The principal public view towards the listed building will remain largely unaffected.
- The black panels and perimeter solar skirt will reduce visual contrast with the existing slate roof.
- The proposal does not require the removal or alteration of historic fabric.
- The installation will assist in improving the property's sustainability and resilience without compromising the heritage significance of the listed building.

On this basis, the proposed solar installation is considered to preserve the character, appearance and significance of the Grade II Listed Building.

3.0 Design and Access Statement

3.1 Design Approach

The proposed solar photovoltaic panels will be installed on the existing slate roof of the detached timber-framed garage.

The panels will be mounted on a proprietary solar panel support system designed for installation on slate roofs. A solar skirt will be installed around the perimeter of the array to conceal the supporting framework and provide a visually integrated finish.

The arrangement has been carefully considered to ensure that the installation remains visually subordinate to the Grade II Listed Building and does not interfere with the architectural character or historic fabric of the barn.

3.2 Construction and Installation

A temporary scaffold protection frame will be erected around the garage during the installation of the solar panels. This temporary structure is required to provide appropriate protection and safe working access during the works.

Following completion of the installation, all temporary scaffolding and associated protection measures will be removed, leaving only the permanent solar installation.

3.3 Access

No alterations to the existing access arrangements are required as part of the proposal. The installation can be undertaken from within the existing site and will not require changes to the access serving the property.

3.4 Works to the Listed Building

There will be **no works, alterations or interventions required internally or externally to the Grade II Listed barn conversion**.

The solar panels and all associated equipment will be confined to the existing detached garage. The proposal therefore avoids any physical impact upon the listed building and its historic fabric.

3.5 Conclusion

The proposed installation of 10 solar photovoltaic panels represents a modest and carefully considered addition to the existing detached garage. Its location, scale, materials and appearance have been selected to minimise visual impact and maintain the prominence and significance of the Grade II Listed Building.

The proposal will not involve any physical alteration to the listed barn, nor will it affect its surviving historic fabric, architectural features or internal arrangement.

The works will provide an important improvement to the property's energy resilience and sustainability while preserving the special architectural and historic interest of Tawelfan.

Accordingly, the proposal is considered to have **no material adverse impact on the significance of the Grade II Listed Building** and is considered appropriate in heritage and design terms.

Appendix A - Photographs



Front view of Tawelfan taken from public Highway



Side view of Tawelfan taken from Garden indicating position of out building in relationship to Tawelfan



Garage / workshop.

Appendix B - PHOTOVOLTAIC PANELS

LONGi EcoLife

LR7-54HVB

475~495M (243 W/m²)

THE smarter E AWARD

Leading
Black Module Efficiency

High Efficiency

70%
Output Maintained when Shaded

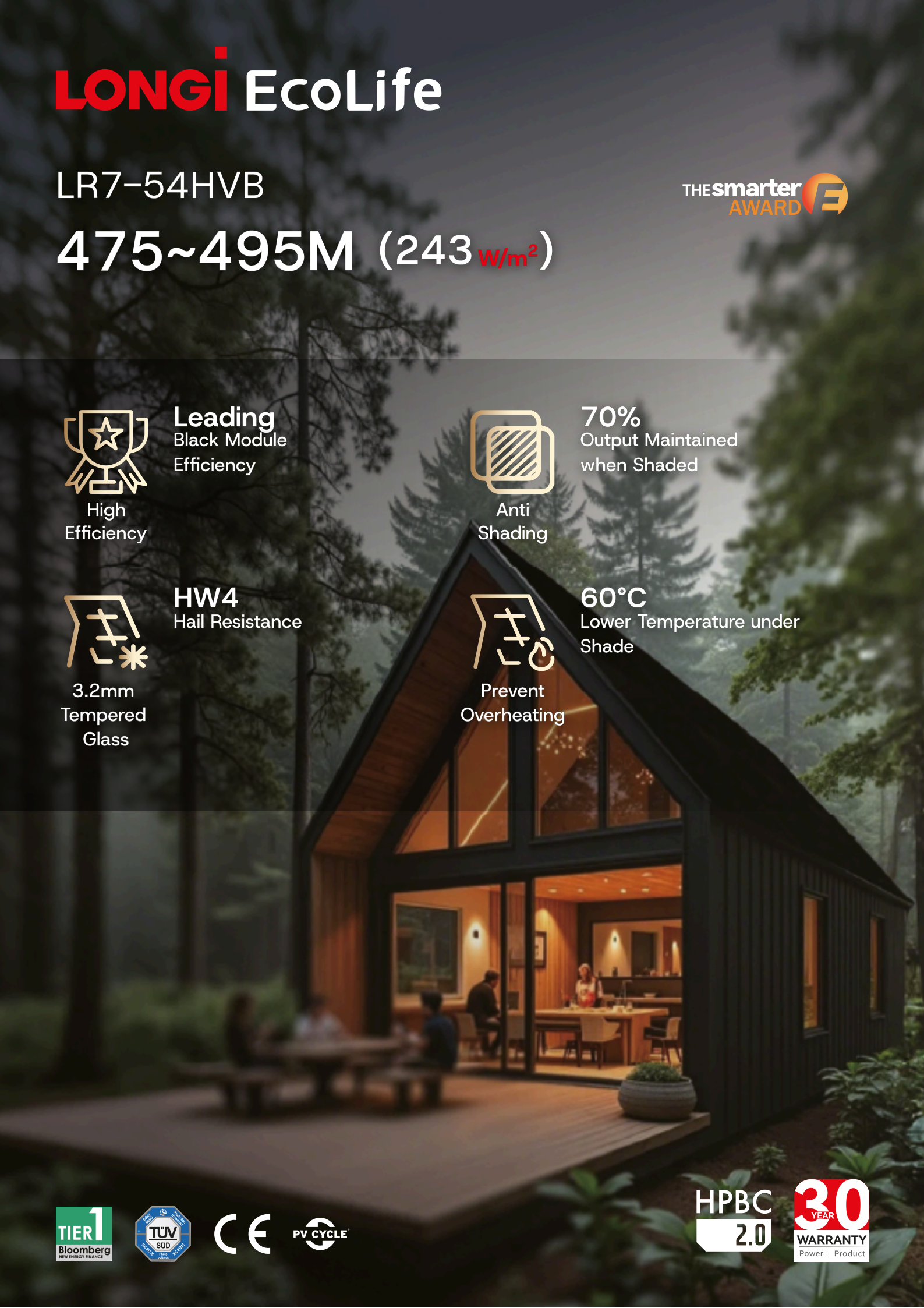
Anti Shading

HW4
Hail Resistance

3.2mm Tempered Glass

60°C
Lower Temperature under Shade

Prevent Overheating



TIER 1 Bloomberg NEW ENERGY FINANCE

TÜV SÜD

CE

PV CYCLE

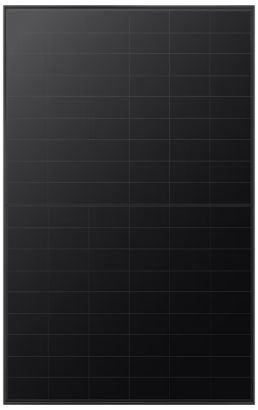
HPBC 2.0

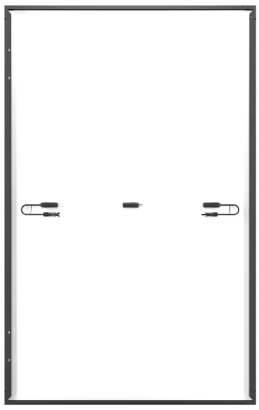
30 YEAR WARRANTY
Power | Product

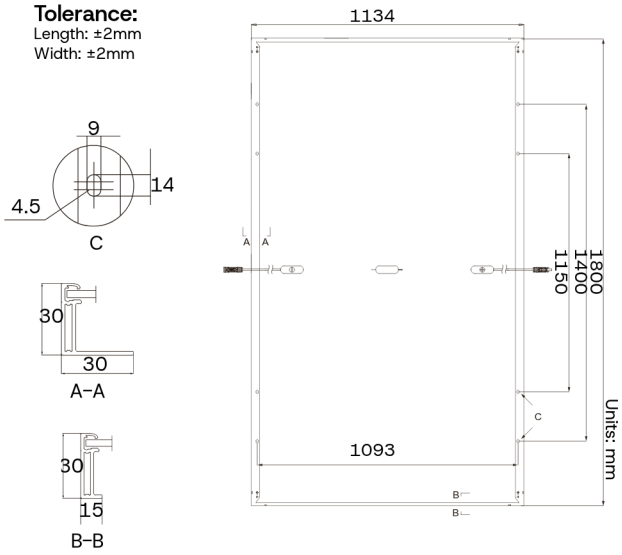
Define Roof Define Life

LR7-54HVB

24.3%	0~3%	1%	0.35%	BC-CELL
MAX MODULE EFFICIENCY	POWER TOLERANCE	FIRST YEAR POWER DEGRADATION	YEAR 2-30 POWER DEGRADATION	LOWER OPERATING TEMPERATURE







Mechanical Parameters

Cell Orientation	108 (6×18)
Junction Box	IP68
Output Cable	4mm2, +400, -200mm/±1200mm length can be customized
Glass	Single glass, 3.2mm coated tempered glass
Frame	Black anodized aluminum alloy frame
Weight	21.6 kg
Dimension	1800×1134×30mm
Packaging	36pcs per pallet / 216pcs per 20' GP / 864pcs per 40' HC

Electrical Characteristics

STC : AM1.5 1000W/m2 25°C NOCT : AM1.5 800W/m2 20°C 1m/s Test uncertainty for Pmax ±3%

Module Type	LR7-54HVB-475M	LR7-54HVB-480M	LR7-54HVB-485M	LR7-54HVB-490M	LR7-54HVB-495M
Testing Condition	STC	STC	STC	STC	STC
Maximum Power (Pmax/W)	475.0	480.0	485.0	490.0	495.0
Open Circuit Voltage (Voc/V)	40.18	40.29	40.4	40.52	40.64
Short Circuit Current (Isc/A)	15.03	15.13	15.23	15.33	15.43
Voltage at Maximum Power (Vmp/V)	33.16	33.28	33.4	33.51	33.62
Current at Maximum Power (Imp/A)	14.33	14.43	14.53	14.63	14.73
Module Efficiency(%)	23.3	23.5	23.8	24.0	24.3

Operating Parameters

Operational Temperature	-40°C ~ +85°C
Power Output Tolerance	0 ~ 3%
Maximum System Voltage	DC1500V (IEC)
Maximum Series Fuse Rating	25A
Nominal Operating Cell Temperature	45±2°C
Protection Class	Class II
Fire Rating	IEC Class C

Mechanical Loading

Front Side Maximum Static Loading	5400Pa
Rear Side Maximum Static Loading	2400Pa
Hailstone Test	25mm Hailstone at the speed of 23m/s

Temperature Ratings (STC)

Temperature Coefficient of Isc	+0.050%/°C
Temperature Coefficient of Voc	-0.200%/°C
Temperature Coefficient of Pmax	-0.260%/°C

LONGi SOLAR

Specifications included in this datasheet are subject to change without notice. LONGi reserves the right of final interpretation.