

**Proposed dwelling**

**at**

**86 Ancton Way  
Bognor Regis  
PO22 6JP**

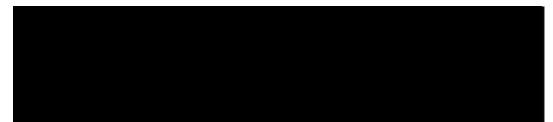
**DESIGN & ACCESS STATEMENT**

**December 2024**



**HERBERT STUMPP**  
L I M I T E D

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|             |                                           |
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| Date        | 18 <sup>TH</sup> December 2024            |
| Revisions   |                                           |

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## **1. INTRODUCTION**

Herbert Stumpp Limited have been appointed to prepare this document in respect of a proposed replacement dwelling at 86 Ancton Way, Bognor Regis, PO22 6JP. The site occupies an area of approximately 240m<sup>2</sup> (0.024Ha). A site location plan is shown in **Figure 1.1**.

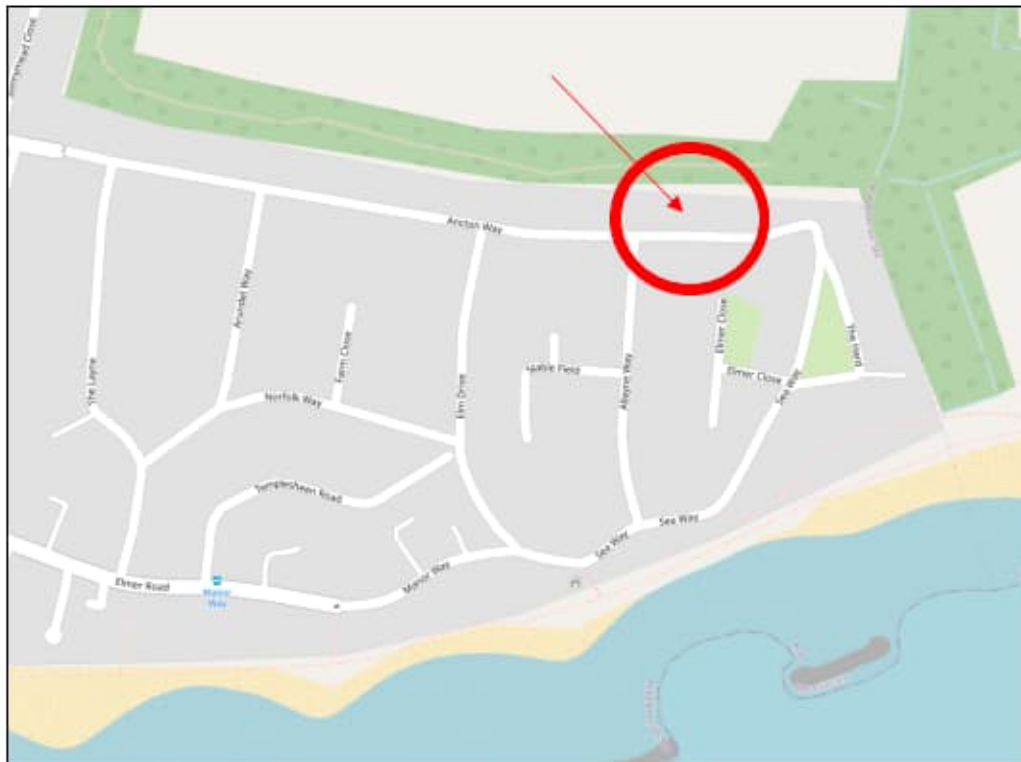


**Figure 1.1: Site Location Plan** © OpenStreetMap contributors

The site is currently occupied by a detached one-bedroom bungalow with a gross internal floor area of 48.9 sq.m. The proposal is to demolish the existing bungalow and to replace it with a detached two-storey, two-bedroom house with 2no. off street parking spaces.

Interrogation of historic mapping indicates that the existing bungalow was constructed at some point between 1910 and 1932. It is of poor construction when compared to current standards and is in need of complete renovation/redevelopment.

The majority of the older 1920's style bungalows in the vicinity have been redeveloped, and many have been replaced with similar two-storey detached houses.

The property immediately to the east, No. 88 Ancton Way, is a recently redeveloped two-storey detached four-bedroom house; and the property immediately to the west is a detached chalet-style property which was possibly constructed in the 1990s.

There is wooded land to the rear.

## **2. PLANNING**

### **2.1 Planning History**

There is no planning history available on the Arun District Council planning web site.

### **2.2 Planning Policy**

The development proposals have been prepared in line with guidance contained in the following publications:

- National Planning Policy Framework (NPPF) December 2024
- Arun Local Plan 2011 – 2031 (April 2018)
- Arun District Design Guide 2024
- Arun District Council Parking Standards Supplementary Planning Document (SPD) January 2020

### **2.3 National Planning Policy Framework**

The National Planning Policy Framework (NPPF) (December 2024), sets out the Government's planning policies for England and how these should be applied. The relevant paragraphs and sections of the NPPF are as follows:

- Paragraph 7 states that the purpose of the planning system is to contribute to the achievement of sustainable development.
- Paragraph 10 states that there is a presumption in favour of sustainable development.
- Section 12 deals with achieving well-designed places and states that the creation of high-quality buildings and places is fundamental to what the planning and development process should achieve. Good design is a key aspect of sustainable development, creates better places in which to live and work and helps make development acceptable to communities.
- Section 15 deals with conserving and enhancing the natural environment and states that planning policies and decisions should contribute to and enhance the natural and local environment.
- Paragraph 192 states that to protect and enhance biodiversity and geodiversity, plans should promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species; and identify and pursue opportunities for securing measurable net gains for biodiversity.

## **2.4 Arun Local Plan**

The Arun Local Plan 2011-2031 (April 2018) sets out policies to guide the development and use of land in Arun until 2031, and forms the basis on which planning applications will be determined in Arun. The relevant policies of the Local Plan are as follows:

- Policy SD SP1 – Sustainable development
- Policy H SP1 – Housing requirement
- Policy H DM1 – Housing mix
- Policy D SP1 – Design
- Policy D DM1 – Aspects of form and design quality
- Policy D DM2 – Internal space standards
- Policy ECC SP1 – Adapting to climate change
- Policy ECC DM1 – Renewable energy
- Policy ENV SP1 – Natural environment
- Policy ENV DM4 – Protection of trees
- Policy ENV DM5 – Development and biodiversity
- Policy W SP1 – Water
- Policy W DM2 – Flood risk
- Policy W DM3 – Sustainable urban drainage systems

## **2.5 Arun District Design Guide**

The Arun District Design Guide 2024 provides detailed guidance that will raise design standards across the District, ensuring that only the highest quality development is delivered. The Guide aims to:

- address past and current challenges, providing for future needs;
- improve and enhance the distinctive character and qualities of Arun;
- create design principles and criteria that applications should meet and are easy to follow;
- set out the design process that should be followed in order to achieve high quality design, educating readers on best practice, design principles and terminology;
- provide an effective tool that can be used by a variety of people regardless of their familiarity with the application, master-planning and design processes; guiding applicants through a step-by-step process to ease assessment of proposed development; and
- set out ADC's expectations for future development, safeguarding the District's identity while shaping the future.

**2.6 Arun District Council Parking Standards**

This Supplementary Planning Document (SPD) (January 2020) outlines Arun District Council's approach to parking at new developments (residential/commercial).

### 3. DEVELOPMENT IN THE CONTEXT OF PLANNING POLICY

#### 3.1 Policy SD SP1 – Sustainable development

##### Policy SD SP1

##### Sustainable development

When considering development proposals the Council will take a positive approach that reflects the presumption in favour of sustainable development contained in the National Planning Policy Framework. It will work pro-actively with applicants to jointly find solutions which mean that proposals can be approved wherever possible and to secure development that will contribute to the social, economic and environmental conditions south of the National Park through to the coast and throughout its settlements (both coastal and inland).

This presumption will not be applicable where development requires an Appropriate Assessment or where consideration of the need for one is being undertaken.

Where possible all building materials will be obtained from a sustainable source, and where possible from local suppliers.

#### 3.2 Policy H SP1 – Housing requirement

##### Policy H SP1

##### The Housing Requirement

Within the plan period 2011 – 2031 at least 20,000 new homes will be accommodated in the District.

##### Arun's Local Plan strategic objective for Housing Delivery is to:

"Plan and deliver a range of housing mix and types in locations with good access to employment, services and facilities to meet the District's housing requirements and the needs of Arun's residents and communities both urban and rural, ensuring that issues of affordability and the provision of appropriate levels of affordable housing are addressed while supporting the creation of integrated communities."

The proposed dwelling will provide a two-bedroom house which will meet the demands of modern living whilst providing accommodation for additional persons.

### 3.3 Policy H DM1 – Housing mix

#### Policy H DM1

##### Housing mix

The Council will seek a mix of dwelling types and sizes, to include affordable housing units, that adhere to the latest Homes and Communities Agency <sup>(37)</sup> design guidance. For developments of 11 units or more the Council shall require a balanced mix of market and affordable dwelling sizes including family sized accommodation based on the most up to date SHMA recommendations.

The tenure mix for development schemes shall be negotiated on a case by case basis taking any necessary viability considerations into account. Developers shall have regard to the most up to date version of the SHMA.

The Council will particularly encourage the development of self-build homes on appropriately sized, serviced sites in the first instance or on appropriately sized sites that are capable of being serviced. Such sites can be provided either as part of a development scheme or on an individual basis.

Over the Plan period a proportion of the housing provided should be of a type that meet the needs of older people, as identified in the most recent SHMA. Such housing could be provided as part of the general mix of one and two bedroomed homes but should be designed to meet the needs of older people.

The residential properties in the immediate area vary in style and size. The proposed dwelling will contribute to this mix and will provide a modest two-bedroom house.

### 3.4 Policy D SP1 – Design

#### Policy D SP1

##### Design

All development proposals should seek to make efficient use of land but reflect the characteristics of the site and local area in their layout, landscaping, density, mix, scale, massing, character, materials, finish and architectural details. Development proposals should have been derived from: a thorough site analysis and context appraisal; adherence to objectives informing sustainable design (inclusivity, adaptability, security, attractiveness, usability, health and wellbeing, climate change mitigation and habitats); and the influence these objectives have on the form of the development.

With major developments (as defined in the GDPO 1995 (as amended<sup>(41)</sup>) or allocated sites in the Development Plan. In addition to a Design and Access Statement, a context appraisal, context plan and analysis of the site will also be required.

The proposals have been developed to make the best possible use of the available land by reflecting or improving on the character of the site and its surrounding areas. The existing bungalow is of very poor construction and is of no particular architectural merit

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and is of incongruent form and profile. The proposed dwelling will blend well with the adjacent properties and the general neighbourhood and is of similar style and form to many other two-storey detached houses in the road and in the locality which utilise a typical duo-pitch roof.

The proposed dwelling is of a similar size and style to other buildings in the area and has been carefully designed to suit its location. The materials to be used in its construction are traditional; being brick, render, timber-effect cladding and reconstituted or reclaimed slates. In respect of parking, bin storage and recycling requirements, the site is extensive and there is no shortage of space for the parking of vehicles, and the site is already well-served with bin storage and recycling and there will be no additional demand. The proposed dwelling thus satisfies the relevant requirements of Policy EN4.

### 3.5 Policy D DM1 – Aspects of form and design quality

#### Policy D DM1

##### Aspects of form and design quality

When considering any application for development the Council will have regard to the following aspects:

##### 1. Character

Make the best possible use of the available land by reflecting or improving upon the character of the site and the surrounding area, in terms of its scale, massing, aspect, siting, layout, density, building materials (colour, texture), landscaping, and design features.

##### 2. Appearance/attractiveness

Demonstrate a high standard of architectural principles, use of building materials, craftsmanship and hard and soft landscaping to reflect the local area.

##### 3. Impact

Have minimal impact to users and occupiers of nearby property and land. For example, by avoiding significant loss of sunlight, privacy and outlook and unacceptable noise and disturbance.

##### 4. Innovation

Raise standards of design by embracing appropriate innovative design, new technologies and construction techniques, where a development proposal has the potential to do so.

##### 5. Adaptability

Acknowledge diversity and difference. Buildings and places should be flexible to future adaptation, including the changing needs of occupants (for example ageing users, family circumstances), changes in wider work and social trends, and be able to accommodate potential differing uses of public space.

##### 6. Crime prevention

Provide security measures that make places feel safer. This shall be achieved through natural surveillance and human presence by locating buildings and play areas along public routes and spaces, and making a clear division between private and public land to foster a mutual protection through territorial belonging. With respect to crime prevention, regard shall be had in particular to the document 'Secured by Design' and the 'Safer Places - The Planning System and Crime Prevention'.

##### 7. Trees and woodland

All new development will be expected to incorporate existing and new tree planting as an integral part of development proposals.

##### 8. Solar gain

Within the constraints of the site and local context development proposals should, maximise sunlight and passive solar energy. Ideally development should be positioned (within a 15-20 degree margin) broadly south, with streets having an east-west pattern.

**9. Public realm**

Provide or enhance layouts, streets and public spaces so that they are attractive, socially inclusive, safe and secure, adaptable, with appropriate provision for planting, street furniture, and facilities for bicycle storage to create a place with attractive and successful outdoor areas.

**10. Layout - movement**

Utilise existing networks or improve access via delivery of a variety of integrated networks, to and from residential areas, commercial zones, open spaces, facilities and public transport. Development schemes should carefully consider walking and cycling as an integral part of the overall design concept.

**11. Layout - legibility**

Deliver or contribute to the ease of navigation within a new or existing development scheme through use of focal points (landmarks, gateways, vistas, corner buildings, active edges, existing topography), and/or a variety of detail within the public realm (sculpture, planting, street furniture, building materials, building detail, signage).

**12. Public art**

Public Art should be incorporated into schemes where there is capacity to do so. Public art can encompass a wide variety of elements to include art as part of the design of buildings and developments, landscape and planting, street furniture, signage and lighting in the public realm which is accessible to all. This can also result in physical, permanent artworks and sculptures.

**13. Density**

The density of new housing will make efficient use of land while providing a mix of dwelling types and maintaining character and local distinctiveness. Higher densities will be more appropriate in the most accessible locations. Proposals should take into account the density of the site and its surroundings. The density of large sites should be varied to guard against uniformity.

**14. Scale**

The scale of development should keep within the general confines of the overall character of a locality unless it can be demonstrated that the contrary would bring a substantial visual improvement.

**15. Aspects of form and design quality**

Development should also comply with the Arun District Council Design Guide.

The best use of the available land is to create a two-storey house, retaining a footprint similar to the existing bungalow and thus avoiding an over development of the site whilst retaining good amenity space. The footprint of the existing bungalow is approximately 68 sq.m, and the proposed replacement house has a footprint of 70 sq.m, which is a necessary but modest increase.

A street scene drawing has been included in the proposals to show the form and scale of the proposed development in relation to the neighbouring properties.

The ridge height of the proposed dwelling will be lower than the immediately adjacent properties, Nos. 84 & 88 Ancton Way.

The western flank wall (adjacent to No.84 Ancton Way) of the existing bungalow is located on the boundary of the two properties, and the eastern side wall of the existing bungalow is located approximately 100mm off the boundary wall between No. 86 & 88 Ancton Way. The western flank wall of the proposed dwelling will be approximately 300mm away from the boundary with No. 84 Ancton Way, and the rear single-storey section of the proposed dwelling will step in by approximately 0.7m. The eastern flank wall of the proposed dwelling will remain in a similar position to the existing situation and the rear single-storey section of the proposed dwelling will step in by approximately 0.7m, mirroring the opposite, western side.

The proposed new house roof eaves height has been kept to a minimum by including a sloping vaulted ceiling at first floor, with the internal spring point at 1.969m above finished first floor level. The roof pitch will be 25 degrees and this ensures that the new ridge height does not exceed the height of the existing properties on each side.

The proposed dwelling will maintain the general building frontage line along the Ancton Way and the neighbouring houses. The two-storey element of the house will be 9.775m in depth, with the single-storey rear projection at an additional 4.185m depth. The rear ground floor only element is set central to the proposed dwelling and is away from each of the east and west boundaries, being approximately 0.7m and 1.1m respectively.

The eastern side wall of No.84 is approximately 1.1m away from the boundary with the proposed dwelling; and the western side wall of No.88 is approximately 0.6m away from the boundary with the proposed dwelling.

Side facing windows have been avoided where possible. Without them, however, the quality of natural light entering the ground floor would be extremely poor, and high-level clerestory windows have been provided at ground floor level. These windows avoid overlooking and privacy issues and also comply with Building Regulations Part B (protected areas – limitations for openings in walls close to boundaries).

A single rooflight has been provided on each side of the roof of the rear single-storey projection, and a rooflight has also been provided in the first-floor bathroom.

A small proprietary cycle shed will be incorporated adjacent to the back of the house.

### 3.6 Policy D DM2 — Internal space standards

#### Policy D DM2

##### Internal space standards

The planning authority will require internal spaces to be an appropriate size (having regard to the exceptions that may apply as referred to in paragraph 13.3.4) to meet the requirements of all occupants and their changing needs. Nationally Described Space Standards will provide guidance.

The dwelling has been designed to meet the Nationally Described Space Standards for a two bed 4 person dwelling of two storeys.

### 3.7 Policy ECC SP1 – Adapting to climate change

#### Policy ECC SP1

##### Adapting to climate change

The Council will support development which is located and appropriately designed to adapt to impacts arising from climate change such as the increased probability of tidal and fluvial flooding; water stress; health impacts as a result of extreme temperatures and a decline in the quality of habitats and richness of biodiversity.

In order to achieve this, development must be designed to take account of the following issues:

- a. Location (in relation to flood risk and vulnerability to coastal erosion);
- b. Water efficiency;
- c. Shade, cooling, ventilation, solar gain;
- d. Connectivity to the green infrastructure network;
- e. Layout and massing;
- f. Resilience of buildings and building materials to extreme weather events; and
- g. Capacity of drainage systems and incorporation of Sustainable urban Drainage Systems (SuDS)

The existing bungalow is not energy efficient. It suffers extreme heat loss during winter leading to high running costs and unsustainable energy demands, and uncontrolled solar gains during the summer.

The proposed dwelling will be constructed to comply with the strict requirements of the current Building Regulations Part L and the intention is for the proposed dwelling to meet the requirements of the 'lean, clean and green' energy hierarchy by the installation of energy efficient appliances, the installation of doors and windows to comply with the

relevant requirements of Part L in order to reduce heat losses and solar gains and also to provide adequate natural ventilation.

Flood risk, water efficiency, resilience and SuDS are discussed elsewhere within this document.

### 3.8 Policy ECC DM1 – Renewable energy

#### Policy ECC DM1

##### Renewable energy

The Council will support renewable energy development subject to the criteria in this Policy. Schemes will be expected to contribute to the social, economic and environmental development and overall regeneration of the District.

Within areas of protected landscapes, areas or buildings, development should generally be small scale or community based.

The Council will support proposals for appropriately located renewable energy development, and their ancillary development where they meet the following criteria:

- a. The proposal is located and designed to minimise adverse impacts to landscape, habitats, the historic environment and residential amenity including visual, noise and odour impacts;
- b. The location and design of proposals will need to take account of the Council's landscape assessment and landscape sensitivity studies (or successor documents) and proposals for large scale renewable energy projects will need to be supported by a zone of theoretical visibility and viewpoint assessment;
- c. Priority should be given to proposals that integrate with existing or new development where appropriate to do so having regard to (a); and
- d. All proposals will need to demonstrate a suitable connection to the electricity distribution network, or appropriate energy storage facility, and provide evidence to demonstrate that the connection will not result in unacceptable impacts upon the landscape, natural and historic environment or visual and residential amenity.

Heating for the proposed dwelling will be provided by a renewable low carbon energy system comprising a Mitsubishi Ecodan R32 6kW air source heat pump, a Mitsubishi Ecodan R32 FTC6 water storage cylinder, and a Mitsubishi FTC6 controller. The system has an A+++ rating and will be supplied, installed and commissioned by a recognised and qualified specialist. Data sheets for the system are included in **Appendix 1**.

PV panels will also be provided. The system will comprise 12 solar panel modules of total 22m<sup>2</sup> area & 7kW of battery storage capacity. The modules will be located in 2 rows of 3 panels on each of the side elevation roof slopes (east & west facing). The specified system includes a hybrid inverter which combines both PV & battery storage utilising 2no. Pylontech batteries. Using the standard calculation method, taking account of the

number of photovoltaic solar panels and their positioning on the east and west roof slopes, a yield of 4000kW is expected. The system specification provides a good quality, high yield combination with good battery storage. It is planned to utilise an Octopus Energy tariff specifically designed for energy saving combinations where the EV car can be charged at night, firstly utilising any additional solar energy, stored in the batteries during the day, and then reverting to the Octopus EV off peak rate. The technology to divert surplus energy and sell back to grid is included in the system. Details of the PV panels are included in **Appendix 2**.

In addition to the renewable low carbon systems proposed, the house construction will include a high standard of insulation and energy efficient glass window/doors which will be above and beyond that required by the current standards indicated in the approved document of the building regulations.

All thermal and energy saving provisions will be fully detailed, proved and justified by SAP calculations, as part of the full Building Regulations approval process.

### 3.9 Policy ENV SP1 – Natural environment

#### Policy ENV SP1

##### Natural Environment

Arun District Council will encourage and promote the preservation, restoration and enhancement of biodiversity and the natural environment through the development process and particularly through policies for the protection of both designated and non-designated sites. Where possible it shall also promote the creation of new areas for habitats and species. In relation to designated sites, development will be permitted where it protects sites listed in Tables 17.1-17.7 that are recognised for the species and habitats contained within them.

The existing bungalow has a fully paved and impermeable frontage, and the rear garden consists of a grassed area and boundary hedging. There is a large outbuilding at the rear of the plot. Neighbouring houses have similar paved/planted rear gardens. Immediately to the rear (north) of the property is a densely wooded copse which is approximately 16m deep and serves as a buffer between the properties and the arable fields beyond. This provides an extensive biodiverse habitat and nature corridor. Architectural planting will be added each side of the rear outbuilding. Measures to improve biodiversity will be incorporated, including the creation of hedgehog holes to the fence and the installation of two bird boxes, one placed on each side of the outbuilding.

### 3.10 Policy ENV DM4 – Protection of trees

#### Policy ENV DM4

##### Protection of trees

Development will be permitted where it can be demonstrated that trees protected by a Tree Preservation Order(s), (TPO) identified as Ancient Woodland, in a Conservation Area or contributing to local amenity, will not be damaged or destroyed now and as they reach maturity, unless development:

- a. Would result in the removal of one or more trees in the interests of good arboricultural practice. This shall be demonstrated by the developer following the advice of a suitably qualified person which shall be guided by BS 5837 (2012). Details of any advice received having regard to BS 5837 (2012) shall be submitted, in writing, as part of a planning application; or
- b. Would enhance the survival and growth prospects of other protected trees;
- c. The benefits of the proposed development in a particular location outweigh the loss of trees or woodland, especially ancient woodland.

Where planning permission is granted in any of the above instances, conditions shall be used to ensure that, for any trees which are removed as part of a development, at least an equivalent number of a similar species and age (where practical) are planted on the proposed development site. Sufficient space for replacement trees to mature without causing future nuisance or damage shall be provided. The planting of new trees shall form an integral part of the design of any development scheme.

Proper provision must be made for the protection and management of trees or areas of woodland on-site when undertaking development. A management plan shall be provided as part of a planning application in accordance with BS 5837 (2012) in order to ensure that trees are adequately protected during development and appropriately maintained in the future. Conditions for the continued protection of trees on sites shall be included in any planning permission given.

Where there are existing trees on or adjacent to a development site, developers shall be required to provide:

- d. Land and tree surveys
- e. A tree constraints plan
- f. An arboricultural impact assessment to include a tree protection plan and arboricultural method statement

These will ensure that development is planned to take a comprehensive view of tree issues at an early stage in the design process and that development works do not have a negative impact on existing trees.

The proposed dwelling is far enough away from the copse for it to have little to no negative effects on the trees either during construction or during occupation/use.

### 3.11 Policy ENV DM5 – Development and biodiversity

#### Policy ENV DM5

##### Development and biodiversity

Development schemes shall, in the first instance, seek to achieve a net gain in biodiversity and protect existing habitats on site. They shall also however incorporate elements of biodiversity including green walls, roofs, bat and bird boxes as well as landscape features minimising adverse impacts on existing habitats (whether designated or not). Development schemes shall also be appropriately designed to facilitate the emergence of new habitats through the creation of links between habitat areas and open spaces. Together, these provide a network of green spaces which serve to reconnect isolated sites and facilitate species movement.

Where there is evidence of a protected species on a proposed development site, planning applications shall include a detailed survey of the subject species, with details of measures to be incorporated into the development scheme to avoid loss of the species. This involves consideration of any impacts that will affect the species directly or indirectly, whether within the application site or in an area outside of the site, which may be indirectly affected by the proposals. All surveys shall be carried out at an appropriate time of year and shall be undertaken by a qualified and, where appropriate, suitably licensed person.

All developments shall have regard to Natural England's standing advice for protected species.

Measures will be incorporated into the proposed development in order to secure biodiversity net gain (BNG). A Natural England Small Sites Metric has been completed to demonstrate how BNG will be achieved and is a separate document included with the application.

All existing hardstandings and impermeable surfaces will be removed and will be reinstated with permeable surfaces, including permeable block paving and open jointed paving for the patio area. The existing grassed area will be re-turfed, and the existing planting alongside the boundary walls will be tidied and supplemented with new plants.

There is a wooded copse area immediately abutting the rear of the property which around the arable field and beyond. The wooded copse is dense and unkept with large mature trees. There is already extensive planting to the side boundaries, however the quantity and quality of this hedging will be improved and the overall soft landscaping/hedging areas will be increased by replacing the numerous sheds with grassed areas/planting/hedging. Additional animal/bird incentives are included. The net gain to the Biodiversity will be improved over existing and well above the level on other properties in the vicinity.

2nr RSPB Classic Bird Boxes will be provided, fixed to the side of the existing outbuilding. Details of these boxes are on the following page.

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Side panel opens  
for cleaning

## Product description

Simply styled, sturdily-made timber nest box. Like all our nest boxes, it's made with thick, FSC® certified timber for insulation with a roof designed to prevent rain water running down the inside of the box. The 32mm entrance hole makes it suitable for many bird species.

Side opens for easy end-of-season cleaning. UK made.

### Installing your nestbox

For secure and stable fixing, there are two hanging tabs attached to the back of the nestbox, one at the top and one at the bottom. These tabs make it quick and easy to securely fix it in place. Screws not supplied.

*With a wide range of expertly-designed [bird houses](#) to choose from, you can easily provide a safe, welcoming home in your garden for different wild birds. RSPB Shop also provides advice on where to locate your bird house. Help us give nature a home!*

Product ID: R401639

### Enjoyed by

- Coal tit
- Blue tit
- Great tit
- House sparrow

## Advice

### Which size nestbox hole for which bird?

25mm - blue tit, coal tit, marsh tit

32mm - great tit, tree sparrow, pied flycatcher, house sparrow, nuthatch, lesser spotted woodpecker.

32mm entry holes can, if you wish, be reduced to 25mm using a nest box plate (R0110).

RSPB nest boxes are made with thick timber and will survive for many years, even without the use of preservatives.

If you do want to protect your nest box further, use a water-based preservative (preferably one that complies with standard EN71 part 3 as safe for children's toys). Such paint/preservative types are clearly marked on the container, and are available from DIY stores and hardware shops.

Preservatives should only be applied to the outside of the box. Apply in the winter, when there is a low likelihood of occupancy. This will allow time for any remaining volatile components to evaporate.

For more information about siting a nest box please see the Advice section of the main RSPB website.

## Specification

Width 20cm | Depth 16cm | Height 22cm | 32mm entry hole



### 3.12 Policy W SP1 – Water

#### Policy W SP1

##### Water

Arun District Council will encourage water efficiency measures in order to protect the District's water resources and enhance the quality of the water environment which supports a range of habitats and ecosystems. Development will be encouraged to make active use of surface water as a design feature and permitted where it identifies measures to improve and enhance waterbodies, coastal habitats or provides additional flood relief.

The Council will also support development that:

- a. is appropriately located, taking account of flood risk and promotes the incorporation of appropriate mitigation measures into new development, particularly Sustainable Drainage Systems that reduces the creation and flow of surface water and improves water quality;
- b. reduces the risk to homes and places of work from flooding whilst increasing biodiversity;
- c. delivers a range of community benefits including enhancing the quality of life and providing greater resistance to the impact of climate change.

Appliances and water fittings will be specified to ensure that the target water consumption does not exceed 110 litres/head/day.

### 3.13 Policy W DM2 – Flood risk

#### Policy W DM2

##### Flood risk

Development in areas at risk from flooding, identified on the latest Environment Agency flood risk maps and the Council's Strategic Flood Risk Assessment (SFRA) , will only be permitted where all of the following criteria have been satisfied:

- a. The sequential test in accordance with the National Planning Policy Guidance has been met.
- b. A site specific Flood Risk Assessment demonstrates that the development will be safe, including access and egress, without increasing flood risk elsewhere and reduce flood risk overall.
- c. The sustainability benefits to the wider community are clearly identified.
- d. The scheme identifies adaptation and mitigation measures.
- e. Appropriate flood warning and evacuation plans are in place; and
- f. New site drainage systems are designed to take account of events which exceed the normal design standard i.e. consideration of flood flow routing and utilising temporary storage areas.

The reports prepared as part of the criteria above must take into account contingency allowances, taking climate change into account as set out in Flood Risk Assessments: climate change allowances section of the NPPG.

In locations where strategic flood defence or resilient and resistant construction measures are necessary within the site itself, proposals will be required to demonstrate how measures have been incorporated as an intrinsic part of the scheme in a manner which is compatible with the latest Strategic Flood Risk Assessment.

All development proposals must take account of relevant Surface Water Management Plans, Catchment Flood Management Plans and related Flood Defence Plans and strategies such as the Lower Tidal River Arun Strategy. The council may require financial

contributions from development on sites where measures to address flood risk or to improve the environmental quality of watercourses have been identified by these Plans and Strategies.

Flood risk has been assessed and a Flood Risk Assessment is included as a separate document with the application. All recommendations of that flood risk assessment will be incorporated into the scheme. The proposals include for the proposed ground floor finished internal floor level to be set at 300mm above external ground level.

### 3.14 Policy W DM3 – Sustainable urban drainage systems

#### Policy W DM3

##### Sustainable Urban Drainage Systems

To increase the levels of water capture and storage and improve water quality, all development must identify opportunities to incorporate a range of Sustainable Urban Drainage Systems (SUDS), appropriate to the size of development, at an early stage of the design process.

Proposals for both major and minor development proposals must incorporate SUDS within the private areas of the development in order to provide source control features to the overall SUDS design. These features include:

- Green roofs
- Permeable driveways and parking
- Soakaways
- Water harvesting and storage features including water butts.

Proposals for major development must also integrate SUDS within public open spaces and roads, reflecting discussion with the appropriate bodies. SUDS must therefore be integrated into the overall design of a development and must:

- a. Contribute positively to the appearance of the area, integrating access to allow maintenance of existing watercourses and the system.
- b. Effectively manage water (including its quality)
- c. Accommodate and enhance biodiversity by making connections to existing Green Infrastructure assets and
- d. Provide amenity for local residents (ensuring a safe environment)
- e. Retain the existing drainage network of the site and the wider area,
- f. Be maintained in perpetuity, supported through a Maintenance and Management Plan/Regime, including its financing, agreed with the Local Planning Authority.

In order to ensure that SUDS discharge water from the development at the same or lesser rate, as prior to construction, developers must:

- f. Follow the hierarchy of preference for different types of surface water drainage disposal systems as set out in Approved Document H of the Building Regulations and the SUDS manual produced by CIRIA.
- g. Undertake up to six months groundwater monitoring within the winter period.
- h. Undertake winter percolation testing in accordance with BRE365.
- i. The proposed drainage system must be designed to ensure that there is no flooding on a 1 in 30 year storm event.
- j. The design must also take account of the 1 in 100 year storm event plus 30% allowance for climate change, on stored volumes, to ensure that there is no flooding of properties or the public highway or inundation of the foul sewerage system. Any excess flows must be contained within the site boundary, and within designated storage areas.

All surface water will be routed first to water butts and will then discharge into the ground via drainage blankets. A surface water drainage scheme has been for the proposed development has been prepared and is included in a separate document with the application.

#### **4. PARKING STANDARDS & CYCLES**

Policy requires a two-bedroom house to have 2no. off road car parking spaces.

Ancton Way is a quiet private road without a dedicated pedestrian footway. The proposals for vehicle crossover/verge treatment and materials will be subject to separate application and approval from the owners of the Elmer Estate private roads and verge. The verge along this stretch of road has differing treatments including, concrete, block paving, gravel and grass and cannot easily be used by pedestrians. The existing frontage is wholly impermeable and is of rough concrete for the full width of the plot and from the front elevation to kerbside

The frontage (parking spaces and verge treatment) of No.88 comprises gravel with small soft-landscaped areas.

The frontage (parking spaces and verge treatment) of No.84 comprises block paving with a small central soft-landscaped area.

The proposed dwelling will provide 2 no. parking spaces, each 2.5m x 5.0m, at the front of the property. The surfacing will be gravel as No.88 Ancton Way to the full width of the frontage. One of the parking spaces will include an electrical vehicle (EV) charging point and additional cables will be installed at the same time to support the installation of a second EV charge point. Details of the EV charging point are included in **Appendix 3**.

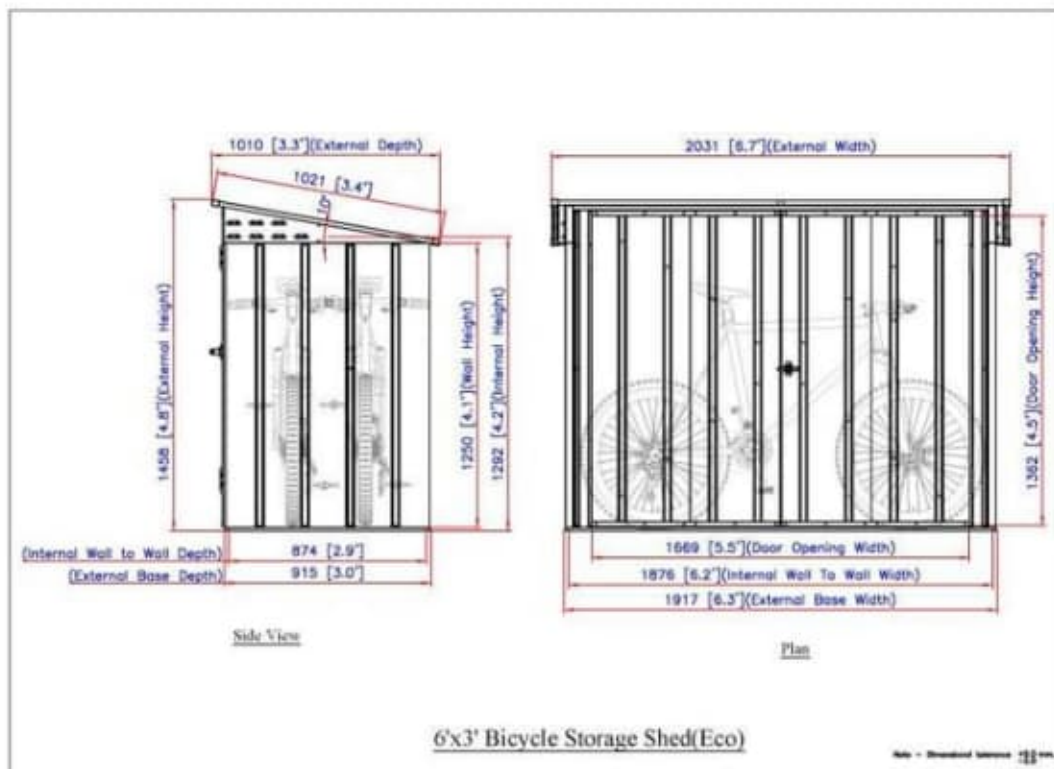
A cycle store for two cycles will be provided at the front of the property. Details of the proposed cycle store are shown on the following pages.

### Description

The Duramax 6' x 3' Metal Bicycle Store – Anthracite is an all metal bicycle shed, providing secure outdoor storage of up to 2 adult bicycles and cycling equipment. It is made from metal offering excellent security for storing all your mountain bikes, road bikes and general cycling equipment.

The reinforced roof and cross metal bars on each door add strength and security for your peace of mind. The metal storage unit will provide you with a safe place to store your bikes that is weather proof and includes a 3 point lock for added security for peace of mind. The panels on this store are 20% thicker than other conventional metal sheds for added protection.

All Duramax Eco Metal sheds must be anchored to a firm foundation to protect against wind damage.  
A floor and/ or foundation kit is not included with this shed.







## **5. MATERIALS AND LANDSCAPING**

### **5.1 Materials**

The following materials are proposed:

#### **Roof:**

Fibre cement slates, 600x300mm, colour blue/black. Details of the slates are included in **Appendix 4**.

#### **Walls:**

White render from DPC level up to first floor level, with brickwork between underside of render and ground level. Brickwork will be Vandersanden Ledbury stock facing brick (colour multi buff/yellow). Details of the bricks are included in **Appendix 5**.

Horizontal fibre-cement weatherboard cladding will be provided above the render, i.e. at first floor level. Cladding will be Cedral click grey woodgrain effect 186x12 horizontal boards. Details of the weatherboard cladding are included in **Appendix 6**.

#### **Windows & doors:**

Aluminium framed, thermally-broken windows and doors with high energy efficient rated sealed glazed units utilising low-e glass.

#### **Car parking & verge:**

Concrete block paving (permeable surface)

### **5.2 Landscaping**

The rear garden area will be fully landscaped with shrub planting along the boundaries (much of existing to be retained) and a new permeably surfaced patio will be laid. The existing trees to the rear of the property will not be removed or damaged, they are far enough away from the proposed development to be safe from harm or construction traffic loadings over the roots. A proprietary lockable bicycle storage shed (2 cycle), will be provided as part of the completed landscaping. The proposed landscaping is shown on Drawing 001 included with the application.

## **6. OTHER ITEMS**

### **6.1 Refuse storage**

240 litres capacity Euro Class wheeled bins will be provided and stored in an enclosure located at the front of the property. There will be a 240L bin for general waste and a similar 240L bin (differing colour) for recycling waste. The wheeled bins will be approximately 8m wheeling distance from the edge of road, which is less than the maximum prescribed distance of 50m. The bins will be pulled to the kerbside on the day of collection.

The specification and details of the proposed bin store are as follows:

- Handmade in Lancashire, UK
- Pressure Treated Timber
- Enclosed Unit
- 50 x 50mm Framing
- Automatic Bin Lid Lifting Feature
- 2 Floor Bar Included
- Pallet Courier, Max 7.5T vehicle size. Item will arrive flat packed on a pallet

#### **Specifications**

- Dimensions: H:1200.0 x W:1225.0 x D:640.0 cm
- Colour: Multi
- Guarantee: 12 Months
- Material: Timber
- Model Number: DC-140-TGV

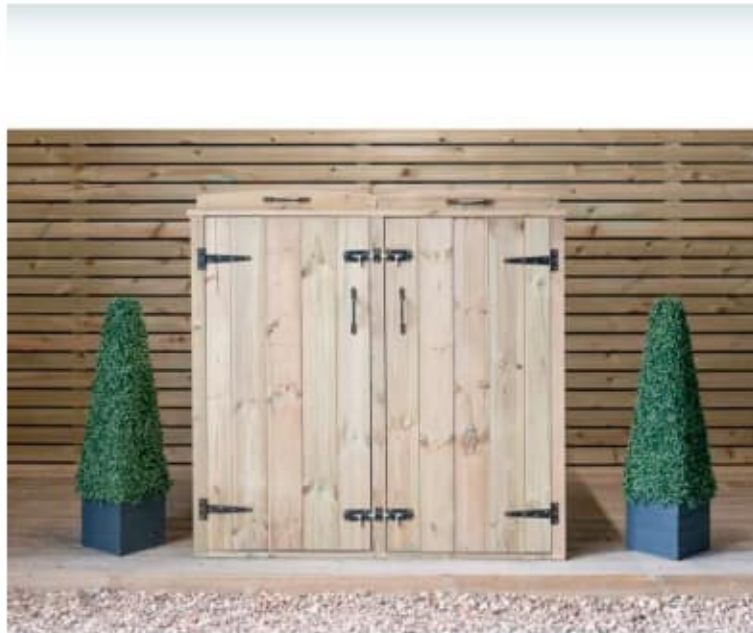
Images of the bin store are on the following page.



**PROPOSED BIN STORE**



**PROPOSED BIN STORE**



#### **PROPOSED BIN STORE**

### **6.2 Accessibility**

The house will include accessible width doors/halls with a large ground floor cloakroom. The front entrance door will have ramped and level access.

### **6.3 Boundary treatments & crime prevention**

The west side boundary fencing will be replaced where required, and any gaps infilled with new timber fencing to match. The fence is approximately 1.9m high to the rear and 1.2m high at the front.

On the east side, the existing wall to the rear will remain. The wall is approximately 2.0m high. To the front the existing 1.2m high timber fence will remain.

All windows and doors will be fitted with good quality locks. The house will be alarmed and a Ring type door entry/rear CCTV camera system will further improve crime prevention measures.

#### **6.4 Foul Drainage**

New foul drainage connections will be connected back into the existing foul drainage system. There is an existing foul drain which discharges into a foul drain located in Ancton Way.

A new foul manhole will be constructed within the curtilage of the property on the line of the existing foul drain and all foul drainage from the property will connect into this new manhole. The manhole will be fitted with a sealed screw down cover. No surface water drains will connect or overflow into the foul system.

**7. SUMMARY**

- 7.1 This document demonstrates how the requirements of planning policy have been met.
- 7.2 The existing bungalow is of very poor construction and needs to be rebuilt to bring the facilities and energy rating of the property up to and beyond current acceptable standards. The proposed dwelling will be an energy efficient dwelling.
- 7.3 The proposed dwelling is modest in size and scale, and is in keeping with the general architectural style on the estate.
- 7.4 The proposed materials to be used externally are traditional and are in keeping with the area.
- 7.5 There will be no loss of privacy to the neighbouring properties as a result of the considered positioning of ground floor windows and the presence of existing timber fences and walls to the rear of the property.
- 7.6 Many other similar proposed developments have been approved in the area. The development does not raise any neighbour amenity issues given and the standard of accommodation of the exceeds the nationally described space standards.
- 7.7 The development accords with the policies of the Local Plan and complies with the provisions of the NPPF.

**Proposed Dwelling**  
**86 Ancton Way, Bognor Regis, West Sussex PO22 6JP**  
**DESIGN & ACCESS STATEMENT**

---

**APPENDIX 1**

# Ecodan R32

## Monobloc Air Source Heat Pump

R32

### Key Features:

- A+++ heating efficiency (Range A+++ to D)
- Ultra quiet noise levels
- Maintains full heating capacity at low temperatures
- Zero carbon solution
- MELCloud enabled

### Key Benefits:

- Ultra low running cost
- Flexible product placement
- Confident and quick product selection
- Help to tackle the climate crisis
- Remote control, monitoring, maintenance and technical support



MELCloud



Manufactured in the UK



017-0255-25-01



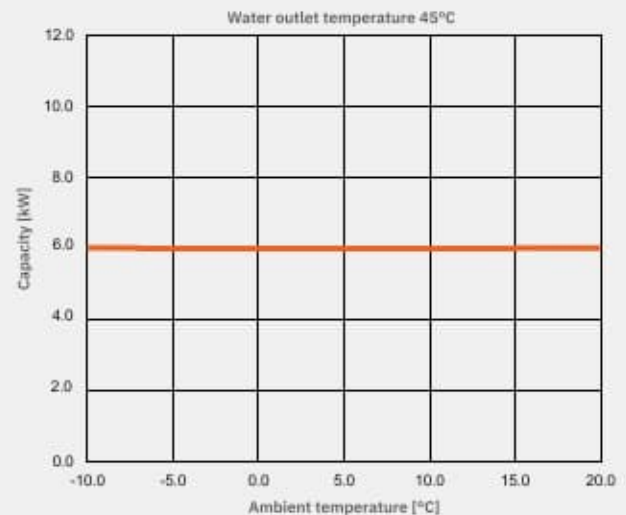
ecodan®  
Renewable Heating Technology

| OUTDOOR UNIT                                                |                                                | PUZ-WM60VAA(-BS)             |
|-------------------------------------------------------------|------------------------------------------------|------------------------------|
| HEAT PUMP SPACE HEATER - 55°C                               | ErP Rating                                     | A+++ (Range A+++ to D)       |
|                                                             | $\eta_{hp}$                                    | 142%                         |
|                                                             | SCOP (MCS)                                     | 3.57                         |
| HEAT PUMP SPACE HEATER - 35°C                               | ErP Rating                                     | A+++ (Range A+++ to D)       |
|                                                             | $\eta_{hp}$                                    | 190%                         |
|                                                             | SCOP (MCS)                                     | 4.81                         |
| HEAT PUMP COMBINATION HEATER - Large Profile <sup>1</sup>   | ErP Rating                                     | A+ (Range A+ to F)           |
|                                                             | $\eta_{hp}$                                    | 145%                         |
|                                                             | Capacity (kW)                                  | 6.0                          |
|                                                             | Power Input (kW)                               | 1.88                         |
|                                                             | COP                                            | 3.20                         |
| OPERATING AMBIENT TEMPERATURE (°C DB)                       |                                                | -20 ~ +35                    |
| SOUND DATA <sup>2</sup>                                     | Pressure Level at 1m (dBA)                     | 45                           |
|                                                             | Power Level (dBA) <sup>3</sup>                 | 58                           |
| WATER DATA                                                  | Pipework Size (mm)                             | 22                           |
|                                                             | Flow Rate (l/min)                              | 17                           |
|                                                             | Water Pressure Drop (kPa)                      | 8.0                          |
| DIMENSIONS (mm)                                             | Width                                          | 1050                         |
|                                                             | Depth                                          | 480                          |
|                                                             | Height                                         | 1020                         |
| WEIGHT (kg)                                                 |                                                | 98                           |
|                                                             |                                                |                              |
| ELECTRICAL DATA                                             | Electrical Supply                              | 220-240V, 50Hz               |
|                                                             | Phase                                          | Single                       |
|                                                             | Nominal Running Current [MAX] (A) <sup>5</sup> | 5.68 [13]                    |
|                                                             | Fuse Rating - MCB Size (A) <sup>6</sup>        | 16                           |
| REFRIGERANT CHARGE (kg)<br>/ CO <sub>2</sub> EQUIVALENT (t) |                                                | R32 (GWP: 675)<br>2.2 / 1.49 |

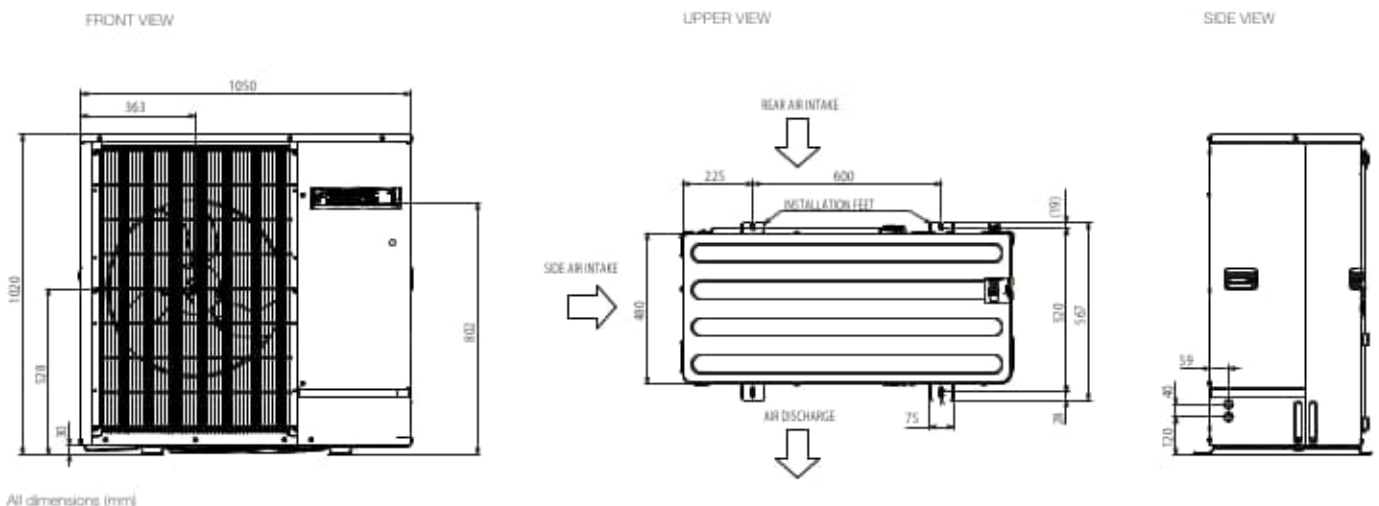
### Notes:

- <sup>1</sup> Combination with EPT20X Cylinder  
<sup>2</sup> Under normal heating conditions at outdoor temp: -7°CDB / -8°CWB, outlet water temp 35°C, inlet water temp 30°C.  
<sup>3</sup> Under normal heating conditions at outdoor temp: 7°CDB / 6°CWB, outlet water temp 55°C, inlet water temp 47°C as tested to BS EN14511.  
<sup>4</sup> Sound power level tested to BS EN12102.  
<sup>5</sup> Under nominal heating conditions at outdoor temp: 7°C, outlet water temp: 35°C.  
<sup>6</sup> MCB Sizes BS EN60898-2 & BS EN60947-2.  
 $\eta_{hp}$  is the seasonal space heating energy efficiency (SEHE)  $\eta_{wh}$  is the water heating energy efficiency

### NOMINAL HEATING CAPACITY



### PUZ-WM60VAA(-BS) DIMENSIONS



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**Note:** Refer to 'Installation Manual' and 'Instruction Book' for further 'Technical Information'. The fuse rating is for guidance only and please refer to the relevant databook for detailed specification. It is the responsibility of a qualified electrician/electrical engineer to select the correct cable size and fuse rating based on current regulation and site specific conditions. Mitsubishi Electric's air conditioning equipment and heat pump systems contain a fluorinated greenhouse gas, R410A (GWP:2088), R32 (GWP:675), R407C (GWP:1774), R134a (GWP:1430), R513A (GWP:631), R454B (GWP:466), R1234ze (GWP:7) or R1234yf (GWP:4). \*These GWP values are based on Regulation (EU) No 517/2014 from IPCC 4th edition. In case of Regulation (EU) No 626/2011 from IPCC 3rd edition, these are as follows: R410A (GWP:1975), R32 (GWP:550), R407C (GWP:1655) or R134a (GWP:1380).

Effective as of January 2025



# EHPT20X-MHEDW

FTC6 **Packaged** Cylinder  
For Ecodan R32 Monobloc Units

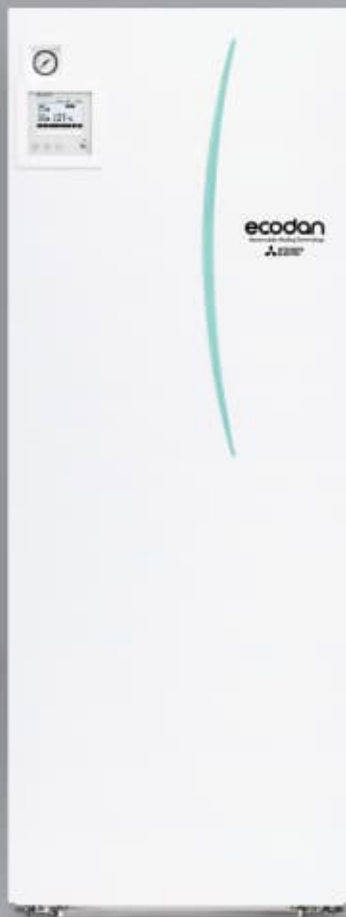
**R32**

## Key Features:

- Unvented plug & play packaged DHW cylinder
- Efficient & rapid heating
- Aesthetic, intelligent and ergonomic design
- Flexible 2-zone space heating control
- MELCloud enabled

## Key Benefits:

- Minimal installation time
- Excellent hot water recovery times
- Simple to locate and install
- Improved comfort and reduced energy use
- Remote control, monitoring, maintenance and technical support

**MELCloud**

**ecodan**<sup>®</sup>  
Renewable Heating Technology

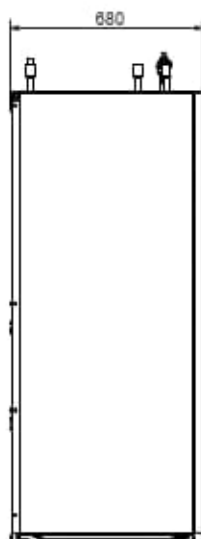
| CYLINDER                                                           |                       |                                                    | EHPT20X-MHEDW                                 |                |
|--------------------------------------------------------------------|-----------------------|----------------------------------------------------|-----------------------------------------------|----------------|
| NOMINAL HOT WATER VOLUME (LITRES)                                  |                       |                                                    | 200                                           |                |
| HEAT PUMP COMBINATION HEATER - Large Profile (Average Climate)     |                       | ErP Rating                                         | A+                                            |                |
| OPERATING AMBIENT TEMPERATURE (°C DB)                              |                       |                                                    | 0 ~ +35°C (RH<80%)                            |                |
| SOUND PRESSURE LEVEL AT 1M (dBA)                                   |                       |                                                    | 28                                            |                |
| WATER DATA                                                         |                       | Flow Rate (l/min) - HW/HW 50 / 60 / 85 / 112 / 140 | 14 / 17 / 24 / 32 / 37                        |                |
|                                                                    |                       | Primary Circuit Pump                               | Grundfos UPM3 15-75 130                       |                |
|                                                                    |                       | Sanitary Hot Water Pump                            | Grundfos UPS0 15-BII 130                      |                |
|                                                                    |                       | Connection Size (mm) Heating / DHW                 | 28 / 22                                       |                |
| WATER SAFETY DEVICES                                               | Heating Water Circuit | Control Thermostat (°C)                            | 1 - 80                                        |                |
|                                                                    |                       | Flow Sensor (minimum flow SL/min)                  | Supplied                                      |                |
|                                                                    | DHW Cylinder          | Control Thermostat (°C)                            | 75                                            |                |
|                                                                    |                       | Temp and Pressure Relief Valve (°C)/ (MPa (Bar))   | 90 / 0.7 (7)                                  |                |
| DIMENSIONS (mm)                                                    |                       | Width                                              | 595                                           |                |
|                                                                    |                       | Depth                                              | 680                                           |                |
|                                                                    |                       | Height                                             | 1600                                          |                |
| WEIGHT EMPTY / FULL (kg)                                           |                       |                                                    | 94 / 300                                      |                |
| ELECTRICAL DATA                                                    |                       | Control Board - optionally powered by outdoor unit | Electrical Supply                             | 220-240v, 50Hz |
|                                                                    |                       |                                                    | Phase                                         | Single         |
|                                                                    |                       |                                                    | Fuse Rating - MCB Sizes (A) <sup>1</sup>      | 10             |
|                                                                    |                       | Immersion Heater                                   | Electrical Supply                             | 220-240v, 50Hz |
|                                                                    |                       |                                                    | Phase                                         | Single         |
|                                                                    |                       |                                                    | Capacity (kW)                                 | 3              |
|                                                                    |                       |                                                    | Max Running Current (A)                       | 13             |
|                                                                    |                       |                                                    | Fuse Rating - MCB Sizes (A) <sup>1</sup>      | 16             |
| MECHANICAL ZONES                                                   |                       |                                                    | DHW and 1 Heating Zone <sup>2</sup>           |                |
| OPTIONAL SIMPLIFIED WIRELESS ROOM THERMOSTAT AND WIRELESS RECEIVER |                       |                                                    | PWR-WT50-E Controller and PWR-WR51-E Receiver |                |

<sup>1</sup> MCB Sizes BS EN60898-2 & BS EN60947-2 <sup>2</sup> Optional 2 zone accessory pack available

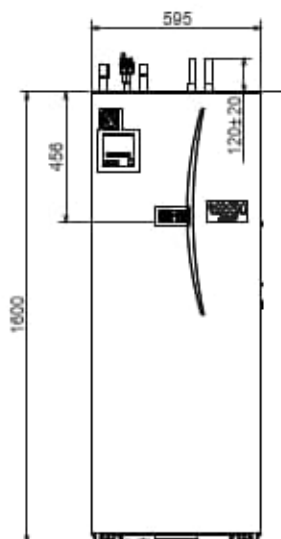
Notes: Cylinder includes: Flow Temperature Controller (FTC6) with Main Controller and Temperature Sensors, Pumps & Valves for Zone 1 and DHW use, Flow Sensor, Plate Heat Exchanger, Scale Trap, 3kW Immersion Heater

## EHPT20X-MHEDW DIMENSIONS

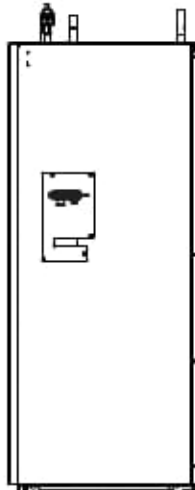
LEFT VIEW



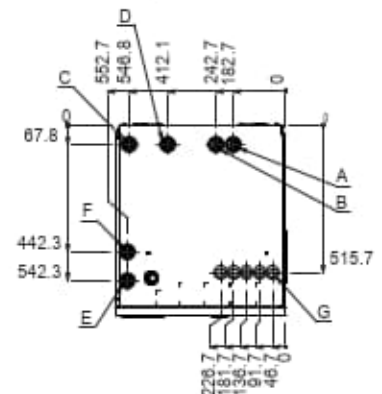
FRONT VIEW



RIGHT VIEW



UPPER VIEW



| Letter | Pipe Description                | Connection size/type |
|--------|---------------------------------|----------------------|
| A      | DHW outlet connection           | 22mm/Compression     |
| B      | Cold water inlet connection     | 22mm/Compression     |
| C      | Space heating return connection | 28mm/Compression     |
| D      | Space heating flow connection   | 28mm/Compression     |
| E      | Flow from heat pump connection  | 28mm/Compression     |
| F      | Return to heat pump connection  | 28mm/Compression     |
| G      | Electrical cable inlets         |                      |

All dimensions (mm)



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Note: Refer to 'Installation Manual' and 'Instruction Book' for further 'Technical Information'. The fuse rating is for guidance only and please refer to the relevant databook for detailed specification. It is the responsibility of a qualified electrical engineer to select the correct cable size and fuse rating based on current regulation and site specific conditions. Mitsubishi Electric's air conditioning equipment and heat pump systems contain a fluorinated greenhouse gas, R410A (GWP:2088), R32 (GWP:675), R407C (GWP:1774), R134a (GWP:1430), R513A (GWP:631), R454B (GWP:466), R1234ze (GWP:7) or R1234yf (GWP:4). These GWP values are based on Regulation (EU) No 517/2014 from IPCC 4th edition. In case of Regulation (EU) No 528/2011 from IPCC 3rd edition, these are as follows: R410A (GWP:1975), R32 (GWP:550), R407C (GWP:1650) or R134a (GWP:1300).

Effective as of August 2020



# PAC-IF072B-E

Ecodan Controller

FTC6 Standalone Controller

**R32**

## Key Features:

- Smart grid ready
- Step by step installation wizard
- Multiple quiet mode options
- Smart device ready (MELCloud)
- Remote control and monitoring

## Key Benefits:

- Store solar energy & benefit from agile tariffs
- Quick and easy system setup
- Tailor the system to user requirements
- Connect your heating to your smart home
- Advanced maintenance and technical support



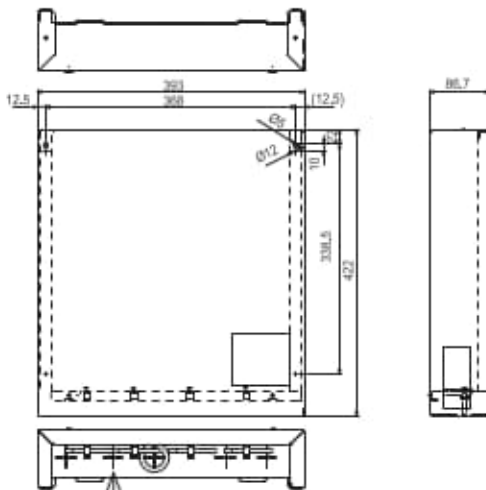
**ecodan**<sup>®</sup>  
Renewable Heating Technology

This controller is specifically designed to integrate within consumer homes and connect Mitsubishi Electric Ecodan Heat pumps with third party Domestic Hot Water tank and benefit from all MELCloud services.

| COMPATIBILITY MATRIX  | FTC6 - PAC-IF072B-E |
|-----------------------|---------------------|
| QUHZ-W40VA            |                     |
| PUZ-WM50VHA(-BS)      | ●                   |
| PUZ-WM60VAA(-BS)      | ●                   |
| PUZ-WM85(V/Y)AA(-BS)  | ●                   |
| PUZ-WM112(V/Y)AA(-BS) | ●                   |
| PUZ-WM140(V/Y)AA(-BS) | ●                   |

| INSTALLATION INFORMATION                                      |                                         |                |
|---------------------------------------------------------------|-----------------------------------------|----------------|
| FTC (MAIN) POWER SUPPLY                                       |                                         | ~N 230 V 50 Hz |
| FTC (MAIN) INPUT CAPACITY MAIN SWITCH (BREAKER) <sup>*1</sup> |                                         | 16 A           |
| WIRING<br>WIRING NO. x SIZE (mm <sup>2</sup> )                | FTC (MAIN) POWER SUPPLY                 | 2 x Min. 1.5   |
|                                                               | FTC (MAIN) POWER SUPPLY EARTH           | 1 x Min. 1.5   |
|                                                               | FTC (MAIN) - OUTDOOR UNIT <sup>*2</sup> | 2 x Min. 0.3   |
|                                                               | FTC (MAIN) - OUTDOOR UNIT EARTH         | -              |

#### DIMENSIONS



Electrical wires openings (x5). When the unit is installed these are facing down.

| WEIGHT                        |                |
|-------------------------------|----------------|
| PAC-IF072B-E                  | 4.1kg          |
| ALLOWABLE AMBIENT TEMPERATURE | 0 to 35°C      |
| ALLOWABLE AMBIENT HUMIDITY    | 80% RH or less |

| OUTPUTS | ITEM                                                                                                                      |
|---------|---------------------------------------------------------------------------------------------------------------------------|
| OUT1    | Water circulation pump 1 output (Space heating/cooling & DHW)                                                             |
| OUT2    | Water circulation pump 2 output (Space heating/cooling for Zone 1)                                                        |
| OUT3    | Water circulation pump 3 output (Space heating/cooling for Zone 2) <sup>*1</sup><br>& 2-way valve 2b output <sup>*2</sup> |
| OUT4    | 3-way valve (2-way valve 1) output                                                                                        |
| OUT5    | Mixing valve output <sup>*1</sup>                                                                                         |
| OUT6    | Booster heater 1 output                                                                                                   |
| OUT7    | Booster heater 2 output                                                                                                   |
| OUT8    | Cooling signal output                                                                                                     |
| OUT9    | Immersion heater output                                                                                                   |
| OUT10   | Boiler output                                                                                                             |
| OUT11   | Error output                                                                                                              |
| OUT12   | Defrost output                                                                                                            |
| OUT13   | 2-way valve 2a output <sup>*2</sup>                                                                                       |
| OUT14   | Water circulation pump 4 output (DHW)                                                                                     |
| OUT15   | Comp ON signal                                                                                                            |
| OUT16   | Heating/Cooling thermo ON signal                                                                                          |
| OUTA1   | Analog output                                                                                                             |
| BC      | Booster heater protection output                                                                                          |
| BHT     | Thermostat for booster heater                                                                                             |

Notes: <sup>\*1</sup> For 2-zone temperature control. <sup>\*2</sup> For 2-zone valve ON/OFF control.

| INPUTS | ITEM                                     |
|--------|------------------------------------------|
| IN1    | Room thermostat 1 input <sup>*1</sup>    |
| IN2    | Flow switch 1 input                      |
| IN3    | Flow switch 2 input (Zone 1)             |
| IN4    | Demand control input                     |
| IN5    | Outdoor thermostat 2 input <sup>*2</sup> |
| IN6    | Room thermostat 2 input <sup>*1</sup>    |
| IN7    | Flow switch 3 input (Zone 2)             |
| IN8    | Electric energy meter 1                  |
| IN9    | Electric energy meter 2                  |
| IN10   | Heat meter                               |
| IN11   | Smart Grid Ready Option 1                |
| IN12   | Smart Grid Ready Option 2                |
| INA1   | Flow sensor input                        |

#### Notes:

<sup>\*1</sup> Set the ON/OFF cycle time of the room thermostat to 10 minutes or more; excessive cycling can potentially reduce the lifetime of the compressor.

<sup>\*2</sup> If using outdoor thermostat for controlling operation of heaters, the lifetime of the heaters and related parts may be reduced.



# Harvest the Sunshine

DEEP BLUE 3.0 Light

Mono

405W MBB  
Half-cell Black Module  
JAM54S31 380-405/MR Series

## Introduction

Assembled with 11BB PERC cells, the half-cell configuration of the modules offers the advantages of higher power output, better temperature-dependent performance, reduced shading effect on the energy generation, lower risk of hot spot, as well as enhanced tolerance for mechanical loading.



Higher output power



Lower LCOE



Less shading and lower resistive loss

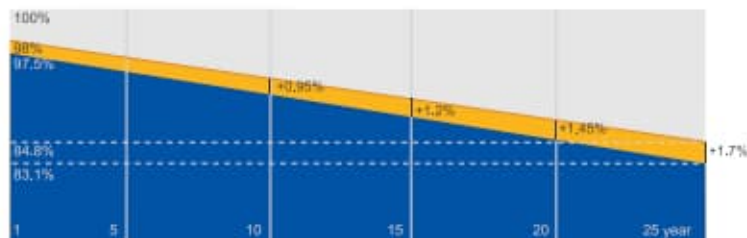


Better mechanical loading tolerance

## Superior Warranty

- 12-year product warranty
- 25-year linear power output warranty

0.55% Annual Degradation  
Over 25 years



■ New linear power warranty ■ Standard module linear power warranty

## Comprehensive Certificates

- IEC 61215, IEC 61730, UL 61215, UL 61730
- ISO 9001: 2015 Quality management systems
- ISO 14001: 2015 Environmental management systems
- ISO 45001: 2018 Occupational health and safety management systems
- IEC TS 62941: 2016 Terrestrial photovoltaic (PV) modules – Guidelines for increased confidence in PV module design qualification and type approval



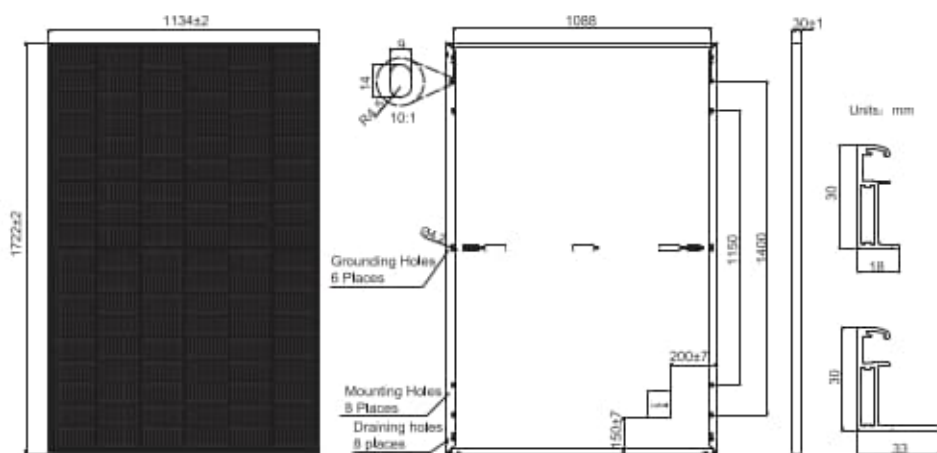
JASOLAR

[www.jasolar.com](http://www.jasolar.com)

Specifications subject to technical changes and tests.  
JA Solar reserves the right of final interpretation.



## MECHANICAL DIAGRAMS



Remark: customized frame color and cable length available upon request

## SPECIFICATIONS

|                                    |                                                                |
|------------------------------------|----------------------------------------------------------------|
| Cell                               | Mono                                                           |
| Weight                             | 21.5kg±3%                                                      |
| Dimensions                         | 1722±2mm×1134±2mm×30±1mm                                       |
| Cable Cross Section Size           | 4mm <sup>2</sup> (IEC) , 12 AWG(UL)                            |
| No. of cells                       | 108(6x18)                                                      |
| Junction Box                       | IP68, 3 diodes                                                 |
| Connector                          | MC4(1000V)<br>MC4-EVO2(1500V)                                  |
| Cable Length (Including Connector) | Portrait: 300mm(+)/400mm(-);<br>Landscape: 1200mm(+)/1200mm(-) |
| Packaging Configuration            | 36pcs/Pallet, 936pcs/40ft Container                            |

## ELECTRICAL PARAMETERS AT STC

| TYPE                                                            | JAM54S31<br>-380/MR                                             | JAM54S31<br>-385/MR | JAM54S31<br>-390/MR | JAM54S31<br>-395/MR | JAM54S31<br>-400/MR | JAM54S31<br>-405/MR |
|-----------------------------------------------------------------|-----------------------------------------------------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| Rated Maximum Power(P <sub>max</sub> ) [W]                      | 380                                                             | 385                 | 390                 | 395                 | 400                 | 405                 |
| Open Circuit Voltage(V <sub>oc</sub> ) [V]                      | 36.58                                                           | 36.71               | 36.85               | 36.98               | 37.07               | 37.23               |
| Maximum Power Voltage(V <sub>mp</sub> ) [V]                     | 30.28                                                           | 30.46               | 30.64               | 30.84               | 31.01               | 31.21               |
| Short Circuit Current(I <sub>sc</sub> ) [A]                     | 13.44                                                           | 13.52               | 13.61               | 13.70               | 13.79               | 13.87               |
| Maximum Power Current(I <sub>mp</sub> ) [A]                     | 12.55                                                           | 12.64               | 12.73               | 12.81               | 12.90               | 12.98               |
| Module Efficiency [%]                                           | 19.5                                                            | 19.7                | 20.0                | 20.2                | 20.5                | 20.7                |
| Power Tolerance                                                 | 0~+5W                                                           |                     |                     |                     |                     |                     |
| Temperature Coefficient of I <sub>sc</sub> (α <sub>Isc</sub> )  | +0.045%/°C                                                      |                     |                     |                     |                     |                     |
| Temperature Coefficient of V <sub>oc</sub> (β <sub>Voc</sub> )  | -0.275%/°C                                                      |                     |                     |                     |                     |                     |
| Temperature Coefficient of P <sub>max</sub> (γ <sub>Pmp</sub> ) | -0.350%/°C                                                      |                     |                     |                     |                     |                     |
| STC                                                             | Irradiance 1000W/m <sup>2</sup> , cell temperature 25°C, AM1.5G |                     |                     |                     |                     |                     |

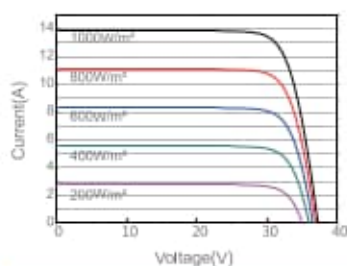
Remark: Electrical data in this catalog do not refer to a single module and they are not part of the offer. They only serve for comparison among different module types.

## ELECTRICAL PARAMETERS AT NOCT

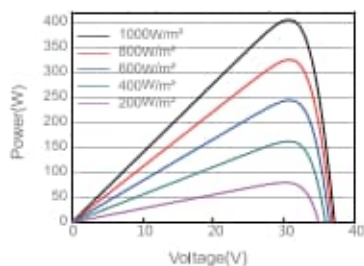
| TYPE                                        | JAM54S31<br>-380/MR                                                                | JAM54S31<br>-385/MR | JAM54S31<br>-390/MR | JAM54S31<br>-395/MR | JAM54S31<br>-400/MR | JAM54S31<br>-405/MR | OPERATING CONDITIONS        |                                |
|---------------------------------------------|------------------------------------------------------------------------------------|---------------------|---------------------|---------------------|---------------------|---------------------|-----------------------------|--------------------------------|
| Rated Max Power(P <sub>max</sub> ) [W]      | 286                                                                                | 290                 | 294                 | 298                 | 302                 | 306                 | Maximum System Voltage      | 1000V/1500V DC                 |
| Open Circuit Voltage(V <sub>oc</sub> ) [V]  | 34.36                                                                              | 34.49               | 34.62               | 34.75               | 34.88               | 35.12               | Operating Temperature       | -40 °C ~ +85 °C                |
| Max Power Voltage(V <sub>mp</sub> ) [V]     | 28.51                                                                              | 28.68               | 28.87               | 29.08               | 29.26               | 29.47               | Maximum Series Fuse Rating  | 25A                            |
| Short Circuit Current(I <sub>sc</sub> ) [A] | 10.75                                                                              | 10.82               | 10.89               | 10.96               | 11.03               | 11.10               | Maximum Static Load, Front* | 5400Pa(112lb/ft <sup>2</sup> ) |
| Max Power Current(I <sub>mp</sub> ) [A]     | 10.03                                                                              | 10.11               | 10.18               | 10.25               | 10.32               | 10.38               | Maximum Static Load, Back*  | 2400Pa(50lb/ft <sup>2</sup> )  |
| NOCT                                        | Irradiance 800W/m <sup>2</sup> , ambient temperature 20°C, wind speed 1m/s, AM1.5G |                     |                     |                     |                     |                     | NOCT                        | 45±2 °C                        |
|                                             |                                                                                    |                     |                     |                     |                     |                     | Safety Class                | Class II                       |
|                                             |                                                                                    |                     |                     |                     |                     |                     | Fire Performance            | UL Type 1                      |

## CHARACTERISTICS

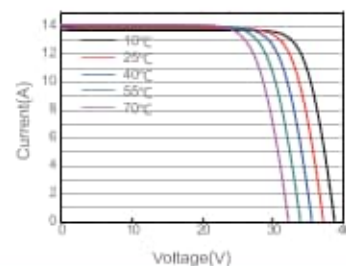
Current-Voltage Curve JAM54S31-405/MR



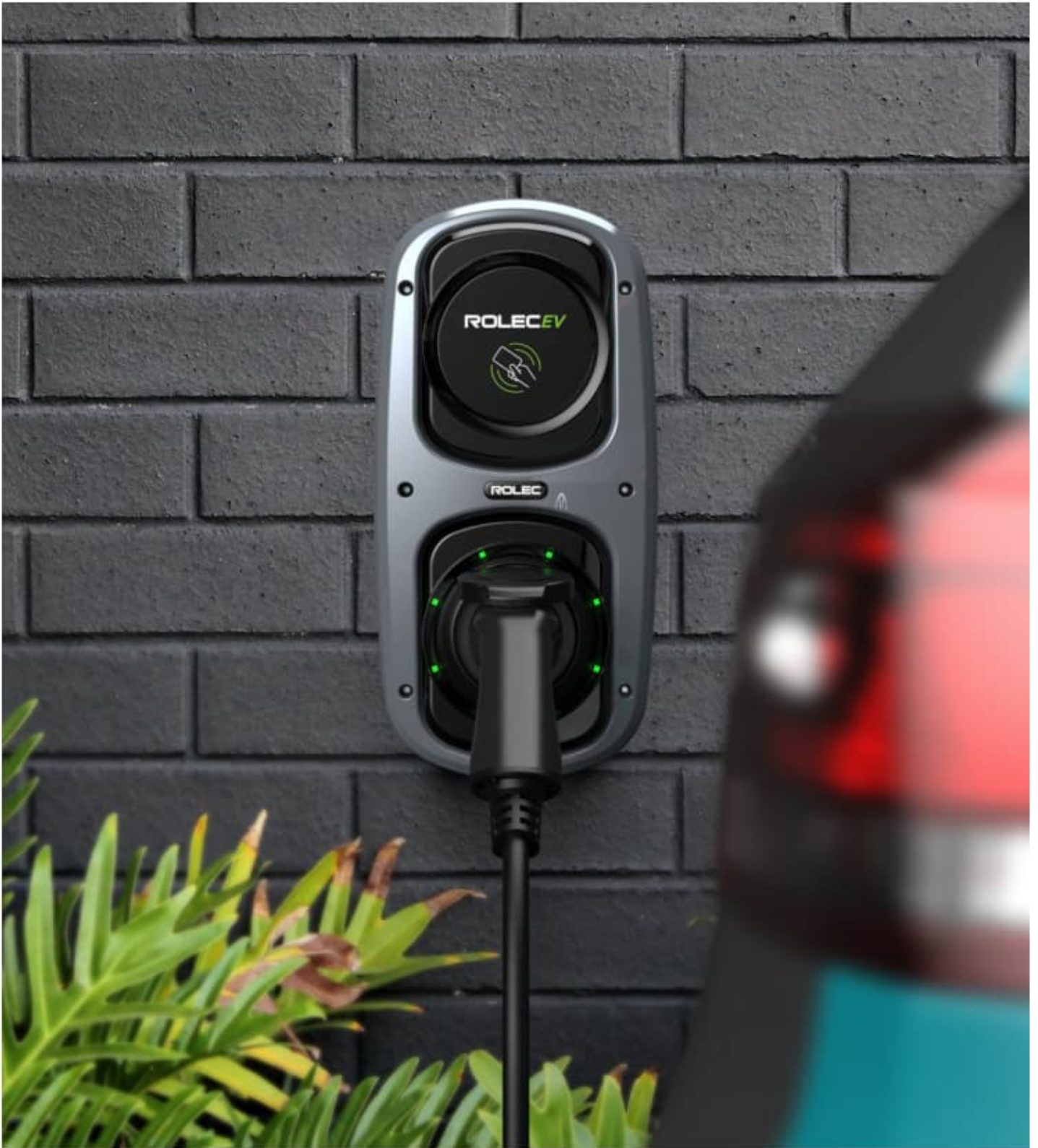
Power-Voltage Curve JAM54S31-405/MR



Current-Voltage Curve JAM54S31-405/MR







ROLEC **EV**

# WALLPOD

Intelligent EV charging unit



Manufactured  
in the UK

# WALLPOD

Intelligent EV charging unit

The WALLPOD is an affordable and reliable EV charging unit, which is ideal for both domestic and commercial locations, providing up to 7.4kW fast charging.

This future-proof OCPP compliant unit can offer a simple plug & charge or pay-to-charge solution via the EV driver's smartphone and/or RFID card/fob through any chosen OCPP back-office management system.

Feature-rich, this EV charger supports dynamic load balancing and is equipped with PME fault detection, so there is no requirement for an earth rod, reducing installation costs.

Domestic users can also charge their vehicle as sustainably as possible using their solar PV or other home renewables for a zero-cost, zero-carbon charge.\*

\*App dependent feature



**FREE app & support**

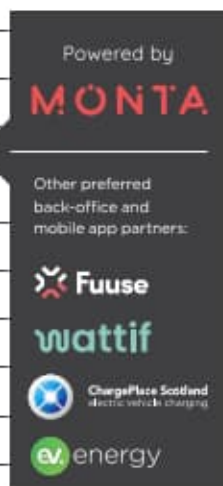
Domestic customers benefit from 3 years  
Monta app connectivity and support\*

\*Data fees may apply if connecting via 4G



# Product features

- Suitable for both domestic and commercial installations
- Plug & charge, mobile app or RFID controlled charging
- Universal charging socket or Type 2 tethered lead
- Up to 7.4kW charging output
- PME fault detection (no earth rod required)
- Dynamic load balancing (CT clamp & cable included)
- Solar PV, battery storage or wind turbine integration\*
- OCPP 1.6 compliant (can integrate with any back-office)
- Over-the-air firmware / software updates
- Built-in 6mA DC leakage protection
- Dual tamper and breach security notifications
- Cable lock security feature (can be permanently locked by user)
- Integrated RFID reader
- MID-approved energy metering
- 4G / Wi-Fi / Ethernet connectivity
- IK10 Impact resistant design
- Wall or post mounted
- OZEV grant fundable
- Designed & manufactured in the UK



\*App dependent feature



## OCPP 1.6 compliant

Ability to integrate with any OCPP compliant back-office management system and app.



## Easy to operate

Three quick and easy ways to operate: mobile app, RFID cards and fobs or plug & charge.



Office for Zero Emission Vehicles

## Eligible for grant funding

This range is approved for the OZEV EV Chargepoint Grant & Workplace Charging Scheme (WCS).



## 4G / Wi-Fi / Ethernet enabled

Complete with secure 4G, Wi-Fi and Ethernet connectivity, ensuring chargers are always online 24/7.



## Branding & colour options available

Rolec offer a bespoke chargepoint branding service; from logos & brand colours, to vinyl wraps.



## No earth rod required

Equipped with built-in PME fault detection, saving on installation time and costs.

## The details

### UP TO 7.4KW

This single phase charger provides up to 7.4kW fast charging.

WALLPOD is compatible with all EVs & PHEVs, charging at the fastest speed possible, ensuring vehicles are ready to go in no time.

### CHARGE FOR FREE!

Sync your solar PV, battery storage or wind turbine setup to benefit from sustainable, zero-cost, zero-carbon charging.

Smart home integration is also supported, so you can control your charger using Alexa or Google assistant.\*

### ACCURATE BILLING

Built-in MID-approved energy metering ensures accurate consumption reporting, which is essential for businesses and residential car parks, wishing to bill for their usage. Use our back-office management platform to generate revenue by setting your own tariffs.

### SAFE AND SECURE

Rest assured, Rolec's entire EV chargepoint range is fully UK Smart Charge Point Regulation compliant.

Over-the-air updates allow the chargers to receive the very latest features, ensuring a safe and future-proof product 24/7.

### 3 YEAR WARRANTY

Rolec EV chargepoints are designed, developed and manufactured in the UK and come with a 3 year warranty included as standard, for added peace of mind on your investment.



\*App dependant feature

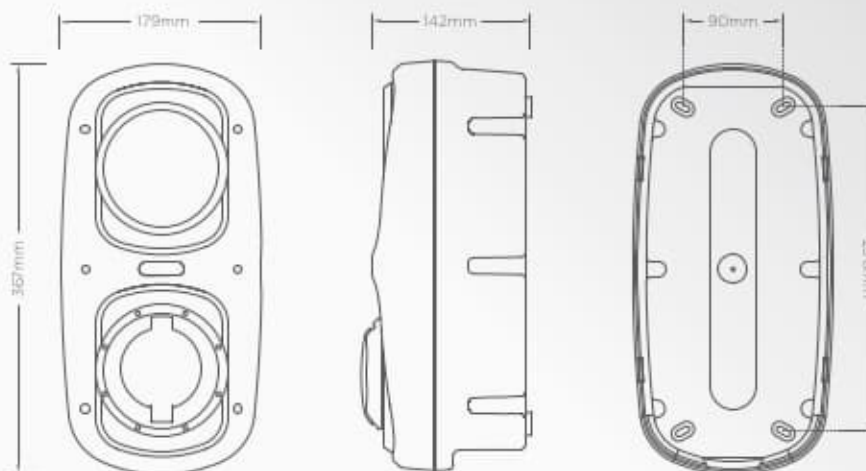
# Specifications

## Product Overview:

|                    | Connection Type                          | Charging Output   | Input Supply                                | Unit Colour | Product Code |
|--------------------|------------------------------------------|-------------------|---------------------------------------------|-------------|--------------|
| Single Phase Units | 1x Type 2 (IEC 62196) charging socket    | Up to 7.4kW (32A) | 1x 32A Single Phase 230V AC (±10 %) 50/60Hz | ● Grey      | ROLEC4020G   |
|                    |                                          |                   |                                             | ○ White     | ROLEC4020W   |
|                    |                                          |                   |                                             | ● Black     | ROLEC4020B   |
|                    | 1x Type 2 (IEC 62196) 5m tethered lead*  | Up to 7.4kW (32A) | 1x 32A Single Phase 230V AC (±10 %) 50/60Hz | ● Grey      | ROLEC4140G   |
|                    |                                          |                   |                                             | ○ White     | ROLEC4140W   |
|                    |                                          |                   |                                             | ● Black     | ROLEC4140B   |
|                    | 1x Type 2 (IEC 62196) 10m tethered lead* | Up to 7.4kW (32A) | 1x 32A Single Phase 230V AC (±10 %) 50/60Hz | ● Grey      | ROLEC4145G   |
|                    |                                          |                   |                                             | ○ White     | ROLEC4145W   |
|                    |                                          |                   |                                             | ● Black     | ROLEC4145B   |

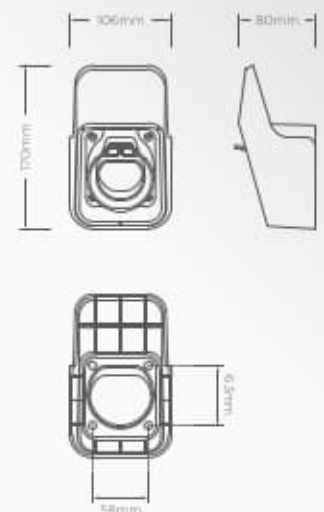
\*5m tethered leads (approx. 4.5m external) 10m tethered leads (approx. 9.5m external)

WallPod unit:



Type 2 charge gun holster:

Included with tethered units



# Specifications

## Technical Data:

|                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| User Interface               | <ul style="list-style-type: none"> <li>• Mobile app</li> <li>• RFID reader (MIFARE ISO/IEC 14443 A)</li> <li>• Plug &amp; charge</li> <li>• RGB LED status indicator halo - configurable</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Charge Protocol              | Mode 3 (IEC 61851-1)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Built-in Protection          | <ul style="list-style-type: none"> <li>• Over current protection</li> <li>• DC fault protection - 6mA</li> <li>• Lightning surge, over temperature protection</li> <li>• PME fault detection - No earth electrode/rod required</li> <li>• Supports automatic dynamic load balancing (may require additional hardware)</li> <li>• Supports static load management (software configurable)</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Required External Protection | <ul style="list-style-type: none"> <li>• AC overload &amp; fault current protection - A suitably rated 30mA Type-A RCBO or equivalent protection is required at source (dependent on cable type and/or route)</li> <li>• Surge Protection - May be required depending on the installation</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Cable Terminals              | <ul style="list-style-type: none"> <li>• Single Phase - 3x 50mm 1P + N + E</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Communications               | <ul style="list-style-type: none"> <li>• 4G LTE Cat-1 (built-in nano SIM, subscription required)               <ul style="list-style-type: none"> <li>• LTE FDD: B1/B3/B5/B7/B8/B20/B28</li> <li>• GSM: B2/B3/B5/B8</li> </ul> </li> <li>• Wi-Fi 802.11 b/g/n 2.4 GHz (2412-2472 MHz / 2422-2462 MHz)</li> <li>• NFC 13.56 MHz</li> <li>• RJ45 Ethernet connection</li> <li>• Bluetooth Low Energy (BLE 4.1) 2402-2480 MHz (for installer configuration purposes)</li> <li>• OCPP 1.6J</li> <li>• Cyber security - Data encryption level TLS 1.2</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Energy Metering              | Integrated Class 1 MID compliant metering                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Standby Power Consumption    | < 7.5W                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Dimensions                   | 179mm x 367mm x 142mm (W x H x D)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Weight                       | < 3kg to < 7kg(model dependant)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Environmental                | <ul style="list-style-type: none"> <li>• Ingress protection - Enclosure IP65, Socket IP54</li> <li>• Impact protection - IK10</li> <li>• Security - Dual tamper and breach notifications</li> <li>• Operating temperature - -30°C to +50°C</li> <li>• Operating humidity - 5% to 95%</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Materials                    | High impact resistant Polycarbonate                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Unit Colour                  |  Black  Grey  White  Branding available upon request                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Certifications & Compliances | <ul style="list-style-type: none"> <li>• EV Charging Compliance - EN 61851-1:2019, EN 61851-22:2002</li> <li>• Smart Charge Points - (SI 2021/1467)</li> <li>• Wiring Regulations - BS 7671:2018+A2:2022</li> <li>• EMC Compliance - EN 61000-6-3:2007+A1:2011, EN 61000-6-2:2005, 2014/30 /EU, SI 2016/1091</li> <li>• Safety Compliance (LVD) - EN 62368-1:2014, 2014/35/EU, SI 2016/1101</li> <li>• Communications / RED - EN 62311:2008, 2014/53/EU, SI 2017/1206, EN 300 330 V2.1.1 (2017-02), EN 301 908-1 V15.1.1 (2021-09), EN 301 908-13 V13.2.1 (2022-02), EN 301 511 V12.5.1 (2017-03), EN 300 328 V2.2.2 (2019-07), EN 300 440 V2.2.1 (2018-07)</li> <li>• Environmental Protection - BS EN 60529:1992+A2:2013</li> <li>• Impact Rating - BS EN 62262:2002+A1:2021</li> <li>• Metering - 2014/32/EU, SI 2016/1153</li> <li>• RoHS - 2011/65/EU, SI 2012/3032</li> <li>• REACH - 1907/2006, REACH etc. (Amendment) Regulations 2021</li> <li>• Certification Markings - CE &amp; UKCA</li> </ul> |
| Warranty                     | 3 years                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |



## Options & accessories

| Product Code | Item Description                                                                                  |
|--------------|---------------------------------------------------------------------------------------------------|
| RFID0010     | RFID card                                                                                         |
| RFID0020     | RFID fob                                                                                          |
| EVFP0010     | WallPod galvanised steel mounting post - 1350mm                                                   |
| EVFP0030     | Mounting post - fits up to 2 chargers                                                             |
| EVFP0040     | WallPod plate for mounting post                                                                   |
| EVFP0080     | WallPod holster plate for mounting post                                                           |
| EVCB0020     | Root mount protection barrier - 48mm                                                              |
| EVCB0040     | Surface mount protection barrier - 48mm                                                           |
| EVPS0010     | EV parking sign - A4 landscape<br>(Other sizes are available)                                     |
| EVPP0100     | 5m 32A Type 2 to Type 2 charging cable                                                            |
| EVPP0107     | 10m 32A Type 2 to Type 2 charging cable<br>(Other cables are available, including Type 1 options) |
| EVIN0010     | 20A Single Phase EV consumer unit with Type A RCBO                                                |
| EVIN0015     | 40A Single Phase EV consumer unit with Type A RCBO                                                |
| EVR50030     | Remote wall mount for Type 2 plug holster                                                         |
| ACSR0125     | 100A up to 35mm <sup>2</sup> screened CT clamp with 10m cable                                     |

RFID0010  
RFID0020

EVFP0030



EVPS0010



EVIN0010



ACSR0125



EVPP0100



### Branding & colour options available

Rolec offer a bespoke chargepoint branding service; from logos & brand colours, to vinyl wraps. This can be arranged at time of order. Contact Rolec for details.

Brand names, logos and trademarks used herein remain the property of their respective owners. This listing of any firm or their logos is not intended to imply any endorsement or direct affiliation with Rolec Services Ltd. and is purely to demonstrate branding opportunities.

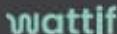
# Chargepoint management



Monta's chargepoint management platform provides businesses and organisations with the ability to deploy and self-manage their very own electric vehicle charging network. Ideal for workplace, fleet, commercial and residential locations.

-  Full & automated control of your chargepoints
-  Unlock additional revenue streams
-  Set chargepoints for public and/or private use
-  Set different pricing for individual chargepoints & groups
-  Dynamic pricing allows operators to set pricing in line with their hour-by-hour energy cost
-  Fully scalable solution; add or remove chargepoints & users
-  Complete fleet management solutions with analytical feedback & reporting
-  Reduce charging costs and CO<sub>2</sub> with Smart Charge feature
-  Vehicle integration provides visibility of battery size, SOC, percentage & location etc.
-  Automatically reimburse employees' home charging
-  Smart queuing system that sends notifications to drivers when they become available
-  Over-the-air updates and self-healing algorithms ensure charger stability & availability
-  Static, Dynamic or True Dynamic load balancing options
-  EV Roaming feature, allowing chargepoints to be available on other apps

Other preferred back-office partners:


+ many more

**Charge point settings**  
Set charge point to public:

Private ☒ Public ☐

**Reserve charge point**  
Book charge points at a time that suits you the best!

Reserve

**Easy payment for your employees**



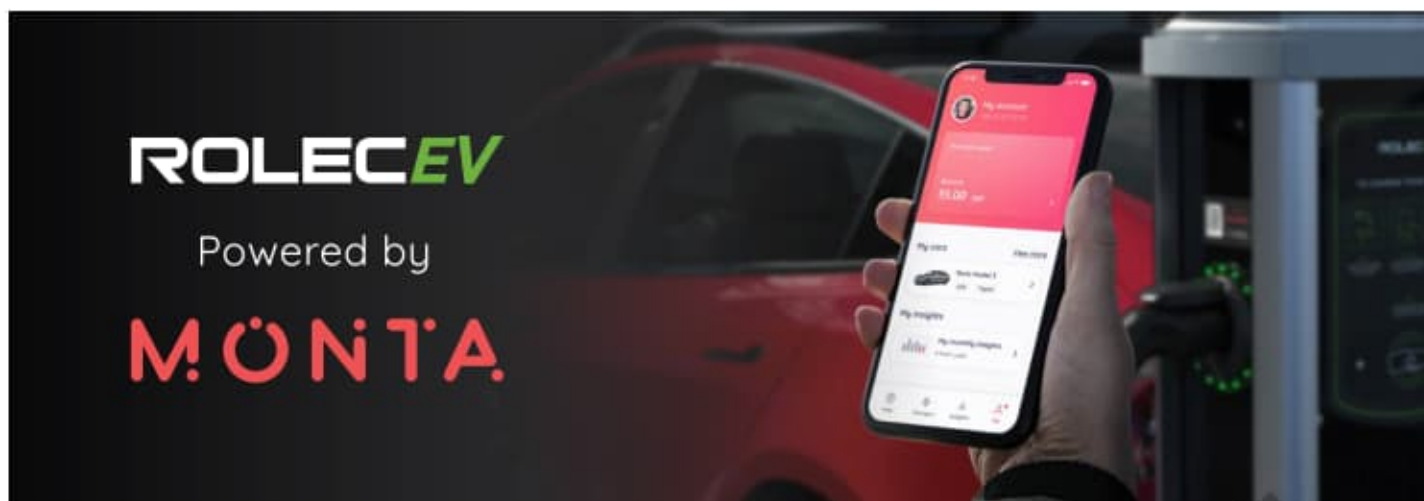


**Charge revenue**




► For more information about Monta's chargepoint management solutions and pricing, see the Powered by Monta Overview Sheet

# Chargepoint operation



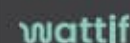
Charge your EV on your terms. With Monta you have full control over your charging experience, at home or on the road.

- Easily locate and navigate using the chargepoint map
- Remotely control your home EV charging
- Choose your ready time and choose to prioritise lower costs, lower CO<sub>2</sub> or only using renewable energy
- Schedule charges so your car is ready when you are
- Integrate with most EV manufacturer apps and cars
- Real-time information on your car and battery levels to maximize your charging experience
- Share and give charging access to friends, family and guests
- Set your home charger for public use with custom pricing
- Access to over 550,000 public chargepoints across Europe
- Easily initiate charging and complete payments via credit card, Apple Pay, Google Pay or Monta Wallet
- 24/7 online chat or email support for help when you need it most



The Monta app is 100% free with no subscription cost when charging at home

Other preferred mobile app partners:



## RFID activation

Great for quick activation, RFID cards or key fobs are easily accessible and add for a much simpler charging experience, which can also be used alongside the mobile app.



DOWNLOAD THE APP



▶ For more details about the Monta solution for EV drivers and the Monta app, please visit [www.monta.com/uk/home-charging](http://www.monta.com/uk/home-charging)



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The latest version of this publication can be downloaded at <https://www.rolecserv.com/downloads-ev-charging>

Illustrations of the product and user interface are for marketing purposes only.

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EV/WD-V02-R7 WallPod Data Sheet

**ROLEC**EV

[www.rolecserv.com](https://www.rolecserv.com)





# THRUTONE SMOOTH FIBRE CEMENT SLATES

Cedral Thrutone Smooth slates have a superb smooth finish and square edges, which will result in a classic, elegant roof. Our fibre cement slates are unmatched in strength, giving you peace of mind when you choose Cedral for your roof.

✓ Smooth surface

✓ Square edges

✓ Clean, sharp lines

## Technical data\*

|                                            |                                                                                                                                                                                                 |                                                                        |
|--------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------|
| Size of slate                              | 600mm x 300mm                                                                                                                                                                                   | 500mm x 250mm                                                          |
| Minimum pitch**                            |                                                                                                                                                                                                 |                                                                        |
| Moderate exposure                          | 22.5° (100mm lap)<br>20° (110mm lap)                                                                                                                                                            | 22.5° (100mm lap)                                                      |
| Severe exposure                            | 25° (100mm lap)<br>22.5° (110mm lap)                                                                                                                                                            | 25° (100mm lap)                                                        |
| Maximum pitch                              | 90°                                                                                                                                                                                             | 90°                                                                    |
| Typical laps                               | 100, 110mm                                                                                                                                                                                      | 100mm                                                                  |
| Slate hooks                                | Hook fixed 100-150mm                                                                                                                                                                            | Hook fixed 100mm                                                       |
| Maximum gauge                              | 245-250mm                                                                                                                                                                                       | 200mm                                                                  |
| Slate thickness                            | 4mm                                                                                                                                                                                             | 4mm                                                                    |
| Covering capacity (net)                    | 13.4 slates/m <sup>2</sup> at 100mm lap<br>13.6 slates/m <sup>2</sup> at 110mm lap<br>14.8 slates/m <sup>2</sup> at 150mm lap                                                                   | 20.0 slates/m <sup>2</sup> at 100mm lap                                |
| Weight of slating (approx.)                | 20.4 kg/m <sup>2</sup> (0.20 kN/m <sup>2</sup> ) at 100mm lap<br>20.9 kg/m <sup>2</sup> (0.20 kN/m <sup>2</sup> ) at 110mm lap<br>22.8 kg/m <sup>2</sup> (0.20 kN/m <sup>2</sup> ) at 150mm lap | 21.3 kg/m <sup>2</sup> (0.21 kN/m <sup>2</sup> ) at 100mm lap          |
| Battens required (net)                     | 4.00 lin.m/m <sup>2</sup> at 100mm lap<br>4.08 lin.m/m <sup>2</sup> at 110mm lap<br>4.45 lin.m/m <sup>2</sup> at 150mm lap                                                                      | 5.00 lin.m/m <sup>2</sup> at 100mm lap                                 |
| Batten size recommended (fixed to BS 5534) | 50 x 25mm for rafters/ supports not exceeding 600mm centres                                                                                                                                     | 50 x 25mm for rafters/ supports not exceeding 600mm centres            |
| Fixings                                    | Slate nails (30 x 2.65mm)<br>Copper disc rivets (19mm dia. x 2mm stem)                                                                                                                          | Slate nails (30 x 2.65mm)<br>Copper disc rivets (19mm dia. x 2mm stem) |
| Fittings screws                            | 14 gauge self sealing                                                                                                                                                                           | 14 gauge self sealing                                                  |
| Slate hooks***                             | Length equal to lap                                                                                                                                                                             | Length equal to lap                                                    |
| Authority                                  | BS EN 492                                                                                                                                                                                       | BS EN 492                                                              |

\* Cedral fibre cement slates meet the strength requirement of BS EN 492, achieving an average bending movement greater than 50 N/mm (Class B). The slates also have a minimum density of 1700kg/m<sup>3</sup> and a nominal thickness of 4mm.

\*\* The minimum recommended pitch and lap may be influenced by special circumstances, please contact the Technical Advisory Team for further information.

\*\*\* When using slate hooks, the perimeter/local areas (as defined by BS 5534) will require nails and rivets.

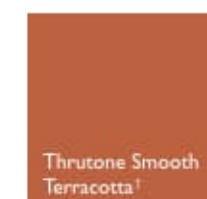
## Sustainability

|                                  |                                                             |
|----------------------------------|-------------------------------------------------------------|
| Green guide rating               | A+ (Element ref: 812410008)                                 |
| BES 6001                         | Very good – can achieve 3 credits                           |
| Credit uplift available with EPD |                                                             |
| Embodied carbon                  | Low carbon footprint of 16 CO <sub>2</sub> e/m <sup>2</sup> |

The printing process restricts the exact representation of colours. For true colour reference, please request product samples.



Thrutone Smooth Blue-Black



Thrutone Smooth Terracotta<sup>†</sup>



Thrutone Smooth Turf Brown<sup>†</sup>



Thrutone Smooth Stone Green<sup>†</sup>



Thrutone Smooth Russet<sup>†</sup>



Thrutone Smooth Heather<sup>†</sup>

## Other shapes



Bullnose<sup>†</sup>



Scalloped<sup>†</sup>



Chamfered<sup>†</sup>









| Product name                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                   | Product group                                                                                                                                                                                                | Production location |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|
| Ledbury                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                   | L3                                                                                                                                                                                                           | Lanklaar            |
| The raw materials are excavated in Weichsel loam layers, the local loam of Aeolian origin dating from the Ice Age. This löss mainly consists of a silt-like fraction, suited ideally for the manufacturing of hand form bricks. By using specific sand types for surface covering, the desired colour is achieved.                                                                                                                            |                                                   |                                                                                                                                                                                                              |                     |
| Colour                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                   |                                                                                                                                                                                                              |                     |
| a shade of yellow to brown and black                                                                                                                                                                                                                                                                                                                                                                                                          |                                                   |                                                                                                                                                                                                              |                     |
| Format                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                   |                                                                                                                                                                                                              |                     |
| Moulding method                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                   | Hand form                                                                                                                                                                                                    |                     |
| DF: 215 x 102 x 65 mm                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                   | Between batches the average size and color may slightly differ.                                                                                                                                              |                     |
| Essential Characteristics - EN771-1                                                                                                                                                                                                                                                                                                                                                                                                           |                                                   |                                                                                                                                                                                                              |                     |
|  EN 771-1 - CPR-97884 NOBO 0063 (ex 0620)                                                                                                                                                                                                                                                                                                                    |                                                   |  EN 771 - 1855-CPR-24914                                                                                                    |                     |
| 2+                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                   | 2+                                                                                                                                                                                                           |                     |
| Dimensional tolerances                                                                                                                                                                                                                                                                                                                                                                                                                        | T2                                                |                                                                                                                                                                                                              |                     |
| Range                                                                                                                                                                                                                                                                                                                                                                                                                                         | R1                                                |                                                                                                                                                                                                              |                     |
| Active Soluble Salts                                                                                                                                                                                                                                                                                                                                                                                                                          | S2                                                |                                                                                                                                                                                                              |                     |
| Mean Compressive strength                                                                                                                                                                                                                                                                                                                                                                                                                     | $\geq 20 \text{ N/mm}^2$                          | Tested to the bed face                                                                                                                                                                                       |                     |
| Normalized Compressive strength                                                                                                                                                                                                                                                                                                                                                                                                               | NPD                                               | Tested to the bed face                                                                                                                                                                                       |                     |
| Dimensional stability                                                                                                                                                                                                                                                                                                                                                                                                                         | NPD                                               |                                                                                                                                                                                                              |                     |
| Bond Strength general                                                                                                                                                                                                                                                                                                                                                                                                                         | $0,15 \text{ N/mm}^2$                             |                                                                                                                                                                                                              |                     |
| Bond Strength thin layer                                                                                                                                                                                                                                                                                                                                                                                                                      | $0,30 \text{ N/mm}^2$                             |                                                                                                                                                                                                              |                     |
| Reaction to fire                                                                                                                                                                                                                                                                                                                                                                                                                              | A1                                                | Category                                                                                                                                                                                                     |                     |
| Water absorption                                                                                                                                                                                                                                                                                                                                                                                                                              | $\leq 17\% \text{ m/md}$                          |                                                                                                                                                                                                              |                     |
| Water vapour permeability                                                                                                                                                                                                                                                                                                                                                                                                                     | 5/10                                              |                                                                                                                                                                                                              |                     |
| Net dry density                                                                                                                                                                                                                                                                                                                                                                                                                               | $1640 \text{ kg/m}^3 \text{ (D1)}$                |                                                                                                                                                                                                              |                     |
| Gross dry density                                                                                                                                                                                                                                                                                                                                                                                                                             | $1530 \text{ kg/m}^3 \text{ (D1)}$                |                                                                                                                                                                                                              |                     |
| Thermal conductivity Lambda 50/50                                                                                                                                                                                                                                                                                                                                                                                                             | $\leq 0,55 \text{ W/m.K}$                         |                                                                                                                                                                                                              |                     |
| Durability against freeze thaw                                                                                                                                                                                                                                                                                                                                                                                                                | F2                                                |                                                                                                                                                                                                              |                     |
| Dangerous substances                                                                                                                                                                                                                                                                                                                                                                                                                          | NL-BSB                                            | According to Annex ZA 3                                                                                                                                                                                      |                     |
| Other Characteristics                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                   |                                                                                                                                                                                                              |                     |
| Initial rate of water absorption - Non-coated Bricks                                                                                                                                                                                                                                                                                                                                                                                          | $1,5 - 4,0 \text{ kg/m}^2 \cdot \text{min (IW3)}$ | Value according EN771-1:2011 - 5.3.8                                                                                                                                                                         |                     |
| Initial rate of water absorption - Coated bricks                                                                                                                                                                                                                                                                                                                                                                                              | $0,5 - 1,5 \text{ kg/m}^2 \cdot \text{min (IW2)}$ | Value according EN771-1:2011 - 5.3.8                                                                                                                                                                         |                     |
| Freeze/thaw resistance - PTV 23-002                                                                                                                                                                                                                                                                                                                                                                                                           | NPD                                               | NBN 27-009                                                                                                                                                                                                   |                     |
| Thermal conductivity Lambda 90/90                                                                                                                                                                                                                                                                                                                                                                                                             | $0,60 \text{ W/m.K}$                              |                                                                                                                                                                                                              |                     |
| Thermal conductivity Lambda Ui                                                                                                                                                                                                                                                                                                                                                                                                                | $0,644 \text{ W/m.K}$                             |                                                                                                                                                                                                              |                     |
| Thermal conductivity Lambda Ue                                                                                                                                                                                                                                                                                                                                                                                                                | $1,27 \text{ W/m.K}$                              |                                                                                                                                                                                                              |                     |
| <div></div> |                                                   |                                                                                                                                                                                                              |                     |
| Storage & handling                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                   | Cutting                                                                                                                                                                                                      |                     |
| <ul style="list-style-type: none"><li>- Store packs on a clean surface and cover them</li><li>- Process from multiple packs at the same time</li><li>- Follow the Vandersanden processing guidelines</li></ul>                                                                                                                                                                                                                                |                                                   | Cutting with power tools may generate dust. This dust may contain silica or quartz particulate which may constitute a hazard. Persons undertaking work of this nature are advised to wear dust masks (FFP3). |                     |
| *All our Coated bricks are only coated on the facing sides. Coated products are specially labeled and recognisable with a "C" logo on the top left-hand side of the packaging. Always check if using coated or non-coated bricks. Match the mortar to the specified initial water absorption.                                                                                                                                                 |                                                   |                                                                                                                                                                                                              |                     |



**15 Year**  
Warranty

**James Hardie brings unique designs  
to life with beautiful fibre cement  
products that are built to last.  
It's Possible™**



**Hardie® VL Plank**  
Light Mist



A close-up photograph of a dark grey or black horizontal plank with a pronounced wood grain texture. The grain runs horizontally across the frame, showing natural-looking knots and variations in tone.

**Hardie® Plank**

A close-up photograph of a dark grey or black horizontal plank with a pronounced wood grain texture. The grain runs horizontally across the frame, showing natural-looking knots and variations in tone.

**Hardie® VL Plank**

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# We all have a dream for our home and with James Hardie, It's Possible™

If you're looking for a versatile, low maintenance with a natural and beautiful texture, look no further than **Hardie®** fibre cement cladding. It's the facade of choice for builders, architects and homeowners alike, protecting and beautifying millions of homes worldwide.

- Most natural look with premium colour range
- Low maintenance thanks to unique ColourPlus™ Technology finishes
- At least 20 % faster installation

**15 Year**  
Warranty





Hardie® VL Plank horizontal installation in Light Mist



# Introducing the Hardie® Plank products

**Hardie® Plank** products include two profiles, made from advanced material fibre cement. With an A2-s1, d0 fire rating, our boards are non-combustible and offer the best fire protection possible for any coloured facade board.

## Hardie® Plank fibre cement cladding



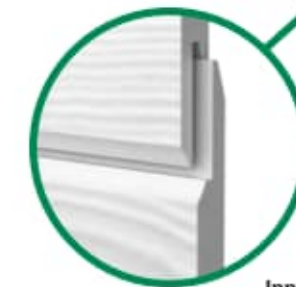
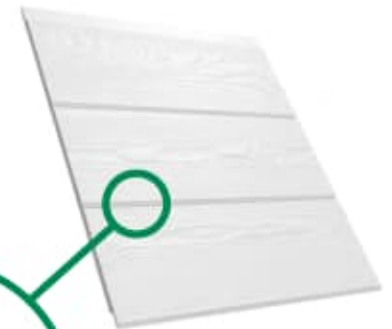
Dimensions: 3600 x 180 x 8mm  
Weight per piece: 7.4kg  
Pieces per m²: 1.85  
Visible surface: 150 - 180mm  
Colours: 21  
Textures: Cedar and Smooth



## Hardie® VL Plank fibre cement cladding



Dimensions: 3600 x 214 x 11mm  
Weight per piece: 10.5kg  
Pieces per m²: 1.52  
Visible surface: 182mm  
Colours: 8  
Textures: Cedar



**Innovative interlocking system**  
Hardie® VL Plank profiles offer hidden fixing, thanks to our innovative tongue and groove system that does not require any additional accessories for fixing and can easily be nailed.



### BBA Certified

Hardie® cladding has been assessed by the British Board of Agrément and has been awarded BBA certificate number 04/4147.

# Create interest with installation styles

Installation is quick and easy, offering maximum flexibility with options to fit our boards horizontally, vertically, ship-lapped or open jointed.

## Hardie® Plank cladding

Create a classic finish with Hardie® Plank boards in horizontal lap, vertical hit and miss or open joint styles, playing around with different colours and textures.



Hardie® Plank cladding  
vertical hit and miss



Hardie® Plank cladding  
horizontal overlap

## Hardie® VL Plank cladding

The seamless interlock of Hardie® VL Plank cladding epitomises architectural modern design, perfect for both horizontal and vertical installation. The clip-less system is 20% faster to install than comparable interlock solutions.



Hardie® VL Plank cladding  
horizontal installation



Hardie® VL Plank cladding  
vertical installation

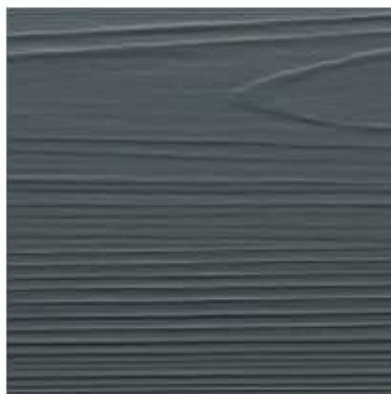


# Choose long-lasting colour

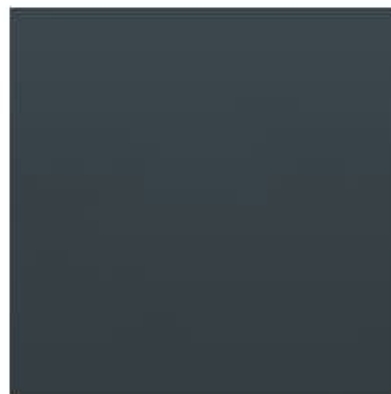
The **Hardie®** fibre cement range is available in two textures and a variety of vibrant colours using **ColourPlus™** Technology – our multi-coat, baked-on finish that gives a durable, fade-resistant finish that lasts for years to come. Combining distinct beauty and high performance in a way that no other finish does.

- 21 colours for **Hardie® Plank** cladding
- 8 colours for **Hardie® VL Plank** cladding
- Unique **ColourPlus™** Technology finishes

## Textures



Cedar



Smooth

## Colours

■ Hardie® Plank ● Hardie® VL Plank



Arctic White ■ ●



Sail Cloth ■ ●



Light Mist ■ ●



Grey Slate ■ ●



Anthracite Grey ■ ●



Midnight Black ■ ●



Cobble Stone ■



Woodland Cream ■



Soft Green ■



Pearl Grey ■



Monterey Taupe ■



Khaki Brown ■ ●



Heathered Moss ■



Mountain Sage ■



Boothbay Blue ■



Evening Blue ■



Traditional Red ■



Chestnut Brown ■ ●



Timber Bark ■



Rich Espresso ■



Iron Grey ■

Our colour palette has been developed with leading industry experts and is bespoke to cladding products from James Hardie.

# The finishing touch

Trim is that final touch that completes your home's design. Accentuate corners, columns, doors, windows and more with our complementary trims.



**Hardie® NT3® Trim fibre cement profile**  
for exterior corners:  
Dimensions: 3655 x 90/140 x 25mm



**Hardie™ Plank MetalTrim™ profile**  
for exterior corners:  
Length: 3000mm



**Hardie® NT3® Trim profile**  
for interior corners:  
Length: 3000mm

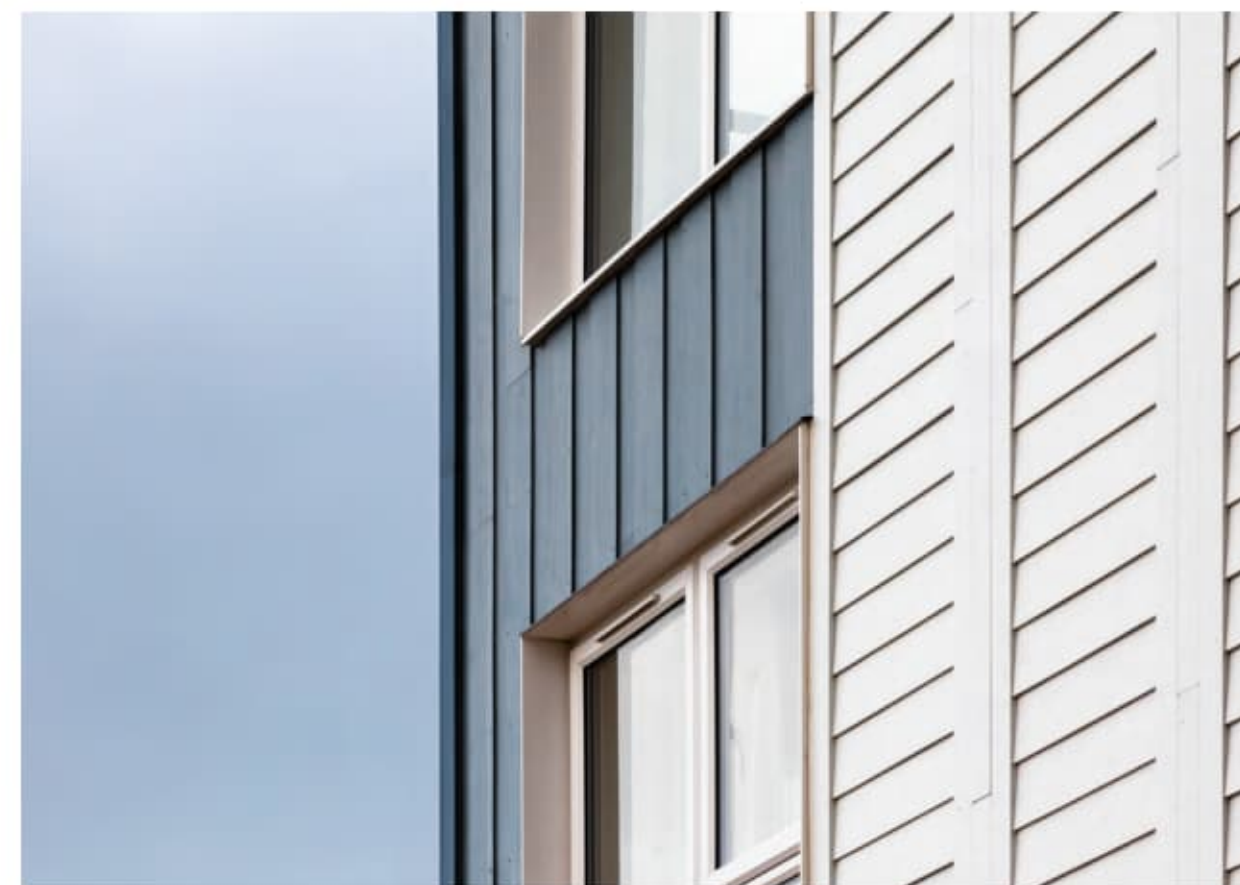


**Hardie® VL Plank 2-Part profile**  
for exterior corners:  
Length: 3000mm

# Design flexibility



Hardie® Plank lap cladding combined with brick – Colour: Iron Grey



Hardie® Plank cladding in a combination of vertical hit and miss and horizontal overlap look – Colours: Boothbay Blue and Arctic White



Hardie® VL Plank cladding installed horizontally – Colour: Arctic White



Hardie® VL Plank cladding installed horizontally – Colour: Anthracite Grey

# Home renovations

This stunning refurbishment saw an extension and new build garage block transformed with render and Soft Green **Hardie® Plank** cladding, brought together to create an elegant countryside retreat.

The property, located near Galleywood Common in Chelmsford, was originally a self-build home constructed in the 1960s. Over time, the house aged badly and the owners decided a full refurbishment was due.



Before

Hyland Homes was commissioned to overhaul the property through construction of a large extension and detached garage block. The end result is a complete transformation into what is now a highly desirable, classically designed home.



After

” **Hardie® Plank** is our ‘go to’ recommendation for any homeowner wanting a classic facade that endures.

Premium Stockist



” Mixing traditional with modern was key to our design and so we quickly switched to **Hardie® VL Plank** for the crisp, clean lines to contrast with the exposed stone.

Private Homeowner



This traditional home in Harrogate was extended at the rear with a new double-storey extension and contrasting tongue and groove **Hardie® VL Plank** cladding on the upper level.

The homeowner chose **Hardie® VL Plank** boards for their fresh, symmetrical look and low maintenance properties.

Here, Anthracite Grey in Cedar texture complements the local stone to offer a strong contrast. The end result is a striking renovation that beautifully captures the character of the home's local heritage.



# Future-proof your home

Choosing the right cladding for your home is an important decision, with each cladding type offering a variety of options in texture, colour, size, finish and installation method. Ultimately, the choice of facade material may be decided by a number of considerations.



Hardie® Plank range



Wood

## Durability

Thanks to its special yet natural composition, Hardie® fibre cement can withstand the effects of the weather in a wide variety of climates. For a permanently beautiful and durable facade.

Wood cladding and uPVC may be susceptible to fading, cracking and sagging over time.

## Low maintenance

Hardie® Plank range comes with ColourPlus™ Technology, a multi-coat, baked-on finish that is fade-resistant and does not require regular repainting.

As a result of fading, painted wood needs to be repainted every 5 years, and stained wood treated every 3 years. uPVC cladding may also be susceptible to fading, discolouration and cannot be repainted.



Hardie® Plank range



Wood

## Fire resistance

Hardie® Plank range will not ignite when exposed to direct flame or extreme heat; it is non-combustible with a fire classification of A2-s1, d0 – the highest possible fire rating for a coloured facade board.

Combustible material like wood burns easily and very quickly, producing significant amounts of heat and smoke. uPVC cladding can melt and warp when exposed to fire.



Hardie® Plank range



Wood



Hardie® Plank range



Wood

## Moisture resistance

Tried and tested, our boards offer long-lasting protection and stand up beautifully, whatever the weather.

Humidity and precipitation may cause paint to crack and peel prematurely when using wood-based products as they expand and contract due to changes in climate conditions. Moisture may also cause rotting, swelling and shrinkage.

uPVC cladding is also known to become brittle and susceptible to cracking when cold.

## Pest resistance

Hardie® Plank range is resistant to pests and rodents, which can cause considerable damage to wooden facades.

Both wood and uPVC cladding are vulnerable to pest infestation. In the long run, the material would need to be replaced.



Hardie® Plank range



Wood

# Inspiration & information

Further product information  
and solutions:

**[Jameshardie.co.uk](http://Jameshardie.co.uk)**

With our online colour  
visualiser tool, you are one  
step closer to making your  
exterior design a reality.

Try it here:

**[Design.Jameshardie.co.uk](http://Design.Jameshardie.co.uk)**

You will find the latest version of this brochure in digital form on our website. Technical modifications subject to changes. Should you require additional information, please contact our customer service. All our products with ColourPlus™ Technology come with a 15-year warranty. More detailed information can be found on our website. Last updated 03/2023.

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**Hardie® Plank range  
Personalised Sample Box**

Scan the code to order samples directly to your home.



**Hardie® VL Plank  
Installation Video**

Scan the code to watch the step-by-step installation video.



**James Hardie Building Products Ltd**

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