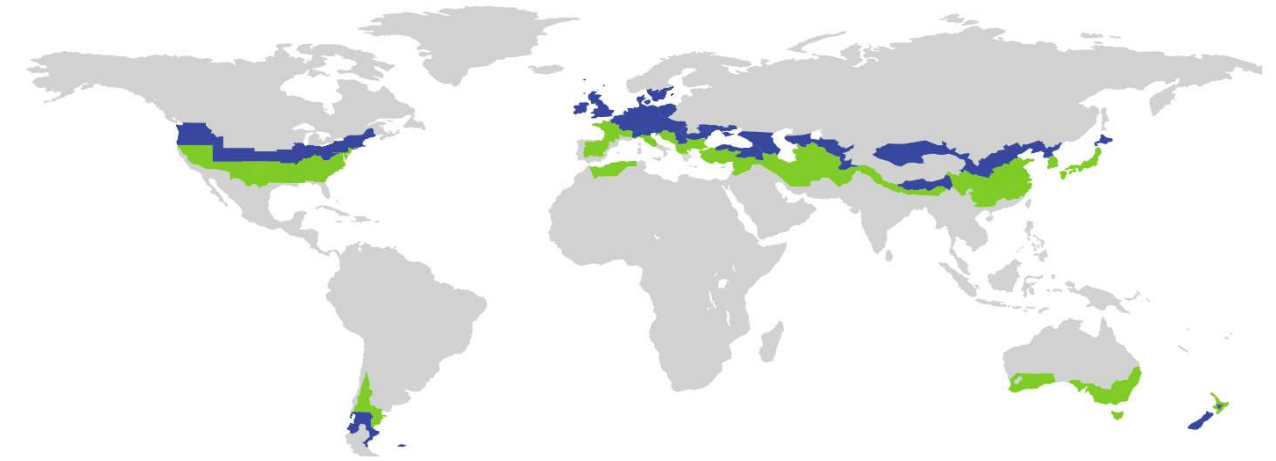


# CERTIFICATE

Certified Passive House Component

ID: 1041cs03 valid until 31. December 2018

Passive House Institute  
Dr. Wolfgang Feist  
64342 Darmstadt  
GERMANY



Category **Construction system | Lightweight timber construction**  
Manufacturer **Moffitt & Robinson Construction Ltd.**  
**BT78 1SU**  
**UNITED KINGDOM**  
Product name **Morob Frame**

**This certificate for the cool, temperate climate zone was awarded based on the following criteria**

#### Hygiene criterion

The minimum temperature factor of the interior surfaces is

$$f_{Rsi=0,25m^2K/W} \geq 0,70$$

#### Comfort criterion

The U-value of the installed windows is

$$U_{W,i} \leq 0,85 \text{ W}/(\text{m}^2\text{K})$$

#### Efficiency criteria

Heat transfer coefficient of building envelope

$$U \cdot f_{PHI} \leq 0,15 \text{ W}/(\text{m}^2\text{K})$$

Temperature factor of opaque junctions

$$f_{Rsi=0,25m^2K/W} \geq 0,86$$

Thermal bridge-free design for key connection details

$$\Psi \leq 0,01 \text{ W}/(\text{m}^2\text{K})$$

An airtightness concept for all components and connection details was provided



**Opaque building envelope**

Morob is a lightweight timber-frame construction system. The external walls comprise timber studs and mineral wool (ISOVER Metac, 0.034 W/(mK), Rockwool Roll, 0.044 W/(mK)). The walls are designed to be used with a ventilated rainscreen to the exterior, for which additional point thermal bridges may need to be taken into account in the PHPP. Two roof options are included, pitched and cold roof, both comprising 'open' timber beams and solid beams with mineral wool (Rockwool Roll, 0.044 W/(mK)). The floor comprises poured concrete, PIR insulation (Quinn Therm QF, 0.022 W/(mK)) and cement screed. The system has undergone analysis by the Passive House Institute against the thermal performance criteria for cool-temperate climate zones and has been deemed suitable for the construction of passive houses in both this and and warm-temperate climates.

**Windows**

Analysis was undertaken using a generic, passive house-standard timber-framed, triple-glazed window unit, featuring phA thermal values for the spacer. For the roof windows, a VELUX GGU-008230 window was used, which features a TGI spacer. PIR Insulation (Ballythermm, 0,022 W/(mK)) is used at the window installations. The calculations undertaken demonstrate that the window installation locations are suited to the cool-temperate climate zone, with no risk of surface condensation.

**Airtightness concept**

The airtightness of the construction system is achieved through the use of a certified airtight OSB product (e.g. Smartply Propassiv) within the external walls, and an airtight membrane in the roof and floor build-ups. Connections are taped using specialist air tightness tape.

**Explanatory notes**

The Passive House Institute has defined international component criteria for seven climate zones based on hygiene-, comfort- and affordability criteria. In principle, components which have been certified for climate zones with higher requirements may also be used in climates with less stringent requirements. This use might make sense in certain circumstances.

Thermal bridge not calculated  
Criteria achieved

Efficiency criteria not achieved  
Hygiene or comfort criterion not achieved

