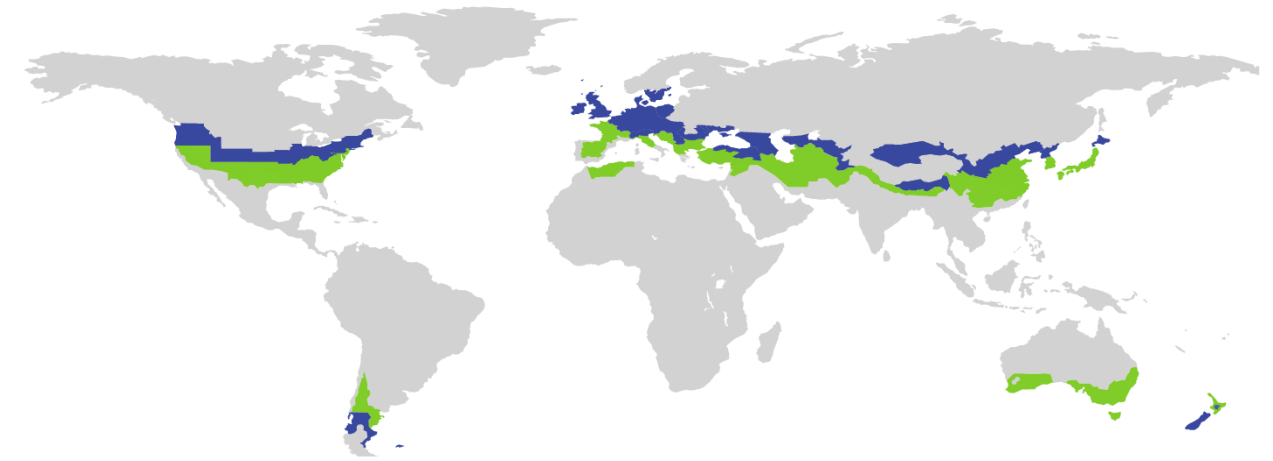


# CERTIFICATE

Certified Passive House Component

ID: 0923cs03 valid until 31. December 2019

Passive House Institute  
Dr. Wolfgang Feist  
64342 Darmstadt  
GERMANY



Category **Construction system | Lightweight timber Construction**  
Manufacturer **Build Smart North America  
Lawrence, Kansas  
UNITED STATES OF AMERICA**  
Product name **Build SMART**

**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

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

#### 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

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

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**

The Build Smart lightweight timber construction system comprises pre-fabricated structural panels that include an air barrier, continuous exterior insulation, a water-resistive barrier and pre-installed, air-tightened windows and doors. The system comprises EPS and cellulose insulation, sandwiched between timber and gypsum panels fixed to vertical timber supports. The system is intended to be used with rainscreen cladding. Thermal conductivity values are taken from the relevant international standard.

**Windows**

Certification was undertaken using Munster Joinery Passiv Future Proof uPVC frames, which are supplied as part of the system. The windows are triple-glazed and use Super Spacer TriSeal / T-Spacer Premium thermal values for the spacer, polyurethane secondary seals and argon-filled chambers. The frames use EPDM gasket seals, multiple chambers filled with air and EPS insulation, and a steel locking system.

**Airtightness concept**

Air tightness is ensured by a combination of OSB panels within the wall structure, and air tightness tape at junctions between panels and around window and door reveals.

**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

