

## **The Cabin at Foresters Cottage Design & Heritage Statement**

**Doc: FC.05**

### **1.0 The Proposal**

The proposal is to remove the existing summer house and associated deck. This then be replaced with a new cabin and deck. The site area is 2,237m<sup>2</sup>, the cabin and decking will create a footprint of 83m<sup>2</sup>. The cabin will be sited in the same location as the existing summerhouse beneath a walnut tree.

The building will be used a yoga studio and a small but fully functioning office where, potentially, the studio could be used as a meeting place or occasional guest accommodation.

The brief and aims of this building are to promote elegance and efficiency in sustainable, small-scale, building, using resources efficiently, designed to produce the minimum of waste making both ecological and economic sense.

Throughout the design high performance, sustainable materials, both inside and out will be specified. The frame will be manufactured sustainably and designed to contribute to the long-term integrity of the building, including efficient and durable exterior membranes, sheathing board, natural insulation and timber from sustainable sources.

The design is purposely different from the host dwelling with gently arching roof and exterior walls clad in Ash. Large windows and sliding glass doors usher in natural light and strengthen the connection to nature. In the yoga studio, skylights bring in additional daylight.

Inside, the building will feature wooden floors and ply walls. Decor and finishes are kept restrained in order to maintain a focus on the peaceful surroundings. The simple and modern interior of the Cabin offers spaces for quiet reflection among the trees and an external covered deck to enjoy the view and garden even during a summer storm.

### **2.0 Heritage**

The cabin will be situated within the grounds of Forester's Cottage a Grade II listed building. The design is purposely different to the linear build form of the cottage. It is sited on the same location as an existing summer house that is now dilapidated and requires replacement. The location provides good separation while the two buildings will be linked via a limestone path bordered with drystone walls to match the existing boundary walls of the cottage. The scale and massing are respectful to the dwelling with materials that have been carefully selected to work with the natural environment, gracefully weathering over time while maintaining integrity for many years. The existing summer house is detrimental to the site and setting of the listed building the proposed cabin will enhance it.

### **3.0 Tree and Root Protection**

Phil Dye from Wotton Tree consultancy has been commissioned to inspect the tree, suggest a maintenance plan and comment on the suitability of the proposed

foundations within the root area of the tree. His report forms part of this application and was a major consideration during the design process.

#### **4.0 Steel Posts, Beams & Railings**

The design uses steel posts and then beams to support the cabin off the ground. Steel has been selected to provide a maintenance free solution that has low impact into the ground. The natural state of steel provides many environmental benefits which other metals do not deliver. Steel is classed as one of the most suitable metals for recycling as its condition requires little maintenance, the end-of-life condition is 100% recyclable, and it can be reused an infinite number of times.

#### **5.0 Aluminium Doors, Windows & Fascia**

Aluminium is the third most abundant element that the world has to offer, after oxygen and silicon. Although it requires a lot of energy to produce raw aluminium, every time it's recycled its embodied energy lowers – making it more sustainable. Therefore, aluminium is one of the world's most sustainable building materials available due to the fact that it requires up to 95% less energy to recycle it than to produce it. Lightweight, durable, highly flexible and able to be reused without any impact on its mechanical properties, it's incredible to note that estimates suggest that approximately 75% of all aluminium ever produced is still in use today in some shape or form.

#### **6.0 Brimstone Ash Decking Cladding**

Beautiful, versatile and modified to last, Brimstone is a new breed of thermally modified British wood for external timber cladding. Sourced from woodlands across Britain, Brimstone is heated to 210 degrees, creating cladding that is very durable, stable, and visually attractive. A relatively knot-free hardwood cladding with a refined appearance and local provenance. Brimstone combines function and quality along with the wider benefits of local purchasing and support for native woodland

#### **7.0 Glulam**

Glulam beams are used in the roof construction. Very efficient to produce. The first and most obvious benefit of glulam is that its main component, timber, grows out of the ground and does not need to be mined and subjected to the high energy demand manufacturing processes. The energy required to produce a glue-laminated beam from the log is only a fraction of the energy required to produce steel or concrete. Glulam has a greater resistance to fire than any other structural construction material. Perfect for long span and curved designs, glulam is the construction material that offers strength without aesthetic compromise.

#### **8.0 Insulation**

Natural fibre insulation products will be used as an alternative for mineral- or petrochemical-based insulation. When used appropriately, natural fibre insulation materials can deliver thermal and acoustic insulation comparable to other insulation materials, but with a lower or potentially negative carbon footprint and fewer health issues during installation. They can also assist in regulating relative humidity and can provide a vapour- permeable system. This multi-functionality has been embraced during the early stages of design stage acknowledging the benefits of natural fibre insulations in order to ensure maximum value and provide a highly efficient building envelope.

## **9.0 Heating**

Due to a high build quality that provides good levels of insulation and air tightness an air source heat pump can be used to provide space heating through an underfloor heating system and hot water stored in a pressurised cylinder. Heat pumps are most effective in buildings which warm up quickly, keep the heat in and so require little energy to maintain a temperature once it has been reached. Also suitable for off the grid locations where fuels like electricity, oil, LPG or coal would commonly be used for space heating.

## **10.0 Internal Built-in Furniture**

The vaulted form of the building is echoed in the entrance porch, with a cantilevered, vaulted roof. The Ash clad side walls and timber deck are complemented by a build-in furniture using Heritage 'Slate' Richlite panels, specified with a mill finish for the office and storage within the studio. The choice of Richlite was not only for its aesthetic and sustainability, but it is also certified by the Rainforest Alliance and is ingeniously manufactured using layers of 100% post-consumer, recycled paper.

## **11.0 Intensive Green Roof**

There are many obvious benefits from installing a living roof such as aesthetics; a green roof is ultimately a thing of beauty creating natural habitat for flora and fauna: a living roof can create a local ecology in which the vegetation will establish and provide a home for smaller elements of wildlife as well as insects and invertebrates.

Good design makes people happy living and working in a green environment has a positive effect on the well-being of people. Greenery offers relaxation and reduces stress.

A green roof will blend the building into its surroundings and, in part, replaces the permeable land surface otherwise lost to the building being constructed in the first place.

There is also sound practical reasoning behind the installation of a green roof. It protects the roofing material from external influences such as the sun, rain, wind and temperature fluctuations and doubles or triples the life span of the roof to up to 60 years or even longer. Research has shown that when protected by landscaping, the life expectancy of waterproofing membranes is substantially increased and can last the estimated design life of the building.

## **12.0 Conclusion**

Sustainable buildings are those that are built to last and have their consumption based around renewable resources. That ethos has been embraced during the design of this building. All products are either 100% recyclable or from a sustainable source.

The proposed location of The Cabin is to be the current location of the existing summer house and decking. This area has been surveyed and inspected by an

arborist and his findings presented within the report that forms part of this application. The well-being of the tree has been of paramount importance throughout the design process and the report confirms the suitability of the proposed sub structure in regard to tree's healthiness and well-being.

The scale and built form are suitable for this large garden, the organic curved green roof and ash cladding integrate the building into its environment, the backdrop of mature trees thus creating a lovely composition that enhances the overall scene and setting of both the proposed cabin and host dwelling.

The addition of The Cabin to Foresters Cottage makes a positive contribution to the overall scene and will provide useful ancillary space for the occupants for many years to come.