

SUSTAINABLE CONSTRUCTION STATEMENT & MATERIALS STRATEGY: (including soil management statement)

Erection of 20 pre-fabricated glamping pods and associated footpaths, retrospective alterations to previously consented raised timber decking adjacent to driving range with addition of pergola and associated alterations, and erection of pergolas over clubhouse rear patio

Blacknest Golf & Country Club, Frith End Road, Blacknest, Alton, Hampshire, GU34 4QL

Applicant : 360 Beech Limited

Ref: 23-2675/FULPP/CF/SCS/V2

Date: November 2022—revision A dated 15/02/2024

POLICY SD48: Adapt to Climate Change and Sustainable Use of Resources

The proposals are:

- Install of 20 prefabricated cabins for overnight accommodation;
- Associated paths to link cabins with existing tipis, facilities building, Clubhouse and car park;
- Install of raised timber decking and pergola by driving range and associated opening up of driving range rear wall for better visual and physical connections;
- Install of timber pergola over Clubhouse's rear patio.

The remainder of the site and buildings including outbuildings are to be retained as existing.

There is no demolition works apart from removal of some timber cladding from the driving range.

In effect the proposals are 'glamping cabins', intended to provide overnight accommodation and similar to facilities provided by 'glamping' sites. The structures are not permanent and can be moved and are not strictly considered as buildings. The cabins are constructed off site, and arrive to site as finished modules.

The LPA Building Control have determined these to be similar to 'mobile homes', and as long as they are moveable and installed 6m apart, a Building Regulations application is not required, aka no SBEM calculations or insulation u-values required.

Under Policy SD48 these proposals fall under Major Non-Residential purely due to the size of the site and not the extent of the proposals, as the existing car park and overflow car parking facilities and driveway access to the main road need to be included within the red line boundary. The proposed increase in non-residential floor area is 358.8m². Technically the extent of construction falls under Minor non-residential as it is under 1000 sqm, and covers a site area less than 0.5ha.



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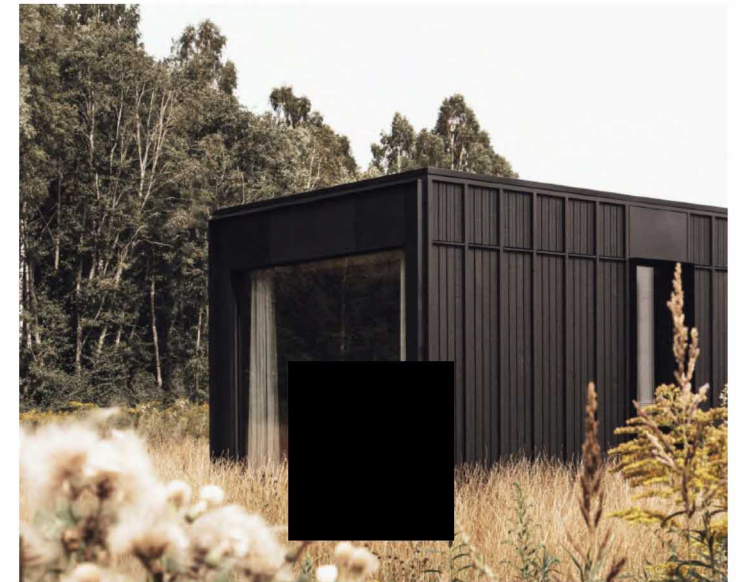


Figure 1. Example images of a Nokken cabin (not a photo of the site)
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It is considered due to the specific circumstances and nature of the proposals that complying with BREEAM New Construction excellent (Major Non-residential), or 19% energy efficiency CO2 reductions (Minor Non-Residential) is not practical or possible due to the units being pre-fabricated, off the shelf in construction, and in effect considered as ‘mobile homes’ under Building Regulations.

The chosen replacement manufacturer is Nokken who specialises in modular, configurable, highly sustainable next generation cabins.

The Nokken cabins are designed to help people connect with nature and are highly eco-conscious, providing a high quality experience and hotel level accommodation within a cabin. The cabins are designed to inhibit low maintenance combined with beautiful, natural, sustainable materials and built using an environmentally friendly build process.

Whilst this company is not the closest ‘cabin’ manufacturer to the site, the new owners of the site have assessed a wide range of manufacturers, and Nokken provided the best all-round product to suit their preferences, intended use, design style preferences and number of size options, cost, quality, and longevity of product.

The chosen cabins are well insulated to improve their comfort and energy efficiency, and have good u-values, on average:

- walls 0.19W/m²K
- floors 0.16W/m²K
- ceilings/roof 0.16W/m²K
- triple glazed timber or aluminium windows and doors;
- Electric heating and hot water system;

which for reference are overall higher than the u-values required for domestic extensions.

All the cabins are built in Nokken’s workshops allowing for the highest standards of construction as weather is not an impeding factor during construction. This also reduces the amount of waste product, and material is less likely to be damaged by weather or mishandling in storage before being installed, or being cut/installed incorrectly due to bad weather hampering access etc.

Nokken cabins are built with FSC certified timber with the majority of structural elements formed by CLT (cross laminated timber—an incredible strong and sustainable way of using

wood), and finishings clad in stained European Larch/spruce and metal panels.

Being built in a workshop with multiple other cabins significantly reduces the number of deliveries associated with construction. The cabins are completed as one unit and delivered to site as one journey.

Nokken have carefully selected their materials to provide reliable, low maintenance and long lasting structures, with options to personalise the cabins whilst in construction. The cabins have a standard 5 year warranty on structural defects.

On completion of the cabins for each build phase, they are transported via a flat bed HGV type of vehicle to the site to minimise the number of vehicular trips.

Green energy, CO2 reductions and Solar Shading:

Whilst achieving on-site Green Energy CO2 reductions of 20% may be possible through use of PV panels on the facilities outbuilding, this would be difficult to calculate to justify 20% has been met as the cabins are individual units and not used every day all year round, therefore, the level of power usage is difficult to calculate or monitor.

The power gained in the winter months would be unlikely to be used due the tipis being seasonal in use, and the cabins less likely to be fully occupied during the winter months. This would require the PV panels to be linked to the facilities outbuilding, main Clubhouse or external lighting or the mains to ensure the power obtained was not ‘lost’.

It is considered inappropriate to install air source heat pumps due to the complications of linking to the individual cabins and the size of the units that would be required to power all 20 cabins, and ground mounted PV is not suitable on a site of this nature due to the high risk of damage by golf balls and people generally being in close proximity to them, unless they are fenced off, which will impact the appearance of the landscape and setting on site, and reduces the ‘woodland’ feel proposed.

The proposals include the completed installation of 9 PV panels on the South facing roof of the facilities outbuilding to provide some renewable energy for this area of the site.

The new pergolas over the clubhouse’s rear patio help provide shading for people sitting on the patio and shading for the adjacent orangery room during the summer

months, to reduce excessive solar heating of the orangery in particular.

The new pergola over the raised decking by the driving range provides an area of shade in the summer for users of the driving range, and the extended raised timber decking shades the tree roots and soil area below, reducing moisture loss and degradation of the soil beneath.

All 20 pods have an en-suite. There are additional shared sanitaryware facilities located in the facilities outbuilding. These are controlled with motion sensor lighting externally and internally when no events are on for energy efficiency. Hot water is through a mixture of electrical hot water cylinders and instantaneous hot water systems.

For health & safety requirements it is not safe to rely wholly on torches for access. Therefore, each cabin has a downwards shielded 3000k LED wall light by their main access door that is set on a close-range PIR with dusk-dawn sensor. There are also 3000k LED downwards shielded low level bollards at key junctions on the main path, controlled by PIR (set to large objects) with dusk-dawn sensors out-of-hours.

Waste & Sustainable Materials Strategy:

Refer to Foul Sewerage and Utilities Assessment report and also planning application form for further details on trade waste resulting from operation of the proposals.

Each cabin is to have separate recycling and waste bins to allow for separate disposal of waste at source, prior to being moved to the main separate waste and recycling bins.

Cabins:

The cabins are pre-fabricated in a workshop which allows for better monitoring of use of materials, less waste material due to damage from inclement weather or mistakes or carelessness on site, and continued use of any additional/surplus materials for the next cabins ordered by others.

Any waste is also easier to separate into sustainable recycling and disposal systems as there are close by designated waste disposal points, and materials are dry and handled individually.

This significantly reduces waste product resulting from the construction of the cabins.

The materials chosen for the pods are as follows:

External walls:

= walls 0.19W/m2K

façade cladding boards—European Larch —this material can be recycled at the end of its use and is a sustainable material;

Metal panelling — this material can be recycled at the end of its use;

high performance eco-conscious wood fibre panels 100mm—this material can be reused or recycled at the end of its use;

ECOWool insulation between studs - this material can be reused or recycled at the end of its use;

All within an FSC certified timber structure—this material can be reused or recycled at the end of its use;

Roof:

= roof 0.16W/m2K

FSC certified CLT panel timber structure treated with light oil —this material can be reused or recycled at the end of its use;

ECOWool insulation 195mm and 50mm wood fibre board — these materials can be reused or recycled at the end of its use;

Floor:

= floors 0.16W/m2K

FSC certified timber structure treated with light oil —this material can be reused or recycled at the end of its use;

ECOWool insulation 245mm—this material can be reused or recycled at the end of its use;

CEMBRIT windstopper.

The lightweight timber frame system allows for a lighter structure, which in turn reduces weight of finished module to be moved by vehicle to site, reducing CO2 emissions.

Finishes Standard Edition

A External Cladding - European Larch - Black Painted & Sealed /
Matte Black Metal Panelling



Figure 2. Example material images . Copyright Nokken

Doors:

Triple glazed timber or aluminium—preference is aluminium due to the longevity qualities and lack of maintenance required as the cabins are located with trees and vegetation which keeps the air more humid which can cause timber to warp.

Windows:

Triple glazed timber or aluminium—preference is aluminium due to the longevity qualities and lack of maintenance required as the cabins are located with trees and vegetation which keeps the air more humid which can cause timber to warp.

External decking

Recycled composite timber decking , for example Envirobuild Hyperion Decking which replicates the natural beauty of real wood, that is highly durable, low maintenance with a 10 year commercial warranty. Or equivalent manufacturer.

Constructed from 57% FSC 100% certified wood powder, 30% recycled HDPE, 6% stone powder and 7% additives;

Made with 100% renewable energy and 87% recycled materials

Hyperion as a company divert 1 million kg of plastic (equivalent 52.6 million plastic bottles) from landfill annually in the production of their products;

Sustainable composite decking reuses waste products. Between 2016-2022 Envirobuild have protected 61.3million trees through reusing waste products in the manufacturer of their products.

Hyperion decking boards will produce up to 64% less CO2 e across its lifetime than softwood timber decking boards;

Reversible anti-slip board with embossed side and grooved side

Anti-slip properties for health and safety, especially for decking located under trees.

Uses FSC 100% certified wood, ensuring sustainably managed forests

No paint or treatments needed, no future chemical required to be applied

Energy efficiency & Heating:

Space heating = underfloor electric heating pads with integrated control unit;

Hot water = electric water heaters 80L—2kw

Footpaths + hardcore bases:

The materials used for the hardcore bases and footpaths are materials regularly used on site and obtained from a local supplier.

Proposals materials:

Hardcore and shingle—reusable material;

Sustainable composite timber decking—recyclable, long lasting material;

Self-binding gravel—long lasting and reusable material if not too old;

Wood/bark chippings—biodegradable and renewable material.

Driving range raised decking and pergolas:

The driving range raised decking and pergolas were designed to utilise off the shelf sizes of timber, reducing need to cut timber lengths, and reducing resulting waste. The decking is orientated running in the long direction to further reduce waste product as the run off past a joist can be supported on noggins underneath.

The timber obtained was from a Grown in Britain source, sourced from a local suppliers. These works are retrospective.

Soils Management Strategy & Waste

The nature of forming the hardcore bases to allow for flush access into the front of the cabin and creation of the low level dig paths and services trenches results in minimal waste product as not many cuts for the composite timber edging boards or decking are required, and any remaining self-binding gravel or wood/bark chipping can be used to repair other paths in the vicinity.

The main 'waste' product is the soil displaced by the minor excavations for the bases and paths and trenches.

The top soil is proposed to be carefully lifted and appropriately stored on site to allow it to be reused in the landscaping features around the cabins, to reduce the need to import topsoil.

The sub-soil is to be excavated and reused and distributed on site, to fill some minor dips in the landscape that have formed over time, and also to form the landscape features around the cabins and the 3 minor raised paths that lead up to 3 cabins for flush access as marked up on drawing 20-2487-PX-04.

The landscaping design has therefore included some raised areas of planting to create and assist with privacy for the cabins and the experience of ‘discovery’ areas around the cabins. If the land were left as all flat, one would be able to see straight through the groups of trees to all the groups of cabins, rather than each group having its own enclosed area of privacy and outlook.

The main golf course has various banks and raised areas of planting, so this style is fairly in keeping with parts of the site and also the various mounds and scrub levels that are beyond the cabins leading down to the stream. Whilst it may be less ‘woodland’ in appearance to have areas of raised planting, as the soil is to be gently sloped to form the mounds, once planted and established, over time this will appear more natural and similar to walking through a woodland that has started to ‘rut’ between groups of trees where water and walkers have passed through, and start to reflect the different land levels found in a woodland near to a stream, which is experienced if one moves closer to the stream on site.

As the soil is heavily clay in composition, on extraction it takes a while to resettle once located in its final location. Therefore, the mounds will need to be formed slightly higher than the final intended height, plus top-soil on top, to account for this natural settlement. It is not advised to overly compact the soil manually as this reduces the aeration of the soil.

Where possible soil stripping, stockpiling and placing is to be carried out in the driest conditions possible to reduce compaction. As this is unlikely to be possible, top-soil is to be carefully stockpiled and covered over to reduce water ingress, and machinery is to follow the routes of the proposed paths to minimise damage to surrounding topsoil that is to be retained.

Machinery should work methodically to strip the topsoil areas first, stockpile, then use the more studier sub-soils with ground protection mats over to create routes outside of RPAs to the proposed cabins areas to allow excavation of their bases, with sub-soil immediately transferred to adjacent final position points, to reduce vehicular movements.

Drawing 20-2487-PX-04 sets out the proposed changes in levels.

The site is large enough and manmade that soil can be used to create the landscape features around the cabins and also safely reused elsewhere on site to form new banks on the golf course, which also reduces vehicular movements and skips to/from the site.

Water Use:

The cabin kitchenettes and en-suites are fitted with low flow aerated showers and basin taps, and dual flush reduced water capacity WCs, which reduces water consumption.

This also applies to the sanitaryware used in the already granted outbuilding.

Adaptation to Climate Change & Landscape Water Use:

Refer to Flood Risk Assessment for details on surface water drainage. Due to the nature of the proposals, there is no need for any surface water mitigation proposals as the cabins are raised above the ground and non permeable and do not hinder the ground underneath the cabins from infiltrating rainwater.

Watering of the landscape remains as per the existing situation, use of rain in the autumn-spring months, then where needed in summer months, some areas of planting may need manual watering by the on-site greenkeepers. The golf course has an automated watering system, and other planted areas are manually watered by the on-site greenkeepers.

The planting has been designed to be all ground bearing to allow natural irrigation through soil water retention and natural ground water sources. Planting has also been carefully chosen with native species suitable for clay soils, to result in a fairly drought resistant scheme.

Refer to Ecosystem Services Statement, Ecology & Biodiversity Assessment and Arboricultural Assessment for further information on conservation of wildlife.

The proposals retain the existing trees, bar 2 which are replaced elsewhere, and increase the number of trees in this area by approximately 33 plus further understorey and low

level planting including grasses.

The proposed planting provides screening and a buffer between the cabins themselves and the other uses on site. All the proposed trees are deciduous which assists with solar shading in warmer months, and extra light and warmth in winter months, ie. allows natural microclimate regulation.

Locating cabins close to trees assists with solar shading in the summer, and improves natural ventilation through contrasts in temperature between the front and back of the cabins, with cooler air on the side facing trees.

A mixture of deciduous, perennial & evergreen understorey and low level planting helps further mitigate water usage throughout the year, assisting with infiltration of rainwater in the wetter months when deciduous trees have less water uptake. The mixture of deciduous and evergreen assists with further year round carbon sequestration.

The cabin proposals are over maintained grass with a significant amount of additional trees and planting proposed to be added to this area, which increases natural water infiltration and stability of the soils.

There are no changes to the surrounding landscape that would result in negative changes to the permeability of the site.

POLICY SD2 Ecosystem Services

Addressed in the separate Ecosystem Services Statement.

POLICY SD22 Parking Provision

Addressed in the separate Travel Plan and Transport & Car Parking Assessments.

EV charge points are proposed for both vehicles and bicycles consisting of:

2 double charging points for vehicles = 4 vehicles can be charged simultaneously;

2 double charging sockets for bicycles = 4 bicycles can be charged simultaneously when parked in the store.

The vehicle EV charging points will not be able to be utilised until the upgrade to the electrical incoming supply has been finished and re-cabled to the clubhouse, which is currently in progress.

The bicycle charge points are run off a standard 13 amp supply, so are not affected by the power upgrade to the site.

END