

This will be achieved through the following:

- to provide an overall landscape framework for the car park facility and public realm that is both appropriate to the immediate area and makes a contribution to the landscape in the wider area;
- To retain, enhance and protect, wherever possible, existing ecological features (ie. river corridors);
- To retain, enhance and protect existing vegetation that is ecologically or visually important (ie. trees and woodland) and mitigate any impact on areas within the SAC and SSSI;
- To sensitively integrate the car park and filter views to adjacent properties and roads;
- To provide safe pedestrian routes through the car park and connect to the Elidir Trail and local businesses;
- To promote sustainable travel through the retention and improvement of public transport connections and the provision of appropriate facilities; and
- To utilise plant species that are in keeping with the character of the existing vegetation in the local area.

Hard Landscape Design

The hard landscape design provides access to the Visitor Hub buildings and parking area, providing a play area to the central quad of the proposed built development and an open area to the east of the site - designed to create a more naturalised landscape setting with informal paths and localised seating areas. The proposed hard landscaping is a mix of materials which are sympathetic to the architectural materials and the local vernacular, reflecting the associated use of area, with macadam compacted gravel and Grasscrete to the car parks; resin bounded gravel to the main pedestrian circulation areas; and wet rolled hoggin to the more naturalised landscape setting to the East of the development.



Landscape masterplan drawing showing design development of hard and soft landscaping across the proposed site.

Soft Landscape Design

The planting design seeks to balance ecological and amenity objectives utilising a range of native and non-native species chosen to work with the wider green infrastructure of the site surrounds. Planted with a range of grasses, herbs and semi-ornamental shrubs providing amenity value and biodiversity, whilst the wider site planting is primarily native. The native planting typologies seek to complement the adjacent River Neath corridor woodland edge and provide a strong site wide framework of trees, hedgerows and grassland to increase site biodiversity. Within and around the buildings, and within the car park areas, rain gardens with native plants are utilised to slow and filter runoff as part of the sustainable drainage design.

Ecology and wildlife corridors

The car park layout and associated landscape scheme will safeguard the river and the associated riverbank habitat, which will likely provide good refuge and foraging for birds, mammals and amphibians. The landscape proposals respect the flood map with all works located outside of flood zones 2 and 3.

Additional native planting will be provided to enhance the site for wildlife with the aim of providing a habitat rich in insects and with the potential for bat roosting sites. An attenuation basin has been designed to the south of the car park that will function for attenuation and also provide an aquatic-rich permanent waterbody for wildlife.

Please refer to Landscape Architects documents including Green Infrastructure Statement and scheme for biodiversity enhancement with associated site plan outlining the proposals as part of this development.

ENERGY AND SUSTAINABILITY STATEMENT

This Energy and Sustainability Statement has been prepared to meet the requirements of Local Development Plan Policy RE2 (Renewable and Low Carbon Energy in New Development) and the Renewable and Low Carbon Energy Supplementary Planning Guidance. It will describe the strategies investigated and implemented to ensure the scheme is efficient in its conservation and use of energy, employs low carbon and renewable energy solutions and minimises the carbon cost of its construction and operation.

Although the design brief has not set a specific target or 'standard' to be achieved, principles for the project's sustainability objectives have been established associated with embodied carbon, energy loss and use, renewable technologies, materials, health and wellbeing.

In order to meet the UK's commitment for decarbonisation, our construction industry must fundamentally change its approach to design, performance and construction of our built environment. Wales has committed to a framework of carbon reduction via the Building Regulations, particularly in regard to energy performance and energy generation but we believe that we must and can go further, quicker by delivering projects that are future proofed for developing technologies and considering whole life carbon impact in construction, operation and end of life. Consequently any proposal developed for Pontneddfechan should seek to improve on current building regulations and be designed to minimise carbon emissions associated with its construction.

In assessing the feasibility of these objectives we have prepared and take into consideration with the design team a number of factors -

- Analysis of the site's physical and environmental constraints and opportunities including sun path and shading, the natural and built environment, accessibility, ecology and vegetation.
- Analysis of the project's use and users, considering when the various elements will be in use, for how long and for what type of activities.
- A knowledge of existing construction standards and potential future changes specifically in regards to the national and regional low carbon strategies.
- The client's environmental policy including an objective understanding of its approach to capital and whole life costs.

The UK General Building Council's Net Zero Building Framework Definition sets out a useful framework for considering and categorising sustainability priorities for all projects. It adopts 4 categories in order of application;

8. Reduce Construction Impacts
9. Reduce Operational Energy Use
10. Increase Renewable Energy Supply
11. Offset Any Remaining Carbon.

High aspirations for sustainability does not have to increase the cost of development, and if considered in a holistic manner will often dramatically improve whole life costs - that being the cost of construction, operational costs including energy and maintenance, and cost of demolition, disposal and / or reuse.

The following is an indicative early-stage sustainability statement setting out some of the principles that will be relevant to the development of the brief:

Reduce Construction Impacts - carbon emissions during the construction phase will be considered throughout the design development process:

- Materials, systems and skills will be sourced locally as far as realistically possible, reducing embodied carbon through transportation and ensuring investment in the local economy.
- Innovative offsite construction methods will be investigated offering potential to dramatically improve efficiency over traditional onsite construction through;
 - the reduction of waste materials,
 - improving quality control to strictly limit the design : as built performance gap and reduce defects,
 - reducing the impact of construction activities including noise, ground disturbance and on and offsite vehicle movements.
- Low carbon construction materials and systems will be at the centre of the construction solution. Rejecting materials generated from the petrochemical industries such as insulation products and PVC based windows and doors not only reduces the associated high embodied carbon, but also encourages the use of natural, recycled and recyclable materials - materials that can offer a significant impact on occupant' health and wellbeing through improvements in acoustics and indoor air quality and comfort.
- Careful consideration will be given to material performance during construction, in use and at the end of life. Materials will be selected

that are durable within the proposed context, ensuring that there is no loss of performance throughout the lifetime of the intervention.

Reduce Operational Energy - energy demand and consumption throughout the project's life should be reduced through a holistic consideration of the design, specification and construction of the development above all other measures. The proposed schemes will therefore address sustainable principles from the outset by adopting a general approach that sequentially looks to:

- Reduce the amount of energy that the building uses
- Maximise the free gains that are available to the site
- Address the energy source.
- A 'fabric first' approach will be adopted which prioritises a high-performance fabric incorporating high levels of insulation and dramatically reducing drafts and heat loss through air gaps and thermal bridging. In conjunction, a compact plan, form and careful placement of openings where possible will look to maximise the efficiency of the external fabric.
- An analysis of site based physical and environmental opportunities guides building orientation and form of interventions, habitable rooms and openings carefully placed to maximise the potential of useful solar heat gains.
- This approach will also look to maximise the opportunities for natural daylighting, prioritising the key habitable dayrooms where relevant, with necessary artificial lighting provided by low energy systems.

Increase Renewable Energy Supply - In accordance with low carbon design guidance the project will adopt the principle of 'fabric first', with

design and specification aimed at minimising demand and maximising efficiency whilst delivering comfort levels. To meet the residual demand for energy, not met via heat gains provided by the inhabitants, technologies and solar gains, highly efficient systems will be combined to achieve occupant comfort. Careful analysis of the project's proposed function will provide project specific characteristics for user comfort and operational requirements, ensuring that the capacity and nature of energy systems are effectively tailored. Systems will be designed and specified to -

- Minimise the amount of energy required to provide heat, hot water, ventilation and light.
- Employ user friendly and smart systems to minimise waste usage.
- Use only clean or renewable energy sources removing any reliance of high carbon technologies such as gas boilers.
- Incorporate renewable energy technologies including air source heat pumps, heat recovery and / or photovoltaic panels to generate useful energy for local use and supply to the national grid.

Offset Any Remaining Carbon - Should a project seek to be truly 'Net Zero' based on a whole life carbon profile ie capturing both embodied and operational carbon emissions, it is inevitable that there will be a residual carbon impact. The project team would need to identify robust and evidenced methods for carbon offsetting. In the current climate this is an area of great change, considerable uncertainty and substantial cost. It is therefore not anticipated that the project will seek a Net Zero outcome with offsite offsetting. However in addition to the opportunities previously discussed to minimise the project's carbon profile, opportunities to offset carbon via tree and vegetation planting will be keenly explored.

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