



DESIGN AND ACCESS STATEMENT

BIOMASS COMBINED HEAT & POWER PLANT

BRYN LANE, WREXHAM

PLANNING APPLICATION_REV A

31st JULY 2015

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1.0 INTRODUCTION

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Development: Biomass combined heat and power plant utilising Grade B & C wood (Fuel Code: PAS 111)

This Design and Access Statement has been prepared by Blok Architecture Ltd on behalf of Green Plan Energy.

The requirement for Design and Access Statements has arisen in response to the need to promote better quality and more sustainable design in development – an objective embedded through PPS1: Creating Sustainable Communities (2005).

The purpose of this statement is to describe in detail the site and surroundings, relevant design policy and guidance, and the concepts and principles behind the development of the site.

This Design & Access Statement is to be read in conjunction with drawings prepared by Blok Architecture Ltd, to accompany the application for planning permission submitted to Wrexham County Borough Council.

It is submitted as a statutory requirement of the planning process and has been formulated to reflect current advice on design best practice, including CABE's advice on how to produce the Design & Access Statements. It is intended as a positive and helpful tool for the Council and interested third parties alike, and demonstrates in succinct terms the extent of consideration that has been invested in the scheme design and layout.

This statement seeks to provide the contextual background that has informed the design response, describes the evolution of the design in response to consultations and illustrates the key elements of the scheme both in terms of function and form.

The design and access statement supports a full application for an industrial development. The overall concept is of high quality sustainable development utilising contemporary detailing that reflects the fresh and dynamic approach of Green Plan to industry, sustainability and environmental awareness.

2.0 SITE AND SURROUNDINGS

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Our proposals are based on a thorough assessment of the site's immediate and wider context, undertaken through desk-based research, site visits and observations, consultations and an access audit.

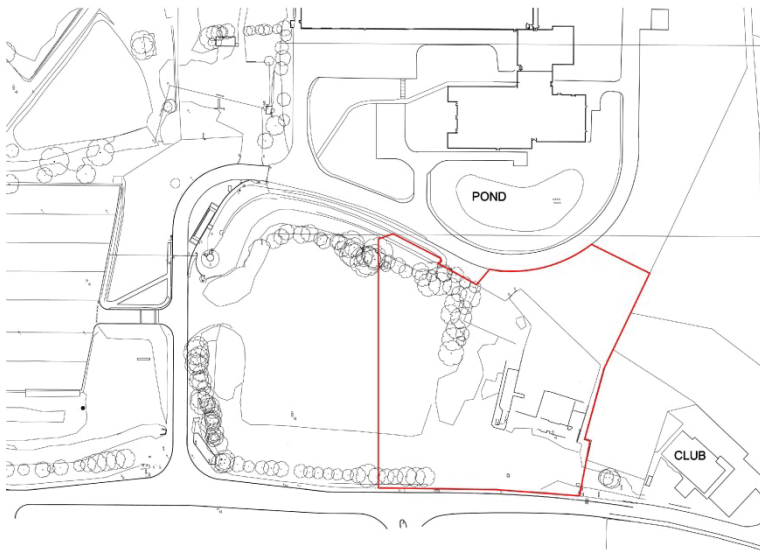


Figure 1. Site location plan

2.1 LOCATION

The application site covers an area of 1.45ha and is located in Wrexham Industrial Estate. The site is accessible from Bryn Lane.



Figure 2. Aerial photograph

The site is vacant and provides no active planning use, nor does it contribute positively to the surrounding built environment.

2.2 CONTEXT

The site is located within the settlement limits of the Wrexham Industrial Estate which contains a number of large industrial developments providing significant local employment contributions to Wrexham. Wrexham Model Car Club is to the South of the site, Wrexham County Borough Council's Recycling Centre to the West and TDG Operations to the East. To the North the area has more agricultural character with a Kellogg's plant to the North West.



Figure 3. Site photo 1



Figure 4. Site photo 2



Figure 5. Site photo 1

3.0 INFRASTRUCTURE – ROADS AND SERVICES

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The site is accessible from Bryn Lane, which joins Oak Road to the South and Hugmore Lane to the North. The A534 Wrexham Road is accessed via Hugmore Lane.

The site is gradually elevated away from Bryn Lane with the highest point elevated approx. 3m from Bryn Lane. The access will be created off Bryn Lane, via a proposed ramp with a gradient no steeper than 1:20, leading to the developed area of the site with a FFL approx. 1.4m above Bryn Lane's road level. The site is inaccessible from the North, South and East.

The staff's car parking provision, including visitor parking will total 6 spaces and will be located to the front (East) of the site. The proposal will minimize disturbance to the remaining part of the site, whilst maintaining a zone for the articulated lorry turning circle and JCB access. Based on a power generation of up to 7MW, vehicular movements would be approximately 11 per day.

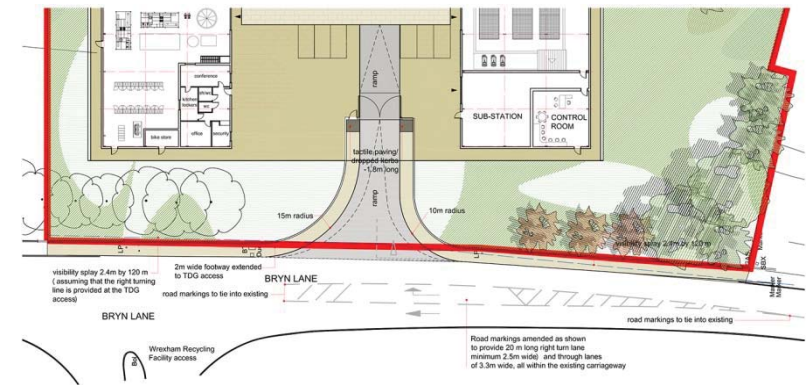


Figure 6. Site access diagram



Figure 7. Bryn Lane looking South

Figure 8. Bryn Lane looking North

4.0 DESIGN POLICY AND GUIDANCE

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By Design (DETR/CABE):

This policy provides guidance primarily to urban developments but its principles should be applied to general good design practice, regardless of its use type and location.

It is now a requirement of PPS1 that regard should be given to good practice set out in 'By Design'.

'By Design' highlights the fact that good design is important everywhere and the creation of successful places depends on the skills of designers and commitment from those who employ them, as well as input from the planning system. The key aspect it focuses upon includes the design of buildings and spaces, landscapes, roads and movement systems.

'By Design' states that successful streets, spaces, villages, towns and cities tend to have characteristics in common. These factors have been analysed to produce principles or objectives of good design. They help to remind us what should be sought to create a successful place. 'By Design' lists the objectives of urban design as follows:

- Character – a place with its own identity***
 Planning should promote character in townscape and landscape by responding to and reinforcing locally distinctive patterns of development, landscape and culture.
- Continuity and enclosure – a place where public and private spaces are clearly distinguished***
 Planning should promote continuity of street frontages and enclosure of space by development which clearly defines private and public areas.
- Quality of the public realm – a place with attractive and successful outdoor areas***
 Planning should promote public spaces and routes that are attractive, safe, uncluttered and work effectively for all in society, including disabled and elderly people.
- Ease of movement – a place that is easy to get to and move through***
 Planning should promote accessibility and local permeability by making places that connect with each other and are easy to move through, putting people before traffic and integrating land uses and transport.

- ***Legibility – a place that has a clear image and is easy to understand***
Planning should promote legibility through development that provides recognises routes, intersections and landmarks to help people find their way around.
- ***Adaptability – a place that can change easily***
Planning should promote adaptability through development that can respond to changing social, technological and economic conditions.
- ***Diversity – a place with variety and choice***
Planning should promote diversity and choice through a mix of compatible developments and uses that work together to create viable places that respond to local needs.

PPS1: Delivering Sustainable Development:

PPS1 places emphasis on quality of design in ensuring the long term sustainability of developments. It states that good design should:

- address the connections between people and places by considering the needs of people to access jobs and key services;
- be integrated into the existing urban form and the natural and built environments;
- be an integral part of the processes for ensuring successful, safe and inclusive villages, towns and cities;
- create an environment where everyone can access and benefit from the full range of opportunities available to members of society; and,
- consider the direct and indirect impacts on the natural environment.

Further Policies, latest revisions of:

EU and UK energy Policy

Energy White Paper

The UK Renewable Energy Strategy

National Planning Policy Context and guidance

The Wales Spatial Plan – People, Places, Futures

Planning Policy Wales

Ministerial Interim Planning Policy Statement Planning for Good Design)

Ministerial Interim Planning Policy Statement (Planning for Sustainable Buildings)

Technical Advice Notes (TANs)

TAN 8 – Renewable Energy

TAN 22 – Planning for Sustainable Buildings

TAN 5 – Nature Conservation and Planning

TAN 18 – Transport

Local Planning Policy Context

Wrexham Unitary Development Plan

Wrexham Local Development Plan

Deposit Wrexham Local Development Plan

(please refer to the Planning Statement for details)

5.0 CONSULTATIONS

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Local Authority – pre-application discussions:

Ongoing consultation has been maintained between Wrexham County Borough Council, How Planning and Blok Architecture Ltd to ensure that all environmental concerns and general planning related issues have been carefully addressed prior to submission.

6.0 DESIGN CONCEPT / PRINCIPLES / EVOLUTION

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The following key principles for the redevelopment of the site have been identified from a detailed assessment of the site and surroundings, an evaluation of issues and opportunities, a consideration of planning policies and local authority guidelines which have assisted development of the brief.

1. Minimising the environmental impact on existing site's habitat.
2. Providing a scheme that will reflect the Client's business approach.
3. Creation of the most efficient layout for the plant's operation.
4. Establishing high quality frontages to Bryn Lane to enhance the area and overall industrial landscape.
5. Extensive use of natural or zero carbon materials to reflect the environmental awareness.

6.1 SITE ANALYSIS

Thorough site analysis was undertaken to provide a fully informed rationale to the concept design.



Figure 9. Sketch site analysis



Figure 10. Site Layout Proposal

Access studies informed the design in terms of the building footprint sitting. Level differences to a degree dictated the position of developed zone within the site. Environmental strategies also influenced the general site layout, positions of wildlife corridors and landscape design.

6.2 BUILDING DESIGN EVOLUTION

Through the course of the design a number of varying proposals were developed, all incorporating the underlying concept of interesting yet functional form assisting the company's branding, but respectful to context, sensitive to the natural environment, with contemporary high quality design.

Analysis of the surrounding landscape led to the conclusion that the proposal should appear organic with the form presenting an impression of natural structure, native to the site.

The initial proposals consisted of a series of canopies providing a degree of protection to the plant. The proposal offered laminated timber primary structure with polyethylene green and clear panel infill sections that expressed a skeletal form.

For practical and functional reasons the design proposals were reviewed and ultimately led to the current proposals.

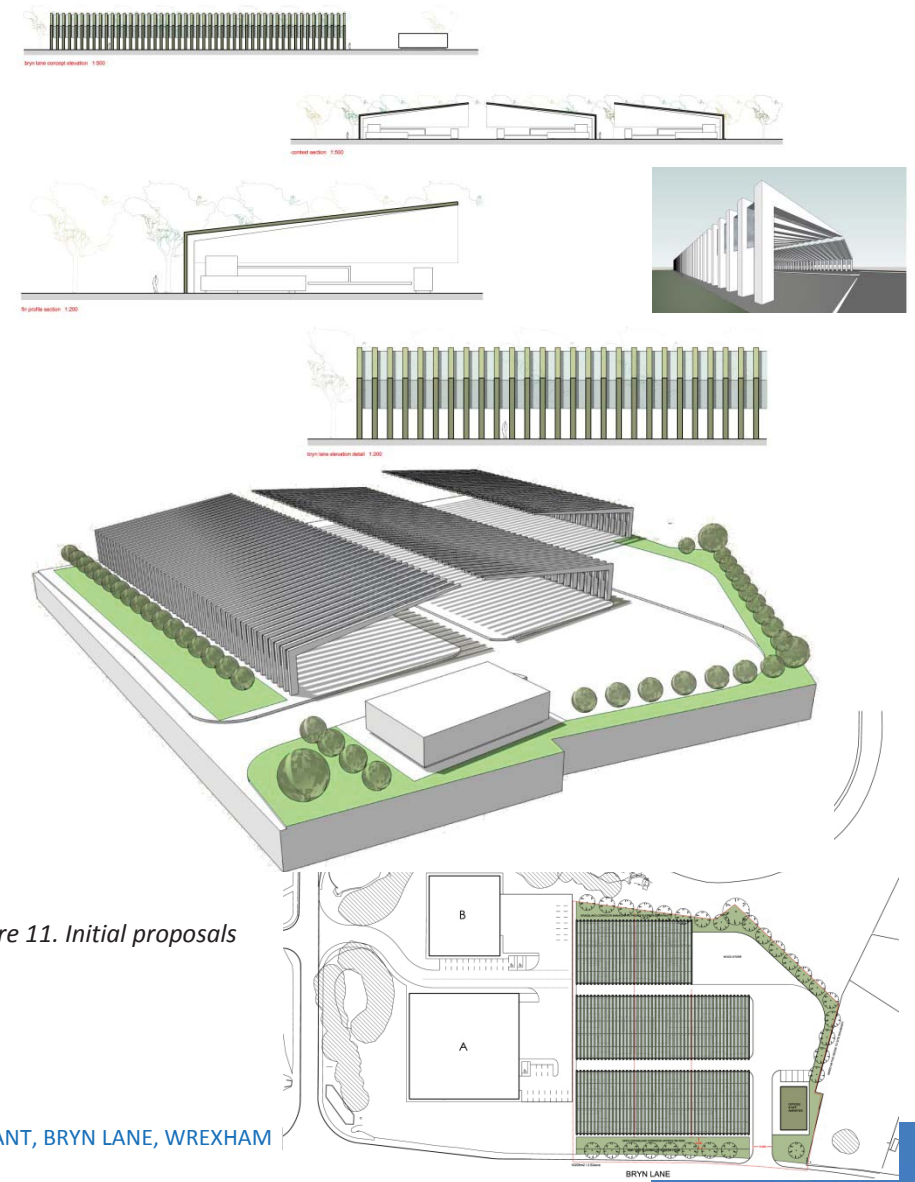


Figure 11. Initial proposals

BIOMASS PLANT, BRYN LANE, WREXHAM

The scheme evolved into minimal sheltered zones to form two long buildings housing the plant and free standing supplementary buildings.

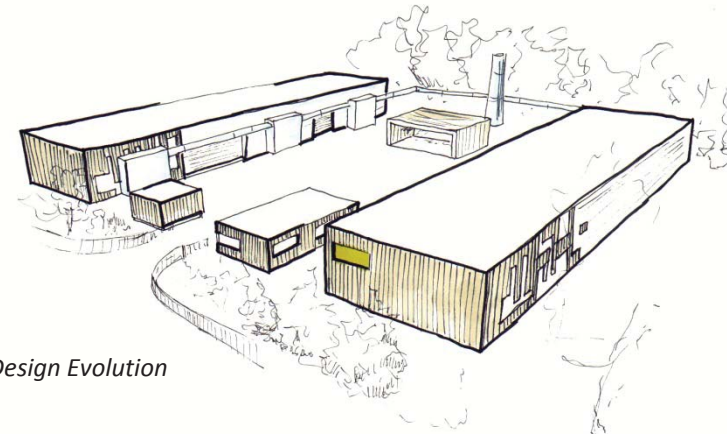
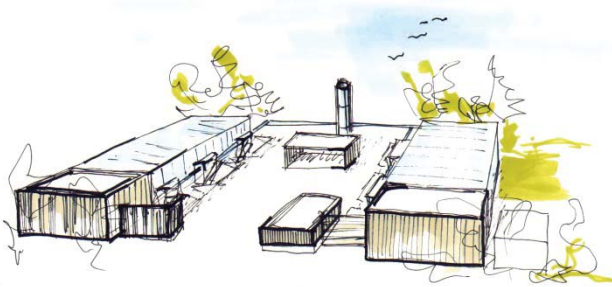
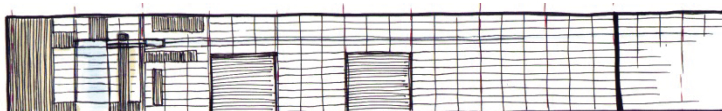
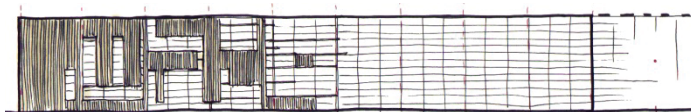
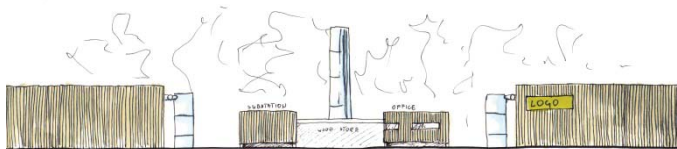


Figure 13. Design Evolution



The colour palette of the proposal was carefully considered to minimise the visual impact and merge with the natural landscape surroundings.

The colour of the cladding to the plant and wood store is Moorland Green, which is a muted, natural green, providing a visual connection to the rural context. The Bryn Lane frontages to the plant buildings are over clad and layered with random set out vertical timber panels. The timber enhances the primary elevations and offers connection to the building use and organic principles.

This proposal is unique in that it states industrial building can be architecturally interesting, subtle, respectful to its context whilst being functional and sustainable.

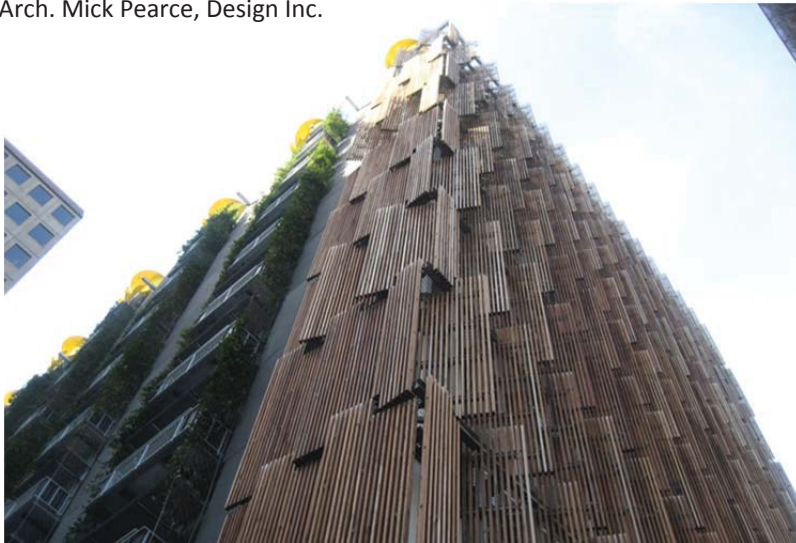
Figure 12. Design Evolution

6.3 PRECEDENTS / INSPIRATIONS

Several successful schemes were examined to research best precedents for organic aesthetic and sustainable principles.

CH2 Melbourne

Arch. Mick Pearce, Design Inc.



Kanak Culture Centre, New Caledonia

Arch. Renzo Piano



Figure 14. CH2, Melbourne

Figure 15. Kanak Culture Centre

7.0 THE SCHEME PROPOSALS

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In total the development comprises of 3530 m2 of plant area, divided into two buildings.

There are 6 car parking spaces within the secure area along with on-site provisions for bicycles and bin storage.

In summary the scheme proposals create:

- A form that responds to the direct needs of the Client in terms of functionality, and company branding.
- A secure and healthy work environment.
- A design utilising a palette of materials that is sympathetic with its surroundings and the local vernacular.
- Maintenance of the natural habitat surrounding the development.
- High quality architectural design to industrial use.
- Sustainable awareness.

The buildings are located to compliment the site's frontage. The overall layout has been dictated by the site levels and the functionality of the specific plant requirements.

Approaching the site from Bryn Lane there is ramp access via the adopted road to the gates. Beyond the gates there is another short ramp leading to the main operational zone. The courtyard is flanked by the Plant from North and South and by the Woodstore from the East.

This solution creates an interesting internal site environment and screens the plant production from outside the site.

Extensive tree planting is incorporated within the landscape design to enhance and protect the natural habitat, this also creates an interesting series of screens and background to the development as viewed from Bryn Lane.



Figure 16. Proposed Site Plan



Figure 17. Proposed Site Front Elevation

Plant:

The biomass facility is divided into two partially open buildings on a rectangular footprint. This arrangement provides an optimal solution for the facility's operation, JCB access and plant layout. The proposed external cladding is green metal cladding to the areas of plant facades that are not in general view from outside the site boundary. The Bryn Lane elevations and part of the side elevations will receive additional random vertical timber cladding panels.

Woodstore:

Simple pitched shelter, open to the front providing protection for the wood chips. The façade treatment will match the plant buildings. Plant and woodstore to have level access.

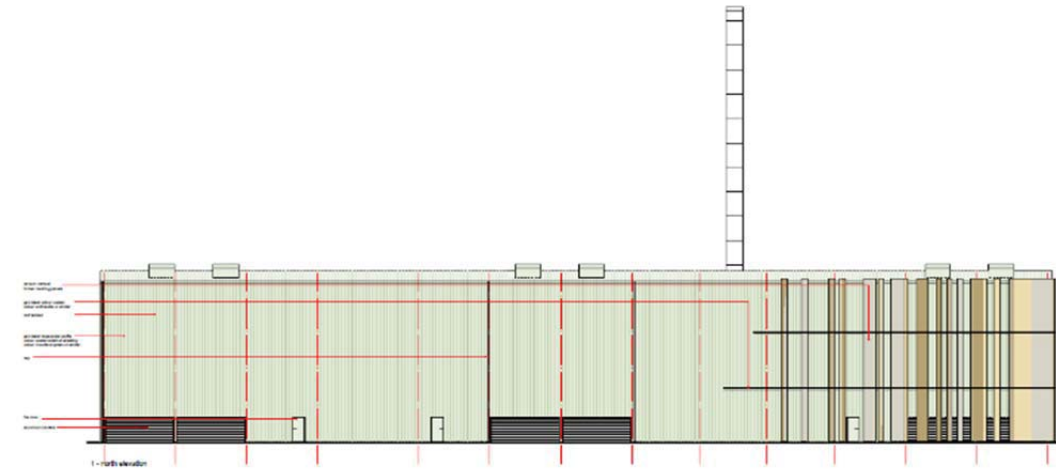


Figure 18. Proposed Plant Elevations continued

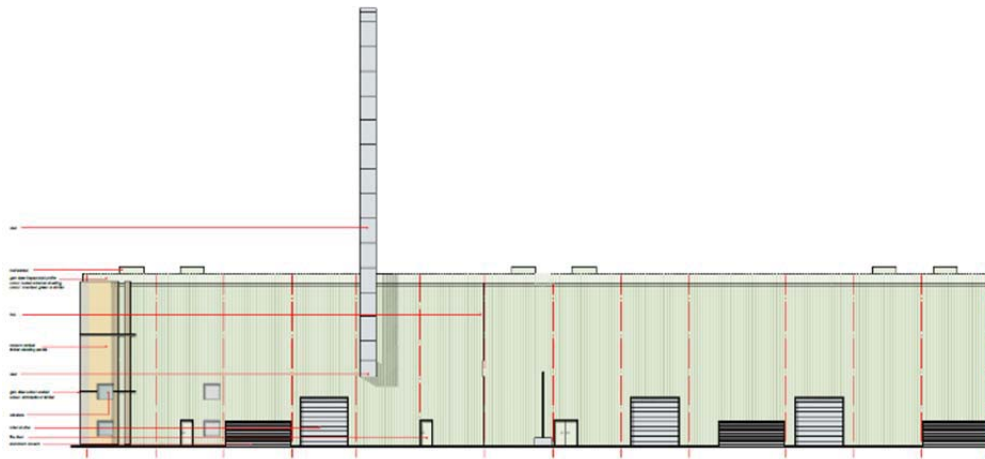


Figure 18. Proposed Plant Elevations

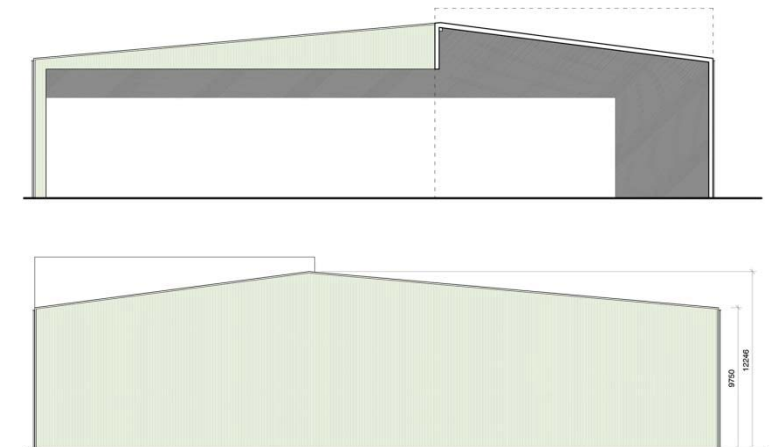


Figure 19. Wood Store Elevations

7.1 LANDSCAPE DESIGN

Site Context and Landscape Character:

The site is set within a mixed industrial and rural area. Despite neighbouring properties being mainly industrial, the site itself has rural characteristics with a wildlife habitat. Great care has been taken to provide a suitable landscaping scheme and environmental mitigation measures. Detailed reports containing ecological survey, impact assessment, ecological framework, landscape design etc. form part of this application.



Figure 20. Indicative Landscaping Plan

7.2 ACCESS

Green Plan Energy are committed to a policy of equality, inclusion and accessibility in the delivery of a building which will be used by visitors to the building and habitants. Green Plan Energy fully recognises the diversity of cultural, religious and individual abilities of future users and employees and is active in ensuring that any potential sources of discrimination are addressed.

The intention is to make the premises as accessible as possible, in line with local planning policy and the obligations that will be imposed upon the future users as service providers under the Disability Discrimination Act 1995 and within the constraints from Conservation and the Planning Department.

Ease of use by all potential users, including disabled people, parents and children, older people, and young people is also considered to be an essential element of breaking down language and cultural barriers.

7.3 ACCESS WITHIN THE BUILDING

Doors:

External main entrance doors will be in compliance with DFA 2 with clear openings of 1000mm.

Entrance and main circulation doors will be designed to provide a minimum of 850mm clear access width, and a clear width of 925mm whenever possible.

8.0 SUSTAINABILITY

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Green Plan Energy and BLOK Architecture Ltd are committed to sustainability initiatives in business and architecture.

The Design Team for the Biomass Facility at Bryn Lane have made great effort to ensure that the scheme meets or exceeds current requirements for sustainable development:

- The biomass facility is sustainable itself. It generates clean, renewable energy.
- All pollutants are within the recommended guidelines limited and controlled by the local authority and environmental agencies.
- Majority of the materials specified will be natural or sustainably manufactured.
- The site will be sustainably drained (drainage report enclosed).
- Natural habitat of the site will be enhanced by careful landscape design (reports enclosed).
- Heat recovery systems will be employed to utilise the heat generated by the plant and used within the site itself. Potentially providing a source of power for the office spaces/staff areas internally.
- Generated heat can potentially be supplied to surrounding businesses to aid wider sustainability in line with CHPQA requirements.
- This development supports the Governments objective to increase renewable energy use to 20% by 2020 and 50% by 2050.
- The scheme will provide renewable energy into the local area capable of powering 11,000 homes.
- Landfill reductions, 49,000 tonnes of waste normally destined for landfills will be utilised and reduce the national reliance on fossil fuels.
- Renewable heat capable of reducing surrounding businesses operating costs whilst reducing reliance on fossil fuels.

- A detailed air quality modelling assessment has been undertaken to define the appropriate height for the stack, this has been completed to the standards required from the Environment Agency to comply with the Environmental Permit Regulations and the stack height is defined to ensure that there will be no significant impact on air quality associated with the facility.

8.1 BREEAM

Detailed consideration has been given to the requirements of BREEAM industrial in order to achieve 'Very good' standard.

In order to achieve a Very Good standard the development will ensure the delivery of:

- Suitable project management,
- Consideration to Health and Wellbeing,
- Efficient energy use,
- Thoughtful approach to transport issues,
- Water usage reduction
- Achievement of 'A' rating for materials where possible (SuDS)
- Biodiversity enhancement
- Contribution to reduce the pollution

All the above as per approved BREEAM industrial guideline documents.

9.0 SUMMARY

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The proposed development of a biomass facility at Bryn Lane represents an opportunity for an exciting and unique industrial scheme set within a sustainable environment. The design team working closely with the client and local council have strove to create an innovative approach to industrial development.

In summary we believe the development offers many opportunities to improve the location in the following ways:

- By enhancing the currently undeveloped site.
- By providing an interesting architectural language.
- By creating a safe and healthy environment for new employees.
- By contributing to the local regeneration.
- The contemporary yet contextual architectural design will assist in breaking the cliché of the industrial context.
- The scheme will create a local precedent for sustainable development

Through detailed site analysis, reference to all relevant policy and through design development we believe the proposals do merit planning approval.

We believe the development will enhance the character and context of the area and also strengthen its identity.

The design creates a scheme that offers clarity, functionality and is easy to understand. Not only does the design offer positive additions in terms of spatial development and micro design, but also proposes a high standard of innovation through its use and architectural aspiration.