

## EnergyPlus EPC

Chorley Business & Technology Centre, East Terrace, Chorley, Lancashire, PR7 6TE.

### PROJECT – HANSON CLOSE, MIDDLETON

#### Date

March 2, 2023

#### Statement Prepared By:

EnergyPlus EPC  
Chorley Business & Technology  
Centre, East Terrace, Chorley,  
Lancashire, PR7 6TE.

#### Mark Scotson

01257 249677  
info@energyplusepc.com

### Summary

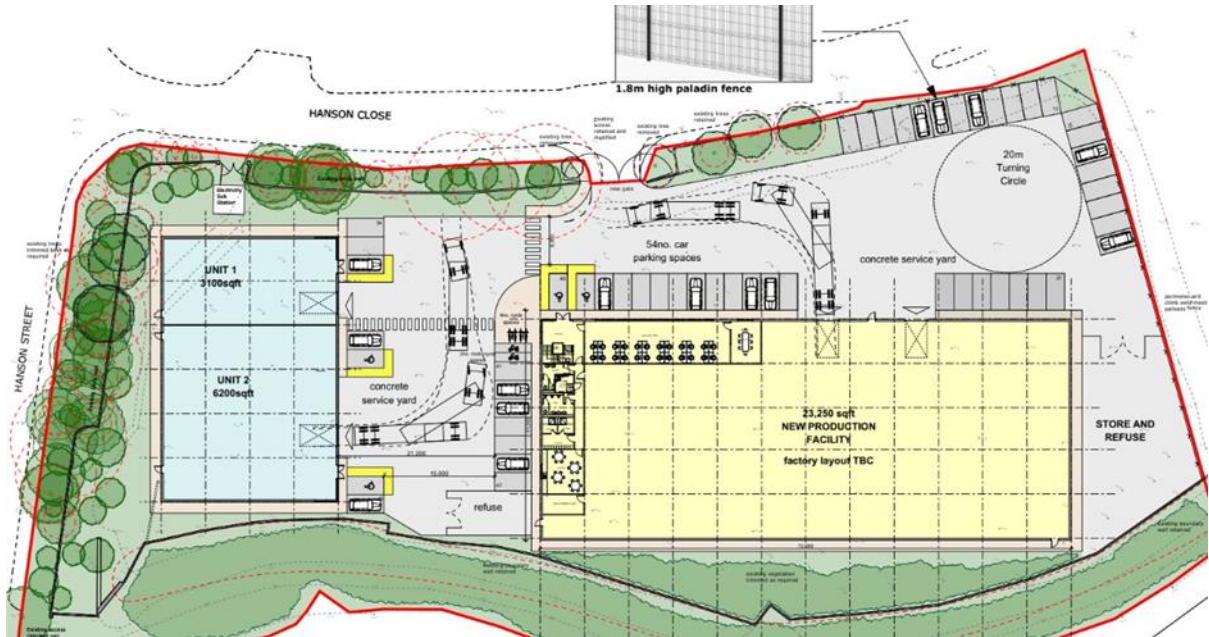
#### Development Address

Hanson Close, Middleton

In accordance with Planning Policy, the proposed light industrial development will be sustainable, able to function effectively in a changing climate, and address impacts on climate change emissions. The M & E services installations will incorporate the features and energy efficiency measures to provide a low carbon building and to comply with the Approved Document - Part L. All proposed plant and equipment will be in accordance with the Non-Domestic Building Services Compliance Guide.

### Site adapted to climate change – Building Orientation

The orientation of building plays an important role to reduce building energy consumption. With consideration given to loading and large vehicle turning on the site, it is found that building orientation will mainly contribute to reduce active cooling. There will be no large windows or curtain walling to the south, east or west and with rising temperatures across summer months welcome shade will come from the trees to the south and west of the site as can be seen from the plan that follows on the next page.



North

## Site adapted to climate change – Green Cover

Given the following research the site will be a good model when it comes to climate change and mitigating the possible adverse effects of rising temperatures and uncertain weather through green cover. Further planting will also be possible given the areas that have been set aside as green space.

Research on adapting cities to climate change indicates that adding 10 per cent green cover to areas with little vegetation, such as the town centre and high density residential areas keeps maximum surface temperatures at or below 1961-1990 baseline temperatures. Additionally, a well-managed water supply can be crucial in preventing green spaces turning brown, cooling the city when most needed. Increasing tree cover by 10% can reduce the surface temperature of an urban area by between 3 - 4°C. Additionally, trees provide shelter, cooling, shade and runoff control. The prediction of hotter, drier summers means that it is vital to protect existing trees and prioritise the planting of new ones. Larger tree canopies contribute hugely to the shading and cooling of streets and buildings; choosing deciduous species minimises the possible downside of screening out winter sunlight.

Indeed the spatial strategies that have been adopted in this new development will minimise vulnerability, and provide resilience, to climate change; conserve and enhance biodiversity, recognizing that the distribution of habitats and species will be affected by climate change.

Adequate space around the buildings and between them will help to tackle the ‘urban heat island’ effect.

# Performance of The Actual Buildings on Site to Reduce CO2 Emissions

## Thermal Performance of Building Fabric

---

The Building fabric that will be adopted will be of a high standard incorporating the latest technology. The insulation will limit thermal bridging and along with PSI Value calculation for each junction will reduce overall energy loss and thereby reduce the energy demand and CO2 emissions.

## Performance of Glazing

---

Improving on Part L1 the glazing.

|                            |             |
|----------------------------|-------------|
| Double Glazing UPVC Frames | U Value 1.4 |
|----------------------------|-------------|

|            |             |
|------------|-------------|
| Rooflights | U Value 1.4 |
|------------|-------------|

Also in the matter of solar gains being exceeded in any zone within the buildings, passive control measures will be introduced according to SBEM assessments, these with include incorporating a tinted film to the windows or installing blinds.

## Heating and lighting

---

All lighting will be LED low energy requirement, with a minimum efficiency of 100Lumens per circuit watt.

A rated split air conditioning systems will be installed with an efficiency of >300% to office spaces ect, these will be installed with full time and temperature zone control throughout the building unit. Consideration will also be given to whether electricity can be generated by on site renewable technology with the expanse of roof space.

## Air Tightness

---

Following testing, a good air permeability rate will be achieved, which together with good construction fabric will bring the CO2 emissions down, and together with the equipment installed contribute to achieving compliance to the standards set out in Part L1.