



Proposed B class Commercial Unit

Plot 3B Dunsbury Park
Design and Access Statement



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Plot 3B Dunsbury Park

1.0 Introduction

This Design and Access statement accompanies the Reserved Matters Application for Plot 3B at Dunsbury Park, Havant for a proposed B-class Commerical Unit, ancillary office, service yard, car parking and hard and soft landscape works. The site, which was agricultural land, is located east of Junction 3 of the A3 (M) and west of Leigh Park and is under the ownership of Portsmouth City Council (PCC). This statement, together with accompanying drawings and technical documents should be read in conjunction with the Planning Statement prepared by Savills. Reference should also be made to the documents supporting the outline planning permission in relation to this application.

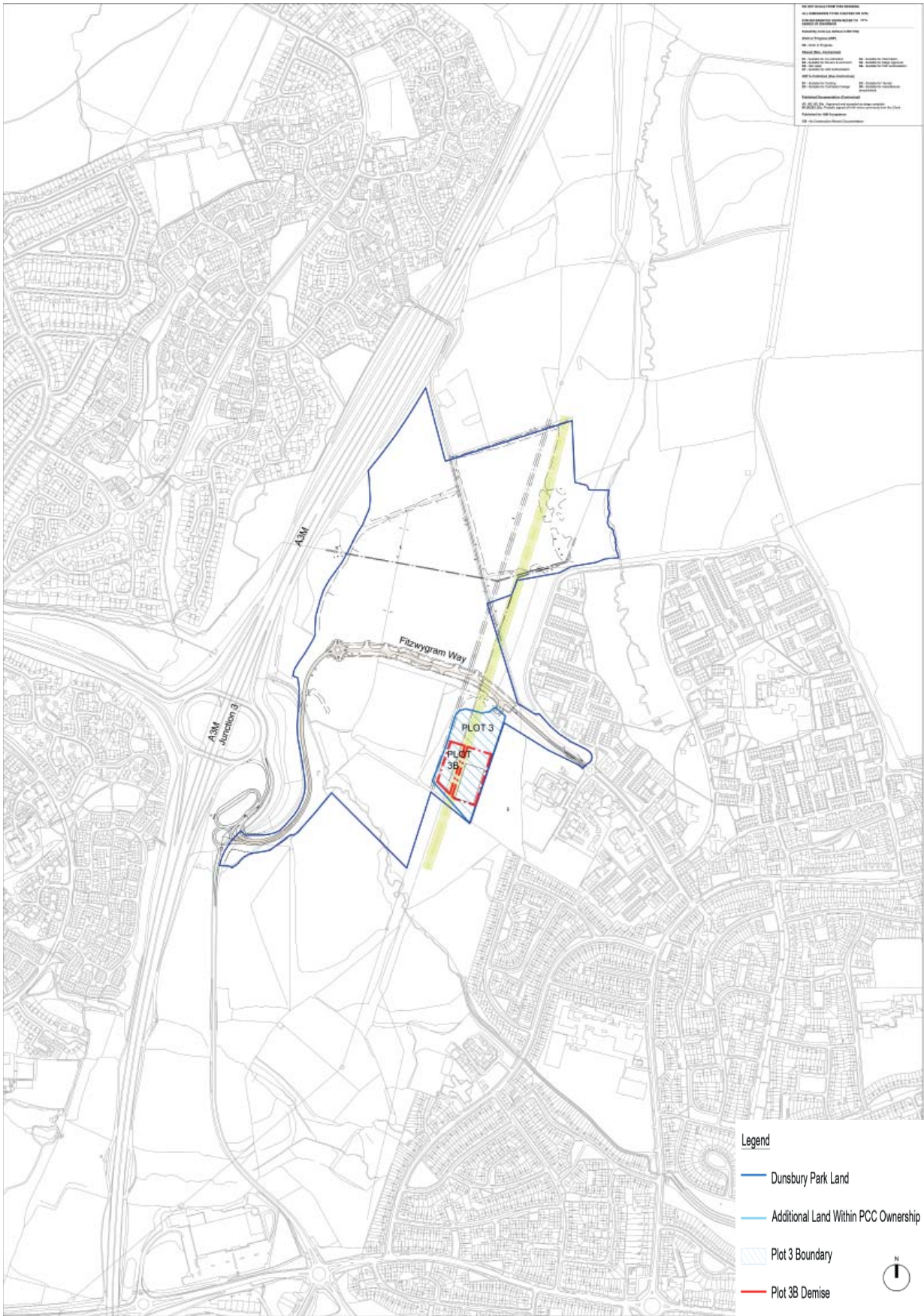
Dunsbury Park has been identified in the Core Strategy as “a key strategic employment site for the borough and the wider sub-region, which will form a new business gateway to South Hampshire from the A3 (M)”.

Planning permission was originally granted for Dunsbury Park in 2014 with a hybrid application (ref: APP/12/00338), providing full permission for the access link road (now constructed - Fitzwygram Way) and outline permission for the development plots totalling 61,779 square metres of B1/B2/B8 floorspace, plus a hotel of 5,574 sqm.

A subsequent Section 73 application (APP/15/00732) was permitted in October 2015 to increase the % of B8 on site from 20% (12,356sqm) to 30% (18,534sqm). This was followed by the first Reserved Matters application (APP/15/01156) for the development of a 120,000 sq. ft. B8 distribution centre for Fat Face Ltd. This was granted permission in December 2015 and has recently been completed with Fat Face now in occupation.

The site was formally launched at a marketing event in March 2017 and this has generated significant interest in further plots, with further Reserved Matters applications forthcoming in the early part of 2018. Submissions to approve the cut and fill strategy, layout, access and scale (APP/17/00866), together with the first internal estate road (APP/15/00732 - Discharge of Condition B9), were approved in November 2017. The works covered by these schemes represent the landowner making a multi-million pound investment in site wide infrastructure to prepare all development plots on Phase 1 of site, including Plot 3B which is subject of this application. A reserved matters application (RMA) is currently being processed on plot 3A for a commercial vehicle repair and maintenance facility

A second Section 73 application submitted in November 2017 is currently being determined by Havant Borough Council (APP/17/01324) which seeks to remove the B8 restriction on the site in line with the emerging Local Plan policy for Dunsbury Park.

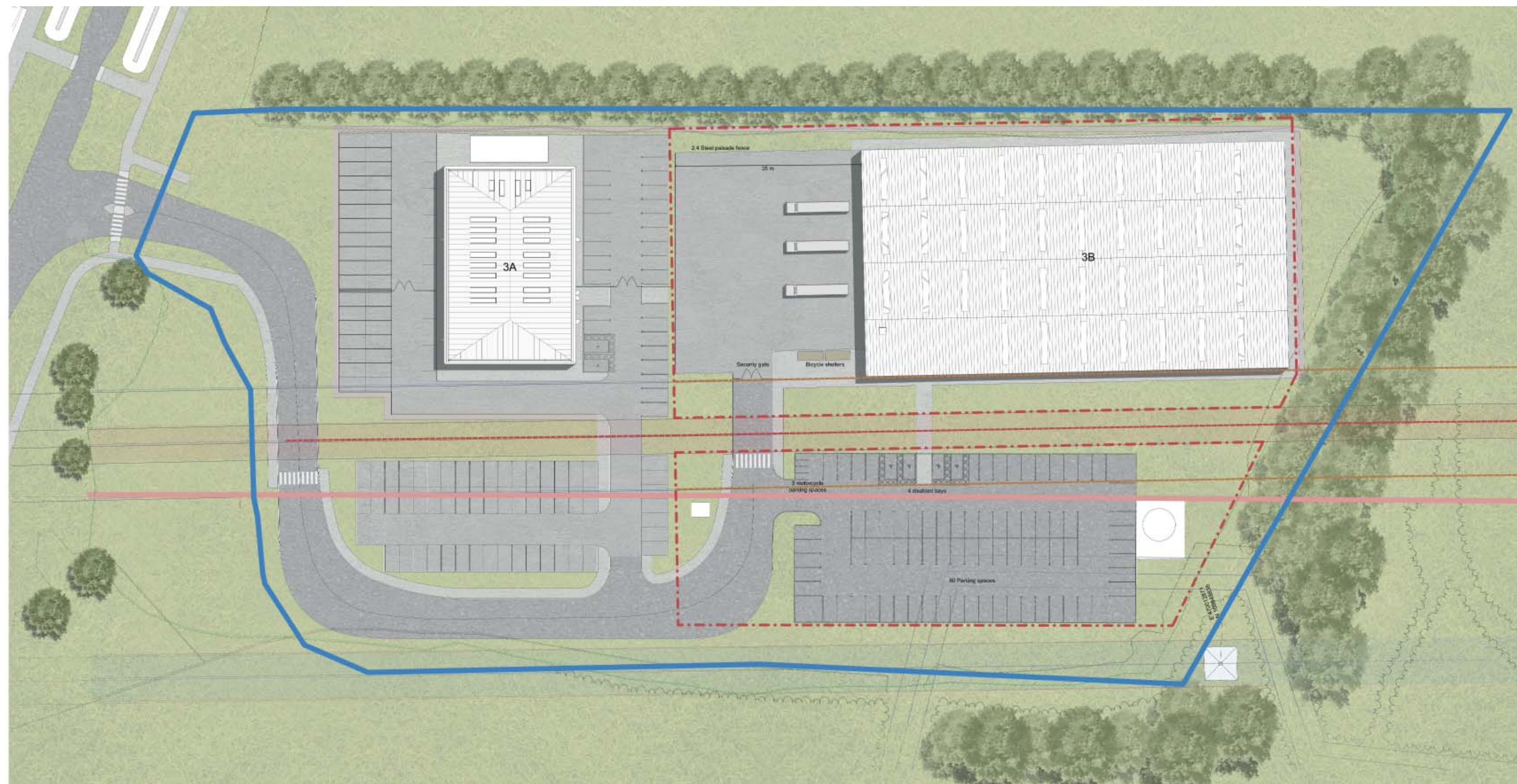


Site Boundary

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Plot 3B Dunsbury Park

2.0 Plot 3B DEVELOPMENT BRIEF



Site Plan Plot 3

The proposal is for a B-class Commercial Unit, including 10% ancillary offices, a 35m service yard, car parking and hard and soft external landscape.

Externally there will be 40 parking bays for staff and visitor parking, 2 will be accessible bays, Cycle parking for 4 cycles, and soft landscaping will also be provided. An overall provision of 80 car spaces is included in the planning application to allow flexibility if the market requires. Initially however only 40 car parking spaces will be provided at the construction stage.



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Plot 3B Dunsbury Park

3.0 Site and Context

3.1 Regional

The regional context comprises a mix of urban settlements and agricultural landscape with large areas of woodland and heathland across flat or gently sloping topography. The South Downs National Park is located to the north and the Chichester Harbour Area of Outstanding Natural Beauty to the south. The site is not visible from or forms part of either of the either of these areas.

The closest city centre is Portsmouth on the coast to the south and Havant and Waterlooville provide the main urban settlements nearby. The main infrastructure runs north to south with the A3(M) connecting Portsmouth to London and northern England via the M25 and motorway network. The M27 motorway and A27 run east-west to the south of the site.

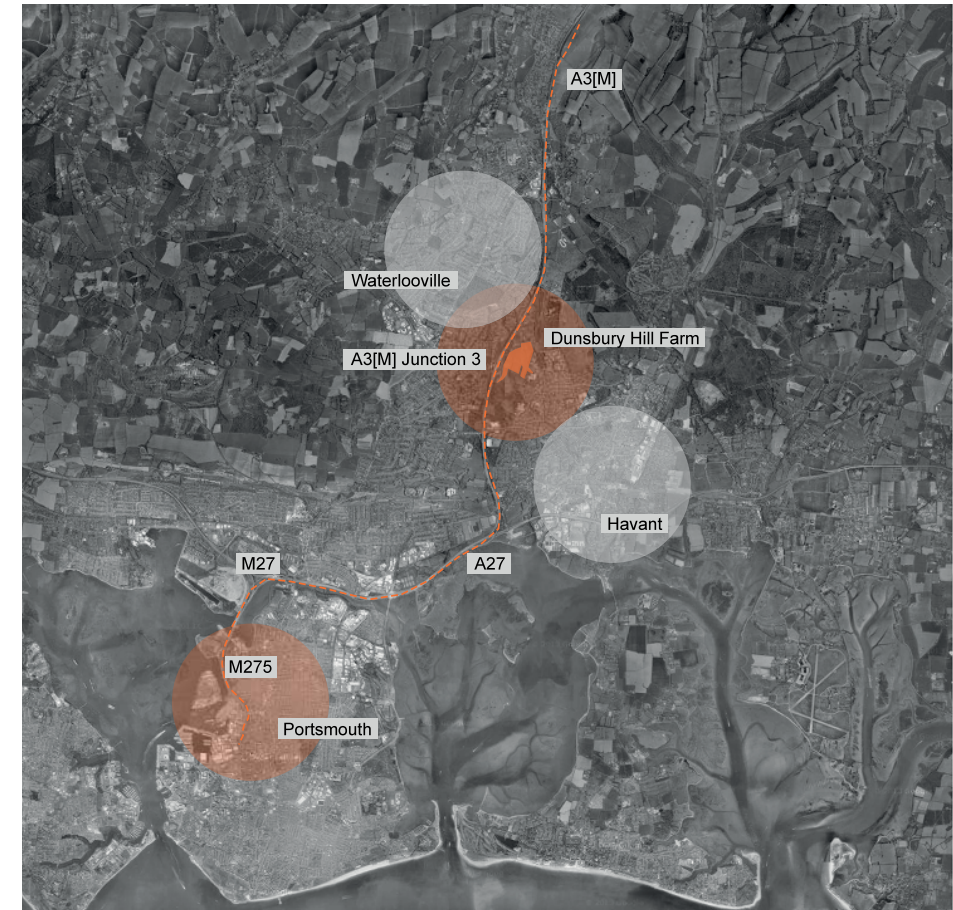
3.2 Local

The local landscape is dominated by the A3 (M) road corridor with the large settlements of Waterlooville running along the western border and Leigh Park approximately 600m to the east. The A3 (M) road corridor is cut into the landscape and is further concealed by mature and densely planted embankments restricting any distant views of the road or out to the local area.

At Junction 3 of the A3(M) there are some local views from the elevated roundabout. The borders of Waterlooville are relatively contained and not visible due to the mature embankment vegetation along the A3 (M). The western side of Leigh park is topographically lower and the borders are wooded restricting any views.

Housing to Leigh Park is predominantly two and three storey public housing stock typical of the 1960's era.

Hermitage stream runs from north to south, emerging on the Dunsbury Park site from a culvert running east-west under the A3 (M) and continues in a south easterly direction through Leigh Park and further south eventually meeting Storehouse Lake to the south of the A27.



Regional Context



Local Context

3.3 The Site

The Dunsbury Park Site gently rises from 20m AOD in the south to approximately 45m AOD in the north. It falls away to the south west towards the A3 (M) embankment. An exposed high point coincides along the Park Lane Bridleway 123. Land to the east, adjacent to Calshot Road and Prospect School is open and lies about 15m AOD.

Principle built features include the western settlement edge of Leigh Park, large pylons with overhead cables running north to south across the Site. The A3 (M), although not directly visible can be heard and becomes visibly and audibly more prominent at the raised roundabout at Junction 3.

To the south of the site are dense areas of ancient woodland. The northern part of the site is more open and woodland within the site connects with the field boundaries. The site was arable fields and has recently been remodelled to create a number of level development plots in accordance with the overall Outline Planning consent for the site.

Hermitage Stream runs along the western border of the site and continues around to the south of the site following a wooded corridor under Junction 3 of the A3 (M).

The higher ground to the north of the site affords medium distant views to the south along the A 3 (M) corridor. There are some limited views from the properties at the corner of Calshot Road that overlook the access road (Fitzwygram Way) and the north part of the wider Dunsbury Park site.

Park Lane and adjoining designated and informal footpaths are popular with local walkers and cyclists and Park Lane connects across the A3 (M) to Waterlooville.



3D Terrain Model of Site

Construction of the link road (Fitzwygram Way) connecting Hulbert Road / the A3(M) with Leigh Park was completed in 2016. The first development as part of the outline masterplan on plot 2, a Warehouse to the west of the site was completed in 2017.

There is a high pressure gas main that runs through Plot 3 from north to south (refer to site layout). The proposed layout of the buildings and design for the hard landscaping has been developed on advice from the HSE on distance of major accident hazard pipelines. There has been ongoing consultation with Southern Gas Networks (SGN) throughout the design to ensure that development will not adversely affect the main.

A redirected underground 33kV electricity main and overhead 132kV cables also run through the site, these are indicated on the site layouts and have also contributed to the layout of hard landscaping and buildings.

The location, height of the proposed building and access road has taken account of statutory clearances from the sub terrain services and overhead powerlines. Also all working methodologies in close proximity to underground services, have been agreed beforehand with the appropriate authorities.

Site Photos



3.4 Key Landscape and Townscape Features

- Urban : Waterloooville and Leigh park are reasonably well screened from the Site by mature vegetation. The environmental value of the urban areas can be described as 'Medium'.
- Woodland : the environmental quality of the surrounding woodland can be described as 'High or Medium'. The watercourse of Hermitage Stream is concealed by woodland cover with access to the woodland limited to unmaintained informal routes.
- A3 (M) Corridor has steep embankments with mature vegetation which can be described as 'Low or Medium' environmental value.
- Undulating mixed grassland or woodland: to the south of the Dunsbury Park site area represents a natural amenity and has an environmental value of 'High or Medium'
- Hermitage Stream: flows through a series of wooded copses to the south of the site.

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3.5 Transport

Fitzwygram Way connects Dunsbury Park to the B2150 Hulbert Road at Junction 3 of the A3 (M).

The B1250 Hulbert Road links the A3 (M) London Road in Waterlooville to the B2149 Bedhampton Road in Bedhampton, adjacent to Havant. Adjacent to the site the B2150 Hulbert Road is a single carriageway road with one lane in each direction with no footways or cycle routes along its length. The roads in Leigh Park are generally single carriageway with one lane in each direction.

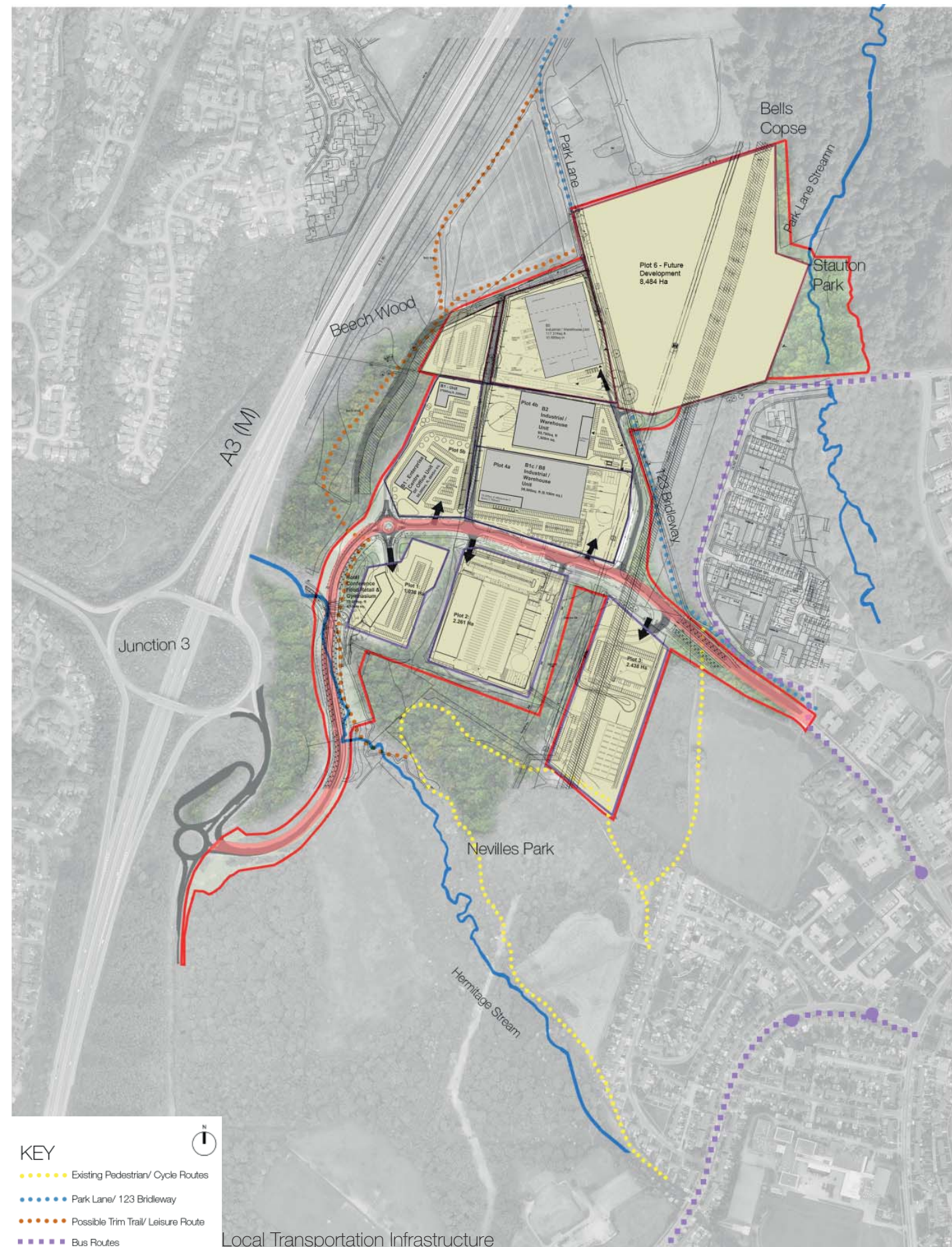
The roundabout at the junction with Calshot Road and Woolston Road will provide a spur for the future bus access to Dunsbury Park to the east by means of a bus gate. There is an existing network of bus services with some stops located 400m from the site providing routes to Havant town centre and Portsmouth Harbour.

Havant and Bedhampton railway stations are located approximately 2.5km from the site.

3.6 Public Rights of Way

A bridleway (Park Lane) crosses Dunsbury Park connecting Leigh Park across the A3 (M) to the north. A cycle way links the west of the A3 (M) to Middle Park Way via the elevated Junction 3 of the A3 (M). An off road cycle route southbound from Woolston Road links Middle Park Lane via the Hermitage Stream path to Havant town centre.

A network of footpaths to the south of the site connects to the Park Lane bridleway. The shared cycle /footway along Fitzwygram Way links into the existing network via Park Lane.



3.7 Ecology

The design team have worked with ecologists Atkins in the development of the design proposals for Plot 3b in order to retain as much of the ecological value of the site as possible. A detailed study of the existing ecology and wildlife across the wider Dunsbury Park site identified a number of protected species which are subject to specific planning legislation.

An Ecological Impact assessment for the proposals on Plot 3b has been prepared by Atkins and forms part of the suite of supplementary documents accompanying the Reserved Matters application.

3.8 Flood Risk

A site wide flood risk assessment formed part of the outline planning consent and a site wide drainage strategy was approved in 2015. The development will satisfy the requirements of the NPPF and accompanying Technical Guidance note on the flood risk as well as adhering to the site wide drainage strategy for Dunsbury Park.

The surface water drainage and attenuation measures for this site are explained in more detail within section 9.1 of this report.

3.9 Site Drainage

A new surface water drain will connect the site to the Hermitage Stream via the recently installed retention ponds to the south of the site. Run off from car parking areas will be via petrol interceptors.



Dormouse *



Bat



Adder *

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Plot 3B Dunsbury Park

4.0 Design Response

Plot 3 as a whole occupies 2.438 ha (6.024 acres) of the proposed Dunsbury Park development. The plot is situated on the southern edge of the development joining onto one of the existing access spurs off Fitzwygram Way, in turn- linking with Hulbert Road. A new bus stop / lay by is located just west of the site outside of the Fat Face development.

The building design principles and plot layout have been developed in line with the guidance within the 'Dunsbury Hill Farm - Design Code' report. Movement through the site and how the landscaping responds to both the ecology and sustainability requirements has been developed in line with the reports guidance.

4.1 Site Layout

The site is split into two plots, Plot 3B to the South to which this application relates and Plot 3A to the North, Both the vehicular and pedestrian access to both plots comes in at a higher ground level from the north and then follows the site along the western edge. The site level changes will be accommodated through the use of retaining structures together with land batters terracing down. A soft landscape zone acts as a natural buffer between the access road and the carpark in-front of the building. Externally there will be 40 parking bays for staff and visitor parking, of which 2 will be accessible bays close to main entrance, Cycle parking for 4 cycles, and soft landscaping will be provided.

The main elevation to the proposed building will face west. In line with the design code for the overall Dunsbury Park development the frontage of the plot will remain unfenced, while the service area to the north of the building will be enclosed by a 2.4m high palisade security fence.

The finished ground floor level of the building has been set at +20.5m AOD. This level has been arrived at as a response to site levels and gradients together with the requirement for ground cover over the existing HP gas main which is crossed by the site access road.

Site plan - Constraints

-  Road
-  Yard
-  Pavement
-  Grass
-  Existing trees
-  Bicycle shelters
-  Gabion wall
-  Site Boundary
-  Demise Boundary
-  Gas Main - centre
-  Gas Main - 3m Exclusion
-  Gas Main - 9m Exclusion
-  33kv Electrical Main - Centre
-  33kv Electrical Main - 4.5m Exclusion
-  Below Ground Electrical Main
-  Woodland Edge
-  Pylon Exclusion Zone



4.2 Landscape Design: General Site Arrangement

The Dunsbury Park greenfield employment site is situated to the east of the A3(M). Whilst the site has a rural setting, it lies between the residential areas of Waterloo and Leigh Park. The proposed commercial unit on plot 3B, which is on the south side of Fitzwygram Way that runs through the business park development.

The rectangular site has a mature woodland belt on the eastern boundary. A high-pressure gas pipeline as well as a 132kv overhead powerline run through the centre of the site. On the western side, on the other side of the access road within the plot, a mature woodland belt provides screening to the recently completed FatFace warehouse.

General Site Arrangement

The proposed commercial unit building is located on the eastern portion of the site, due to the restrictions of the high-pressure gas main that runs north-south through the plot.

Due to the drop-in level across the site, retaining wall approximately 1.5 m high will be required on the northern edge of the site between the service yard and the Plot 3A to the North. The service yard is approximately at the same level with the existing ground level on the eastern boundary. In order to maximise the distance between the eastern elevation of the proposed building and the adjacent site boundary, as the proposed unit extends southwards the building will be retained below floor slab level in the same plane as the external wall. This will provide a clear construction and maintenance zone of approximately 4m between the building and the canopies of the existing mature trees.



North East Axonometric view



North West Axonometric view

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4.3 Access and Parking

Fitzwygram Way runs through the Dunsbury Park site, linking Hulbert Road to Woolston Road. The spur for the access road to plot 3A has been created and this will be extended down the western side of plot 3A and will terminate at plot 3B, to the south.

There will be up to 80 staff and visitor parking spaces, on the western boundary to the site which include 2 accessible bays, providing step-free access to the building entrance on the western elevation. Initially 40 spaces will be constructed to reflect 1/75sqm parking standard. An additional 40 spaces will be provided if there is occupier demand.

Covered storage for 4 cycles will be provided to the north of and adjacent to the main entrance in the paved area and will be clearly visible from Reception.

4.4 Existing Vegetation

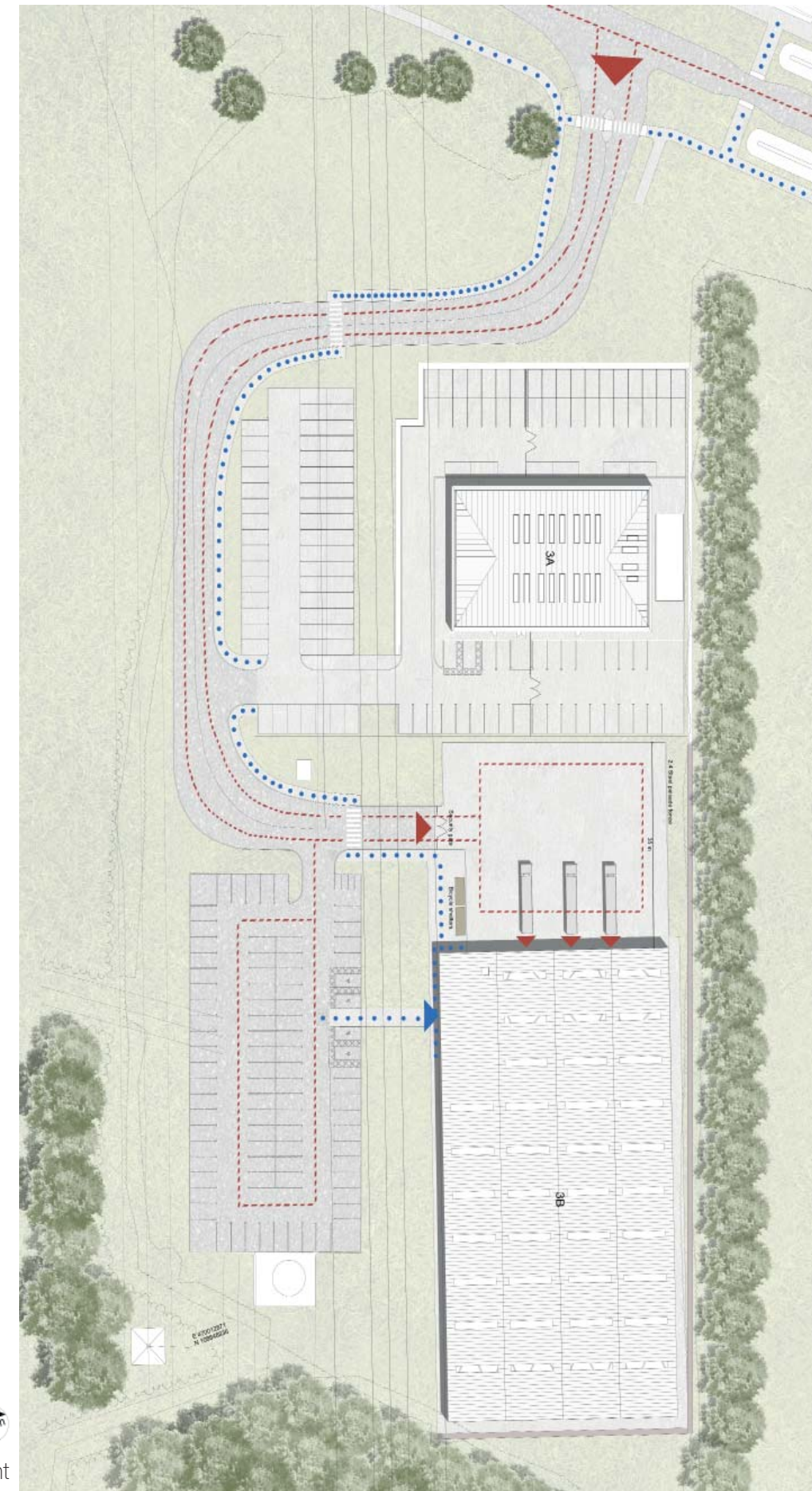
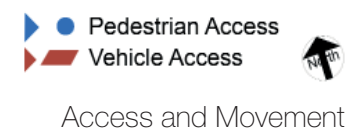
The plot was formerly agricultural land, but has been used as a storage area for spoil over the last 2 or 3 years. Re-grading of the site, approved as part of the cut & fill reserved matters scheme, has created the plateaux for the plot 3A building.

The existing mature woodland on the eastern and western boundaries has not been disturbed by the excavation works and the intention is not to alter the levels within the root protection zones of the retained trees.

4.5 Planting

Due to the constrained, linear nature of the plot and the restrictions imposed by the high-pressure gas main and underground electricity cables, the proposed planting is minimal on the eastern boundary. This addresses to the approved landscape strategy for the site which did not propose any buffer planting on this boundary given the constraints.

General amenity grass will be used around the strip of land over the gas main will be planted with wildflower seeding to match other areas of Dunsbury Park along Fitzwygram Way and the internal estate road heading north parallel to Park Lane Outside of Plot 3a, along the western edge of Plot 3 as a whole, seeded grass will be introduced to tie in with the approved landscape strategy for the wider site.



4.6 Hard Landscape Materials

It is proposed to use tarmac for the access road around the building and parking bays and an in-situ concrete with tamped finish to the service yard.

A textured concrete flag will be used for the pedestrian areas, such as the perimeter of the building and the cycle shelter area. The cycle shelter will be 2m x 2m and will be constructed from curved polycarbonate and powder coated steel. This will accommodate 4 cycle spaces.

The gabion wall to the northern boundary will be approximately 1.5m high tapering out to nothing on the east and west boundaries. The gabions will be hand packed on the front face, with durable local stone and reflect the gabions used for the realignment of Hermitage Stream within Dunsbury Park.



Gabion wall



Marshall's Mistral block paving in 'Graphite'. For use on display roadways, marking out parking bays, and at service entrances.



Marshall's Mistral block paving in 'Charcoal'. For use on parking bays



Marshall's 'Conservation' textured flag paving slabs in 'Silver Grey'. For use around building and at main entrance



Cycle shelter for staff and visitors



Area of wildflower meadow to the centre of the site



Hooped tubular rail to boundary of display parking spaces and entrance



Naturalised drifts of native daffodils to the centre of the site

4.7 Fencing and Boundary Treatment

Steel palisade fencing, 2.4m high with a double gate opening the width of the access road on the west will be used to secure service yard. The palisade will be finished in RAL9005, jet black, consistent with Plot 2.

A 2.4m steel palisade fence will extend the length of the Eastern boundary of the site returning at the South elevation of the building with a gated access for emergency means of escape in the South West and North West corners of the building.

The retaining wall on the northern edge of the site will have a 2.4m high security fence. This will be finished in RAL9005, jet black.

-  20-25 cm standard tress
-  Tarmac
-  400x400mm textured concrete slabs
-  Grass seeded area
-  Wild flower meadow area
-  Bulb planting
-  Woodland matrix planting
-  Insitu concrete
-  Security fences

Landscape and security plan



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Plot 3B Dunsbury Park

5.0 Building Form



North West Axonometric view



South West Axonometric view

5.1 Massing

The building has been designed to reflect its function as a speculative commercial unit with 10% ancillary office space at ground and first floor level. Behind this is the double height workshop space.

The building will be rectangular in plan, 80.8m in length by 43.3m in width. The height and to the underside of haunch will be 10.0m (+30.5m AOD). This sits comfortably within the parameter plan height limit for this plot of +40.0m AOD.

5.2 Levels

The building has been grounded at +20.5m AOD as a result of careful consideration of a number of factors. These include:

- Vehicular access from the estate access road to plots 3A and 3B
- Lorry access has been modelled using computer software to ensure permitted vehicles can access the site and service the building from the link road at an acceptable gradient as Fitzwygram Way. , The access link road sits at a significantly higher level than this plot
- Provide inclusive access for pedestrians of all abilities. Segregation between pedestrians and vehicles is provided from arrival at the site to entrance.
- Impact of height and mass of the building on surrounding development.

The level of the floor slab enables the building eaves line to underside of haunch to be set at +30.5m AOD. The surrounding mature woodland canopy ensures there is no loss of visual amenity from surrounding development, or indeed from wider views to the south and east.

- Optimise cut and fill on site to reduce environmental impact of bulk removal from site.

Through careful analysis of the level difference across the site from north to south, it was evident a ground floor level of +20.5m AOD also allowed the designers to optimise the cut and fill balance reducing the amount of bulk material to be moved on site while enabling existing levels at the perimeter of the site to be maintained, thereby reducing the negative impact on the existing surrounding ecology.

- Coordinate surface water storm drainage to existing infrastructure.



West Elevation

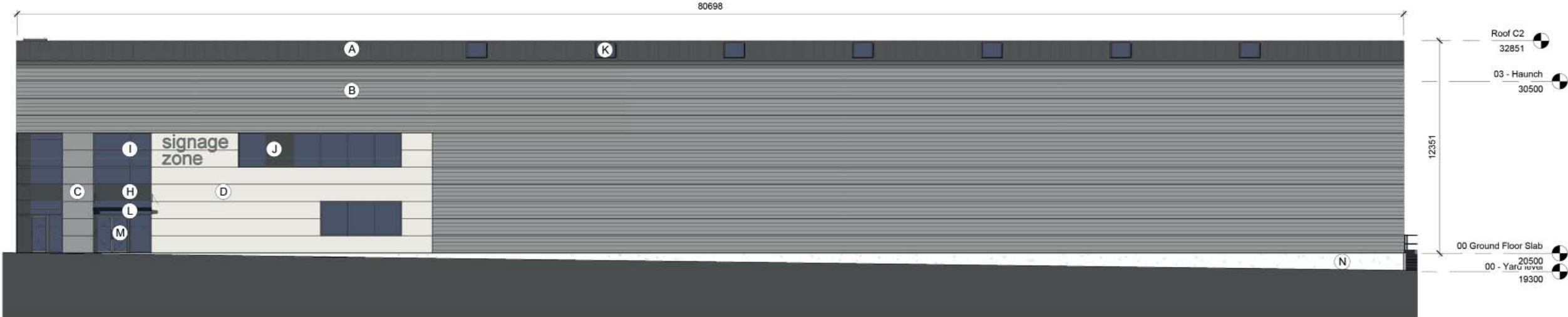


North Elevation

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Plot 3B Dunsbury Park

6.0 Building Appearance



West Elevation



East Elevation

6.1 Elevations and Materials

The building materials have been selected to portray a crisp contemporary architectural aesthetic that reflects the function of the building through the use of a limited palette of high quality, low maintenance materials. The building entrance is located on the northwest corner, prominent on approach and uses modular curtain walling to open up views into the reception space.

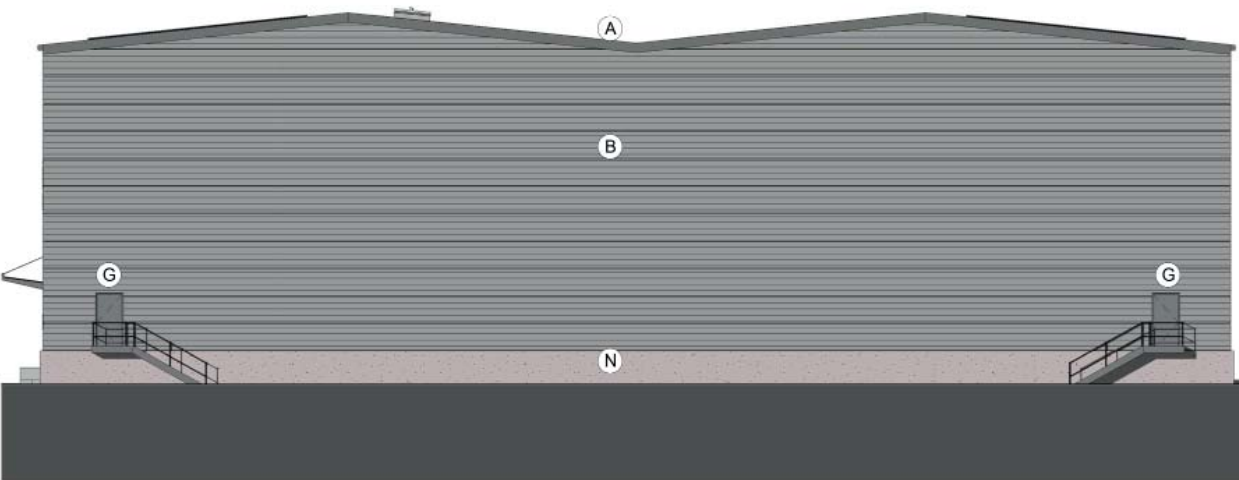
Locations for branding have been designed integrally into the cladding treatment on the front of the building and side elevations of the offices where they are visually prominent on approach to the site via the main estate access road. Signage within these areas will be subject of a separate advert application.

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Plot 3B Dunsbury Park



North Elevation



South Elevation

The building will be clad in a combination of metal micro-rib composite panel system running horizontally to the office areas to the front elevation facing north and west. The remaining elevations will be in silver / grey coated horizontal cladding. Gable ends to the North and South facing elevations will be expressed as pitched bables to reflect the twin portal structural solution.

The roof will be in a profiled metal deck with a grey coated finish with an area equivalent to 10% of which will be polycarbonate roof lights

There will be 3 level access doors in a blue finish providing lorry access between the warehouse and the service yard.

Material Legend

- (A) Kingspan KS1000 RW Profiled Composite Roof Cladding [Goosewing Grey RAL 7038]
- (B) Built Up Curve Wall Profile Cladding System [White Aluminium RAL 9006]
- (C) Kingspan KS1000 FL AWP Horizontal Cladding [White Aluminium RAL 9006]
- (D) Kingspan KS1000 FL AWP Horizontal Cladding [Traffic White RAL 9016]
- (E) Loading Bay Doors [Cornflower Blue BS 185ES]
- (F) Powder Coated Aluminium Louvre Panel Units [Grey Aluminium RAL 9007]
- (G) Solid Core Steel Door [Grey Aluminium RAL 9007]
- (H) PPC Aluminium Casette Panel/ Curtain Wall [Anthracite Grey RAL 7016]
- (I) PPC Aluminium Curtain Wall Stick System [Anthracite Grey RAL 7016]
- (J) Glazed Spandrel 'Lookalike' Panel [Anthracite Grey RAL 7016]
- (K) Rooflight
- (L) Canopy
- (M) Glazed Entrance Doors [Anthracite Grey RAL 7016]
- (N) Precast Concrete Retaining Wall

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Plot 3B Dunsbury Park



EXTERNAL PAVING MATERIALS



External Surface Material to Building Approach
Marshall's Saxon Textured Slab [Natural]



Concrete to forecourt



Tarmac to car park

EXTERNAL CLADDING MATERIALS



Kingspan cladding and external doors/ louvers
Grey Aluminium [RAL 9007]



Kingspan cladding to offices
Traffic White [RAL 9016]



Kingspan cladding
White Aluminium [RAL 9006]



Curtain wall and spandrel panels
Anthracite Grey [RAL 7016]



Loading Bay Doors
Cornflower Blue [BS 185ES]



Kingspan profiles metal roofing
Goosewing Grey [RAL 7038]

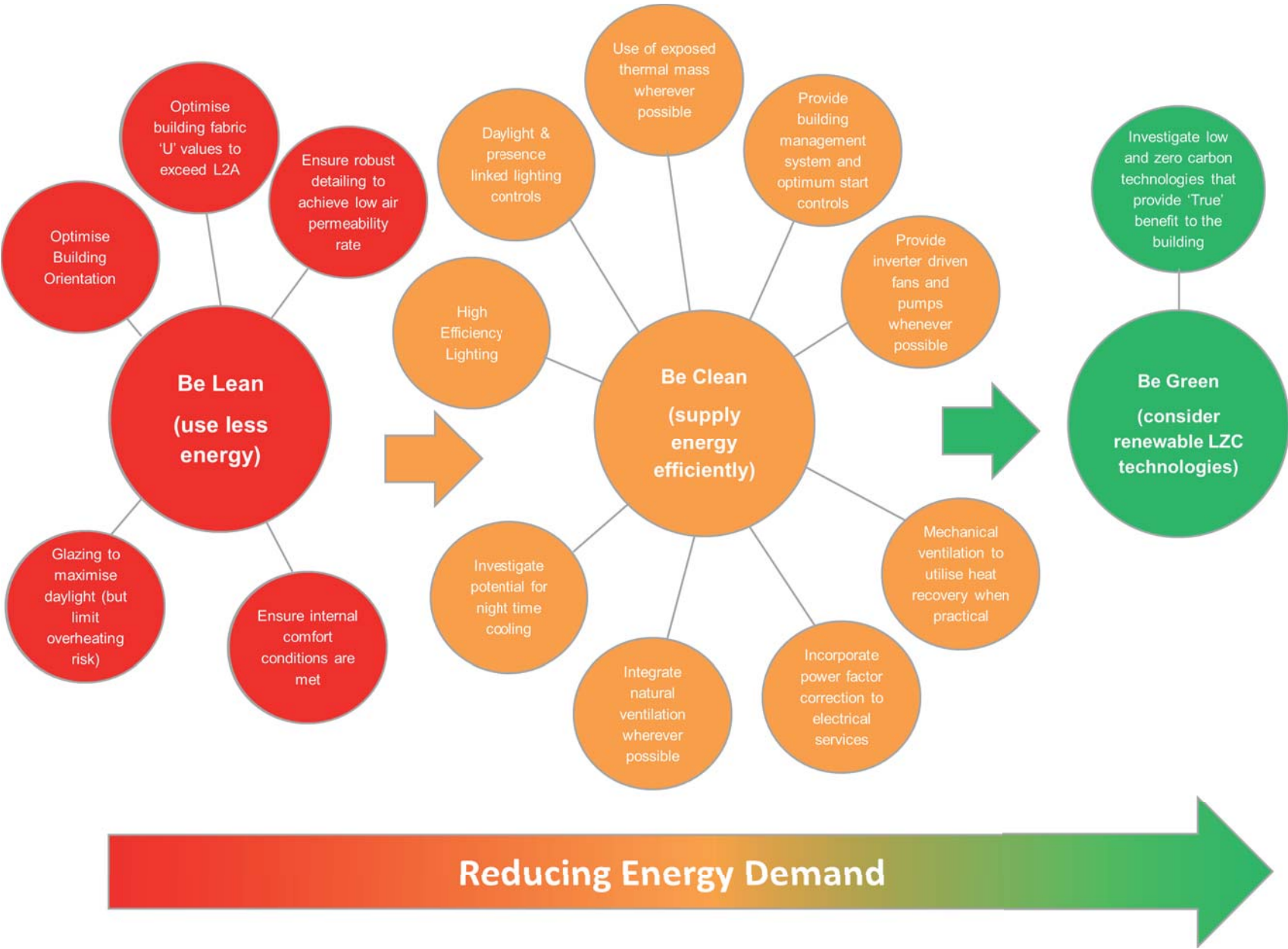
7.1 Design Strategy

The following statement sets out the sustainable design strategy for the proposed warehouse to be constructed on the Dunsbury Park site, Havant. The strategy will highlight the “Lean”, “Clean”, and “Green” measures that will be adopted to achieve Building Regulations compliance; and to follow the general principles of the site wide strategy for sustainability and energy reduction.

For the proposed warehouse building we have mapped out our sustainable design strategy for the design of the building form, fabric and the environmental services to ensure we are providing a well-considered sustainable design solution that aims to maximise the energy efficiency of the building and thus reduces both carbon dioxide emissions and the energy demand and ultimately operating/running costs.

The strategy can be summarised be :

- Be Lean (use less energy)
- Be Clean (supply energy efficiently)
- Be Green (consider renewable energy)



7.2 LEAN

We have adopted a 'fabric first' approach to maximise energy and CO2 savings using passive design measures. This includes the following;

- High performance U-values for the walls, roof, floors and glazing
 - Walls 0.20W/m²K
 - Roof 0.15W/m²K
 - Windows 1.60W/m²K
 - Ground Floor 0.15W/m²K
- High air tightness value of 3m³/h/m² @50Pa
- Glazing g value of 0.4 to limit solar gain

High air tightness and U-values reduces energy lost from the building fabric, especially in winter, and gives a subsequent reduction in CO2 emissions.

There are a number of physical site constraints that limit the ability to optimise the orientation of the building with respect to energy consumption so focus has been on the internal planning of the spaces to maximise energy efficiency.

All the occupied areas are concentrated to one end of the building, with WCs stacking vertically, to ensure that environmental systems (heating, cooling, lighting etc.) can be designed in zones. This allows efficient control of the environmental systems.

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7.3 CLEAN

Further to the 'lean' measures outlined above we have developed the building design based upon a 'clean' design principle. This ensures that we minimise the use of energy in the building, and what energy we do use is used efficiently and minimising waste.

The following lean design measures have been targeted;

- Natural ventilation – Where possible areas will be naturally ventilated to minimise energy consumption without compromising occupant comfort.
- High efficiency LED lighting systems
- High efficiency condensing gas boilers and radiant heating systems to reception and circulation
- Inverter driven fans and pumps – inverters provide speed control of fans and pumps to ensure no energy is wasted in over provision of heating and ventilation. Controls will be linked to occupancy to maximise efficiency.

7.4 GREEN

The third and last design strategy in the design hierarchy is to implement renewable or low carbon technologies, where appropriate, to improve the sustainable credentials of the building further.

Whilst the 'lean' and 'clean' measures outlined above would provide the necessary improvements in energy efficiency to meet the relevant requirements of the Building Regulations (Part L2A), further energy savings would be achieved without the implementation of renewable or Low carbon technology. As such a number of technologies have been appraised, with the summary table below outlining the most appropriate for this building.

7.5 BREEAM

In addition to the sustainable design statement the proposals are also subject to a requirement to try to achieve a BREEAM rating "Excellent" defined in Condition 5 (d) of Planning permission APP/12/00338.

A BREEAM Pre-Assessment of the proposals has been carried by accredited BREEAM Assessors in accordance with BREEAM UK approved procedures and achieves a pre-assessment score of 61.2% which is a Building Rating "Very Good".

As the proposals are being developed by Portsmouth City Council speculatively basis the design is being prepared to "shell and core" stage. As such, it has not been possible to consider any tenant-related items at this pre-assessment stage.

A copy of the BREEAM Pre-Assessment is included in the supplementary information to this Reserved Matter application.

Technology	Capital Cost	Functionality/ suitability	Reliability	Maintenance Requirements	CO ₂ Saving	Overall Rating
Ground coupled air system	Medium – dependant on excavation costs	High – can pre-heat and pre-cool fresh air thus reduces energy demand – limits on summer cooling capacity due to ground temperature	Medium – minimal moving parts, but high level of workmanship required to ensure water tightness	Medium - regular replacement of filtration. Water tightness can be problematic	Medium – potential to reduce winter heating load and to reduce ventilation rates to minimum due to free cooling of air during summer	* No space to implement due to requirements for SUDs drainage and limitations on site area
Ground source systems (water)	Medium to High dependant of drilling & infrastructure costs	High – can provide free cooling during summer and low grade heating (up to 55°C) in winter when used in conjunction with GSHP	High – although subject to suitability of boreholes - open loop can be susceptible to blockages	Low for closed loop systems – Medium for open loop systems and may require specialist maintenance contractor	Medium – dependant on whether used for heating as well as cooling	** Low water temperatures in heating not conducive to warehouse environment
Ground source heat pumps	As ground source water	High – can be utilised to provide low temperature cooling and low grade heating – best suited for underfloor heating and pre-heating of mechanical ventilation systems	Medium – regular inspection in line with F Gas regulations. Proven technology	Low for GSHP and as above for open/closed loop system	Medium – operational efficiency dependant on low heating temperature	** Low water temperatures in heating not conducive to warehouse environment
Biomass	Low – however higher cost than conventional boiler Cost of fuel to be taken into account in life cycle	High – can be utilised to supply 100% of required heating demand	High – dependant on stringent maintenance regime and quality of fuel	High – requires specialist maintenance for boilers and associated fuel delivery system – if poor quality fuel then risk of fault will increase. Large area for bulk storage required coupled with frequent deliveries, especially in winter.	High	** subject to fuel availability (recommend back up gas boiler due to implications with fuel delivery). Negative impact on BREEAM NOx credits
Solar thermal panels	Medium – roof may need structural enhancement due to weight and wind load	Medium – although requires consistent HWS demand	High	Low – requires regular cleaning and annual glycol checks (medium for vacuum tubes)	Medium	* Needs a high, and consistent hot water demand for viability
Photovoltaic panels	Medium	High – with optimum positioning	High	Low	Medium	**** The cost of PVs is continually reducing and with Feed in Tariffs these are now financially viable
Wind turbine	High – potential structural implication for building mounted turbines	Best suited for non-urban location with high average wind speed- high risk of planning refusal for large scale schemes	Low /medium – dependant on wind conditions	Medium - specialist maintenance required	Low – unlikely to provide major savings in isolation (unless high wind speeds)	* Not suitable due to location of surrounding residential areas. Also insufficient space for citing of turbine
Micro -CHP	Medium – initial cost of CHP engine and commissioning	High – provides consistent base load	High	Medium - specialist maintenance required. Regular maintenance schedule	Medium	*** Requires Clean Air Act calculation and flue that may not be desirable wrt planning

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Plot 3B Dunsbury Park

8.0 Security and Reduction in Crime Risk



During the development of the design the team have referred to guidance in the document 'Safer Places the Planning System and Crime Prevention', the advice of which has been incorporated to reduce opportunities for criminal activity. These will include:

- The proposed site layout and design of the building has been carefully considered to reduce opportunities for crime and provide passive and active visual surveillance. This has been addressed from first principles in the design process starting with site layout.
- The building has been located on the site to create clearly defined public and private secure zones which are unambiguous and can be readily supervised and enforced.
- External lighting will ensure lux levels are achieved which will provide safe and secure movement of staff around the perimeter of the site, whilst also respecting the ecologically sensitive location adjacent to bat corridors.
- All windows will have high performance hardware and elevations will be free of recesses to deter unauthorised access.
- Doors will be located within the building to reduce unauthorised access to and from the workshop areas.



Plot 3B Dunsbury Park

9.0 Summary

The proposed commercial facility on Plot 3B has been considered holistically within the wider Dunsbury Park development. The site benefits from mature woodland boundaries which provide a clearly defined setting and as well as a dense visual screen to three sides.

The building form, mass and appearance is a direct response to its functional requirements whilst following the overall guidance set within the 'Dunsbury Park – Design Guide'. Existing landscape features have been retained and supplemented to reinforce the setting. The site is left deliberately open and inviting to the front with effective security at the building line.

The car parking and public realm at the front of the building has been carefully considered using a mixture of tarmacadam and small unit paviers to provide a high quality robust environment which is softened through the use of soft landscape, gabion retaining walls and steel street furniture with coordinated signage.

The use of well detailed, high performing materials with good

U-values and long life expectancy will ensure a sustainable solution for the future. Careful consideration of structural frame will enable flexible use of the site in the future.

Efficient plant and low energy highly efficient lighting and flexible controls will ensure energy use remains low.

As part of the ongoing Dunsbury Park Development, this proposal will provide a high quality development in line with the outline permission and emerging local planning policy from Havant planning department.



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