

THORNHILL LOW CARBON COMMUNITY

A SUSTAINABLE, CONNECTED & INCLUSIVE COMMUNITY SET IN A NEW COUNTRY PARK FOR CARDIFF

CANDIDATE SITE SUBMISSION PART II
SITE ASSESSMENT & EMERGING MASTERPLAN

JUNE 2021



LIGHTWOOD



Creu Lleuedd Cymru
Placemaking Wales

Llofnodydd y Starter | Charter Signatory

People and community

The local community are involved in the development of proposals. The needs, aspirations, health and well-being of all people are considered at the outset. Proposals are shaped to help to meet these needs as well as create, integrate, protect and/or enhance a sense of community and promote equality.

Location

Places grow and develop in a way that uses land efficiently, supports and enhances existing places and is well connected. The location of housing, employment, leisure and other facilities are planned to help reduce the need to travel.

Movement

Walking, cycling and public transport are prioritised to provide a choice of transport modes and avoid dependence on private vehicles. Well designed and safe active travel routes connect to the wider active travel and public transport network, and public transport stations and stops are positively integrated.

Mix of uses

Places have a range of purposes which provide opportunities for community development, local business growth and access to jobs, services and facilities via walking, cycling or public transport. Development density and a mix of uses and tenures helps to support a diverse community and vibrant public realm.

Public realm

Streets and public spaces are well defined, welcoming, safe and inclusive with a distinct identity. They are designed to be robust and adaptable with landscape, green infrastructure and sustainable drainage well integrated. They are well connected to existing places and promote opportunities for social interaction and a range of activities for all people.

Identity

The positive, distinctive qualities of existing places are valued and respected. The unique features and opportunities of a location, including heritage, culture, language, built and natural physical attributes, are identified and responded to.

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01 Introduction

The candidate site (165) is the major part of an overall opportunity area situated to north of Thornhill, between the M4 and the scarp and ridgeline of Craig Llanishen extending east towards Craig Lllysfaen.

To the east, the area is framed by Cefn Onn Park and Llanishen Golf Club, themselves bounded by the railway line. To the west lies Wenalt Road/Coed-Y-Wenallt.

The submission also includes a 'satellite' woodland area to the immediate south of Thornhill and Lisvane station, which is available as part of the sustainable travel strategy for the site.

This technical assessment forms Part 2 of a two-part candidate site submission and is accompanied by a Vision for a new, highly-sustainable community at Thornhill, close to existing key commuter train and bus services. The site, which is under single ownership, presents a unique opportunity to create a development that aligns squarely with Cardiff City Council's aspirations for a fairer, greener and stronger capital city.

The technical assessment sets out why the Council should be looking at the candidate site as part of the future growth of Cardiff, and sets out the justification for the emerging proposals. The following matters are covered:

- Strategic Planning Context
- The Proposals and Emerging Masterplan
- Landscape and Visual Appraisal
- Green Infrastructure
- Green Belts and Green Wedges
- Heritage
- Ecology
- Transport and Movement
- Flood Risk and Drainage
- Utilities

Site Plan





02 Strategic Planning Context

FUTURE WALES 2040

Future Wales 2040 was published by the Welsh Government in February 2021 and is the Welsh Government's national development framework and forms part of the Development Plan.

Cardiff, Newport and the Valleys are identified in Policy 1 as a National Growth Area where development will be directed.

This will be supported by Policies 2, 3, 6 and 8, which will ensure that development is sustainably located with easy access to public transport and other public services. Towns and cities must grow in a sustainable way and in a way which promotes placemaking. Digital and mobile connectivity will be crucial to the economic success of the South East and Policies 13 and 14 help to ensure that suitable infrastructure is in place to support this.

SOUTH EAST WALES STRATEGIC DEVELOPMENT PLAN

The Local Government Elections (Wales) Act 2021 and establishment regulations for Corporate Joint Committees (CJCs) set out the legal framework for preparing Strategic Development Plans (SDPs) for the regions of Wales. Future Wales 2040 provides a clear context for each region and policies to support regional planning.

Planning and co-ordinating the delivery of new housing to meet identified needs is an important task for the new regional planning process for South East Wales. Strategic housing issues must be considered at the regional level and not on the basis of the aspirations of individual local planning authorities. Understanding and managing different development pressures across the region will be a key issue for the South East Wales Strategic Development Plan.

Welsh Government estimates of household growth and housing needs to provide part of the evidence and context on which Housing Requirements for Strategic Development Plans can be based and should be considered at the regional scale.

Under the Welsh Government central and higher estimates, 66,400-85,300 additional homes are needed in the south-east region until 2039 and over the initial five years (2019-20 to 2023-24) 48% of the additional homes needed, should be affordable homes. Such data should be considered with other key evidence in relation to issues such as what the Plan is seeking to achieve and the link between homes and jobs.

CARDIFF LDP REVIEW (LITE)

The intent of the three-tiered Welsh planning system is that Local Development Plans deal with local issues. Strategic housing matters and the identification of strategic sites is an SDP competence. The scale of the candidate site at Thornhill is 'strategic'.

WHERE CAN CARDIFF FEASIBLY AND SUSTAINABLY GROW BEYOND CURRENT COMMITMENTS & ALLOCATIONS?

This section outlines why Cardiff Council and the Corporate Joint Committee for South East Wales should be considering the candidate site.

The adopted Local Development Plan 2006-2026 (2016) allocates several strategic development locations (SDLs) for Cardiff which have not come forward at the rate required, although planning and delivery progress is now being made.

Since the adoption of the current LDP the climate change and decarbonization agenda has gathered momentum. However, from a transport perspective, the supporting transport infrastructure that is needed has not been forthcoming for sites such as North West Cardiff and Creigiau. The vision is known (cross rail), but delivery is another matter and is some way off. Conventional transport planning wisdom is that unless modal shift options are available to new occupiers from day one then existing behaviour become embedded.

Despite progress, there is no prospect that the housing delivery objectives of the adopted LDP Plan will be achieved by 2026. The current stock of commitments is, in part, a 'failure' not a 'success'; it should be much lower because thousands of these homes should have already been built.



We do not seek to ascribe 'blame', but under delivery is a key theme of the past 10 years (despite the Council's best efforts). This demonstrates that there must be a clear focus, not solely on the overall stock of commitments but on the likely rate of delivery that can be achieved.

The lower than planned rate of housing delivery between 2010 and 2020 will have had a dampening effect on population growth during the last few years. This in turn dampens the latest population and household projections. Projections merely 'project' forward past trends; they are not forecasts of what is needed based on socio-economic policy objectives. Planning Policy Wales advises that projections are only part of the evidence base for establishing future needs. The significance of Cardiff to the South East Wales region cannot be overstated and it accounted for 85% of all of Wales employment growth between 2014-2019.

WHERE NEXT?

The administrative area of Cardiff City Council is very restricted in terms of strategic and deliverable growth options, which accords with the Council's Transport Vision and the recommendations of the South East Wales Transport Commission, as set out in Section 08.

The following commentary should be read alongside the associated plans, with each bullet relating to a letter or number. The adopted LDP identified that land in the vicinity of two of the SDLs has future expansion potential, namely:

a) To the west of Strategic Site D [North of J33] is land associated with Henstaff House and Henstaff Court Business Centre. This suffers from the same poor sustainable access credentials as the parent site. There is no train service and cross rail is not guaranteed to be delivered, especially any time soon. The combination of cycling distance/routes to Cardiff is likely to prohibit active travel

b) To the north of North West Cardiff, between Rhydlafar and Radyr Golf Club. This area is heavily affected by woodland, and the Goitre-Fawr Ponds SNCI. The assumed level of development would require an access not only from Church Lane but also from the A4119 Llantrisant Road, involving significant woodland loss within the Gwern-y-Cegyrn SNCI Ancient Woodland (Coniferous plantation on an ancient woodland site with varied moss and liverwort flora). The site does not enjoy the same rail accessibility credentials of Thornhill and the No.62 bus offers only an hourly service. In time this location may benefit from cross rail through Plasdwr, if it is delivered.

The adopted LDP identifies that both potential expansion areas could yield 1,250 homes each, but that has yet to be properly tested.

The first key point is that these two areas cannot automatically be assumed to be the top two ranked sites to be released for development, especially from a transport sustainability perspective.

Having regard to the rest of the administrative area:

- 1) There are no growth options to the south east of the city due to the Bristol channel, flood risk, the Gwent Levels SSSI, and proximity to the Severn Estuary SPA. These constraints continue on a wide band to SW Newport.
- 2) Cardiff has grown up to its south western boundary with Glamorgan (the A4232). The city would have to spill out into Glamorgan to expand. Politics aside the Cwrt-yr-al Basin Special Landscape Area is a major constraint.
- 3) Easterly strategic growth within Cardiff is constrained, by the inviolable St Fagan's and Ely Valley Special Landscape Area and Conservation Area.
- 4) To the immediate north of the St Fagans SLA, LANDMAP identifies that the land is of regional importance from landscape and sensory perspective.
- 5) Due west of the A4232 (with Glamorgan) the land is also covered by an SLA designation. Whilst the mainline railway passes through this area, there are no station and no plans for any stations.

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- 6) An extensive area within Cardiff between Plasdwr, the A4232 and J34 present a strategic option, post the implementation of Plasdwr, which is two decades away. At present this area performs poorly in transport terms and would be highly car dependent. A new junction would be needed on the A4232.
 - 7) North of the M4, there is no strategic potential between Creigiau and the A470 due to the extensive Garth Hill and Pentyrch Ridges SLA designation. There may be some modest non-strategic potential north and west of Creigiau.
 - 8) There is no strategic development potential between Tongwynlais and The Wenallt on account of the Fforest Fawr SLA.
 - 9) It is not until the Thornhill Road area, that strategic potential can be identified between the Fforest Fawr SLA to the west and the Caerphilly Ridge SLA (including Parc Cefn Onn) to the north and the east. This area benefits from three M4 overbridges, the Caerphilly Road, strategic bus routes and accessibility to Lisvane and Thornhill Station. This is the study area containing the candidate site.
 - 10) East of the Rhymney line the lower slopes of Craig Lysfean also offer strategic potential by virtue of the Craig Road overbridge. This area, contained by electricity transmission lines, is also within walking and cycling distance of Lisvane and Thornhill Station. However, it is likely to be less able to be viable served by bus. Moreover, there is no effective access aside from Craig Road (South) and therefore no effective secondary access strategy for emergency vehicles. This access constraint will limit the capacity of this area unless a connection can be made to Rudry Road, through other another ownership, that would thus have a ransoming position.
 - 11) East of Area 10, and either side of Rudry Road, the pattern of landownership becomes more complex. There are several high value houses in large grounds and thus the existing use value and landowner intent will affect deliverability. In any case, the area is heavily affected by the alignment of electricity transmission lines and woodland coverage also increases markedly. This area is more isolated, further from the railway station and even less capable of achieving an effective bus service. Beyond Rudry Road there are no vehicular crossings of the M4 until J30. The masterplanning of North East Cardiff SDL leaves no scope for a further bridge or underpass to be achieved.
 - 12) Yet further east, the landscape opens up and the key feature is the Scheduled Ancient Monument Castle Field Camp E Of Craig-llwyn. The monument comprises the remains of a hillfort which probably dates to the Iron Age period (c. 800 BC - AD 74). This hillfort is on a prominent knoll just above the 100m contour forming a spur of the Cefn Mably Ridge. Though on a comparatively low level; it commands magnificent views in practically all directions, and the fall is especially steep on the north and south sides. Clearly this affects the developability of much of this area. Notwithstanding, this area has poor access credentials. The transmission line issue persists and the scale of theoretical development is such that it will not be viable to move or divert (underground) these.
 - 13) North of J30, Cefn Mably Historic Park and Garden and a covered reservoir remove a large area from consideration. This location is isolated and unable to be effectively connected to any public transport network.
 - 14) Immediately West of Strategic Site G (East of Pontprennau) the valley floor of Afon Rhymni floods.
 - 15) One is then left with the area between the M4 and A48(M). There is an existing area of settlement here is but Druidstone Road is unsuitable as an access strategy for strategic growth. To unlock this area one would need a new all movements junction west of the A48 and then a bridge over the A48(M). That will not be viable for the scale of development that could ultimately be achieved.
 - 16) West of Cardiff, Newport City Council's adopted LDP (2015) defines an area of Green Belt on the Cardiff Newport Boundary. This is the only area of Green Belt in

South East Wales. Some of this is also affected by significant flood risk and ecological constraints. Green Belts should be capable of enduring for the longer term, but failing that should only be identified for development if there are exceptional circumstances and not before reasonable, non-Green Belt locations.

CONCLUSION

- i. Much of the commentary above identifies areas where Cardiff cannot expand, but there are some potential locations that remain.
- ii. The 'potential' future growth locations in the LDP are not 'allocations', will not deliver what the LDP assumed, and are not as sustainable as the subject site.
- iii. Plasdwr could one day grow further west, towards Junction 33. At present this area is not sustainably connected to the city. Longer term, Cardiff may even breach the A2433 in this broad location, but that would require development in Glamorgan. This location would be equally car dependent unless growth was planned around cross rail spur line. Cross rail is sensible strategy but it is not guaranteed to be delivered.
- iv. There are two credible options north of the M4, linked to Lisvane and Thornhill station, which is the only station

within Cardiff's administrative area where there remains strategic unidentified development potential within a 0.5-1.0 mile radius.

- v. One option is the subject site either side of the Thornhill Road, the other is a potential additional location on Craig Road.
- vi. Further east of these locations, strategic growth would not be sustainable and cannot be delivered.

On the basis that these conclusions on the sieving of strategic growth options are largely uncontested, there is a strong justification for examination of the subject site in more depth, as set out in subsequent sections of this assessment.

03 The Proposal

The purpose of this document is to demonstrate the Promoter's understanding of the site and how this has informed the proposals within it. The proposals are presented spatially on the emerging masterplan and flow from the proceeding analysis.

The Candidate Site










- The masterplan provides around 34ha of housing land.
- This would deliver around 1,000-1,200 dwellings at 30-35dph. There is scope for part of the site to be reserved for self-build.
- 30% of the housing would be affordable (360 homes)
- The master plan identifies a 1.8ha site for a 2-form entry primary school.
- Areas of 0.5-1.0ha can be provided as local centres/local hubs with one on Thornhill Road and another on the junction of Capel Gwilym Road and Heol Hir (South).
- The local centres/hubs would provide for day to day convenience retail needs and delivery units for other services.
- The local centres/ hubs would also host co-working space/remote working hubs to serve the site and north Cardiff, with the need for such facilities in new housing areas identified by the South East Wales Transport Commission.
- A strategic level of green infrastructure will be delivered to enable public access to Wenallt Hill, Briwnant Woods and across the Craig Llanishen scarp. Briwnant Woods could host a forest school.
- There is scope to create some outstanding playscapes and new allotments at the interface development and the countryside.
- A range of new public footpath or permissive routes will link to existing networks and public open spaces. Some of these routes could include off road riding trails.
- A surfaced segregated cycling loop will connect east to west and areas of housing to Lisvane and Thornhill train station to the east of the site. This route will connect to current advisory routes in north Cardiff which will then connect to the Council's new strategic cycleways and the Taff Trail.
- Land ownership extends south of the train station car park and part of this land could be used to enhance the mobility hub credentials for the station (secure bike parking or additional car parking).
- The active travel plan will include a premium e-bike for every household and a 10 year subscription to nextbike. The advantages of e-bikes are set out in Section 8.
- The west of the site is served by an express bus route from Caerphilly and Cardiff Bus route no.27 would be extended north to go around the site.

Other Land

- The master plan also shows a further 3.3ha of housing land on other land within a slightly wider study area.
- A 1.5ha park and ride site could be located next to the cemetery extension.

Taking all matters into consideration the masterplan strikes a balanced approach to the achievement of a critical mass, placemaking and the protection and recreational enhancement of the setting of the city. With the concept taking shape, the next step will be to consider Design Coding and the architectural response to the site in line with guidance from, inter alia, the Welsh Design Commission, e.g Places for Life II, drawing on emerging best practices such as Gwynfaen to achieve quality design.

LEGEND

1	Thornhill Station & New Electric Bike Hub		Residential
2	Caerphilly Road Express Bus Stop		Local Centre
3	Community Hub/Local Centre/Neighbourhood Workspace		Existing Vegetation
4	2Ffe Primary School		Proposed Planting
5	Destination Playspace & Dedicated Youth Allotments		Existing PRoW's
6	Allotments		Proposed PRoW's
7	Forest School		Strategic Cycle Network
8	Country Park		Bus Routes
9	Self/Custom Build		Nextbike Hub Locations
10	Thornhill Cemetery Northern Extension		
11	Park & Ride (500 spaces)		





04 Landscape & Visual Appraisal

SITE DESCRIPTION & CONTEXT

Situated to north of the Thornhill, Cardiff the site lies between the M4 and the distinct scarp and ridgeline of Craig Llanishen extending east towards Craig Llysfaen. To the east the area is framed by Cefn Onn Park and Llansshen Golf Club. To the west lies Wenallt Road/Coed-Y- Wenallt.

Overall, the site is strongly contained to the north, east and west by a combination of landform and vegetation. Although the southern edge is also strongly defined by the settlement, the nature of the topography (characterised as it is by slopes rising north toward the scarp and ridge) presents an overall south facing slope that is prominent to a greater or lesser degree subject to location and the availability of views. Across this overall topographical trend, are a series of localised undulations (often defined further by local streams and watercourses) which create various undulations across the face of the slope.

The landscape to the west of Thornhill Road tends to be more contained by a topographical bowl, and a stronger woodland structure; to the east of Thornhill Road the slope face is less 'curved', has a more direct southward facing aspect and exhibits a more open character given the relative lack of vegetation cover.

Watercourses are present across the site, generally associated with localised shallow valleys, but often relatively discreet and coincidental with linear belts of trees and woodland. Incidental springs and field ponds are present in some parts of the site, also associated with small clusters or belts of trees and woodland.

Green infrastructure across the site varies, with the western parts more strongly characterised by larger scale blocks of trees and woodland; to the east the pattern of woodland breaks down, however a framework of hedgerows with intermittent hedgerow trees remains influential. Overall, these set the scale of the landscape pattern, but the western parts are generally more contained, whilst eastern parts are more open.

Combined with topography, the vegetation framework also tends to present a greater sense of enclosure on the lower slopes (particularly closer to the physical containment of the suburban edge of Cardiff and the M4 corridor).

In relation to settlement patterns and access, there is currently a clear distinction between the settlement edge of Cardiff and the site. However, whilst the urban edge is currently clearly defined by the M4 corridor, the site is not free from development or urbanising influences, and is connected to Cardiff by three overbridges (A469 Thornhill Road, Heol Hir and Cherry Orchard Road).

The western extent of the site is loosely defined by the route of Wenallt Road, and within this sub-area there are several larger scale properties and farmsteads which tend to be dispersed across the south facing slope but remain prominent features from some parts of the landscape.

To the east, there are several tracks along with the Capel Gwilym Road and Heol Hir; Llanishen Golf Club and the campsite at Thornhill Farm are notable land use variations to the more typical agricultural fields that otherwise tend to characterise the slopes. Centrally through the site area, the A469 forms a key transport route that has been subject to recent alterations which add an urbanising influence, including extended and wider footways and bus stops. Between the A469 and New House Farm, a new burial site and associated structure and engineering further influences the character of this part of the site and landscape.

Public access varies across the wider site area. To the west, outside of the site, there are extensive recreational opportunities within Wenallt Wood, including small car parking and picnic areas which act as local destinations. Within the western parts of the site, public rights of way (PROW) are limited to a small selection of routes off Wenallt Road and towards the base of the slope, closer to the M4 corridor. Notwithstanding the proximity to the settlement edge and highway, these routes experience a small scale and intimate character as a result of the landform, woodland enclosure and mixed agricultural uses.



PRowS are also limited in the eastern part of the site, however where these are present they are situated slightly higher up the slopes and pass through more open areas, giving more open views to the south.

There are also longer distance routes crossing west to east in the northern parts of the site, at the base of the steeper scarp, as well as west-east routes outside of the site but situated back from the main ridgeline (and further north). Notwithstanding the relative elevation, these higher routes tend to have views focused toward the north towards Caerphilly's administrative area due to them being set back from the crest of the ridgeline.





OVERVIEW OF LANDSCAPE DESIGNATIONS

The site is partially covered by the Fforest Fawr and Caerphilly Ridge Special Landscape Area designation (SLA) (Policy EN3) the local extent of which is identified adjacent.

The Fforest Fawr and Caerphilly Ridge SLA adjoins SLA designated land in Caerphilly, which runs up to the urban edge of Caerphilly.

Those parts of the SLA that are within the site boundary are generally to the north and west, including the scarp slope north of Hill Farm and broadly extending to the north-west of the Manor Parc Hotel. The 'core' areas of the site are not within the SLA designation.

One area of overlap between the concept plan and the SLA relates to three field parcels in the south west of the site. Detailed site assessment identifies that these fields could be developed with acceptable impacts.

Section 02 has already set out the wider pattern of SLA designation around the city, and the constraint that this places on credible future growth options.

Several single trees and groups of trees within the site are subject of Tree Preservation Orders (TPOs); several areas of Ancient Woodland also lie within the western and northern parts of the site.



Local Extent of Fforest Fawr and Caerphilly Ridge SLA and TPO's

LANDSCAPE CHARACTER

National Landscape Character Areas (NLCA) form the broadest scale of landscape character assessment in Wales. The site sits on the boundary between;

- NLCA 35, 'Cardiff, Barry and Newport'; and
- NLCA 37, 'Wales Valleys'.

The local boundary between these two areas lies just to the south of the base of the scarp slope. The concept masterplan identifies that all proposed development is proposed in NCLA 35.

In respect of local landscape character assessment, 'The Landscape Study of Cardiff' was originally published in May 1999 and subsequently reviewed in August 2008. The part of the site that can be considered to be developable, at least in part, is located in 'LCA 7: Caerphilly Ridge Foothills'. This extends from Wenallt Road in the west to Rudry Road to the east (east of Parc Cefn Onn) before hugging the base of Craig Llysfaen. The northern boundary of LCA7 within the site is a few metres further north than the boundary of NCLA 35 but this may simply reflect the fact that the NLCA boundaries are drawn at a wider scale.

The site is framed to the north and west by 'LCA 6: Fforest Fawr & Caerphilly Ridge'.

The LCA guidance sets out a description of the character area, along with considerations of positive and negative attributes. These are summarised below;

LCA7: Caerphilly Ridge Foothills

Positive Attributes

- Important areas of woodland, both semi-natural and planted
- Remnant semi-improved habitats – pastures, marshy habitats, wet woodland and riparian systems
- Extensive views to and from the City
- Still a predominantly rural landscape and character, with a relatively unspoilt feeling

Negative attributes

- Visual and noise impact from the M4 motorway
- General urban fringe land management issues and increased use of land for horse grazing
- Disruption to landscape pattern and character by golf course development

LCA 7: Caerphilly Ridge Foothills



LCA 6: Fforest Fawr & Caerphilly Ridge





View from the high point of Craig Llanishen: The Heol Hir overbridge can be made out but the M4 is not visible. Development would therefore appear as a contiguous extension to Cardiff.

The concept plan takes a balanced approach to development, achieving a critical mass whilst leaving several of the fields 'open' at the base of the scarp. Five to six fields in the foreground of this view are left open to manage the transition between town and country.

LANDMAP

In defining these various characteristics and attributes, the LCA makes reference to a series of 'aspect areas' which are parcels of land defined in the finer grained landscape study of LANDMAP. This resource is also the primary evidence base for the designation of SLA's.

LANDMAP is an 'all-Wales' landscape resource where landscape characteristics, qualities and influences on the landscape are recorded and evaluated in relation to five aspects, including:

- the geological landscape - considers the physical, primarily geological, influences that have shaped the contemporary landscape;
- landscape habitats - focuses on recording habitat features, characteristics and their spatial relationships within the context of the wider landscape;
- visual and sensory issues - addresses landscape characteristics and qualities as perceived through our senses, primarily visually and the physical attributes of landform and land cover, their visible patterns and their interrelationship;
- the historic landscape - considers landscape characteristics that depend on key historic land uses, patterns and features but identifies only those classes of historic land uses, patterns and features that are prominent and contribute to the overall historic character of the present landscape; and

- the cultural landscape - describes the links between landscape and people, from the way in which cultural, or human activity shapes the landscape, to the way in which culture shapes the way we respond to landscape.

Each LANDMAP aspect has an 'overall evaluation' and summary. All of Wales is evaluated from a local to a national scale of landscape importance. The terms used include:

- Outstanding: nationally important;
- High: regional or county importance;
- Moderate: local importance; and
- Low: little or no importance.

The LANDMAP approach defines parcels at a relatively small scale, with numerous parcels often overlaying a wider site and often with different boundaries for each aspect. For the site, the 'visual and sensory' and 'cultural' parcels north of the M4, Llanishen and Cardiff landscape share the same boundaries. There is no separate map for the cultural landscape on the NRW Wales LANDMAP website.

A brief visual summary of the 'overall evaluation' set out in LANDMAP for each of the relevant land parcels is included in the following plates;

Geological Evaluation



The more developable part of the site is of local importance whereas the scarp, and indeed the Thornhill urban area is of regional or county importance.

Visual & Sensory Evaluation



The Capel Gwilym Slopes (and Llanishen Golf Course) are assessed as being of local importance. In this sense this parcel is judged as being of the same band of significance as all the other land around Cardiff is allocated for development in the adopted Local Plan.

The scarp and ridgeline to the north and west, and land within the 'bowl' to the east (Briwnant) are of regional and county importance. These areas coincide directly with the boundary of the Special Landscape Area designation

Historic Landscape Evaluation



Overall, there is an east west divide. East of Thornhill Road the site is of local importance, and to the west it is of regional or county importance. Similar land is allocated for development at North West Cardiff and Creigiau in the adopted LDP, so this not an absolute constraint.

Parc-Cefn Onn (being designated as a historic park and garden) is of regional or county importance, as is Llanishen golf course, which forms part of its immediate setting. Two fields outside the study but within the study area are also placed with the same 'cell' perhaps also for setting reasons.

Further north, the historic landscape between the ridge and towards Caerphilly is of national importance.

Habitats Landscape Evaluation



Overall, the site is of local importance aside from the woodland to the west, which is of regional or county importance.



LANDSCAPE ANALYSIS & DEVELOPMENT STRATEGY

This section draws together the landscape and visual baseline information and summarises the key constraints and opportunities in the existing landscape. These are not exhaustive and will require development through more detailed appraisals during future design phases. However, the level of analysis is sufficient to demonstrate a developable opportunity within and adjoining the site.

ANALYSIS

The wider site area sits to the northern edge of Cardiff, contained to the north, west and east by a combination of topography and vegetation. In that context it presents a logical direction for strategic growth as, despite the physical alignment of the M4 corridor, the site would form a contiguous part of the wider conurbation of Cardiff, and is connected to Cardiff at Thornhill by three overbridges. These are wide enough to carry two-way traffic with pavements either side.

From many vantage points along the scarp and ridgeline, and indeed the lower slopes, the M4 is invisible, i.e. it does not act as a wall between the site and Thornhill. Thus, development would appear as an expansion to Cardiff without 'jumping' strategic infrastructure. In a similar fashion, when travelling north over the M4 bridges, the site would not feel/appear detached from Cardiff.

The scale of the site means that proposals can come forward that include a comprehensive and diverse strategy for green infrastructure. This will ensure that, despite the extension of the settlement pattern and urban

edge into 'the countryside', this is achieved in a manner which is sensitive to environmental issues and incorporates a strong framework of green infrastructure and open space.

The site is greenfield and of mixed character with a range of components that contribute to, and define, its character; consequently, the site is not without its sensitivities. The characteristic landform of the scarp and ridgeline provides physical containment and also forms a landscape feature that is prominent from much of the surrounding landscape and which forms a backdrop to the coastal plain to the south (and to Cardiff city itself). As such, this conveys some value to the local landscape context, not just in terms of the settlement edge and Cardiff generally, but also at a regional level, given the scale of the escarpment and hills as a whole and its integration with other parts of the wider landscape (for example the more extensive hills, ridgelines and valleys around Caerphilly). Both value scales are recognised in published character assessments.

There is a distinction in character across the site which reflects its broad structure, characteristics and recognised value;

- To the west of Thornhill Road the topography creates a more contained sub-plot to the wider site, physically containing it at a small scale and combining with extensive woodland to screen many parts from local and wider views.
- To the east, there remains a mix of agricultural land uses but here the field parcels are bound by hedgerows with less frequent areas of trees and woodland – given the scarp

slope 'straightens out' this presents a more open face to the slope on land north of the M4 generally.

- Overall, in both east and western parts, there is a stronger distinction between the more prominent scarp slope and ridgeline and the lower undulating foothills, closer to the M4 and which are generally more contained.

The variation reflects the fact that the Special Landscape Area (SLA) is present on parts of the site to the west, north and east, yet this falls away from the core areas of the site to the east and west of Thornhill Road. This ties in to the character of Thornhill Road and its immediate context, whereby highways infrastructure and a small number of hotels and restaurants add an urbanising influence at a local level.

Together, watercourses and vegetation across the site naturally generate a series of sub-parcels. On steeper slopes, development would be less appropriate as built form is likely to encroach too far up the slopes and be apparent in views from a wider area. On lower slopes there is a greater opportunity to accommodate built form, given the various undulations, green links and various structures that would help to contain and limit the influence of development and retain the wooded ridgeline and backdrop of the scarp and leave the Special Landscape Area essentially 'intact'. There are three field parcels to the west of Thornhill Road that are within the SLA, but where development can be accommodated.

Several other relevant sensitivities are present across the site and in its context, including TPO's, ancient woodland and various heritage and ecological matters. Consideration of design matters as an iterative process

can readily accommodate such components of the landscape, using these to shape design and contribute to the quality of an environmental strategy overall. The water course to the east enables wide N-S corridors to break up built form and along which recreational routes can be achieved.

CONSTRAINTS & OPPORTUNITIES

Constraints for the site and surrounding context are considered to be;

- Statutory and non-statutory designations which are relevant to landscape and visual issues in relation to TPO's, ancient woodlands and historic park and gardens. Not all are present on site, and where they are these are not necessarily extensive, but all have some influence in terms of local landscape value and subsequent judgements on sensitivity.
- Policies in relation to the Special Landscape Area
- The vegetation structure across the area (including woodland areas, tree belts, parkland trees/avenues, individual trees, hedgerow trees and hedgerows). These will need to be considered carefully so as to avoid and minimise losses; this will extend to consideration of appropriate stand offs and using this framework positively in respect of any development proposals;
- More elevated areas of landform, higher up the foot slopes and more extensively across the steeper scarp slopes – these more elevated positions increase the susceptibility of the landscape to development,

particularly where these are more open and exposed to the wider landscape (such as the north-eastern parts of the site);

- Considering the ridgeline landscape separately as a local feature in the landscape, whereby the generally wooded and steeper slopes should not be 'broken' by built form in respect of views from the surrounding landscape (particularly from Cardiff and the coastal plain to the south);
- The network of public rights of way which, albeit limited across the site, will need to be retained and incorporated into the development wherever possible; and
- Some views/areas of visual amenity, generally associated with publicly available views from the PROW network.

Opportunities for the site and surrounding context are considered to be:

- The lack of any overriding landscape designations across large parts of the site;
- Vegetation structure (as noted above in terms of constraints) but in relation to opportunities for creation of new vegetation (woodland areas, native hedgerows etc.) to promote new green infrastructure links as well as reinforcement and enhancement of existing vegetation (new planting and improved management) so as to maintain a green infrastructure legacy and promote biodiversity (including considerations of habitats and

protected species); and

- Walking Access, in terms of identifying key existing public rights of way routes which can be enhanced in terms of accessibility and also identifying potential new links where connectivity is weak, or where this could improve the amenity of the routes – for example, creating better connections across open faces of the scarp, and connecting to areas of Wenallt Wood.



View west from field west of Heol Hir

EMERGING DEVELOPMENT & LANDSCAPE STRATEGY

Landscape and visual constraints and opportunities have informed the design principles that underpin the emerging masterplan.

The layout, scale and character of residential-led development in this location is capable of responding to the local landscape character and facilitating effective and appropriate mitigation that will avoid, or minimise potential impacts. Certainly, a buildable proposition is identifiable in landscape and visual terms.

The landscape and visual strategy is founded on the following principles:

- Restrained growth of the current pattern of settlement, focussed towards the settlement edge and corridor of the M4, but with a gradual integration and transition to the wider landscape and more elevated parts of the scarp and ridgeline;
- Working within the existing framework of green infrastructure, including hedgerows, trees and woodland;
- Responding to landscape character and visual amenity in respect of the scarp slope and ridgeline as a landscape feature and backdrop to the coastal plain;
- Identification of suitable 'development parcels' taking into account landscape character and visual containment of the site; and
- Creation of additional green infrastructure and open space on site, which is both consistent with and complementary to, the existing local landscape character in terms of scale,

disposition and species mix.

The key spatial elements of the landscape strategy include the following separate but integrated components:

- Development cells are generally restricted to the lower slopes of the foothills to the scarp. There remains some capacity on the mid slopes, with no intrusion into the skyline.
- On the more elevated parts of the site the form of development will involve a greater proportion of green infrastructure and open space within the layout, screening and softening the appearance of built form.
- Development cells are also contained and guided by the scale and pattern of the existing landscape, including retaining green infrastructure wherever possible and including appropriate stand offs to the existing/retained vegetation.
- Green infrastructure forms the back bone of a network of open spaces between development cells. Overall, this ensures that benefits to capacity for development are retained and that there is an 'instant' green infrastructure framework to help assimilate potential areas of development;
- Green infrastructure enhancement can take place through additional planting, new links and appropriate management. This will ensure diversity and longevity of the green infrastructure network throughout the site and also reinforce and create habitat connectivity; and

- Extensive areas of new publicly open space are proposed in more elevated and more wooded parts of the site, enhancing access provision and providing new opportunities to experience the wider landscape context, including from locations in more elevated parts of the scarp, looking across the coastal plain.

These over-arching principles and strategies set the framework for areas proposed for development. Each of these areas will be subject to a greater level of detailed consideration with regards to masterplanning and design coding.

SPECIAL LANDSCAPE AREA





Looking east along Craig Llanishen

05 Strategic Green Infrastructure

This section outlines how the proposals can significantly enhance Cardiff's County Park Network.

THE BASELINE

Residents across Cardiff have access to Coed-y-Wenallt and Parc Cefn Onn where there is a high density of walking routes. Parts of Craig Llanishen are also accessible, although the footpath within the site runs along the base of the scarp rather than atop the ridgeline.

The site itself has a more limited degree of public access;

- Footpath Whitchurch no.37/Lisvane no.31 connects Wenallt Road to Thornhill Road and generally hugs the alignment of the M4.
- Footpath Lisvane no.17 connects Thornhill Road to Capel Gwilym Road, running north of the cemetery extension and through New House Farm (past Thornhill Farm Shop). After crossing Capel Gwilym Road, the footpath connects to Heol Hir (North) which provide vehicular access to Llanishen golf course. Heol Hir (North) provides a highway connection to the PRoW running along the base of the scarp, but there is not a footway. For the first 400m leading from the Capel Gwilym junction there is a conflict with frequent vehicular movements in and out of the golf course.

- Footpath Lisvane no.1 within the site runs along the base of the scarp. This PRoW connects into a wider network and Parc Cefn Onn to the east. To the west the network becomes more fractured.
- Footpath Whitchurch no.100 is a trackway giving access to Briwnant from Wenallt Road. The path terminates on the edge of Briwnant Wood.
- Other PRoW (outside the site and within Caerphilly) are set back from the ridge.
- Whilst the path at the base of the scarp affords views of Cardiff to the Bristol Channel, more elevated views are available from within the site. These are from private land, although walkers may be tempted to stray from the rights of way to gain the best vantage point. This is not however open access land and it has not been dedicated.

THE OPPORTUNITY

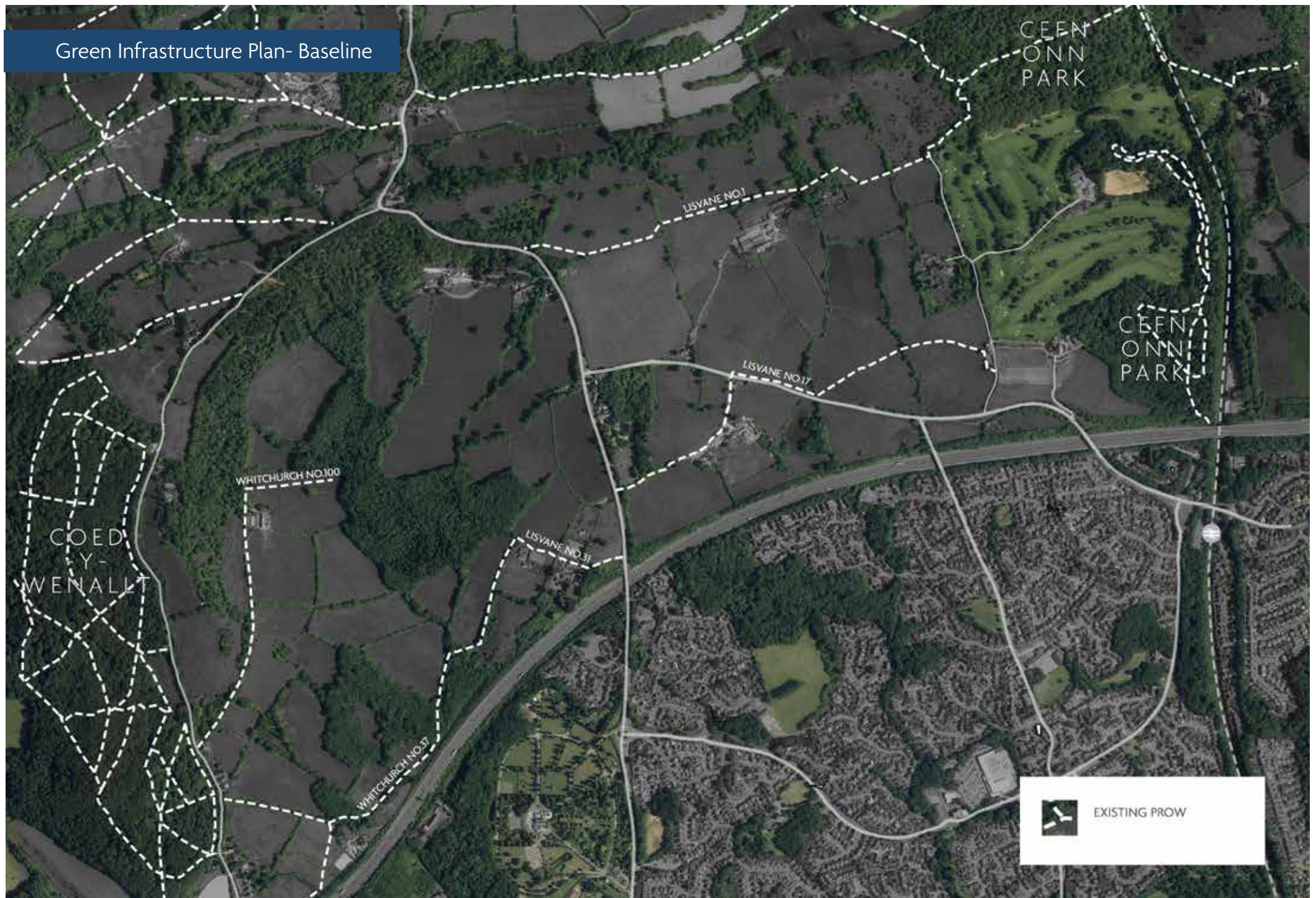
- Single landownership enables an extensive area to be secured.
- This can be used to significantly enhance public access to the area and to stitch together existing assets and routes to create a comprehensive northern fringe country park network for Cardiff.
- New publicly accessible land and woodland can be secured and an intensified network of walking and cycling routes can be created linking east to west and north to south.

- On the lower slopes these routes would form part of the immediate movement network for the new development.
- In particular, a new PRoW atop the ridgeline can be established, which will enable the most commanding views to the south.
- This land could be transferred to the City Council or Natural Resource Wales.

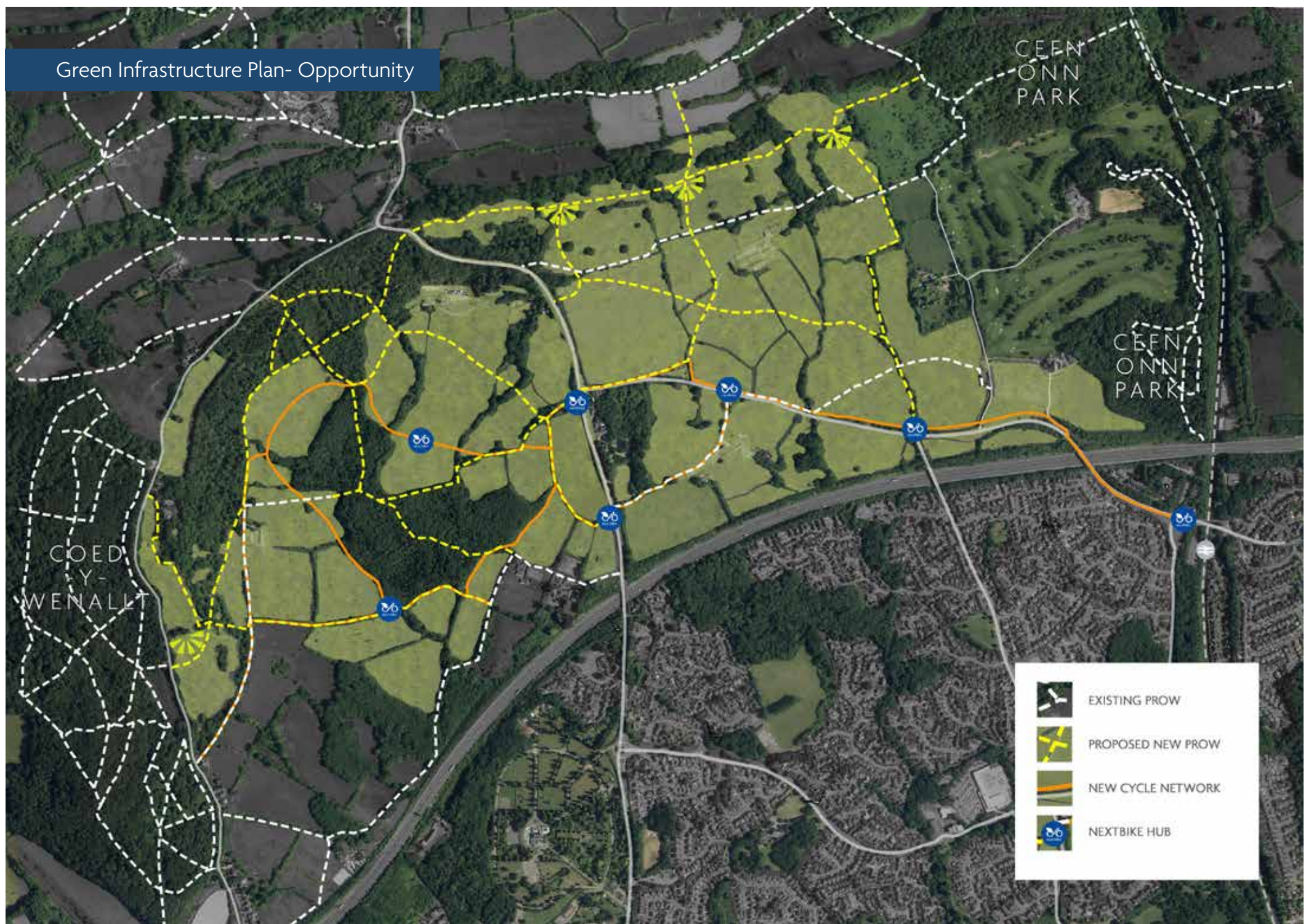
The GI Strategy would open up the open eastern slopes of Wenallt Hill. Currently there is no public access to this desirable location.



Green Infrastructure Plan- Baseline



Green Infrastructure Plan- Opportunity



06 Green Belts & Green Wedges

ADOPTED LOCAL PLAN

During the preparation of the adopted Local Plan the Council sought to designate a Green Belt to the north Cardiff. The examination process found that this was not justified and instead the Inspectors reasoned (at paragraphs 9.6-9.14 of their report) that a green wedge designation was more appropriate. The key reason for this was that the Inspector's attached considerable weight to the need to avoid prejudicing the outcomes of any future strategic approach to planning across the south east region (para 9.14). That strategic process has not yet been forthcoming, but is now legislated for.

The essential difference between the two designations is their degree of permanence. Green Belt's should be capable enduring beyond the plan period in the face of longer-term needs for development land. Green Wedges protect openness within the plan period and need to be justified during each phase of plan review.

FUTURE WALES 2040 & THE FORTHCOMING SOUTH EAST SDP

Policy 34 of Future Wales 2040 requires that the Strategic Development Plan (SDP) for the South East identifies the need for, and boundaries of, a Green Belt to the north of Cardiff, Newport and the eastern part of the region to manage urban form and growth.

Both the 'need' for a Green Belt and its detailed 'boundary' will be tested at the examination of the SDP. In the interim, an 'area for consideration' has been identified on the regional strategic diagram for the south east, and is to be treated as Green Belt. This causes some difficulty as the area for consideration is drawn so conceptually that it is not possible to conclude whether many areas are currently 'inside' or 'outside' the area for consideration and thus how they should be treated.

The written justification in Future Wales for the consideration of a Green Belt focuses on entirely on the potential for long-term development pressure to spill out of the out of the Bristol sub-region into South East Wales. The position taken is that due to the existence of Bristol-Bath Green Belt, development pressure (through plan making in the West England) will be directed to Wales. Whether that pressure is real remains to be seen. The West of England authorities have previously shown that they are prepared to amend the Green Belt around Bristol to accommodate need where is arises and the West of England Spatial Development Strategy will track ahead of the South East Wales SDP. The justification for a Green Belt in Future Wales does not refer to Wales meeting its own needs

In looking to define Green Belt, especially for the first time, Planning Policy Wales (February 2021) advises that:

3.72 – “When considering Green Belt designations a sufficient range of development land which is suitably located in relation to the existing urban edge should be made available, having regard to the longer term need for development land, the effects of development pressures in areas beyond the Green Belt and the need to minimise demand for travel. This may require land to be safeguarded, and boundaries of proposed Green Belts must be carefully defined to achieve this.”

Based on the analysis in Section 02 & 08 of this submission, the evidence base for the South West Wales SDP will identify that very few credible growth areas for Cardiff remain within its administrative area. Therefore, development may need to be accommodated in neighbouring authorities. These authorities will want to see Cardiff doing its utmost to identify and allocate sustainably connected sites within its own administrative area where this land is not subject to constraints such as Special Landscape Areas.

Thornhill Low Carbon Community should be allocated for development as strategic site within the South East Wales SDP for delivery during the lifetime of that plan. Failing this, in defining the boundary of a Green Belt that can endure into the longer term without it needing to be revised, the site should be safeguarded from any Green Belt that is proposed in the SDP.

The suggested Green Belt boundary is identified overleaf. The basis of the land to be excluded from the Green Belt degree is the inner boundary of existing boudary of the special landscape area, with the following several adjustments.

- Llanshen Golf course remains in the green gelt and
- Fields leading up to the scarp remain in the Green Belt
- Three fields forming the south west part of the low carbon community are removed from the Green Belt

The proposed delineation of the Green Belt does not mean that all the land that would be outside the Green Belt would be developed. The proposed boundary merely follows the current features on the ground that most closely contain the proposed built-up areas (including the proposed primary school playing field). This would not be appropriate development in the Green Belt and so would need to be excluded from it.



Proposed area to be released from the Green Belt

07 The Historic Environment

Several heritage assets within and adjoining the site have the potential to be affected by development within it. The location of these assets is identified opposite, which also identifies the key areas forming the setting of each asset. These areas derive from the proceeding analysis.

The following assets have been identified and assessed:

- Lower Briwnant Farmhouse and Adjoining Farm Range (GII)
- New House Hotel (GII*)
- The Long Barn and Attached Courtyard Wall, Gates and Railings (GII)
- Pantysgawen (GII)
- Hill Farmhouse (GII)
- Castle Morgraig (SAM and GII)

For all assets, their historic significance is principally associated with the historical, evidential and aesthetic values of its physical fabric as an example of its building typology as set out in the List Entry.

The setting of each asset also contributes to its significance, although the significance derived from the setting is less than that from its historic fabric.

The proceeding paragraphs consider the principal elements of the physical surrounds and experience of each asset (its 'setting') which are considered to contribute to its heritage significance. It identifies the extent to which development in the vicinity of each asset would have a notable impact upon the manner to which its understood, experienced and appreciated in both an immediate and wider context.

The section concludes with a review of the archaeological record.

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- The map shows an aerial view of a rural landscape. A road runs diagonally from the bottom left towards the center. To the right of the road is a residential area. To the left is a wooded area. Several points are marked with numbered circles: 1, 2, 3, 4, 5, and 6. Four areas are outlined in red: one near point 1, one near point 2, one near point 4, and one near point 3. Yellow arrows point from these red areas towards the road. A legend in the bottom right corner explains the symbols.
- AREAS OF HIGH SENSITIVITY
 - POTENTIAL SENSITIVITY
 - BRIWNANT FARMHOUSE
 - NEW HOUSE HOTEL
 - PANTYSGAWEN
 - HILL FARMHOUSE
 - CASTEL MORGRAIG
 - WENALLT CAMP



LOWER BRIWNANT FARMHOUSE & ADJOINING FARM RANGE (GII LISTED)

This is a 17th Century farmhouse and associated range, elements of which may be 19th-century in date. The List Entry sets out that the farmhouse was designated “an early regional farmhouse that retains much of its historic fabric”.

Accessed via a trackway from Wenallt Road, the farmhouse is located in an isolated hillside position, overlooking the wider landscape to the east. It is situated within an immediate domestic/ancillary area, beyond which are the wider landholdings. The latter are primarily comprised of areas of pasture, defined by mature vegetation boundaries, and interspersed with mature woodland.

The principal elements of the physical surrounds and experience of the farmhouse (its ‘setting’) which are considered to contribute to its heritage significance comprise:

- The position of the farmhouse within its immediate curtilage and the experience and appreciation of the asset from this location;
- The relationship between the asset and elements of its wider agricultural land holdings, both current and historic, in particular those which the asset can be experienced from and in conjunction with its associated landholdings; and

- Areas across which views of the asset are obtainable from the wider landscape to the east, in particular from locations where the asset is experienced in conjunction with its wider agricultural landholdings.

Based upon the identified functional and associative connections between the asset and its surrounding landholdings, and the manner in which it is experienced, the key areas of sensitivity are shown on the preceding.

Development in these areas, when viewed from more distant and/or elevated areas to the east, would be seen in conjunction with the asset reducing the understanding of its isolated context and relationship with its wider landholdings. This would result in moderate harm to its overall architectural and historic interest.

In order to reduce potential impacts on Lower Briwnant Farmhouse the masterplan excludes development from this area. The fields to the south cannot be seen in wider views of this area (including from Craig Llanishen) and are considered developable from a heritage perspective.

NEW HOUSE HOTEL (GII* LISTED)

This is a late 18th-century former country house, now in use as a hotel. The List Entry sets out that the asset was designated “as an interesting late C18 country house retaining much of its original appearance.”

The property has undergone various phases of alteration and extension during the 20th and 21st centuries in association with its current use as a hotel, including a large extension to the west. Nonetheless, the original form and appearance of the 18th-century house remains discernible.

The current immediate surrounds of the house are now largely characterised by the modern grounds associated with the hotel, elements of which are considered to reflect the historic arrangement.

Located to the south of New House is its former parkland, the historic extent of which is identifiable via cartographic sources. This grassland is no longer associated with the ownership of the hotel.

The principal elements of the physical surrounds and experience of the asset (its ‘setting’) which are considered to contribute to its heritage significance comprise:

- The position of the asset within its immediate surrounds and the experience and appreciation of the asset from this location;
- The relationship between the asset and its wider former parkland;
- Outward views from the asset, in particular southerly views across its former parkland. Views of the asset from within the bounds of the former parkland.

Based upon the above, and the manner in which the asset is experienced, the key areas of sensitivity in relation to New House relate to the immediate environs and formerly to the south parkland. The northern field is of more significance in the experience and appreciation of New House when looking towards it than the southern field, although both fields are important.

Development to the south of the Grade II* Listed New House Hotel would result in the erosion of historic parkland, and introduce modern built form into southerly views from the asset. This will impact upon the manner to which the historic asset is understood, experienced and appreciated. The existing mature hedgerow trees to the south west screen the fields to the east of Thornhill Road. Tree planting at the boundary of the southern and north fields of the former parkland would (over 15-25 years) provide effective screening for the southern field in outward views across to the coastal plain. Advanced planting (now) is a credible mitigation strategy.

Development in the southern field would cause moderate harm to the overall significance that could be mitigated, and therefore the masterplan proposes housing in this area.





THE LONG BARN AND ATTACHED COURTYARD WALL, GATES & RAILINGS (GRADE II)

This is a late 18th-century stable block, built to serve the Grade II* Listed New House. The building has since been converted for residential use and is in separate ownership to the New House Hotel. The List Entry sets out that Long Barn is designated “for its historic interest as a long stable range associated with the main house; group value with this and the entrance gateway.”

The Long Barn is located within the bounds of its current domestic curtilage, to the southwest of New House Hotel. The character of the current surrounds is modern and domestic and, although they still utilise the same drive, there is little connection now between the asset and the hotel.

The principal elements of the physical surrounds and experience of The Long Barn (its ‘setting’) which are considered to contribute to its heritage significance comprise:

- The position of The Long Barn within its immediate curtilage and the experience and appreciation of the asset from this location; and
- The relationship between The Long Barn and New House Hall to which it once served.

Whilst the parts of the site historically form part of the wider landholdings associated with New House, based upon the historic and current context, it is not considered that this connection makes any contribution to the overall architectural and historic interest of the asset. No likely impacts are identified to its overall heritage significance via a change in setting from development within the site.

PANTYSGAWEN (GRADE II)

This is a probable C17th farmhouse that has been much altered since its addition to National List in 1975. The updated 2001 Entry states that the building is “Much altered since RCAHMW survey when it apparently retained timber partition and thatched roof amongst other features.” The List Entry, however, states that the building is “Retained on list notwithstanding considerable alteration since listing as retaining a proportion of historic fabric.”

Nonetheless, one could be excused for not identifying the house, as it now appears, as a probably listed building.

Pantysgawen is currently located within a wider complex of buildings, primarily comprising a series of ancillary buildings to the north. Land to the south of the asset remains undeveloped and is used to graze goats. A PRoW runs southwest-wards from the complex, Views of Pantysgawen are visible from the PRoW.

The principal elements of the physical surrounds and experience of the asset (its ‘setting’) which are considered to contribute to its heritage significance comprise:

- The position of the asset within its immediate curtilage / complex of buildings and the experience and appreciation of the asset from this location;

- The relationship between the asset and elements of its wider land holdings, both current and historic, in particular those which the asset can be experienced from and in conjunction with its associated landholdings; and
- Views of the asset from the PRoW to the south.

In order to reduce /remove potential impacts on the significant of Pantysgawen, the highest sensitivity areas identified have been kept free of development.





HILL FARMHOUSE (GRADE II)

Hill Farmhouse is a farmhouse with c.16th-century origins with later 19th-century alterations. The List Entry sets out that the buildings were added to the National List “as a small early regional farmhouse retaining much of its character including a thatched roof.”

Accessed via a trackway from Capel Gwilym Road, the farmhouse is located in an isolated position on the southern slopes of Craig Llanishen. The immediate surrounds of the farmhouse are characterised by its domestic grounds, beyond which is the wider farm yard. The latter is primarily modern in character, and newer buildings screen views into and from the asset to the south west. The immediate surrounds are relatively well enclosed by built form and mature vegetation.

The principal elements of the physical surrounds and experience of the farmhouse which are considered to contribute to its heritage significance comprise:

- The position of the house within its immediate curtilage and the experience and appreciation of the asset from this location;
- The relationship between the farmhouse and elements of its wider agricultural land holdings, both current and historic, in particular those which the asset can be

experienced from and in conjunction with its associated landholdings; and

- Views of the farmhouse as obtainable from the wider landscape, in particular from PRoW where the asset is experienced in conjunction with the wider agricultural landholdings.

The areas that are considered to be of greatest sensitivity have been identified and are excluded from the potential development concept. Nonetheless, any housing development north of Capel Gwilym Road would result in the reduction of the agricultural and undeveloped character of the wider landholdings associated with, and the surrounds of, Hill Farm.

This would result in minor to moderate harm to the overall architectural and historic interest of the asset.

CASTELL MORGRAIG (SAM & GII)

The scheduled extent of the remains of Castell Morgraig runs along the ridge line of Craig Llanishen. There is a minor overlap with the site boundary. The standing remains of the Castle are also Listed. The remains of the castle are now located within a densely wooded area, with no official public access and the Monument can not be experienced or appreciated from a PRoW.

The List Entry for the Scheduled Monument provides the following description:

“It is located on the southern boundary of the Welsh lands of Senghennydd Is Caech on a ridge top overlooking the Cardiff plain. The ruined remains consist of a walled pentagonal enclosure about 40m in diameter with the angles defined by the remains of four towers and on the east a keep. It is thought to have been built in the mid thirteenth century and may not have been completed. The monument is of national importance for its potential to enhance our knowledge of medieval defensive and domestic practices. The monument is well-preserved and an important relic of the medieval landscape. It retains significant archaeological potential, with a strong probability of the presence of both structural evidence and intact associated deposits. The scheduled area comprises the remains described and areas around them within which related evidence may be expected to survive.”

As this part of the site is undevelopable (accepting that a castle was built here) there will be no physical impacts to the Monument, and it is considered unlikely that associated buried remains would extend this far south into the site.

Outward views from the Castle would have historically formed part of its design intent as a defensive structure; however, outward views are no longer likely to be clearly obtainable from the Monument due to its current woodland location, and due to woodland further down the scarp. Glimpsed views may be possible during the winter months, although these are likely to be heavily screened.

If glimpsed views do become available from the Monument, they will be far reaching to the south comprising the modern extent of and built form of Cardiff in the distance. The wider ‘developable’ part of the site would not be seen in the foreground due to and steepness of the scarp. With regard to these outward views, it is the ability to experience and understand the commanding position of the Castle which is considered to be important, rather than the content per se.

The only part of the site which is sensitive with regards to the Monument is the northern element of the eastern part of the site. This area forms part of the ridge upon which the Castle was constructed and is highly sensitive. No development is proposed within the areas which are deemed sensitive in relation to Castell Morgraig.

WENALLT CAMP (SAM)

The monument comprises the remains of a defended enclosure on the south end of a spur overlooking Cardiff which probably dates to the Iron Age period (c. 800 BC - AD 74). The List Entry is not presented here for brevity. There are unlikely to be any unknown buried remains associated with the hillfort within the site.

ARCHAEOLOGICAL RESOURCE REVIEW

Prehistoric and Roman Archaeology

There is no recorded evidence of Prehistoric activity within the site, and besides Wenallt Camp no further activity of this date has been identified within the immediate vicinity.

No evidence has been identified for Roman-British activity within the site itself. A single Roman coin recovered beyond the western boundary is not a historic asset and is likely to represent either a chance loss or evidence of manuring. At present, the archaeological potential for this period is comparatively low.

Medieval

No medieval assets are recorded within the site itself, and evidence of such a date within the immediate surrounds is limited to Castell Morgraig and a hoard of medieval coins found to the west of Wenallt Camp. A review of the historic field patterns suggests that the site has remained in agricultural use from the medieval period to present, prior to which the majority is likely to have been wooded. Many of the fields (particularly to the west) appear to have been assarted, a process common to the medieval and post-medieval periods. Historic settlement within the site appears to be primarily of a post-medieval date, although there is the potential that some of the identified farmsteads could be of an older date.

Post-Medieval

Historic settlement - principally post-medieval – appears to have been focussed upon ‘Pentre-Gwilym’ located between the two larger site parcels, and Thornhill to the north. The majority of assets recorded within and around the site relate to dwellings and associated features of a 17th- to 19th-century date. More widely, assets recorded to the south, south-east and east of the site are largely agricultural in character, including ridge and furrow and lynchet earthworks. To the north and west of the site, agricultural evidence is sparser, and the assets recorded relate more to post-medieval/modern industrial activity. This corresponds to a change in the underlying geology, with the higher ground along the northern and western site boundaries underlain by bands of limestone and quartzite conglomerate. These were exploited from the post-medieval period onwards, resulting in a concentration of quarrying activity and numerous limekilns in those areas specifically. As such, there is some potential for industrial features to survive buried along the northern and western most site margins. Within the remainder of the site, historic agricultural remains would be the only unknown archaeological remains anticipated to survive.

Modern

A World War Two (WWII) Anti-Aircraft bunker is recorded in the western part of the site, and is thought to be extant. A possible ‘defensive line’ is also recorded within the site to the south

of New House Hotel. At this stage, no further detail has been identified in relation to the possible defensive line.

Conclusion

There would appear to be a low potential for significant archaeological remains within the site, and archaeology is not considered to represent a constraint to development

08 Transport

CONTEXT

The Council's Transport White Paper: Transport Vision to 2030 'Changing how we move around a growing city' (January 2020) sets out a transport agenda for both strategic spatial planning (where to build) and site specific masterplanning (how to do it).

The overarching themes driving the vision are:

- responding to the climate emergency,
- clean air,
- creating safe and healthy communities, and
- ensuring that all people can make sustainable travel choices.

Key takeaways from the baseline are:

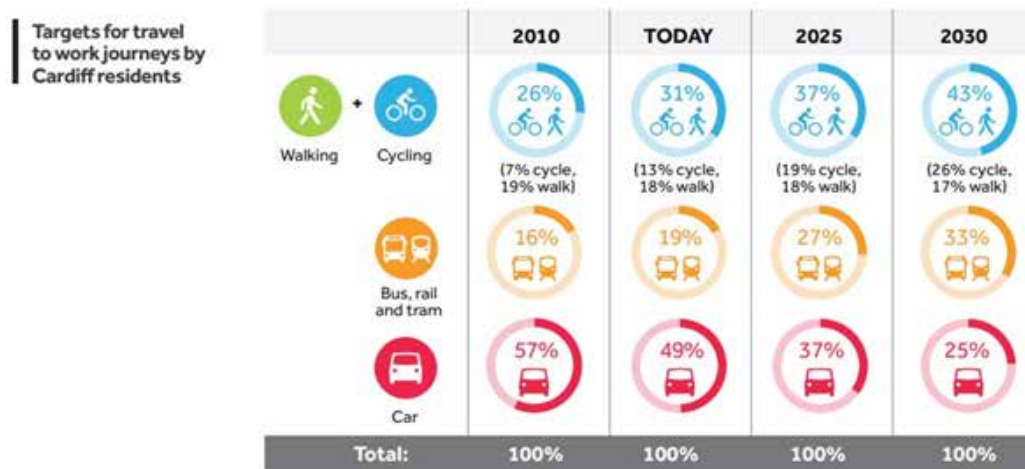
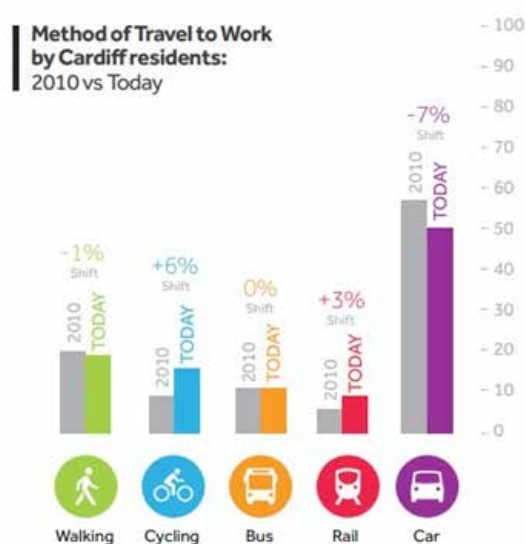
- Cardiff is expected to be the fastest-growing major UK city of the next 20 years.
- As of 2018, there were around 100,000 people commuting into the authority from outside each day, with around 80% of people of them travelling by car.
- Between 2014-2019, 82% of all jobs growth in Wales was in Cardiff (48,200 out of 58,600). Cardiff accounts for around 10% of the population of Wales

The White Paper sets out how modal shift has changed since 2010 and the city's targets to 2025 and 2030. These

are ambitious but necessary if the decarbonation is to be achieved, congestion reduced and transport vision realised. It will be doubly hard to achieve these targets as the city is already expanding in places that are not the most transit orientated locations. The adopted LDP also identifies potential future growth locations that are also poorly served by rail or bus.

It is understood that the need for housing may mean that locations that are less well connected to the public transport network will be needed, but these should not be ranked or prioritised above better performing locations.

All this sets the scene for the transport appraisal of the site in a local and sub-regional context.



Report of the South East Wales Transport Commission

In November 2020 the South East Wales Transport Commission published its Final recommendations for alternative ways of reducing congestion on the M4 other than building an M4 relief road around Newport. The commission recommended a 'Network of Alternatives' made up of stations, key transport corridors and services. It recommended five packages to deliver the network: infrastructure, network policies, behaviour change, transport governance, and land use and planning. In January 2021 the Welsh Government largely accepted the Commission's recommendations.

Chapter 8: 'Land use and planning package' addresses several key themes that should have a bearing on spatial planning in the region, for the city, and on the positive assessment of the site. Amongst other things the Commission recommended that:

- Too many development sites 'bake-in' future congestion pressure as they have easy access to the M4 without effective commuting alternatives also being in place.
- The SDP should deliver the function of master planning the region 'and that such a plan much be more than the aggregation of existing LDPs'.
- The SDP should identify the locations most suitable for development in South East Wales

- Transport for Wales should provide advice on the sustainable transport implications of strategic locations.
- Developments should be mixed use, with key services provided alongside housing. For example, every development should be designed so that peoples' homes are within walking or cycling access of a range of small shops, cafes, green space, services and – now especially relevant – a remote working hub.

This is not an exhaustive list but it sets a clear agenda for spatial planning to be transport-led unless there are strong overriding constraints.

When assessing the impact of its own proposals, including new rail stations, the Commission celebrated that proposals would result in over 90% of people in Cardiff and Newport living within a mile of a rapid part of the public transport network (rail and rapid bus corridors). Figure 9.1 of the Commission Report identifies 1-mile catchments around existing and proposed new stations on the South East Wales main line.

As identified in the strategic planning context of this candidate site submission, Lisvane and Thornhill station is the only station within Cardiff's administrative area where there remains strategic unidentified greenfield development potential within a 0.5-1.0 mile radius of a rail station. Moreover, although the site is very close to the M4, in terms of

accessibility to a junction, it is one of the locations that is least likely to generate commuter travel along the M4.

Llwybr Newydd: A New Wales Transport Strategy 2021

Since the Cardiff Transport White Paper was published the Welsh Government has published Llwybr Newydd: the Wales Transport Strategy 2021. In several respects this reflects much of Cardiff's own White Paper and notes that the achievement of net zero will require a change to the way people travel, with fewer cars on the roads, and more people using public transport, walking, or cycling. Key themes are bringing services to people in order to reduce the need to travel through better physical and digital connectivity to support access to more local services, more home and remote working. With more people able to walk and cycle for everyday trips, car dependency will reduce. Where movement is needed, the aim is reliable, efficient and affordable transport services that people want to use, can use and do use.

THE LOCAL HIGHWAY NETWORK

A469 Thornhill Road

The A469 Thornhill Road is a local distributor road that provides a direct connection to Cardiff city centre and the A48 to the south and Caerphilly, Rhymney and the Heads of the Valleys Road (A465) to the north. It is the main overbridge, of three, connecting the site to the northern urban area of Cardiff.

Footway provision is available along the eastern side of the carriageway. Improvements have from been made from the entrance of the extension of Thornhill Crematorium (ref 18/01545/MJR) to the overbridge. These include a new raised table zebra crossing with associated tactile paving and beacons, relocated 30mph zone (approximately 200m north of its previous location), improved shared cycling and pedestrian footway provision and two new bus stops on the eastern and western side of the carriageway.

Vehicular access to the proposed development parcels west of Thornhill Road would likely be via priority right turn junctions. No accesses are proposed to the east of Thornhill Road.

Capel Gwilym Road/Cherry Orchard Road

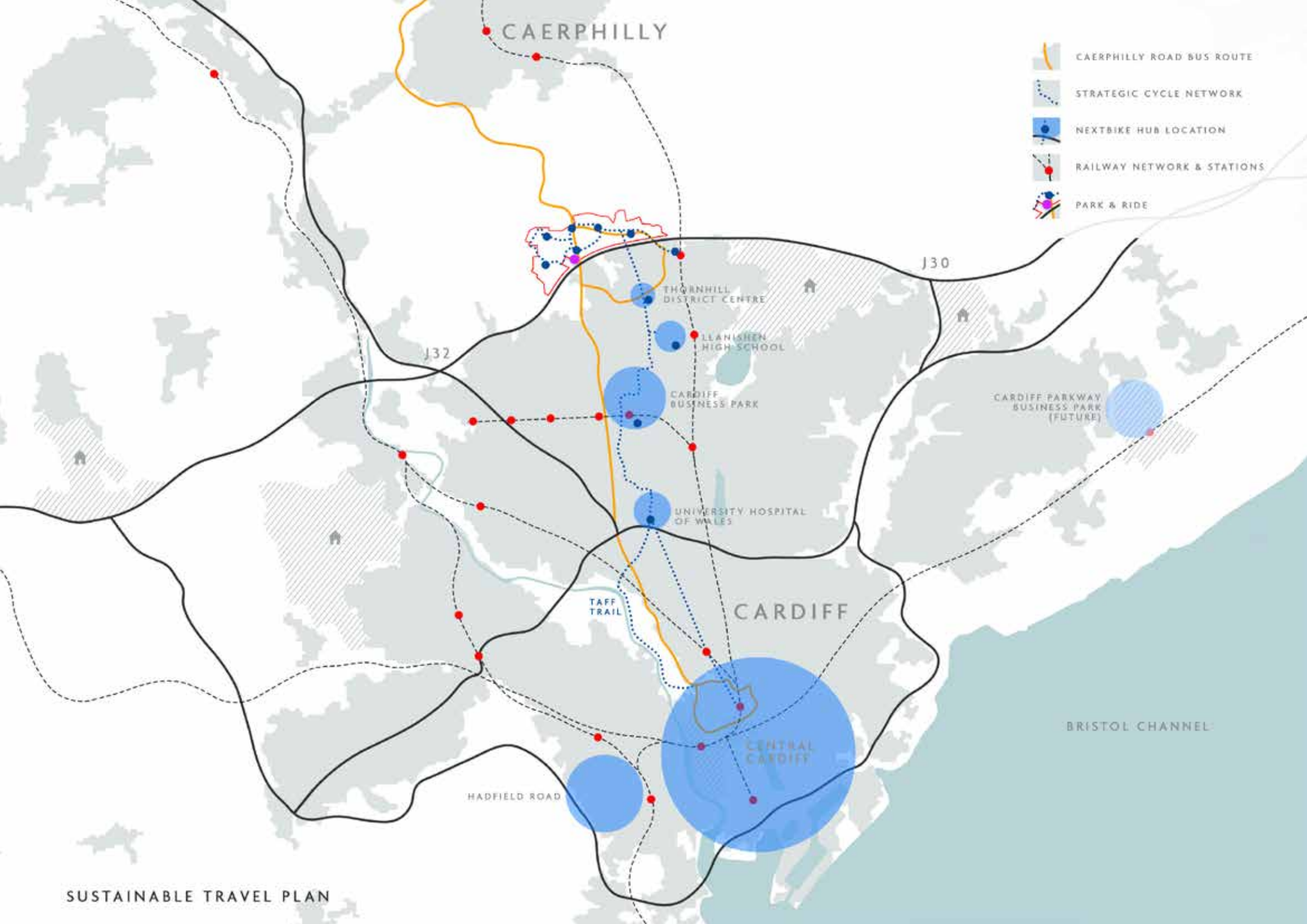
Capel Gwilym Road is a rural road of varied character which connects with A469 Thornhill Road to the west and Heol Hir to the east. From the junction with Heol Hir, the road name changes to Cherry Orchard Road. For the majority of its length, Capel Gwilym Road and Cherry Orchard Road are subject to the national speed limit and are not lit. There are no pedestrian footways provided along the road other than at its south eastern end for the last 210m (beginning at the overbridge) on the approach to the Excalibur Drive roundabout within the residential area of Lisvane.

The character of the road changes approximately 600m west of the A469 after Llanishen Brook where the road becomes wider and has centre line markings. The whole stretch of Capel Gwilym Road is capable of enhancement to serve development parcels to the north and south. It is envisaged that access to the parcels of land that have frontage with Capel Gwilym Road will be in the form of priority junctions.

Heol Hir South and North

Heol Hir South is a local access road which runs from Capel Gwilym Road at its northern end to Excalibur Drive to the south. It provides access to residential development and Thornhill Primary School, and the Thornhill Local Centre. The road is lit and is subject to 30mph speed limit, with a localised reduction over a 170m stretch past the frontage of Thornhill Primary School. Heol Hir has footways on both sides of the carriageway, including on the overbridge and is traffic calmed with speed cushions along the majority of its length.

Heol Hir North is a no through access road providing access to three residential properties and Llanishen Golf Club. It also provides a walking connection to the base of Craig Llanishen. The road is single track and has no lighting or pedestrian footway provision.





PUBLIC TRANSPORT

Rail

Lisvane and Thornhill Railway Station, on the Rhymney Line, is situated approximately 0.62 miles (800m) south west from the nearest proposed housing parcel. The junction of Capel Gwilym Road and Thornhill Road is around a mile away. The station enables frequent and rapid sustainable travel to nearby key destinations.

As identified in the strategic planning context of this submission, Lisvane and Thornhill station is the only station within Cardiff's administrative area where there remains strategic unidentified development potential within a 0.5-1.0 mile radius.

From a rail perspective the site can be categorised as offering a form of transit orientated development, utilising sustainable travel infrastructure that 'already exists' and is 'known to be effective'. This contrasts with some adopted allocations and recently developed sites which are not rail orientated and where public transport services will not emerge at all or not for several years.

Currently, trains depart for stations in Cardiff and Caerphilly three times an hour (Monday-Friday). Welsh Government investment in the South Wales Metro will increase the frequency to four services per hour.

Current Departures

To Cardiff

- at 21 mins past
- at 40 mins past •
- at 53 mins past •

To Caerphilly

- at 11 mins past
- at 30 mins past
- at 47 mins past

Travel times from the station to key destinations are:

- 11-13 mins to Cardiff Queen Street
- 17-24 mins to Cardiff Central (40 mins past changes at Queen Street)
- 18-24 mins to Cardiff Bay (53 mins past changes at Queen Street)
- 24-31 mins to Grangetown (40 mins past changes at Queen Street)

It will also be possible to travel to Cardiff Parkway and 'Hendre Lakes' once established. This will be a 7-minute onward connection from Cardiff Central.

It will be critical to connect new homes to the railway station with high quality, direct and convenient walking and cycling connections in order to maximise the potential for longer distance non-car-based travel. We set out how this will be achieved in the paragraphs on 'Active Travel'.

The wider landownership includes an area of woodland to the south of Thornhill station car park. The car park comprises

84 spaces and pre-COVID was regularly full. This land can be utilised to improve the station's facilities as part of the South East Wales Metro. Options include additional parking (with a high incidence of electric vehicle charging spaces) and secure cycle parking for those not using a 'nextbike'. The hub could include a 'E' bike rental facility for those travelling out of the city to use trails around the main site and wider area.

Consideration would need to be given to whether any additional car parking was the right strategy given that the objective would be to see most people walking or cycling to the station. Nonetheless, a level of parking will always be needed. Either a woodland area could be used for the bike hub or it could compensate for lost parking if this was achieved on the existing car park. Whilst any loss of trees is always regrettable there is scope within the main site for compensatory planting.

Bus

Thornhill Road is served by the Stagecoach 86X bus service. This provides an express service from Caerphilly, through the site to Cardiff City Centre. There are stops at the Capel Gwilym Road junction and further south at the Manor Parc Hotel/cemetery extension. The journey time to the city centre is around 23 minutes, but the frequency is only hourly. Stagecoach also runs the 86-bus service, with a stop on Heol Hir. This provides an hourly service to Cardiff City Centre, but the route is circuitous and slow. It is unlikely to be attractive given cycling, rail and other bus and driving options.

Cardiff Bus run the 27 service from Excalibur Road to the city centre via Thornhill Road. This is a high frequency service operating at 10-minute intervals for most of the day. It is around 24 mins from the further point of the route to the city centre. The bus stops serving the 27 service on Excalibur Drive are too far to walk to enable effective take-up but there is a clear opportunity to extend and loop route 27 though the site.

Potential for Park and Ride

The Transport Vision for Cardiff identifies the need to achieve modal shift on trips into the city along the northern corridors (A470 and A469). The Vision also identifies that it is an objective to deliver a park and ride facility for A470 approach into Cardiff but as far as we can tell no site has been identified. Whilst the A470 is major route into Cardiff from the north, a significant number of car-based trips from Caerphilly travel down the A469.

A site can be identified within the study area to cater for some of the car trips that enter the city along the Caerphilly Road. The concept plan shows a bus-based park and ride option opposite the cemetery extension. This area would be big enough for a 500-car facility. A park and ride may justify an increase in the frequency of the 86-service at peak times, further improving the public transport credentials of the site itself.

ACTIVE TRAVEL

The existing pattern of footways along Thornhill Road, Capel Gwilym Road/Cherry Orchard and Heol Hir have been noted.

Several public rights (PRoW) permeate the area as identified on the green infrastructure plan. These are largely recreational routes, and will continue to form that function. The green infrastructure strategy outlines several new routes (either new PRoW or permissive) that can be defined as part of this strategy.

The stretch of footpath Lisvane No.17 between Thornhill Road and Capel Gwilym Road offers the potential to be upgraded as an active travel link to enable shared pedestrian and cycling status. The route runs to the north of the cemetery extension and Thornhill Farm shop. Once tied into other improvements, this will enable active travel from the west of the site to the rail station.

The concept plan identifies a broadly east west strategic shared walking and cycling route/loop that forms an active travel spine linking development parcels either side of Thornhill Road to the train station. This will be a segregated and lit route set back from the carriageway. The route will also enable active travel to neighbourhood hubs and the primary school. Active travel infrastructure on-site will encourage active travel from/to the front door addressing the crucial first mile from the origin point of a journey. Off-site improvements can be delivered by the Council through planning obligations.

The shared route will also will also perform a recreational function in the western part of the development, linking to existing routes, e.g. footpath Whitchurch 100. Although not a bridleway this is an access track for Briwnant Farmhouse off Wenallt Road and is suitable for cycling.

Alongside the development of this route a high frequency of 'nextbike' stands will be introduced at regular intervals, with funding towards additional bikes (standard bikes and e-bikes). At present the wider area is served by a stand for 10 bikes to the north of the railway station.

As part of the active travel strategy for the site, each dwelling will receive two annual 'nextbike' subscriptions covering a period of 10 years to encourage and embed behavioural change.

In addition, the key part of the active travel strategy we will to provide every dwelling with a premium branded e-bike to encourage and embed behavioural change. The Thornhill Low Carbon Community is the first strategic development site to make such a commitment in the UK.

The e-bike will be provided on a £1 per annum rental with a management and maintenance company retaining ownership (so that the bike runs with the dwelling if the initial occupier moves).



Nextbike Subscription Tariff

Standard nextbike

- First 30mins FREE rather than £1
- Second 30mins 50p rather than £1

'E' nextbike

- First 30mins £1 rather than £2
- Second 30mins £1 rather than £2



The Appeal of E-Bikes

- Battery assist makes cycling less of a physical effort.
- This translates in faster speed; easier acceleration after a stop, such as at a traffic light; and a power boost when going uphill, facing headwinds or carrying heavy loads.
- Battery assistance stops at 25 km per hour, any faster and the rider must power the bike on their own.
- On an e-bike, a cyclist can attain an average speed of about 22 km per hour, about 50% faster than the average 15km per hour for a standard bike (and with less effort).
- This increased speed could cut journey times by two-thirds
- At such speeds an e-bike could outpace a car or bus, especially taking into account full origin to destination travel, including walking to and waiting for a bus, or parking a car.
- An e-bike journey is more akin to a stroll than a sprint. This matters to commuters: Not having to pack a change of clothing or shower after a ride removes a significant disincentive for many.
- E-bikes open up cycling to many who might otherwise hesitate.
- “MY OTHER CAR IS AN E-BIKE”



Mixed Used Development

Key local services will be provided alongside new housing. Homes will be within walking or cycling access of local shops/cafes and a remote working hub. A primary school can also be provided on-site.

Two potential locations for local centre hubs are proposed in the concept plan;

- A primary centre/hub is proposed along the Thornhill Road, with passing traffic likely to assist with its vitality and viability.
- A secondary, smaller hub could also be provided on the Heol Hir junction with Capel Gwilym Road.

The increase in population would also provide an immediate customer base for Thornhill Farm shop.

Thornhill Sainsburys, the North Cardiff Medical Centre and Llanishen High School are all within active travel distance. Both the Cardiff Business Centre and the University Hospital of Wales are within a conventional cycling distance, with the e-bike travel plan likely to increase bike-based cycle to work trips.

In combination with Cycleway 1 (from the Hospital and Heath High Level) and other improvements, onward riding to the centre of Cardiff and the Bay will become more attractive to those with an e-bike.



09 Ecology

DESIGNATIONS

There are no headline ecological designations within the site.

The key designations of note in the general vicinity of the site lie to the north west and comprise the following overlapping features, which do not pose any constraint to the concept plan.

- A. **Cardiff Beech Woods SAC (1)**- is designated as one of the largest concentrations of Asperulo-Fagetum beech forests in Wales, and represents the habitat close to the western limit of its past native range in both the UK and Europe. The woods show mosaics and transitions to other types, including more acidic beech woodland and oak Quercus and ash Fraxinus excelsior woodland.
- B. **Fforestganol A Chwm Nofydd SSSI (5)**– which is designated for its semi-natural broadleaved woodland and notable ground flora.
- C. **Cwm Nofydd and Fforest Ganol LNR**

The following SNCI's fall within or partially within the site boundary/study area, namely

- **LDP7 Briwnant Footpath Field**- A horse-grazed pasture supporting 12 species of Waxcaps.

- **LDP8 Briwnant Wood**- Coniferous plantation on an ancient woodland site with relict ancient woodland flora.
- **LDP9 Briwnant Isaf Wood**- Semi-natural Oak/Alder woodland with marshland containing Lousewort.
- **LDP33 Coed-y-Briwnant**- Coniferous plantation on an ancient woodland site.
- **LDP49 Craig Llanishen**- Semi-improved calcareous grassland.
- **LDP50 Craigbriwnant field**- Marshy grassland.
- **LDP124 Nant-y-Briwnant**- Unimproved tributary with diverse bankside vegetation.

In addition, the satellite part of the site to the south of Lisvane and Thornhill Station is designated as **LDP92 Lisvane Station Wood**. This is a secondary broad-leaved Oak/Alder and Beech woodland with a series of wet hollows with Wood Club Rush and Drooping Sedge and containing a unique population of the introduced plant species Skunk Cabbage. There is a planning balance to be assessed here (on part of this woodland) between sustainable transport related measure, tree loss and mitigation.

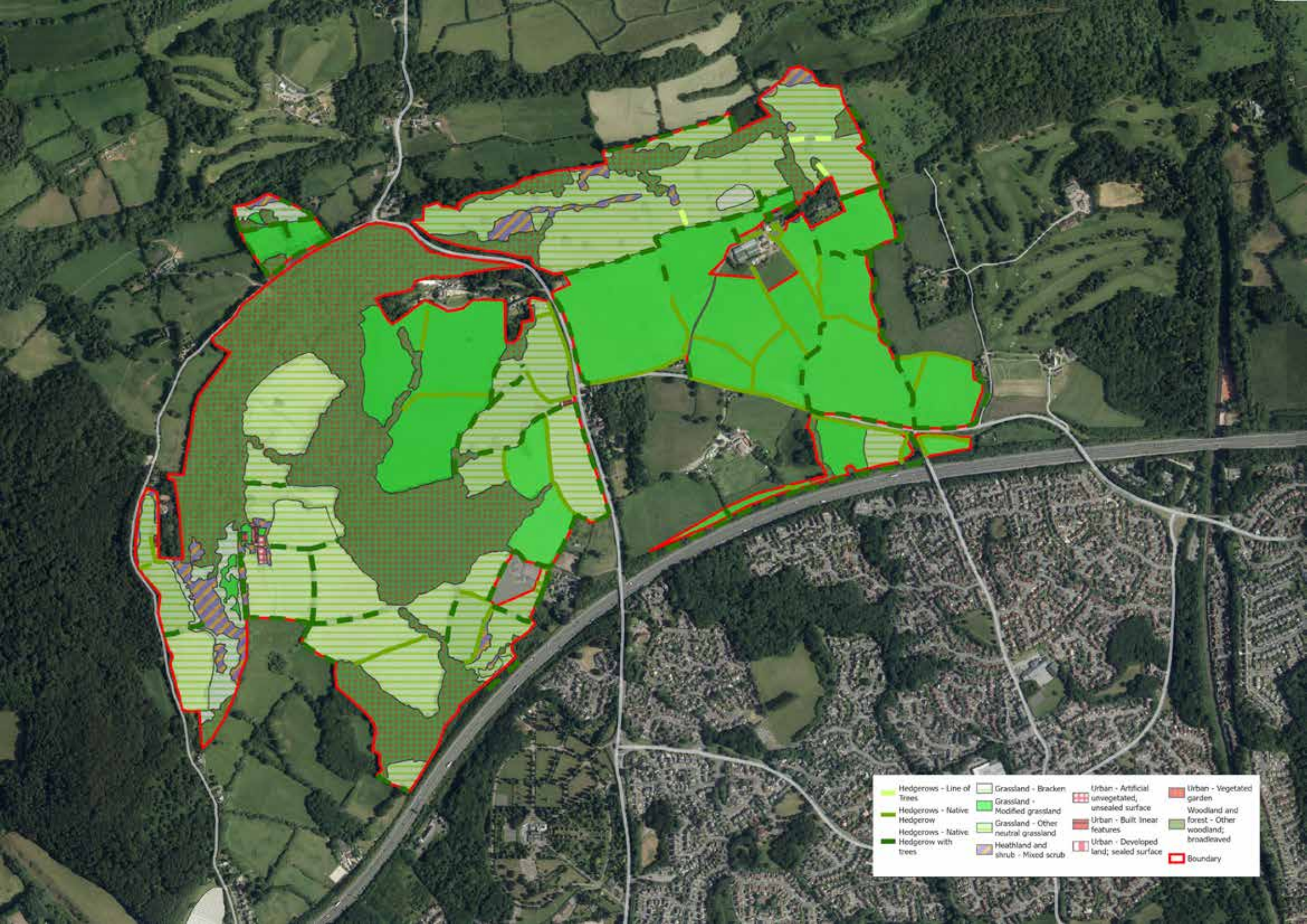
The SNCI's have been taken into account in the preparation of the concept plan for the main body of the site. The lower slopes of the eastern part of the site are unconstrained by designations. SNCI coverage in the west is more significant, focused on large areas of woodland or watercourses. The

woodland will be undisturbed aside from where recreational trails can be forged through LDP8 and LDP33. There are already some existing and historic trails and a more detailed survey is needed to determine the effect of improving existing routes and creating new ones.

Where development adjoins woodland, a 15m woodland ecotone will be allowed to develop, or planted, to provide a gradual transition between forest trees such as oak, ash and beech, woodland edge trees such as birch, hawthorn, rowan and willow, woodland edge shrubs such as blackthorn, dogwood, elder, hazel and wayfaring tree, herbaceous vegetation and gardens.

Vehicular and active travel crossings will be kept to a minimum across the Nant-y-Briwnant tributary SNCI, albeit one or two crossing points may be needed.





HABITATS

Land east of Thornhill Road contains large areas of modified grassland on the lower slopes which are sheep-grazed and intersected by hedgerows. The northern section of the site (the scarp) contains neutral grassland and bracken scrub with small areas of broadleaved woodland present.

Land west of Thornhill Road contains large areas of broadleaved woodland and neutral grassland with some modified grassland fields which were intersected by hedgerows. Areas of mixed scrub and bracken were also present.

Neutral grassland

There are areas of neutral grassland in the east and west of the site. The northern portion of the east of the site was sloped (steeply in places) and contained neutral grassland with a variety of grass species present. The grassland contained patches of bracken and mixed scrub. A field at the southern end of the east of the site is wetter and contains species of rush (*Juncus* spp.). There are more areas of neutral grassland in the far western portion of the site, some of which contained ecologically valuable meadows.

Some areas of neutral grassland require further survey to determine whether they are botanically-rich or unimproved. The neutral grassland fields contained ecologically valuable habitat including meadows and marshy grassland which have the potential to support a variety of protected species such as

foraging bats, reptiles, GCN, invertebrates and birds (both ground-nesting and foraging).

Two areas of land in the west of the site (north of Lower Briwant Farmhouse) have potential to be botanically-rich and further surveys will confirm their status. The concept plan proposes no development in this part of the site

Modified grassland

There are fields of modified grassland on both sides of the site, which are largely sheep-grazed. These fields are of less value from an ecological perspective due to the fact they contained a short sward and were species poor.

Scrub & Mix Scrub

There are small areas of bracken scrub in both sides of the site. There are areas of mixed scrub across the site which mainly contained hawthorn (*Crataegus monogyna*), blackthorn (*Prunus spinosa*), gorse (*Ulex europaeus*) and bramble (*Rubus fruticosus*). The mixed scrub and bracken habitats are fairly limited in size and are mainly located along the grassland/woodland interface. There is a larger section of mixed scrub in the south west of the site. These scrub habitats contain a mosaic of species which support a variety of invertebrate species including butterflies and moths. The structural diversity of the habitats also makes them highly suitable to support reptiles, which need open areas to bask and refugia for cover. These scrub habitats would be retained where possible due to their ecological value.

Hedgerows

There are large numbers of hedgerows on site which have the potential to support protected species such as dormouse, foraging bats, breeding birds, hedgehog, polecat, invertebrates and badger. The hedgerows vary from defunct species-poor to species-rich with trees. The defunct species-poor hedgerows could be infill planted as part of the development proposals to enhance the hedgerows as a wildlife corridor and improve ecological connectivity across the site. There were also several large grassland fields on site which were not hedged; these could be subject to new hedgerow planting around the edges to improve the wildlife network and create new commuting routes for bats and other species.

If any hedgerows require removal as part of the development proposals, an assessment of their importance under the hedgerow regulations will be required and compensatory planting would be required.

Broadleaved woodland

There are small areas of woodland in the north east of the site and larger areas of woodland throughout the western portion of the site. The woodland habitat is the most ecologically valuable habitat and would be retained and buffered from development. Several of the woodland parcels in the west of the site are designated as Wildlife Sites and Ancient Semi-Natural Woodland. An ecotone of 15m will be provided as set out above.



PROTECTED AND NOTABLE SPECIES

Amphibians

There are no ponds present on the site and therefore no potential breeding habitat for amphibians such as GCN. There are two ponds south east of Thornhill Farm Shop. These ponds are well- connected to the site through hedgerows and areas of grassland. A further pond is south west of New House Hotel. To inform the detailed design, these ponds would be subject to a Habitat Suitability Index (HSI) assessment and eDNA survey to assess their potential to support GCN.

Reptiles

The site contains areas of mixed scrub, bracken scrub, grassland and hedgerows which hold potential to support reptiles. Some of the hedgerows contain a good wide field margin containing grassland, ruderal and scrub habitats, which would be suitable to support reptiles and also act as wildlife corridors to allow reptiles to move across the wider landscape. Further targeted surveys to identify the presence of reptiles on the site would take place at a more detailed design stage.

Bats

The site contains a variety of habitats which are valuable to foraging bats including hedgerows, neutral grassland, scrub and woodland. The areas of woodland, scattered trees and hedgerows also contained trees with features suitable for roosting bats. The cluster of farm buildings in the east of

the site also hold potential to support roosting bats. Further surveys for bats are recommended. Activity transects supplemented by static detector surveys will be undertaken to identify bat activity across the site at a more detailed design stage

Higher level bat surveys (trapping and radio tracking) are unlikely to be required as the development concept seeks to avoid impacting key bat habitat such as the woodland parcels.

A ground level assessment of trees likely to be impacted by development proposals would be undertaken to identify trees with potential roost features. This will also identify any trees which require further surveys for bats (aerial inspection or emergence/re-entry surveys). There are structures on site itself to inspect to identify their potential for roosting bats.

Badger

No signs of badger were identified during a June 2020 ecological walkover survey; no setts, foraging signs or latrines. However, the woodland habitat is extensive in the west of the site and the habitat is highly suitable for badger. Additionally, there were desk study records of badger from Thornhill Quarry, which is adjacent to the north of the site. The grassland, scrub, hedgerow and woodland habitats hold potential to support foraging badger. For areas of woodland, hedgerow or scrub (or areas within 30m of these habitats) likely to be impacted by the development, an updated badger

survey would be carried out to identify any evidence of badger (particularly setts) within these areas.

Otter and water vole

There are small streams/brooks running through the site; Llanishen Brook in the east of the site and Nant-y-Briwnant running north-south through the woodland in the west of the site. These streams were very shallow and narrow and were considered unsuitable for water vole. Although the streams were largely unsuitable for otter, there is the potential for the species to occasionally use the streams to move across the wider landscape to find more suitable foraging areas, as otter are known to travel large distances in search of suitable riverine habitat.

Environment (Wales) Act Section 7 species

The habitats present on the site are suitable to support European hedgehog and polecat, both of which were identified within desk study records. The hedgerow, scrub and woodland edge habitats would provide suitable nest habitat for hedgehog, and the grassland fields (particularly the meadow habitats) would provide suitable foraging habitat for hedgehog. The woodland and farm buildings would provide suitable habitat to support polecat.

Hazel dormouse

The woodland, hedgerow and mixed scrub habitats are suitable to support dormouse, as they contain a variety of

species which are known to be important food sources for dormouse including oak, hazel, ash, bramble, hawthorn and blackthorn. A desk study also identified records of hazel dormouse within 5km of the site. Further targeted surveys for dormouse would identify if the species is present.

Birds

The site contains areas of woodland, hedgerow, grassland and farmland habitat which have the potential to support a wide variety of bird species. The desk study identified a large amount of records of protected and notable species of bird, including several Wildlife & Countryside Act 1981 (as amended) Schedule 1 species. The desk study records largely related to aquatic and wetland habitats such as the River Taff, Glamorgan Canal and Roath Park Lake. These habitats are not present on the site and therefore the site is considered unlikely to support the protected bird species that relate to these habitats (e.g. long-tailed duck, bittern and greenshank). However, there were areas of meadow grassland which hold potential to support ground-nesting birds. The farmland habitat would also be suitable to support species such as barn owl (which could also roost within the farm complex in the east of the site), skylark and yellowhammer. Targeted surveys for farmland birds and breeding birds are recommended to identify protected and notable species of bird on the site, including the need for special mitigation or habitat compensation as part of the development proposals.

Invertebrates

The site contains a wide variety of habitats including grassland, scrub, woodland, scattered trees, marshy grassland and hedgerows, which hold potential to support a variety of invertebrates. The woodlands present on site contains areas of dead wood suitable to support saproxylic invertebrates such as beetles. The meadows and scrub habitats are likely to support a variety of butterfly, moth and cricket species.



10 Flood Risk & Drainage

FLOOD RISK

A review of Natural Resources Wales' development advice map indicates that the whole of the proposed site area is in Zone A, "Considered to be at little or no risk of fluvial or coastal/tidal flooding".

The key driver for the site will therefore be essentially focused around the drainage strategy that is employed as opposed to the need to deal with any significant flood related issues.

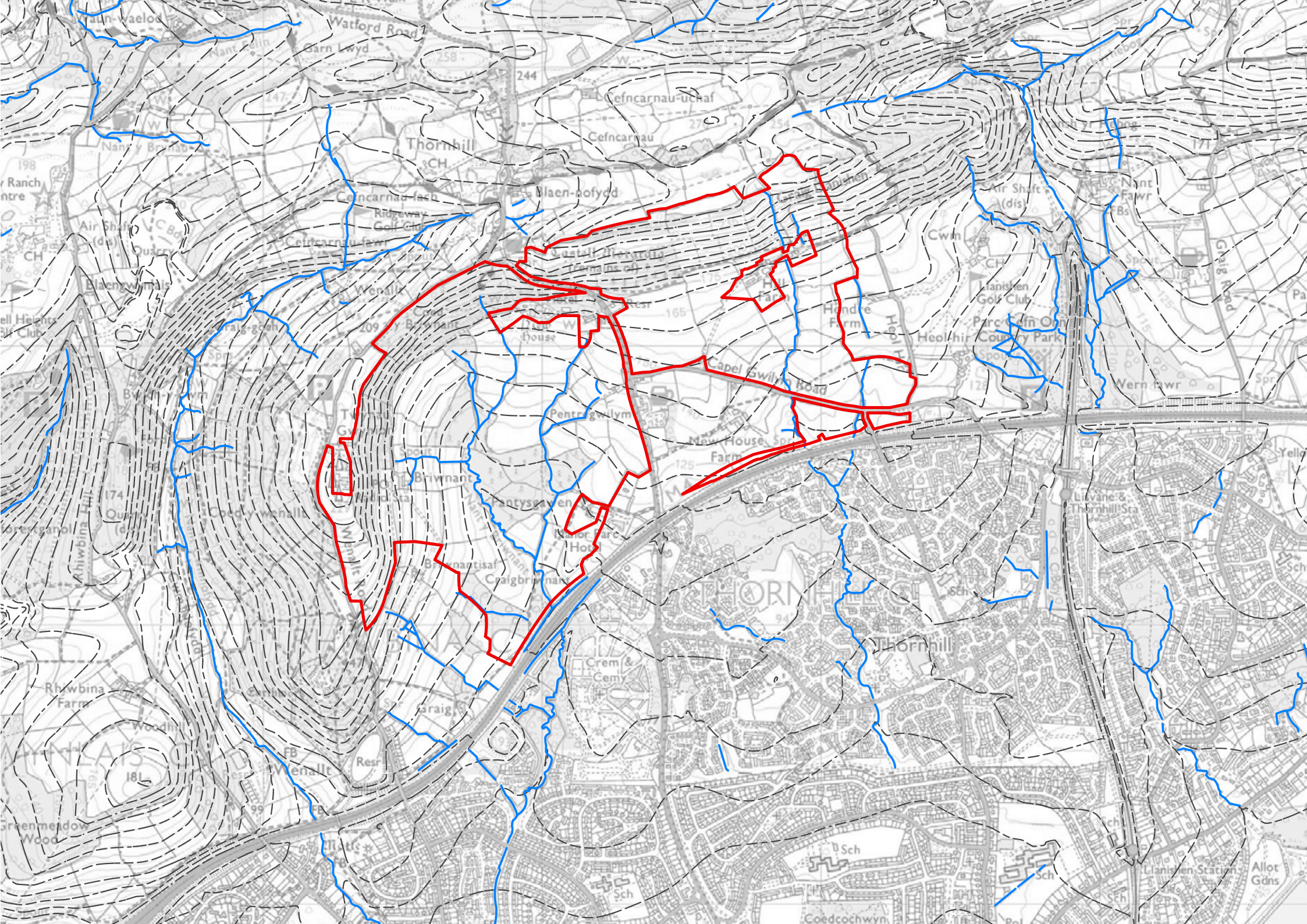
SURFACE WATER DRAINAGE

The natural drainage of the western parcels is generally from north to south via the existing network of watercourses and ditches (Nant-y-Briwnant) which then converge to around four points along the northern boundary of the M4. Flows then pass beneath the M4 and discharge into the Rhydwaedlyd Brook in the vicinity of Thornhill Crematorium and Cemetery.

Areas to the east of the A369 are generally characterised by more open fields and more even gradients than those to the west, though it is apparent that this area is also less well served in terms of existing drainage receptors such as watercourses.

Inspection of the prevailing contours suggests that the majority of the area would drain to the Llanishen Brook, which runs north to south and is located broadly central within the intended development area.

A preliminary assessment has been made of the likely land take requirements for SUDS to ensure that the preliminary site capacity assumptions are robust.



11 Utilities

Records showing existing utilities and statutory undertakers apparatus crossing the site have been received, reviewed and assessed. A number of existing local and more strategic services crossing the site area. include;

Western Power Distribution

- Overhead 11KV power lines crossing east-west through the centre of the eastern proposed development area, and also north-south through the western parcels.
- Existing LV cables are located along Thornhill Road.

British Telecommunications

- BT Openreach have a number of below ground cables running along Thornhill Road and Capel Gwilym Road, which are believed to be within the existing footways.
- There are overhead cables running across some parts of the site which serve existing properties, farmhouses etc. It is anticipated some of these cables may be grounded within certain parcels which will also form part of the new services to supply the proposed dwellings.
- A High Pressure (HP) gas mains crosses the site from the east to the middle of the eastern parcel and then runs north through the site.
- Low Pressure (LP) mains are located within Thornhill Road and also to the far east of the site.

- The HP gas main has a joint inner and middle zone consultant zone within which Health and Safety Executive (HSE) guidance would advise against housing development. This 'risk' area is quite narrow and the concept plan assumes no housing development within it. HSE guidance also advises against other vulnerable uses within the outer zone (such as a school) but housing is permitted in this zone.

Wales & West Utilities (WWU) Cadent Gas & National Grid

- Records show existing overhead National Grid power lines to the far north of the site, just beyond the site boundary and are not expected to affect the site proposals in terms of any diversion requirements.



Dwr Cymru Welsh Water (DCWW)

- Dwr Cymru Welsh Water have responded to a pre-application enquiry. A number of existing water mains currently run through and across the site, each requiring 7-8m easement.

Foul Drainage

Inspection of sewer records indicates that the availability of local sewerage network that might service the development is limited. The bulk of the adopted network is located to the south of the M4 with only a limited number of small localised sewers serving specific properties within the site area.

A pre-planning application has been lodged with DCWW requesting their considered response for 1400 new dwellings, with a local centre and school for approximately 420 pupils. This results in peak foul drainage run-off of approximately 72.0 l/s.

From existing DCWW records the only existing drainage is a private pumping station located adjacent to Pentre Gwilym house (Miller and Carter) with a 60mm mdpe rising main going south along Thornhill Road and over the M4 motorway.

The existing infrastructure is unlikely to have capacity to accommodate the proposed development. Hydraulic

Modelling Assessments would be required to be undertaken by DCWW which will examine the impact of the development flows upon the performance of the existing network, which in turn will then, where appropriate, identify solutions and points of communication to allow the site to be developed.

The follow options are available

Option 1 - upgrade to existing system.

Following the above modelling works it may be feasible to provide upgrades to the existing system.

Option 2 - on-site storage and treatment works

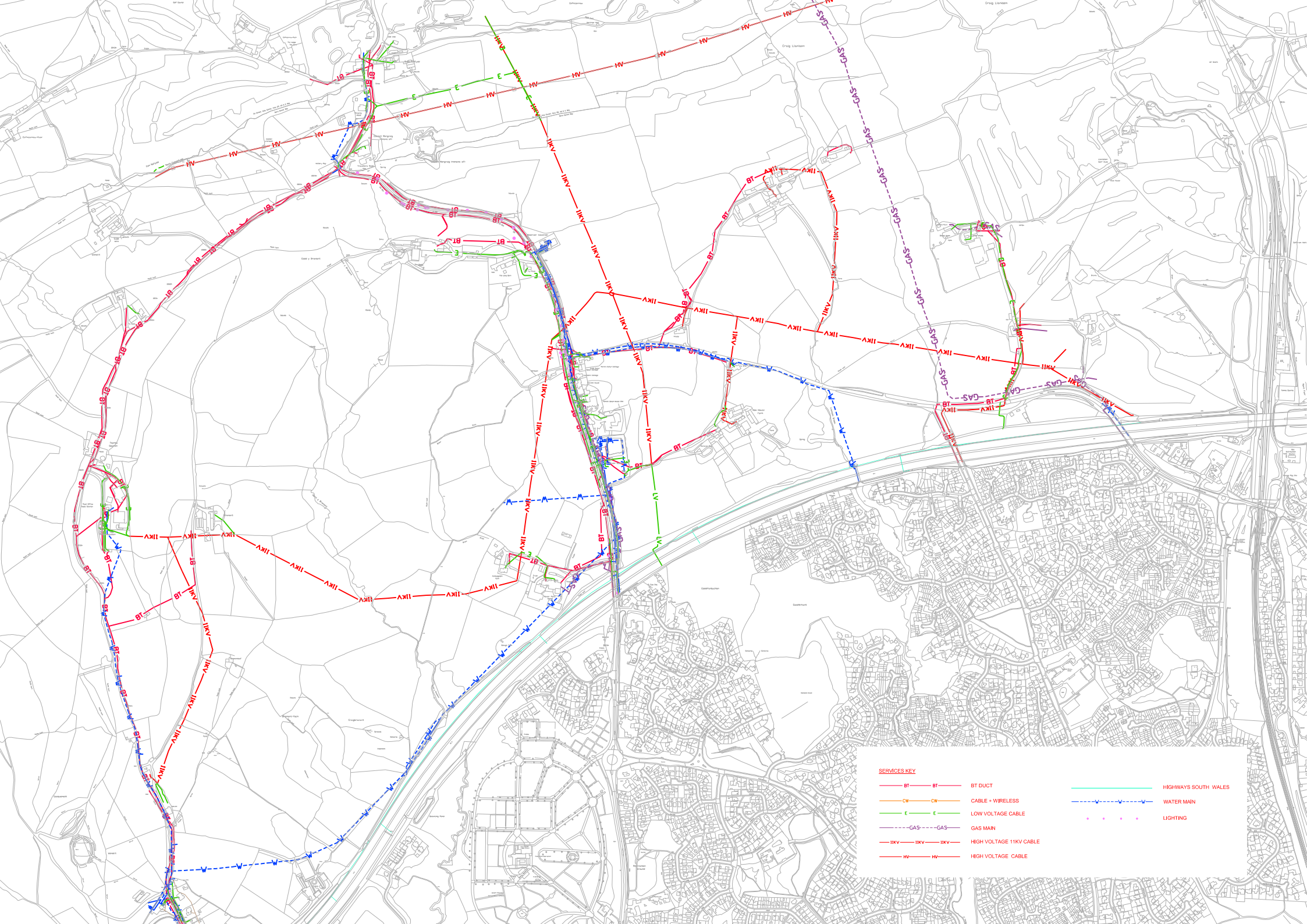
This may then not require any upgrades to the existing system (dependant on CCTV survey results). Option 2 will require either:

- An area for a stand-alone treatment works to accommodate the whole of the site area. This would be fed by a traditional series of gravity fed foul water sewers. This would need to be in line with Sewers for Adoption at 160 litres per dwelling. Treatment works then will discharge either to a series of soakaways (if feasible) or to an existing flowing watercourse. Either option will require approval and consent from the Environment Agency; or

- A series of smaller treatment plants which can cater for smaller parcels of land. This will require the same procedures and guidance as Option 1. The provision of an on-site treatment facility will require EA and DCWW approval. STWs will also be required to be on the British Water approved list, and in line with Building Regulations part H for smaller type systems.

Option 3 - on-site storage and pumping.

An alternative option would be to construct a traditional gravity sewer system (both east and west of Thornhill Road) and provide a pumping station, either individually to serve both east and west or alternatively 2 No. compounds located to the south of each site. A rising main can then be provided across the A469 Thornhill Road bridge over the M4 for either the whole site or just the western site and Heol Hir bridge for the eastern site. This option would then allow flows to be pumped at a very low rate (to be agreed with DCWW) and may negate the requirement for any upgrade works to the existing system. This would require on site storage, above the normal 24-hour storage required for pumping stations, to be provided and therefore on-site storage would be required to be incorporated into the scheme.



SERVICES KEY

- | | | | |
|------|------|-------------------------|----------------------|
| BT | BT | BT DUCT | Highways South Wales |
| CW | CW | CABLE + WIRELESS | Water Main |
| E | E | LOW VOLTAGE CABLE | Lighting |
| GAS | GAS | GAS MAIN | |
| 11KV | 11KV | HIGH VOLTAGE 11KV CABLE | |
| W | W | HIGH VOLTAGE CABLE | |



Hafod y Milgi, Wenallt Road (1846) - non designated local building/architecture

12 Conclusion

Part 2 of this candidate site submission has set out the strategic plan making context for planning for housing in Cardiff and which strategic options/land could play a future role.

It is clear that a sieve of key environmental constraints leads one to a handful of candidate strategic locations with Cardiff's administrative area.

Of these, only land within the catchment of Lisvane and Thornhill Station would be able to connect to existing primary public transport services (with 4 trains per hour on the Rhymney line forthcoming as part of the South Wales Metro). Critically, unlike Crossrail, the infrastructure is already in place. A low carbon community at Thornhill would also be able to connect into existing, high frequency and express bus services. There also exists a park and ride facility to intercept trips from Caerphilly that have not already transferred to bus or rail. The overall opportunity here in transport terms is to be considered in light of the absence of other 'as' sustainable locations in Cardiff or in South East Wales that can serve Cardiff.

Further expansion opportunities to the north west of the city (LDP potential future growth areas) are more car dependent locations. Aside from land accessible from the Craig Road overbridge, there are no credible expansion options north of the M4, and this arc of constraint runs all the way east to the A48(M).

Lightwood will bring forward the most cycle-oriented development that Wales has ever seen. A premium e-bike will be supplied for every household, alongside a 10-year subscription to nextbike, a high frequency of nextbike stands and a dedicated cycling route. As set out in the transport and movement section, e-bikes have huge potential to make a real difference to how people travel around the city, coupled with the investment that the Council is already making in cycling infrastructure.

The subject site is extensive and is thus subject to several constraints. However, a core area can be identified on the lower slopes of Craig Llanishen, outside the Special Landscape Area where a critical mass is achievable and where a mixed-use community of up to 1250 homes can be seeded, inclusive of a primary school, local centre, and remote working hub (for all of North Cardiff). A suitable balance can be struck between the creation of an outstanding residential environment and the protection of the natural and historic environment.

By virtue of the extensive land ownership that is available a vast Green Infrastructure strategy is available that goes much further than simply serving/mitigating the new neighbourhood. The overall scheme has the potential to open up a northern arc of publicly accessible land, walking and cycling routes between Coed-y-Wenallt and Parc Cefn Onn. This is green infrastructure 'net gain' on a huge scale.

It is recognised that the 'buildable' part of the site will require a first-class placemaking response. Wales is now seeing high performing low carbon housing coming forward at places such as Gwynfaen Farm, Penyrheol. All 144 homes have been designed to achieve EPC 'A' and a SAP score of 96% or above. In terms of operational energy over the course of a year, many homes are predicted to be net zero carbon. Elsewhere, sites such as Parc Hadau (35 homes) are leading the zero-carbon charge in Wales

This is the 'fabric' and 'energy' future for the site that Lightwood aspires to. Recognising the urban rural transition, we intend to open discussion with the Welsh Design Commission to scope out the Placemaking response, to consider 'how to build' here in terms of aesthetics. Whilst Modern Methods of Construction are sometimes associated with a contemporary style, the technology exists to pursue more traditional appearances, or a blend.



LEGEND

- 1 Thornhill Station & New Electric Bike Hub
- 2 Caerphilly Road Express Bus Stop
- 3 Community Hub/Local Centre/Neighbourhood Workspace
- 4 2ffe Primary School
- 5 Destination Playspace & Dedicated Youth Allotments
- 6 Allotments
- 7 Forest School
- 8 Country Park
- 9 Self/Custom Build
- 10 Thornhill Cemetary Northern Extension
- 11 Park & Ride (500 spaces)

- Residential
- Local Centre
- Existing Vegetation
- Proposed Planting
- Existing PRoW's
- Proposed PRoW's
- Strategic Cycle Network
- Bus Routes
- Nextbike Hub Locations



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