

Environmental Statement Addendum

Volume 4: Non Technical Summary



April 2024

Marvel Ltd

Environmental Statement

Volume 4

Non-Technical Summary

Proposed Leisure Development
Rhydycar West, Merthyr Tydfil,
Wales

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PLANNING



Contents

1.0	INTRODUCTION.....	3
2.0	THE SITE.....	5
3.0	THE PROPOSED DEVELOPMENT	6
4.0	SOCIO-ECONOMICS	9
5.0	GREENHOUSE GAS EMISSIONS AND CLIMATE CHANGE	11
6.0	GEOLOGY AND GROUND CONDITIONS.....	13
7.0	ECOLOGY	15
8.0	TRANSPORT AND MOVEMENT.....	<u>1919</u>
9.0	ARCHAEOLOGY AND CULTURAL HERITAGE.....	<u>2222</u>
10.0	HYDROLOGY AND HYDROGEOLOGY	<u>2424</u>
11.0	LANDSCAPE AND VISUAL IMPACT	<u>2727</u>
12.0	DRAINAGE AND FLOOD RISK.....	<u>3030</u>
13.0	NOISE.....	<u>3333</u>
14.0	AIR QUALITY	<u>3535</u>
15.0	LIGHTING.....	<u>3737</u>
16.0	HEALTH.....	<u>3939</u>
17.0	UTILITIES.....	<u>4444</u>
18.0	CUMULATIVE IMPACT	<u>4545</u>



Figures

Figure 1.1 Site Location Plan

Figure 1.2 Outline Masterplan



1.0 INTRODUCTION

1.1 Background

1.1.1 This document is the non-technical summary (NTS) of an environmental statement (ES), which records the environmental impact assessment of the development described below. The application seeks outline planning permission for the development of land at Rhydycar West, to the west of Merthyr Tydfil and the A470, shown at Figure 1.1.

1.1.2 The site for the purposes of seeking planning permission is outlined in red on Figure 1.1 and measures 30.4 hectares. The blue line on Figure 1.1 indicates other land within the applicant's control, measuring circa 223 hectares. It should be noted that the study area (that is, the area over which surveys and analyses have been undertaken) is often wider than the application site or ownership area and varies according to the discipline being considered (e.g. the study area was more extensive when considering landscape matters than, say, transportation).

1.2 The application

1.2.1 The application seeks outline planning permission for a mixed leisure development comprising Indoor Snow Centre (up to 39,200 sq m), Waterpark (up to 7,500 sq m), Indoor Activity Centre (up to 9,000 sq m), Outdoor Activity Centre, Hotel Accommodation (up to 418 bedrooms), Woodland Lodge Accommodation (up to 30 units), car parking (up to 830 spaces) and associated earthworks, access, drainage, servicing and utilities connections/infrastructure. The Outline Masterplan is shown at Figure 1.2.

1.3 Environmental impact assessment

1.3.1 Environmental Impact Assessment (EIA) is a means of drawing together in a systematic way an assessment of the likely significant environmental effects of a particular development. This helps to ensure that predicted effects are identified and assessed and that the scope for minimising or mitigating them is considered at the time the decision is made.

1.3.2 As part of the process of designing the project and assessing its potential environmental effects, the applicant consulted a wide range of organisations, including the local planning authority and highway authority, other departments within Merthyr Tydfil County Borough Council, Natural Resources Wales, Cadw, The Coal Authority and held numerous a public exhibition events 'in person' and on-line.



1.3.3 The ES is presented in four volumes:

- Volume 1: Main text;
- Volume 2: Figures;
- Volume 3: Appendices; and
- Volume 4: Non-technical summary.

1.3.4 The scope of the Environmental Statement has been agreed with the Local Planning Authority and covers the following topics: Socio-Economics, Greenhouse Gas Emissions and Climate Change; Ground Conditions; Ecology and Nature Conservation; Traffic and Transport; Archaeology and Cultural Heritage; Hydrology and Hydrogeology; Landscape and Visual Impact Assessment; Water, Drainage and Flooding; Noise; Air Quality; Lighting; Human Health; and Utilities.

1.3.5 It is considered that with the implementation of an appropriate Site Waste Management Plan, construction waste would be managed sustainably in accordance with the Waste Hierarchy and that the proposed development would not give rise to any significant environmental impacts. Waste was therefore 'scoped out' of the assessment.

1.3.6 Legal requirements, codes and standards at the design, construction and operational stages adequately control the potential for major accident and/or disasters occurring. Measures will be taken during construction and operational phases to ensure codes of practice are followed, the development is not wilfully misused and to prevent wilful trespass. As such, the proposed development is not considered to be particularly vulnerable to risks of major accidents and/or disasters. The development is not a source of hazard itself that could result in a major accident and/or disaster occurring, does not interact with any sources of external hazards that may make it vulnerable to a major accident and/or disaster and if an external major accident and/or disaster occurred, the existence of the development would not increase the risk of a significant effect to an environmental receptor. Likely significant effects of a development from major accidents and/or disasters are accordingly "scoped out".

1.3.7 Copies of the ES are available to purchase at a cost of £100.00 (excluding post and packaging) while stocks last. Electronic copies are also available at a cost of £10.00 (including post and packaging). Enquiries should be made to the applicant's agent:

CarneySweeney, Brunel House, Fitzalan Road, Cardiff, CF24 0EB
Email: peter.waldren@carneysweeney.co.uk

1.3.8 Electronic copies of this non-technical summary of the ES are available free of charge.



2.0 THE SITE

2.1 Location

- 2.1.1 The Rhydycar West application site forms part of a wider landholding that spans c.223ha in the heartland of South Wales, opposite the town of Merthyr Tydfil. The proposed development will leave around 86% of the land under Marvel's ownership, approximately untouched, accessible and retained as countryside. The application site itself occupies a 30.4ha parcel of land and is located in the south-eastern corner of the landholding.
- 2.1.2 The site is located on the A470, linking Cardiff approximately 40 minutes to the south, and the Brecon Beacons National Park, which attracts in excess of 4 million visitors a year, only a 10 minute drive to the north.

2.2 Planning designations

- 2.2.1 The application site is subject to various historical and environmental designations / attributes, of particular note being the Cwm Glo a Glyndrys Site of Special Scientific Interest (SSSI), Rhydycar Gorllewin/ Rhydycar West Site of Importance for Nature Conservation (SINC) and various Scheduled Monuments (SM) within and surrounding the site. The Cyfarthfa Balance Pond and Leat SM straddles the western boundary of the application site while the Cwm Pit Head of Railway SM straddles the site's southern boundary. Woodland in the west and south west of the site is covered by a woodland TPO. A number of rights of way have recently been established on and surrounding the site as a result of an application to modify the definitive map and a positive dialogue and collaboration between the landowners and MTCBC.



3.0 THE PROPOSED DEVELOPMENT

- 3.1.1 The proposals include the provision of all cut and fill, slope engineering operations, roads, parking, landscape drainage, servicing and utilities connections/infrastructure and all other associated development necessary to deliver the above elements.
- 3.1.2 The Rhydycar West development seeks to create the flagship indoor leisure resort in Wales – for “all year round”. It will be an exemplary and internationally recognised, sports, leisure and tourism destination able to offer a unique experience to both the people of South Wales and the UK as a whole.
- 3.1.3 Indoor snow sports will be one of the anchor attractions at the development. It will host the Welsh & UK National Centre of Excellence for snow sport and be the training headquarters for the Welsh and UK national and Olympic teams as well as offering world class recreational facilities. As the national governing body for Snowsports in Wales, Snowsport Cymru Wales have campaigned for a facility such as this for nearly a decade. The indoor snow centre will conform to International Ski Federation (FIS) and international standards. Key aspects and benefits of the indoor snow centre include:
- The largest Indoor Snow Centre in the UK and the only one in the UK capable of meeting international standards.
 - World class facilities – the first and only one of its kind in the UK.
 - Provision for events (from local to international competitions) to be delivered across the different disciplines of snow sport.
 - A venue for the development of Welsh and UK Olympic and Paralympic skiers and snowboarders.
 - Ability to deliver significant parts of Wales and the UK’s out of winter season training within the UK bringing about huge opportunities for potential future snow sport athletes.
 - Potential for significant benefits to the development of snow sports from grass roots participation through to international excellence.
 - Significant increase in participation in snow sports at both a local and national level.
 - Huge opportunities to develop school sport activities.
 - Club development and training programmes (recreational and competition).
 - Grass roots schools and local competitions, national championships and international events
 - Year round national and regional training.
 - Year-round coach and instructor training opportunities, creating long term employment.



- 3.1.4 The resort will be home to a wide variety of Indoor and outdoor pursuits including an Indoor Tropical Water Park and Indoor & Outdoor Adventure Centres. These facilities will be supported by a wide range of associated accommodation from the Luxury Spa and the Sport and Value hotel and Woodland Lodges –catering for the long and short stay visitor.
- 3.1.5 The resort will also complement and enhance the existing sport, leisure and tourism offer currently thriving in the South Wales Valleys and Brecon Beacons such as BikePark Wales and Zip World. Ideally situated and extremely well connected the development will strengthen Merthyr Tydfil’s regeneration and position as both a destination of choice in its own right and the gateway to the Brecon Beacons.
- 3.1.6 The proposal is the carefully considered outcome of a period of several years of engagement and understanding of the local and regional economy, ecology, history and heritage. Further detail regarding the formulation of the scheme, the design process and the final submission is set out in full in the accompanying Design and Access Statement.
- 3.1.7 When fully operational, the resort is intended to be a UK premier destination and “basecamp” for the region; facilitating longer stays, providing much needed quality accommodation and being the catalyst for new local and regional economic opportunity and job creation. Importantly, the development will offer a weather-proof guaranteed “all year round” destination for holiday visitors while underpinning the notion of the Valleys region developing as the epicentre for UK wide adventure and activity led tourism.
- 3.1.8 The topography of the site and the transport connectivity makes this an ideal location at the “heads of the valleys” for a strategic transformational destination. The World class facilities of the Snow Centre, being the largest such facility in the UK, elevate the development to be one of national significance in Welsh and UK terms.

3.2 Consideration of alternatives

- 3.2.1 The EIA Regulations require applicants to provide a description of the reasonable alternatives studied which are relevant to the proposed development and set out the main reasons for selecting the chosen option, including a comparison of the environmental effects.
- 3.2.2 The consideration of reasonable alternatives relating to this project began when Marvel Ltd first investigated the development options of their land ownership at Rhydycar West and were put in contact with Snow Sports Wales (who had long been seeking a site for a snow facility in the area) by the Economic Development department of Merthyr Tydfil Council. Since then, the GB Ski Team have also become involved in defining the parameters in terms of requirements for a site to physically and commercially deliver a feasible development.



- 3.2.3 In terms of the 'do nothing' alternative, while the likely significant environmental effects would not occur, neither would the regeneration / socio-economic benefits, beneficial remediation / 'clean-up' of the coal and highways legacy of the site, funded maintenance of heritage assets and improved heritage access on the site and active and funded ecological management of the local and European ecological designations in, and around the site. Furthermore, the Do Nothing scenario would not achieve the stated objectives for the development and so cannot be considered as a 'reasonable alternative'.
- 3.2.4 Alternative locations have been considered. Planning policy requires a sequential approach to site selection for a number of the uses proposed by this development whereby locations within the town centre should be considered before out of centre sites are considered. However, there is no requirement to consider breaking up the scheme into parts. Even taking a very flexible approach there are no sites which could accommodate even the core elements of the proposed development (leaving aside necessary parking, servicing and landscaping etc) within a town centre location. The Indoor Snow Centre, Indoor Tropical Waterpark, Indoor and Outdoor Adventure centre and hotel accommodation alone have a footprint of over 4.5 hectares – an area approximately 10% of the area covered by Merthyr Town Centre. No such site exists within Merthyr Town Centre. Furthermore, the site would have to be suitable for the nature and form of the development proposed which, even allowing for flexibility, would have to accommodate the slope required for the International Ski Federation standard snow centre and provide an appropriate natural environment for the outdoor leisure and lodges. The fact that most town centres tend to occupy valley floors, rather than the sides of the valley, makes a town centre location inappropriate and unsuitable. All this being the case, no suitable viable and available sequentially preferable site exists.
- 3.2.5 Alternative forms of development on the application site have also been considered. Residential development was included within initial scheme proposals on a larger area of the applicant's ownership, which were ultimately reduced and then removed altogether due to ecological, heritage and policy impacts/conflicts. Further alterations were made to refine the orientation of the proposed ski slope to reduce associated impact on the SSSI both quantitatively and qualitatively as well as avoid impact on the adjacent Black Pins Scheduled Monument. An earth bund along the ski centre's western elevation was added to improve thermal efficiency and reduce visual impact.



4.0 SOCIO-ECONOMICS

- 4.1.1 The ES assesses the socio-economic effects of the Proposed Development and the extent to which it conforms to planning policy relevant to socio-economics. The study area is the area over which potential direct and indirect effects of the Rhydycar West project may occur during construction and operation.
- 4.1.2 Where possible, socio-economic impacts have been appraised against relevant standards, such as those provided by HM Treasury and the Homes and Communities Agency. These are UK-level documents that have been used where a Welsh equivalent is not available. Where relevant standards do not exist, professional experience and expert judgement have been applied.
- 4.1.3 A Direct Impact Area and a Wider Impact Area have been used to provide socio-economic context for the development, and for assessing the socio-economic effects of the scheme. The Wider Impact Area is the area which incorporates the population that may reasonably be expected to travel to and benefit economically from the Proposed Development). Data shows that the Direct Impact Area has:
- 4.1.4 a lower proportion of young people (aged 0 to 15) than both the Wider Impact Area and Wales;
- fewer residents qualified to Level 4 and above;
 - more residents in the Direct Impact Area with no qualifications;
 - more residents qualified to Apprenticeship level;
 - fewer residents aged between 16 and 74 are economically active;
 - fewer residents in employment;
 - more economically inactive residents aged between 16 and 74;
 - a lower frequency of managers, directors and senior officials;
- 4.1.5 The Direct Impact Area falls within the 43% most deprived areas in the country based on the overall Index of Multiple Deprivation measure. On the 'Access to Services' domain, the Direct Impact Area is ranked just outside the top third of most deprived areas in Wales (based on this measure). The next most pressing domain is the 'Income' measure, with the area.
- 4.1.6 No significant adverse effects are predicted during the construction, maintenance, operation and decommissioning of the Proposed Development, and as such no specific mitigation is required, to avoid or minimise the socio-economic effects identified in this chapter. However, in order to ensure the proposal has the maximum positive effect in terms of social value, the



above positive impacts of the scheme will be further targeted towards the local Merthyr economy by the developer's additional mitigation commitments, which will be secured through the Section 106 agreement. As outlined in the ES these will target training and local employment by working alongside Partner Organisations such as Tydfil Training, Merthyr College, the Council, the local Job Centre Plus, Local Schools, Colleges and Training providers, Careers Wales). This will be secured through legally binding obligations to secure recruitment and training opportunities for local residents. Though these impacts have not been quantified, the Section 106 obligations ensure that the positive socioeconomic impacts of the scheme are targeted towards the local economy. The residual socio-economic effects are effectively the same as the identified likely significant effects, as no additional mitigation measures are required.

- 4.1.7 The construction phase of the development is expected to support 1,549 net additional jobs per year over the c.3-year construction phase, comprised of 1,219 jobs within Merthyr Tydfil Travel To Work Area (TTWA) and 330 jobs outside the area, resulting in a highly significant beneficial effect on employment. The operational phase of development is expected to provide 842 direct additional long term jobs (755 net jobs), comprised of 663 jobs (594 net jobs) in Merthyr Tydfil TTWA and 179 Jobs (161 net jobs) outside the area, resulting in a highly significant beneficial effect. Additional indirect jobs will also be created.
- 4.1.8 Overall, the proposed development supports high levels of new employment during both the construction and operational phases, with benefits targeted primarily to the local economy and labour market of Merthyr, whilst also contributing to economic growth on a wider regional and national level. The socio-economic impact of the proposal is therefore highly significantly beneficial.
- 4.1.9 The construction of Rhydycar West would contribute c.£317.6m in additional Gross Value Added (GVA) to the economy over the duration of the construction period. GVA is the value of the amount of goods and services that have been produced, less the cost of all inputs and raw materials. It represents the additional value that is added through economic activity on site and through the supply chain.
- 4.1.10 The Rhydycar West project will contribute c.£38.1m in GVA to the economy per annum during operation. This compares favourably to the turnover related spend (GVA) generated by the Principality Stadium in Cardiff which stood at £19.5m in 2017-18.
- 4.1.11 It is considered that the Proposed Development will have a highly significant positive impact on the Merthyr Tydfil TTWA economy, through the provision of employment during construction and operation and through associated multiplier effects.



5.0 GREENHOUSE GAS EMISSIONS AND CLIMATE CHANGE

- 5.1.1 The assessment of likely significant environmental effects arising in relation to greenhouse gas emissions (GHG) and climate change includes embodied carbon of construction, tree felling, traffic-related emissions and carbon dioxide emissions from the operation of the project. In addition, the assessment outlines the mitigation measures required to avoid, prevent, reduce or offset any potentially significant adverse effects.
- 5.1.2 To determine the anticipated impacts of the Proposed Development, they were measured against an existing baseline, following the Institute of Environmental Management and Assessment methodology for GHG emission assessments.
- 5.1.3 The assessment establishes a baseline of existing sources of carbon emissions at the site and a future baseline; identifies and measures the likely sources of carbon emissions resulting from the construction and operational phases of the development; reviews how alternatives can demonstrably reduce carbon emissions; and by applying the relevant IEMA methodology, determines the anticipated impacts of the proposal.
- 5.1.4 Embedded mitigation measures, i.e. those built in to the design of the proposal, are proposed to minimise GHG emissions. During the construction phase, these measures include shortening the supply chain by ensuring a preference for local suppliers; prioritising wherever possible the use of low embodied carbon materials; adopting circular economy principles within the design; detailed consideration of the placement of the proposed development to minimise impact on ecology; positioning the building and structures to minimise the number of trees to be felled; re-use and/or recycling of materials extracted during enabling works; and management of waste materials.
- 5.1.5 Meanwhile during the operational phase, embedded mitigation measures include a heat exchange system to enable excess heat from cooling the Indoor Snow Centre to be used to heat the Indoor Water Park; implement an all-electric, combustion-free operational energy strategy; verified green tariff so that zero emissions are achieved from day-1 of operation; optimised solar PV installation throughout the site; energy modelling in accordance with Part L requirements; energy efficient building fabric; suitable glazing to reduce heating demand; encouraging sustainable travel to and from the site via the implementation of a Framework Travel Plan to prioritise non-car travel and public transport usage; and s106 measures to increase local participation in terms of staffing and usage of the facility.
- 5.1.6 IEMA's overarching principles on Climate Change Mitigation and EIA acknowledge that carbon emissions from all projects will inevitably contribute to climate change. Therefore,



additional mitigation measures are proposed to further reduce any potential adverse impacts arising from the development, such as low form factor design, high albedo materials, smart metres/sub metres (detailed fully within Chapter 6).

5.1.7 Taking additional mitigation measures into account, the likely residual effects of the development are:

- Embodied carbon during construction – minor adverse effect, not significant.
- Construction traffic - minor adverse, not significant.
- Energy in operation - negligible, not significant.
- Embodied carbon (during operation – repair and maintenance) – minor adverse, not significant.
- Construction phase – minor adverse effect (i.e. not significant).
- When considering the emission sources in isolation, embodied carbon during construction, operational energy and transport during construction are likely to have a minor adverse effect (i.e. not significant).
- Operational phase traffic – the impact of operational traffic is moderate adverse (i.e. significant) However, if the various mitigation and other measures detailed were taken into account, this effect would be reduced. Although the effect of certain mitigation measures to address operational traffic are unknown and difficult to quantify. However, these measures and the ongoing electrification of the transport sector and continuous decarbonisation of the national electricity grid are expected to further reduce the annual emissions of the Proposed Development during its operational stages. The proposed mitigation measures can be actioned during the detailed design stages. Implementing secondary mitigation measures to improve access to the site with sustainable transport modes will reduce the residual effect. The ongoing electrification of the transport sector and continuous decarbonisation of the national electricity grid are expected to further reduce the annual emissions of the Proposed Development during its operational stages.
- Climate resilience and adaptation – the embedded mitigation measures that form part of the proposal are considered to reduce potential risks related to climate change, hence none were identified that are likely to result in significant impacts, resulting in no significant residual effect.



6.0 GEOLOGY AND GROUND CONDITIONS

- 6.1.1 This Chapter provides a summary of the potential impacts of the proposed development on the ground conditions in terms of both Ground Stability and Contamination. The site is located within an area which has been subject to the impact of historical coal mining both with the placement of spoil heaps on the site surface as well as underground mine workings of numerous coal seams and mine entries (shafts and adits). Spoil heaps are present across the site consisting of colliery spoil, ironstone waste and material originating from the development of the A470 dual carriageway located adjacent to the site. Infrastructure associated with the historical mining activities are also present on the site including the routes of historical railway lines and cuttings and derelict buildings.
- 6.1.2 Shallow mine workings and mine entries are anticipated within the development footprint which will require detailed assessment and remedial works to enable the proposed development. The extent of the remedial works required will be dependent on the findings of an intrusive investigation which will be required to support the development.
- 6.1.3 Similarly, the geotechnical properties of the strata below the site and potential for ground contamination will require detailed assessment and risk assessment to support the proposed development in terms of foundation design and remedial works required to reduce ground contamination to an acceptable level.
- 6.1.4 Remedial works will be required to facilitate the development in terms of risks associated with geotechnical parameters, coal mining legacy and ground contamination. The anticipated outline requirement for remediation is presented within this document, however it is noted that further works may be required based on the findings of any future assessments. However, based on the current level of understanding, the scope and scale of these additional works are unlikely to pose a barrier to the proposed development.
- 6.1.5 The following receptors have been identified associated with the potential risks listed above:
- Site Construction Workers (high sensitivity)
 - Controlled Waters - surface waters and groundwater (medium sensitivity)
 - Future Site Users (high sensitivity)
 - Building Infrastructure (medium sensitivity)
 - Ecological systems (medium sensitivity)
 - Heritage Features (medium sensitivity)



- 6.1.6 The baseline data outlined above indicates the complex nature of the ground conditions associated with the extensive legacy of coal workings on the site and in the subsurface. The development location has been chosen after considering a plethora of factors, one being to minimise risks associated with ground conditions. Notwithstanding this, further mitigation will be required to assess and manage risks. The implementation of the proposed mitigation measures will provide beneficial impacts for the site due to the improvement in ground stability and management of contaminated land, water and ground gas issues. The assessment and mitigation process will follow an iterative and phased approach to include:

Design

- Geophysical Assessment
- Ground Investigation to Confirm Baseline Conditions
- Mining Risk Assessment
- Piling Risk Assessment
- Ground Gas Risk Assessment

Construction

- Localised Remediation of Contamination/ Reactive Remediation Management Plan
- Localised stabilisation of mine workings / spoil tips
- Adoption of appropriate working practices
- Construction Environmental Management Plan
- Materials Management Plan
- Site Waste Management Plan
- Construction and Validation of Ground Gas Protection Measures

Operation

- Operational Management Systems

- 6.1.7 The application of the mitigation procedures outlined within this document is considered to reduce adverse residual effects to minor or negligible with regards to ground stability and ground contamination. Where beneficial effects have been identified (stabilisation of coal workings and reduction in surface water infiltration leading to reduced mobility of contaminants) these are considered to be a major beneficial and minor beneficial respectively.



7.0 ECOLOGY

- 7.1.1 This chapter summarises the baseline ecological conditions on the site, identifies the key ecological receptors for impact assessment purposes, describes the likely significant ecological effects arising from the proposals, identifies measures that will be taken to prevent, reduce or offset any significant adverse effects, and finally describes the predicted residual effects taking into account the mitigation and compensation committed to as part of the application scheme.
- 7.1.2 The chapter and the technical appendices supporting it have been produced in line with the standard guidance for ecological impact assessment, as set out in Chartered Institute of Ecology and Environmental Management guidance.
- 7.1.3 The Application Site forms part of a wider landholding which has been the subject of intensive ecological studies since 2015. These studies have become progressively more focused on the current Application Site as the scheme has been settled upon and refined. Consequently, the study area covered by the various surveys detailed in the ES encompasses the entirety of the landholding, comprising some 223ha of land. Some elements (e.g. desk survey) encompassed additional land up to 5km from the site centre. The most recent field surveys were focused on the current Application Site and (where relevant) surrounding areas up to 250m.
- 7.1.4 The Application Site includes around 6ha of the 181.3ha Cwm Glo a Glyndyrys SSSI which dominates the wider landholding. The land upon which the rest of the development is focused, whilst outside the SSSI, is subject to SINC designations, and contains representations of many of the same habitats and some of the same species. This includes waxcap fungi, priority grassland, heathland and woodland habitats and a suite of notable species.
- 7.1.5 The chapter details how the scheme has avoided, minimised, mitigated and compensated to ensure there is no reduction in the overall conservation value of the area and how a net benefit for biodiversity will be secured. Both the location of the development within the wider landholding and the detailed positioning and extent of the Application Site have been configured through numerous design iterations, pre-empting but in alignment with the step-wise approach advocated in the latest revisions to Planning Policy Wales in order that overlap with the designated Cwm Glo a Glyndyrys SSSI is first avoided and then restricted to the absolute minimum necessary. This has seen the quantum of SSSI land affected by the proposed development incrementally reduced over time in order to reduce impacts on the statutory site. Some SSSI landtake remains unavoidable, however, in order to deliver the



indoor snow centre, which is the 'wholly exceptional' central focus of the scheme (total avoidance of the SSSI was investigated with the snow centre adopting a broadly north-south alignment, however, the need to utilise the topography of the site for the indoor snow slope has meant that an east-west alignment was unavoidable). In total, a direct landtake of 6ha of the SSSI is anticipated, which represents a little over 3% of the total land area of Cwm Glo a Glyndyrys SSSI. Due to the national importance of the SSSI series, this impact is inevitably rendered significant at that level.

- 7.1.6 The parts of the SSSI affected by the proposed development do not contain any significant representations of the primary features of special habitat or mycological interest underpinning the designation. Thus, it is considered that the direct loss of SSSI land to the development will have little or no impact on the national and international mycological importance of the SSSI and will not result in the direct loss of any substantive quantum of the cited marshy grassland, acid grassland or heathland habitats, including those supporting the site's current population of marsh fritillary butterfly.
- 7.1.7 Consequently, it is primarily the secondary interest features of the SSSI that will be directly affected, in particular woodland, scrub and 'ffridd' habitats of a type falling outside the scope of the primary interest features.
- 7.1.8 In seeking to make most efficient use of the land within the Application Site to reduce the overall magnitude of ecological impacts, the scope for mitigation and compensation to be delivered within the confines of the Application Site itself, as part of the development, is very restricted. This is a logical outcome of stringent application of the step-wise approach.
- 7.1.9 In consequence, the focus of mitigation and compensation will be outside the Application Site. In the first instance this will be in the wider landholding where the opportunity to secure optimised management of both SSSI and non-SSSI resources will be taken. In addition, there will be enhancement of habitats complementary to the SSSI interest features (in particular lowland meadow and marshy grassland) on additional land the applicant has agreed an option to purchase at Blaencanaid Farm which is adjacent to and borders the Application Site. Significant effort has been expended by the applicant over a number of years in searching for and securing an option on appropriate compensation land. This has included region-wide searches, extensive discussions with NRW and other landowners. Blaencanaid Farm, due to its proximity (it adjoins the Cwm Glo a Glyndyrys SSSI) and the nature of the habitats there represents the optimum solution. The secured beneficial management and enhancement of land at Blaencanaid Farm (itself also a SINC) will improve the deliverability of optimised grazing management within the balance of the Cwm Glo a Glyndyrys SSSI and secure complementary habitats to the retained SSSI and SINC lands, improving future



~~ecosystem resilience. Additional offsite measures, whether from securing and enhancing additional land and related habitats off-site or via financial contributions to established or new conservation projects ecologically and geographically relevant to the South Wales region will be taken.~~

7.1.10 Mitigation during construction comprises production and adherence to a Construction Environmental Management Plan, improved management of remainder of SSSI, Natural Resources Wales (NRW) mitigation licensing, species protection plans, legal compliance and offsite compensation. Mitigation during operation comprises improved management of wider site, sensitive lighting scheme and offsite compensation.

7.1.11 ~~It was clear that further off-site enhancement to deliver substantive biodiversity benefits of relevance to both the Cwm Glo resource and the wider region would be appropriate in order that the negative impacts on the SSSI could be outweighed, in both technical and policy terms, and net benefits delivered. Significant effort was expended for over a year in searching for and securing an appropriate off-site compensation site (including discussions with NRW and a number of non-statutory agencies, visits to a number of prospective sites and negotiations with landowners), some 17ha of land immediately abutting the Cwm Glo a Glyndyrys SSSI at Blaencanaid Farm has been secured for this purpose by means of an option to purchase the land. The offsite compensation measures are not yet settled, hence the range of impacts noted below, albeit significant effort has been expended already in searching for and securing an appropriate off-site compensation site or sites in discussion with NRW and a number of non-statutory agencies. This provision will be the subject of further submissions as and when additional information becomes available.~~

7.1.12 ~~The resolution of a preferred off-site compensation solution has allowed the working up into Heads of Terms detail of these various wider landholding and off-site measures that will be secured as a consequence of the development. These are set out in a draft Nature Conservation Management Plan submitted with the application. This draft NCMP has been drawn up in discussion with NRW and the applicant will commit to a final fully prescriptive version being secured via a pre-commencement condition on the planning consent. The implementation of this management plan is adjudged to have beneficial consequences for the on and off-site habitats within its ambit that will offset the net negative impacts from the development considered in isolation. This accords with the step-wise approach and the application of the DECCA framework and the result will be a net benefit to biodiversity. In this case, there is an opportunity for a combination of secured management of the balance of the SSSI and additional compensatory enhancement of other off-site land or via other 'in kind' measures, to substantially offset the impacts from the losses of SSSI and SINC land, and associated impacts on attendant habitat and species resources. The precise magnitude~~



~~of such offset, and whether it delivers an outcome approaching or exceeding neutral in terms of overall net change, is contingent on the precise details of the off-site measures that will be submitted in support of the application in due course.~~

7.1.13 As a result of these mitigation measures, construction phase impacts range from:

- no significant impact to minor adverse effect significant at national level and moderate adverse effect significant at regional level in respect to the SSSI;
- no significant impact to moderate adverse effect significant at regional (mid-valleys) level in respect to the SINC;
- no significant impact to minor magnitude adverse impact significant at Borough level for woodland, other habitat and relevant species.

7.1.14 As a result of the above mitigation measures, operation phase impacts range from:

- no significant impact to minor positive effect in all respects.



8.0 TRANSPORT AND MOVEMENT

8.1.1 This chapter presents an assessment of the likely significant transport and access effects of the Development. Consideration is given within the chapter to changes to traffic flows within the local highway network and associated implications for drivers, pedestrians, and other highway users in the vicinity of the Site. An overview is also given to the potential for the completed Development to positively contribute to more sustainable modes of transport, with consideration also given to the traffic effects associated with the construction phases of the Development.

8.2.2 Guidance identifies that the study area should include highway links where traffic flows will increase by at least 30% (vehicles or HGVs) or where flows increase by at least 10% in sensitive areas. A Net Impact Assessment has been undertaken to identify those roads where a net increase in traffic flows of 10% (for robustness) or more would occur because of the Development. The Net Impact Assessment has been undertaken based on the 2-way Annual Average Daily Traffic flow (AADT) on a road link. However, the Net Impact Assessment did not identify any roads that experienced a net impact of 10% or more. Nonetheless, for the purpose of a robust assessment, the link(s) experiencing the largest net impact have been assessed:

- A470 (between Site Access Roundabout and Bike Park Wales Roundabout); and
- A470 (between Swansea Road Roundabout and Site Access Roundabout).

8.2.3 The assessment has been undertaken in accordance with the guidance provided in the 1993 Institute of Environmental Assessment publication Guidance Notes No. 1: Guidelines for the Environmental Assessment of Road Traffic, which sets out a methodology for assessing potentially significant traffic-related environmental impacts where a proposed development is likely to give rise to changes in traffic flows.

8.2.4 Impact has been assessed for each of the following categories:

- Effects on Traffic Flows.
- Severance.
- Driver Delay.
- Pedestrian Delay.
- Pedestrian Amenity.
- Fear and Intimidation; and,



- Accidents and Safety.

8.2.5 The baseline environment is described and includes a bridleway connecting to the site via an existing bridge over the A470 carriageway. The bridge provides a connection from the site over the A470 to the bridge over the A4102 which connects to the Taff Trail / National Cycle Route 8 and provides access to the local active travel network within Merthyr Tydfil. A number of other rights of way which have recently been established as a result of an application to modify the definitive map and a positive dialogue and collaboration between the landowners and the Council.

8.2.6 The closest bus stops to the site are the 'Leisure Centre' bus stop, located approximately a 1.2km walk northeast of the site within the grounds of the Merthyr Tydfil Leisure Village. The stops benefit from a regular level of services which operate Monday to Sunday, providing connections to the town centre (including a new award-winning bus interchange, which opened in 2021), and wider parts of Merthyr Tydfil. From the bus interchange several destinations are available including services to local towns and villages and more strategic services to Cardiff, Brynmawr, Abergavenny, Newtown, Llandrindod Wells, Builth Wells and Brecon.

8.2.7 The nearest railway station to the site is Merthyr Tydfil Rail Station, which is located approximately 1.7km northeast of the site (22-minute walk). The station is set to be improved by the Merthyr Tydfil Rail Interchange project.

8.2.8 The site will be accessed from the A470 / A4102 four arm roundabout, via an extension and improvement to the existing stub provided at the southwestern arm. As a part of the Welsh Trunk Road Network, the A470 provides a key route from the site, connecting to the A465 Heads of the Valleys Road and continuing onwards to Brecon in the North, and linking to the M4 at Junction 32 to the south. Near the site, the A470 is subject to the national speed limit.

Construction Phase

8.2.9 Assessments concluded that, in the absence of mitigation, the traffic effects associated with the construction of the development would be short-term temporary, and of negligible significance.

Operational Phase

8.2.10 The assessment concluded that the A470 (between Site Access Roundabout and BikePark Wales Roundabout) and the A470 (between Swansea Road Roundabout and Site Access Roundabout) are both forecast to experience a long-term permanent effect of negligible significance following the full operation of the site, regarding the effects on traffic flows,



Severance, Driver Delay, Pedestrian Delay, Pedestrian amenity, Fear and Intimidation, and Accidents and Safety.

8.2.11 Nonetheless, mitigation strategies, including:

- a Construction Traffic Management Plan
- an ambitious travel plan incorporating:
 - A shuttle bus service linking the site to the railway station, bus interchange, leisure centre, town centre and other key destinations.
 - improvements (including upgrading, lighting, and paving) of the bridleway route via the bridge across the A470 to the Merthyr Tydfil Leisure Centre.
 - Electronic booking and ticketing measures to encourage public transport and multi modal trips.
 - EV charging points; and,
 - Staff travel measures.

8.2.12 The operational environment impact of this development negligible, with regards to highways.



9.0 ARCHAEOLOGY AND CULTURAL HERITAGE

- 9.1.1 This ES Chapter has assessed the potential effect of the Proposed Development in terms of archaeology and cultural heritage resources. Potentially significant effects associated with construction activities and the operational phase of the completed proposed development are identified and, where necessary, mitigation and enhancement measures are outlined.
- 9.1.2 The Application Site contains parts of two scheduled monuments (Cyfarthfa Balance Pond and Leat and Cwm Pit and Head of Railway) and a Grade II listed building (Base of Chimney at Cwm Pit). Within a 2km radius of the Application Site are 23 scheduled monuments, as well as three conservation areas, part of a fourth conservation area, part of a Historic Park and Garden and 145 listed buildings.
- 9.1.3 The Application Site is located within the Merthyr Tydfil Landscape of Outstanding Historic Interest (MTLOHI).
- 9.1.4 As an embedded enhancement measure, conservation works are proposed at three of the scheduled monuments (the two partly within the site and Black Pins Early Ironstone Workings) and the Grade II listed building located within the application site. The works are designed to conserve and enhance the heritage significance of the three monuments and the listed building by eliminating environmental factors that are currently eroding and gradually destroying the monuments and instigating controlled plans for their management which will govern their future conservation and restoration.
- 9.1.5 The proposed development includes provision for walking routes that cross parts of the two scheduled monuments that lie within the Application Site which will be part of a wider Heritage Trail. These routes will allow for controlled and managed public access to these monuments in order to facilitate their interpretation with the aim being to deliver a positive benefit with the development.
- 9.1.6 A Construction Management Plan will also be entered into to protect heritage assets during construction.
- 9.1.7 With embedded and additional mitigation in place, the construction phase has identified significant beneficial effects to four designated historic assets, comprising three scheduled monuments and one Grade II listed building.
- 9.1.8 It will also bring these assets into the wider tapestry of Merthyr's historic landscape which includes Cyfarthfa Castle and the Ironworks to compliment and connect with Merthyr's wider 20-year Cyfarthfa Plan project, thereby realising key National policy goals in respect of Welsh



tourism, community, cultural development, sustainability and those embedded (for example) in the Wellbeing of Future Generations Wales Act 2015.

- 9.1.9 Whilst the proposed development will result in the loss of ten non-designated archaeological assets, archaeological mitigation will take place through recording. The remit for this work will be set out in a Written Scheme of Investigation (WSI) and will include opportunities for community involvement in the archaeological process and, for interpretation of archaeological results within the development's plaza. As such, with mitigation in place only non-significant residual adverse effects to ten non-designated historic assets are assessed. A beneficial effect is assessed to a single non-designated historic asset.
- 9.1.10 In accordance with Cadw guidelines (Cadw, 2017) the assessment has identified effects from the operational phase of the proposed development on historic assets due to change within their settings. As well as effects related to the presence of the development's buildings, this assessment includes effects related to enhanced public access to some of these assets and opportunities for their interpretation. These comprise significant beneficial effects to three scheduled monuments, significant adverse effects to two scheduled monuments, and non-significant adverse effects to a scheduled monument, a Grade II* Historic Park and Garden and a conservation area.
- 9.1.11 An Assessment of the Significance of the Impact of Development on Historic Landscape Areas on the Register of Landscapes of Historic Interest in Wales (ASIDHOL2) and an assessment of effects on the Merthyr Tydfil Landscape of Outstanding Historic Interest (MTLOHI) have been carried out. In this regard, the assessment identifies an overall effect of Minor Adverse and should be considered alongside the benefits delivered to the heritage assets within the MTLOHI through conservation and interpretation which are not directly assessed in the ASIDHOL methodology, but which are nonetheless relevant to the MTLOHI.
- 9.1.12 The assessment has identified no in-combination cumulative effects with any committed or proposed development in the Application Site's vicinity, however, the potential for future in combination effect with two sites that are allocated within the LDP has been identified.
- 9.1.13 A response from Cadw on the PAC submission (dated 27 May 2022) states that they have no objection to the proposed development in respect of historic assets and that they concur with the view that mitigation and off-setting measures proposed will result in a considerable improvement to the physical condition of the designated historic assets in question that will outweigh any adverse impacts to their setting.



10.0 HYDROLOGY AND HYDROGEOLOGY

- 10.1.1 The chapter presents an assessment of the potential effects on the hydrological and hydrogeological environments associated with the proposed development and outlines appropriate mitigation measures to reduce or eliminate any adverse effects arising from the construction and operational phases of the development.
- 10.1.2 The land ownership at Rhydycar West covers an area of approximately of 223 ha. This area covers undeveloped land consisting of natural mature woodland and marshland combined with man made spoil tips and mining features relating to the long history of coal and ironstone extraction works. The north-western extent of the land ownership is characterised by less mature woodland and wide-open spaces, with coniferous forestry on its western edge. Numerous streams flow across this area from south-west to north-east, and numerous ponds and small reservoirs dot the landscape. In the northern area of the land ownership streams are generally shown to flow west to east. Directly north of the application site boundary, within the central area of the land ownership, streams flow mostly west to east and a small number of ponds are shown to be present. Several water features are shown to be located to the west and south-west of the application site, largely orientated west to east with some trending north-south with discharge of water collecting into an unnamed stream which flows through Cwm Pit and into the site, with discharge into a basin area between the A470 tip and the Cyfarthfa Pond and Leat. The eastern and south-eastern extent of the site has several streams flowing mostly with a west-east orientation, although some are shown to flow north-south.
- 10.1.3 In terms of hydrogeology, the Coal Measures constitutes a complex multi-layered aquifer system rather than one continuous groundwater body. Under natural (pre-mining) conditions, the sandstone horizons act as individual aquifers, separated by the intervening lower permeability mudstones/siltstones layers. This condition however has largely been disrupted by large scale mining across the South Wales Coalfield which has largely disrupted the hydrogeological environment and created hydraulic continuity between water bearing sandstone layers and historic mine workings; even those present in the Middle and Lower Coal Measures Formations.
- 10.1.4 The superficial deposits beneath the site comprise Glacial Till deposits which are categorised by Natural Resource Wales (NRW) as Secondary Undifferentiated Aquifer. The solid geology beneath the site comprises the Middle and Lower Coal Measures Formation of the Coal Measures Group which are categorised by NRW as 'Secondary A' Aquifers.
- 10.1.5 Several coal and ironstone derived spoil tips are shown to be present across the site. These



mine tips are shown to largely overlie Glacial Till deposits beneath the site. These tips will act as separate, individual aquifer systems and can be referred to as “anthropogenic aquifers”. These Made Ground ‘aquifers’ will be recharged directly by rainfall infiltration and inflows of streams and surface water run-off. Several springs have been observed to emerge from this tip features, providing a source of water for a number of drainage channels across the land holding.

- 10.1.6 The presence of boulder clay across the site will largely promote surface runoff across and limit vertical flow to (and recharge of) the underlying Coal measures beneath the site.
- 10.1.7 Lower permeability, clay rich Glacial Till deposits are shown to be present across the majority site area confining the Coal Measures. The presence of till material overlying the coal measures will restrict rainfall recharge to the water bearing sandstones beneath the site, largely resulting in rainfall runoff.
- 10.1.8 Groundwater flow within the Coal Measures is anticipated to be down geological dip of the strata towards the to the south, south-east of the site.
- 10.1.9 Groundwater present within disused coal mine workings beneath the site has the potential to be of poor quality with possible high levels of dissolved inorganic ions, low levels of dissolved oxygen, iron and sulphate. Mine water discharge has not been observed within the development area. Water emerging from springs within the development boundary has been observed to be clear, with no obvious signs of iron & manganese precipitate. The chemical status of the South-Eastern Valleys ‘Carboniferous Coal Measures’, which underlie the proposed development area, is classified as ‘poor’ and have an overall status of ‘Poor’.
- 10.1.10 The site is not located within a groundwater source protection zone. No licensed groundwater abstractions have been identified at the site or within 250m of the site boundary. No Private Water Supplies are present at the site or within 500m of the site boundary.
- 10.1.11 There are five main hydrological catchment areas across the land ownership boundary and the proposed development is located within three of them.
- 10.1.12 The assessment of impact without mitigation ranges from negligible to moderate. However, mitigation is proposed in the form of further ground investigation as part of the detailed design process, formulation of a remediation strategy, the gathering of site specific qualitative groundwater data (level and water quality) over a sustained period, production of a dewatering risk assessment, and adherence to a Construction Environment Management Plan to minimise the potential for spills and other accidents, govern activities such as on site refuelling and silt trapping and to avoid impacts on watercourses.



10.1.13 The implementation of specific mitigation measures within the construction and operational phases of the proposed development, in conjunction with good environmental controls, will ensure that any impacts and/or effects on hydrology and hydrogeology will be quickly controlled and will have minor to negligible residual risks. In addition, the incorporation of SuDS features or the proposed re-alignment of the Nant Melin Cannaid will bring beneficial impacts by preventing continued erosion of the Cwm Pit and Head of Railway stone masonry wall.



11.0 LANDSCAPE AND VISUAL IMPACT

11.1.1 This Landscape and Visual Impact Assessment has examined the landscape and visual impacts in relation to the development proposals. All impact assessments are based on the proposed design approach, which incorporates mitigation measures. The potential impacts have been thoroughly assessed through a combination of desk study research and walk-over surveys of the site and the surrounding context.

11.1.2 The sensitive integration of development at the site represents a significant challenge due to the combination of former mining features, disused railway infrastructure, tips and the distinctive character of the site and its context. The master plan is for a new destination sports, leisure and tourism resort. Central to this is the creation of a high-quality holiday resort destination that focuses on indoor and outdoor activities, wildlife and reinforces the special character of the local environment.

11.1.3 In describing the baseline, designations provide an indication of landscape value. They are areas that have been recognised for the scenic beauty and recreational potential of the landscape. The Brecon Beacons National Park (BBNP) covers part of the north and northwest of the study area. At its nearest point, the BBNP is circa 2.9km to the northwest of the application site. Special Landscape Areas (SLAs) are a non-statutory landscape designation applied by the local planning authority to define areas of high landscape importance within their administrative boundary. The site is located within SLA 3: Merthyr West Flank. Relevant landscape value and contributions are identified as:

- The rarity value of this area is significantly enhanced by its specific historic associations with the Crawshay family of Cyfarthfa and the substantial density of features across this landscape, including particularly significant concentrations of early extractive features a number of priority habitats are found and important key species.
- The area contains very special habitat of marshy grassland, species-rich neutral grassland and lowland acid grass land, it also contains native woodlands which adds value also.
- The area displays the reasonably intact condition of the upland pastoral fieldscape and the presence of substantial extant remains of mid -19th century extractive activity specifically associated with Robert and Lucy Thomas pioneers of the 'steam coal' industry.

11.1.4 There is some ancient woodland mapped as occurring within the south-west corner of the



application site boundary and the application site encompasses areas of woodland subject to Tree Preservation Orders (TPOs).

- 11.1.5 The proposals for the site have been formulated through an iterative process with the design evolution responding to the findings of baseline surveys to avoid or moderate adverse effects. The proposals have been informed by comprehensive survey and assessment work. As a result, the potential landscape and visual impacts have been moderated. All impact assessments are based on the proposed design approach, which incorporates mitigation measures.
- 11.1.6 In terms of effects on landscape, the landscape receptors within the site where effects were assessed as major adverse or major-moderate adverse during construction and at completion phases are receptors that have high or moderate-high sensitivity. These receptors would undergo great change as a result of the proposed development, and include landform, areas of woodland and trees, the mosaic character, setting the urban edge of Merthyr Tydfil, and recreational access and setting to PRoW and public access land. At 15 years after completion, effects would reduce, with effects mainly reducing to moderate adverse as the magnitude of change reduces, except for recreational access and setting to PRoW and public access land.
- 11.1.7 The remaining landscape receptor within the site (attractive distant views from open and elevated areas) has a moderate-high sensitivity and was assessed as having a medium and small magnitude of change during construction and at completion, and would reduce to minor neutral 15 years after completion.
- 11.1.8 For the wider landscape character, indirect effects resulting from the proposed development were assessed to be mostly minor adverse during construction and at completion. After 15 years some effects would reduce to negligible as the magnitude of change reduced as the proposed development is likely to become assimilated into the landscape.
- 11.1.9 In terms of the effects on visual amenity the assessments generally concluded that for viewpoints with open views located within 1km of the site, the magnitude of change would mostly be great or medium-great during construction and at completion. The magnitude of change may reduce from great to medium-great 15 years after completion as proposed planting becomes established.
- 11.1.10 For viewpoints located between 1 and 3km of the site, the magnitude of change was mainly assessed as medium during construction and at completion. The magnitude of change may reduce from medium to small 15 years after completion.



- 11.1.11 Beyond 4km of the site, the magnitude of change for elevated viewpoints were mainly assessed as medium-small or small during construction and at completion with the magnitude of change reducing 15 years after completion as the proposed development becomes more ingrained into the landscape and planting becomes established.
- 11.1.12 The visual assessments conclude that for residents with open views to the east of the site that have high sensitivity, the visual effects would be major adverse during construction and at completion as the magnitude of change was assessed as great. Effects would reduce to major-moderate after 15 years of completion as the magnitude of change reduces. For residents to the northeast of the site where the proposed development would be less prominent in views, the visual effects were assessed as major at construction, reducing to moderate 15 years after completion. For residents with moderate sensitivity, effects were assessed as moderate or minor for each phase.
- 11.1.13 For users of public open space within Merthyr Tydfil with moderate sensitivity, visual effects were assessed as moderate adverse during construction and at completion, reducing to moderate-minor 15 years after completion as the mitigation planting establishes reducing potential visual effects.
- 11.1.14 For users of public rights way and National Cycle Route 8 with oblique or partially screened views with moderate sensitivity, the visual effects were mainly assessed as moderate adverse during construction, at completion, and after 15 years.
- 11.1.15 For road users within 2km of the site with lesser sensitivity, the visual effects were assessed as moderate-minor adverse during construction, at completion, and 15 years after completion. Road users would typically have oblique or partial views towards the proposed development that would be short in duration with the proposals viewed in context to the surrounding townscape.
- 11.1.16 The Landscape and Visual Impact Assessment has identified that the site could accommodate the proposed development without resulting in an unacceptable adverse impact on landscape character and visual amenity experienced within the surrounding landscape/townscape.



12.0 DRAINAGE AND FLOOD RISK

- 12.1.1 This chapter presents an assessment of the likely Water, Drainage and Flooding effects on, and from, the proposed development. Consideration is given within the chapter to changes to drainage and flood flows within the local drainage network and associated implications for the application site, proposed development and elsewhere. The potential for the proposed development to contribute to more sustainable drainage and flood management is also considered, along with the impacts associated with the construction phases.
- 12.1.2 A Flood Consequences Assessment (FCA) has been prepared in support of a SuDS Approving Body (SAB) pre-application for the proposed development. The FCA contains detailed information on which this chapter is based.
- 12.1.3 ~~T~~Almost the entirety of the site is located within flood zone 1; land considered to be at little or no significant risk of river (fluvial) or tidal/coastal flooding. The application site is also not at flood risk from ~~reservoir-marine~~ flood sources. The proposed development does, however, encroach by a very small amount on the fluvial and reservoir floodplains at its south-eastern extremity, which is a significant distance from the built area of the development. Pluvial flooding (ie from rainfall, independent of an overflowing waterbody) is, ~~however, also~~ shown to be present at the application site, coinciding with topographical low points.
- 12.1.4 In terms of foul and surface water disposal, the site is located approximately 250 metres from a public sewerage system that drains to Cilfynydd Waste Water Treatment Works. Surface water drainage flows can be accommodated within the public sewerage system at a point of connection to the 825mm trunk combined sewer to the east of the site. In summary, regarding foul discharges, these can be accommodated in Welsh Water's network via a sewer requisition which is part of a standard process that will be implemented post approval. Regarding surface water discharges these will be to watercourses within the site boundary subject to requisite consents and approvals.
- 12.1.5 On site drainage and features exists in the form of streams and ponds. Two existing streams combine and spill to flow in an informal drainage channel alongside a retaining / boundary wall which forms part of the Cwm Pit and Head of Railway Scheduled Monument. The flow terminates alongside the wall where it appears to sink into a pre-existing culvert where it flows to connect to the Nant Cannaid. The informal channel alongside the SAM is causing erosion. The Cyfarthfa Balance Pond (another Scheduled Monument) receives water from the surrounding lands to the west and discharges to the associated Leat which flows south to north. Flows then spill from the Canal and pond before exiting the site via an existing culvert. Surface water in the Glyndyrus Tip area gathers from surrounding ground and ponds



to the west side of the tip. Surface water to the east of Glyndyrus Tip springs from the base of the tip and flows through to Glyndyrus Pond to the east of the application site boundary.

12.1.6 During spring 2022, tip drainage works were undertaken by MTCBC. It is understood that the works were undertaken to enhance pre-existing drainage provisions and improve stability of tips across the site. The works were undertaken without the relevant permissions and permits and are currently on hold, leaving them incomplete. Although the works are likely to have a beneficial impact on the site drainage, the network is incomplete, and its effectiveness is yet to be tested.

12.1.7 Mitigation has been included within the design. Surface water discharges from the proposed development will be restricted to a Greenfield Runoff equivalent rate. The proposed development layout has been prepared to facilitate the need for detention basins to attenuate controlled surface water flows. The proposed drainage strategy incorporates rainwater harvesting (ie collection and reuse), along with the swales and detention basins, to discharge surface water run-off at controlled rates to two watercourses within the site boundary. The SuDS Approval Body has confirmed this would be acceptable. Regarding the part of the site in fluvial flood Zone 2 and 3 Rivers, this simply comprises the use of an existing underpass, beneath the A470, to provide an emergency access and pedestrian and cycle access only. No material changes will be made to this access route; construction will be at pre-existing levels, whereby, there will be no impact upon pre-existing flood risk. In the event of flooding in this location, no parts of the proposed development will suffer damage, and users of the facility will have a safe means of access and egress via the alternative route which passes along the southern boundary of the application site before heading north to the main car park area and access road. Accordingly, and subject to an awareness of this flood risk potential, there will be no impact on, or from, the proposed development.

12.1.8 Additional mitigation is proposed in the form of:

- Disposal of foul discharges during the construction phase by a licensed waste carrier to a designated Wastewater Treatment Works;
- Adherence of a Construction Stage Earthworks/Environmental Management Plan (EMP), Pollution Prevention Plan and Incident Response Plan as well as industry standard construction working practices;
- Water usage will be mitigated by implementation of rainwater harvesting and water efficient appliances;
- A SuDS based surface water strategy will mitigate storm drainage impacts;



- Formalization of the drainage channel adjacent to the Cwm Pit and Head of Railway scheduled monument to restored pre-existing erosion and prolong the life of the monument;
- Adding a lined impermeable swale in the vicinity of the Cyfarthfa Balance Pond, to provide an escape vector for ponding water;
- Reroute watercourse around proposed development features to discharge back into the pre-existing receptor. Routing will primarily be in open channels with two short piped sections to transfer the watercourses beneath proposed development access roads;
- Avoiding pluvial floodplain extents wherever possible and where not possible, development levels and gradients will be set to optimise the collection and transfer of stormwater runoff to the receiving watercourses
- retaining pre-existing ground levels in the small area affected by fluvial and reservoir flooding.

12.1.9 Construction impacts in respect of water supply, foul drainage, storm drainage and flooding are all assessed to be neutral with mitigation in place.

12.1.10 Operational impacts for water supply are assessed to be neutral, neutral for foul drainage with a potential slight positive for the receiving Wastewater Treatment Works, a positive impact for storm drainage due to betterment being expected for rainfall events exceeding Qbar (the mean annual flood flow) because surface water discharges will be restricted to greenfield runoff equivalent rates and a neutral/positive residual impact for pluvial flood risk due to optimisation of the collection/transfer of stormwater runoff. Flooding impacts from the proposed development can be adequately managed throughout the operational phase by employing the best practice measures outlined previously. Accordingly, flooding will have a neutral impact.



13.0 NOISE

- 13.1.1 This chapter considers the impact of the development on the noise at and within the vicinity of the proposed development.
- 13.1.2 The chapter sets out the methodology followed in undertaking the assessment and provides a review of the noise climate of the development site and surrounding area. Within this Chapter an assessment of noise from the construction phase and operational phase from building services plant, outdoor leisure activities and road traffic noise has been undertaken.
- 13.1.3 The extent of the study area for the site is comparable to that assessed within the Transport and Access Chapter (Chapter 9). With regard to the impact of existing noise sources on receptors, the assessment is based on the overall study area although, in reality, only localised noise sources are expected to have an influence on the assessment presented.
- 13.1.4 A baseline monitoring survey was undertaken at twenty-one locations. Attended short term measurements were undertaken at ten locations during the day, evening and night-time periods with an additional location attended during only the evening and night-time periods. Three attended traffic source measurements were undertaken for 15 mins per hour in three consecutive hours, with an additional location monitored unattended for three hours. Six additional locations were measured, unattended, over a 144-hour period.
- 13.1.5 Existing ambient noise levels around the site are characterised by road traffic noise from the A470 with localised contributions from minor roads and sources including the railway and existing industrial and commercial facilities to the east of the site.
- 13.1.6 Mitigation is proposed in the form of a suitable Construction and Environmental Management Plan and a glazing and ventilation strategy to achieve both ventilation and internal ambient noise level requirements of World Health Organisation and British Standard thresholds for internal noise levels.
- 13.1.7 In terms of construction noise levels, the results of the assessments indicate that with best-practice measures within the Construction Environmental Management Plan, the noise impact is expected to result in effects with a Very Low to Low impact magnitude and the sensitivity of the receptors have been assessed as medium to high, therefore the effect will be Negligible to Minor Adverse and therefore Not Significant.
- 13.1.8 In terms of the impact of noise generated from the operational phase of the development, noise levels will increase at properties around the site by up to 0.5 dB which is of Very Low impact magnitude at receptors of medium to high sensitivity and it is considered that the



overall effect will be Negligible and therefore Not Significant in EIA terms.

- 13.1.9 Similarly, in terms of the impact of increases in road traffic during the operational phase of the development, noise levels will increase at properties around the site by up to 1.2 dB which is of Very Low impact magnitude at receptors of medium to high sensitivity and it is considered that the overall effect will be Negligible Adverse and therefore Not Significant in EIA terms.



14.0 AIR QUALITY

- 14.1.1 This chapter presents the approach and findings of the Air Quality Assessment. The chapter sets out the methodology followed and provides a review of the baseline air quality in the vicinity of the proposed development and surrounding area, and then presents the results of the assessment of air quality associated with the proposed development in order to determine the anticipated magnitude and significance of effects.
- 14.1.2 The study area incorporated within this assessment comprises sections of the A470, A4120, A4054, Bike Park Wales Access, High Street, Court Street and Court Terrace.
- 14.1.3 The construction phase assessment uses the Institute of Air Quality Management Guidance on the Assessment of Dust from Demolition and Construction and the Design Manual for Roads and Bridges. In total four processes are considered, namely demolition, earthworks, construction and trackout. With regards to development traffic on the surrounding road network, the operational phase assessment consists of the quantified predictions of the change in Nitrogen Dioxide (NO₂) and particulate matter PM₁₀ and PM_{2.5} (less than 10 micrometres and 2.5 micrometres in diameter respectively).
- 14.1.4 Mitigation is recommended in the form of good practice mitigation measures presented secured through a Construction Environmental Management Plan for the proposed development.
- 14.1.5 It is anticipated that with these appropriate mitigation measures in place, the risk of adverse effects due to dust emissions from the construction phase will be negligible and will not be significant. With the construction mitigation measures in place the potential impact significance of dust emissions associated with the construction phase of the proposed development presented is considered to be negligible and dust soiling and PM₁₀ during construction are considered negligible in EIA terms.
- 14.1.6 Additional vehicle movements associated with the proposed development during operation will generate additional exhaust emissions, such as NO₂, PM₁₀ and PM_{2.5}, on the local and regional road networks. However, the effects without additional mitigation are predicted to be negligible for NO₂, PM₁₀ and PM_{2.5} and therefore not significant at all sensitive receptors. The maximum predicted concentration at any ground floor proposed receptor is not predicted to exceed the Air Quality Objective for NO₂, PM₁₀ and PM_{2.5} and therefore, no further mitigation is required. This is the case for both assessment years of 2026 and 2031.
- 14.1.7 Using the provided traffic data, the effect of the development is predicted to be 'negligible' at



all receptors in both assessment year of 2026 and 2031 which is considered not significant.

- 14.1.8 A full nitrogen deposition assessment was undertaken for ecological receptors Cwm Glo A Glyndyrys (E1) and Rhydycar West (E5-E7). There were no predicted significant impacts on nitrogen deposition at ecological receptors as a result of the proposed development and the impacts are considered to be negligible.



15.0 LIGHTING

- 15.1.1 This chapter considers the impact of the development from lighting at and within the vicinity of the development.
- 15.1.2 The chapter sets out the methodology followed in undertaking the assessment and provides a review of existing lighting in the area of the development site and surrounding area. Within this Chapter an assessment of lighting from the operational phase from both internal and external lighting has been undertaken. Lighting within the construction phase is also discussed.
- 15.1.3 This assessment has considered the lighting impacts on the surrounding residential, ecological and dark sky receptors based on an indicative lighting design developed to the relevant British Standards and guidance.
- 15.1.4 Baseline lighting conditions were determined during a site survey of the assessment area. A visual assessment of the existing artificial lighting within the assessment area was undertaken in order to identify the locations of lighting columns, their estimated heights and luminaire/lamp types currently employed.
- 15.1.5 An initial survey was undertaken between 19:30 hours and 22:30 hours to establish the existing pre-curfew lighting conditions and a further survey was undertaken after 23:00 to determine existing post curfew conditions.
- 15.1.6 The main existing light sources surrounding the site are from road and vehicle lighting along the A470 to the east of the proposed site and further existing lighting from nearby residential buildings and streetlights.
- 15.1.7 In terms of mitigation during construction, the Construction Industry Research and Information Association (CIRIA) provide good practice guidance documents which highlight the need to minimise potential adverse impacts upon surrounding sensitive receptors. The type of equipment employed, including lamp type and optics, should be carefully selected to provide a controlled distribution of light, within the site boundary, whilst limiting the luminous intensity to below 2,500 cd, as required for an Intrinsically Dark zone. The type of floodlights employed should have Type C asymmetric reflectors (GN01:2021), with a flat glass lens, and be mounted with the glass parallel to the ground (zero-degree tilt). Wide angle, symmetric floodlights mounted at low level, with a high tilt angle should not be used as the majority of the light is at or above the horizontal creating excessive glare and obtrusive light within the environment. These mitigation measure are common practice and would be expected for most construction sites based on British Standards and the Institution of Lighting



Professionals (ILP) Guidance on obtrusive light.

- 15.1.8 Mitigation during operation is built into the indicative lighting design, including internal lighting located at central locations within rooms away from windows where possible in order to minimise light spill to external areas, lighting activated in response to pedestrian or vehicle movement within in certain zones, areas illuminated using dark sky bollards, 4000k temperature luminaires, and directional luminaires angled towards the ground to limit upward sky glow and warmer temperature lights to decrease the effect of any light spill for any bats roosting or foraging in the surrounding area.
- 15.1.9 Given the construction mitigation measures detailed above, it is considered that the effects upon sensitive residential, ecological and dark sky receptors will be minor, resulting in a negligible, short-term and reversible effect, which is not considered to be significant.
- 15.1.10 During operation the impact of the proposed development is predicted to be negligible with respect to local sensitive residential locations as the pre-curfew and post-curfew criteria are not predicted to be exceeded. The effect of the development will be 'negligible' and the magnitude of impact 'negligible', which is not considered to be significant.
- 15.1.11 Light trespass associated with the proposed development does not exceed 1 lux at any of the modelled ecological locations across the site and surrounding area. As such the proposed development is not predicted to result in any significant adverse impacts with respect to local sensitive ecological receptors. The significance of the development on ecological receptors is considered negligible.
- 15.1.12 Modelled upward light predicts a sky glow figure which meets the ILP sky glow limitations and, therefore, will not result in adverse effects on the dark sky landscape. The development on dark skies is considered negligible.



16.0 HEALTH

- 16.1.1 This chapter defines the study area, the methodology used for developing the impact assessment, and provides a description of the baseline environment and impacts in relation to human health and wellbeing.
- 16.1.2 In terms of baseline, the study area is mostly rural and sparsely populated. Properties relevant to this assessment are in small groups and estates. The closest residential properties to the Rhydycar site are a small group of properties located 485m to the east on Plymouth Street. There are two schools located within 600m of the site area. Merthyr Tydfil Police Station is located in close proximity of the site. There are also a number of businesses located within 500m of the site. Within 1km of the site, there are several leisure and tourism facilities. These include BikePark Wales. The nearest hospital to the site (with an accident and emergency department) is Prince Charles Hospital located 3.2km to the north of the site. There are also GP surgeries within 3km of the development.
- 16.1.3 Pedestrian and cycle access to the site is gained via an existing bridleway bridge over the A470 carriageway with a secondary pedestrian access is provided to the south of the site, via the emergency access where a link is provided under the A470 to Dragon Parc and the Taff Trail. There are also a number of rights of way through and surrounding the site which have recently been established as a result of an application to modify the definitive map and a positive dialogue and collaboration between the landowners and MTCBC.
- 16.1.4 Based on 2011 Census data, 11.2% of the residents in Merthyr Tydfil believed they were living in 'bad' or 'very bad' health. This is the highest proportion of 'bad' or 'very bad' health of the 22 local authorities in Wales. In addition, the proportion of the population who had a long-term health problem or disability which limited their day-to-day activities at least a little in Merthyr Tydfil was 26.9%. Life expectancy data also suggests that Merthyr Tydfil performs poorly in terms of health. Life expectancy at birth in Merthyr Tydfil was very low compared to other local authorities in Wales. In particular, life expectancy for females in Wales is at its lowest in Merthyr Tydfil. In terms of mental health, the mean mental health component summary score for Merthyr Tydfil has been consistently lower than the Welsh average since the 2003/05 period, indicating consistently poorer mental health and well-being in the county. Regarding the health of children in Merthyr Tydfil, a report by Public Health Wales stated that 28.2% of children were living in poverty, which is regarded as a key determinant of health. In addition, 33.8% of 4- to 5-year-olds were overweight or obese in Merthyr Tydfil, the highest proportion across all Welsh local authorities. Furthermore, 23% of adults in Merthyr Tydfil are regular smokers, 23% of adults are classed as obese and 48% of adults were active for less than 30 minutes in the previous week of the survey (National



Survey for Wales, 2021).

16.1.5 Best practice principles are provided in NHS England's Healthy Urban Development Unit's (HUDU) Rapid Health Impact Assessment (HIA) Toolkit 2019 and forms the basis of the approach adopted to assess impacts on health and wellbeing. In addition, consideration has been given to the Health and Wellbeing checklist of the Wales Health Impact Assessment Support Unit (WHIASU) (2020) to help with the identification of which health determinants are relevant.

16.1.6 The results of the assessment are as follows during construction:

- Impact on healthcare services - no discernible health impact is identified
- Impact on capacity, location, and accessibility of other social infrastructure - no discernible health impact is identified
- Impact on existing open and natural spaces - an adverse impact is identified
- Minimisation of construction impacts such as dust, noise, vibration, and odours - no discernible health impact is identified
- Minimisation of air pollution caused by traffic and energy facilities - no discernible health impact is identified
- Minimisation of noise pollution caused by traffic and commercial uses - no discernible health impact is identified
- Encouragement of walking - an adverse impact is identified
- Encouragement of cycling - an adverse impact is identified
- Connection to public transport, local services, and facilities - a beneficial impact is identified
- Access to local employment and training opportunities - beneficial impact is identified
- Opportunities for work for local people via local procurement arrangements - beneficial impact is identified

16.1.7 The results of the assessment are as follows during operation:

- Impact on healthcare services - no discernible health impact is identified
- Impact on capacity, location, and accessibility of other social infrastructure - a beneficial impact is identified
- Impact on existing open and natural spaces - a beneficial impact is identified
- Provision of new open or natural space, or improve access to existing spaces - a beneficial impact is identified



- Provision of links between open and natural spaces and the public realm - beneficial impact is identified
- Are open and natural spaces welcoming and safe and accessible for all - beneficial impact is identified
- Minimisation of air pollution caused by traffic and energy facilities - no discernible health impact is identified
- Minimisation of noise pollution caused by traffic and commercial uses - no discernible health impact is identified
- Encouragement of walking - a beneficial impact is identified
- Encouragement of cycling - a beneficial impact is identified
- Connection to public transport, local services, and facilities - a beneficial impact is identified
- Connection to public realm and internal routes to local and strategic cycle and walking networks - a beneficial impact is identified
- Access to local employment and training opportunities - beneficial impact is identified
- Opportunities for work for local people via local procurement arrangements - beneficial impact is identified

16.1.8 As the proposed development is a mixed-use leisure and tourism scheme, there are multiple known health benefits that the local area and its population could benefit from with its completion. The site will include an Indoor Snow Centre, Indoor Tropical Waterpark and Indoor and Outdoor Adventure Centres; all allowing visitors to participate in physical exercise. These sports facilities can help to increase activity and promote healthier lifestyles. Engaging in physical exercise and movement also promotes a range of mental and psychological benefits such as increased happiness and reduced stress. The scheme also seeks to create new footpaths through the site to encourage walking and active travel and to complement existing provision.

16.1.9 The project's stakeholders include Snowsport Wales and GB Snowsport, who have clear commitments to support increased participation in snow sports. In addition, the project would complement a range of existing facilities which deliver and promote active lifestyles and participation in outdoor sporting and leisure activities. These include BikePark Wales, Zip World and wider activity within the Brecon Beacons and surrounding area covering walking and climbing. As such the investment adds to the potential range of opportunities for both residents and visitors to pursue healthier lifestyles. Accessibility and affordability are key considerations in the extent to which the facilities at Rhydycar West help to maximise healthier behaviour and activity and this should be considered as part of the project's social value and engagement strategy. Preferential rates and tariffs will be available for local



residents at appropriate periods during the week in order to further promote the benefits of the development in the local area.

16.1.10 The assessment concludes that construction workers will not place additional demand for health services or social infrastructure and construction and operational traffic will not affect local residents' ability to access healthcare or social infrastructure facilities as the existing road network is projected to remain free of congestion during the construction period. The potential impact on access to healthcare services and social infrastructure during construction and operation is therefore assessed to be neutral. Indeed, the resort will provide a wide range of new facilities in the form of an Indoor Snow Centre, Indoor Tropical Waterpark, and other activity and leisure areas, adding to the local offer and having a positive impact on users' access to social infrastructure.

16.1.11 The site is currently closed to visitors and access is restricted other than in respect of previously claimed and now recently established rights of way through the land. During the construction period, temporary or permanent diversion or stopping up of Public Rights of Way will be required. Access would be managed during the construction phase. However, and nonetheless, it is anticipated the proposed development would have a negative impact on encouraging walking and cycling at the site during the construction period. In the operational phase, the Proposed Scheme will link the new public realm to the local community through new footpaths. This connects the greenspaces outside of the development area to the site, as well as to the public realm areas proposed in the scheme design. The proposed footpaths connect to the town centre, the Taff Trail active travel route and provide the potential to connect to Aberdare, to the west. The connection of the Proposed Development to local and strategic cycle and walking networks is anticipated to have a positive health effect during the operation phase. The Proposed Development will deliver the optimum amount and quality of public walkways through parts of the site, carefully crafted to ensure flexibility across a range of community uses and sensitive to the important ecological designations and historical features on the site. The proposal will have a positive impact on walking and cycling during the operational phase.

16.1.12 The ES concludes that when proposed measures to mitigate construction dust and noise are followed, there is likely to be negligible impacts on surrounding receptors (for air quality) and negligible to minor adverse (in respect of noise) and the potential health impact is assessed to be neutral. There are not predicted to be any exceedances of air quality pollutant concentrations during the operational phase and therefore mitigation is not required. The development is not considered contrary to any of the national and local planning policies regarding air quality. Likewise, noise impacts are considered to be negligible. Therefore, the potential health impact is assessed to be neutral due to noise and air quality impacts not



being significant.

16.1.13 The scheme will include the running of a shuttle bus during the operation phase which will provide an additional transport connection between the site and rail station, bus station, town centre, leisure centre and Merthyr College. The proposed shuttle bus would synchronise with the arrivals/departures from Merthyr Tydfil rail station to minimise layover time for visitors to the site. By providing access to the Bus and Rail Stations, the development will provide opportunities to access the site via a multi modal journey, therefore increasing accessibility to and from the surrounding region. It is considered that the shuttle bus provides a very attractive offering to visitors and staff and will encourage site users to access the site by public transport and thus will have a positive potential health impact.

16.1.14 As noted at section 4, above, the proposed development will generate significant employment opportunities during both construction and operation. A s106 agreement will commit the developer or contractor to work alongside Partner Organisations to ensure that training and employment is targeted towards local people. The potential health impact during construction is therefore assessed to be positive. Access to local employment and training opportunities will be supported by the developer's commitments to work with Partner Organisations which will maximise local opportunities. The potential health impact is assessed to be positive.



17.0 UTILITIES

- 17.1.1 Investigations have been undertaken with the local Electrical, Communications and Water statutory authorities, the results of which have identified that offsite routes will be required and that these will likely have negligible effect on the natural environment.
- 17.1.2 Welsh Water have yet to define the point of connection or the extent of offsite works required; connection points are available. The specific connection point will be identified and modelled at the next design stage.
- 17.1.3 The 100% electric energy strategy has informed the overall load for the development and has been utilised to identify the potential POC on NGED's network to deliver power to the site. NGED have been consulted and identified the Merthyr East primary substation as the POC.
- 17.1.4 As the electrical Point of Connection (PoC) to the Merthyr East primary substation will be at 11kV (HV), there will not be a requirement for a primary substation to be located onsite. Rather, incoming 11kV cables would terminate within an intake room, either located internally to a building or standalone/external building. A series of smaller standard size 1MVA distribution substations would then supply the various buildings across the development.
- 17.1.5 All routes to site have been considered to have minimal environmental impact as they will likely be laid in the highway verge through the majority of their routes. Detailed route proving exercises will be undertaken at the detailed design stage in order to fully rationalise all routes to site, seeking to undertake combined trenching wherever possible in order to rationalise any excavation and further reducing any effects to the natural environment.
- 17.1.6 The impact both the overhead powerlines and the intermediate pressure gas main present on site are considered to be negligible and unaffected by the proposed development and any new site entrances are unlikely to have any effect on existing utilities.



18.0 CUMULATIVE IMPACT

- 18.1.1 Cumulative effects result from multiple actions on receptors or resources occurring in combination over time.
- 18.1.2 There are no likely forthcoming developments identified that would result in any cumulative socio-economic impacts.
- 18.1.3 IEMA guidelines establish that Green House Gas (GHG) emissions from all projects cumulatively contribute to climate change, meaning that climate change is a cumulative effect in itself, and is therefore inherently addressed within the GHG and climate change assessment.
- 18.1.4 No cumulative impacts are identified for ground conditions.
- 18.1.5 In respect of Ecology, two consented sites of potential cumulative impact are identified in the locality: Bike Park Wales and Trago Mills. The consent for Bike Park Wales involves the loss of some trees and woodland and secures appropriate mitigation for protected species and landscape via planning condition. In combination, there would be somewhat increased loss of woodland cover and partial loss of another SINC (Graig Gethin), however secured mitigation for protected species means no significant cumulative or additive effects are anticipated.
- 18.1.6 For the Trago Mills site, there is considered to be no surviving functional link between Trago Mills and Cwm Glo great crested newt populations and thus no in-combination effects. Additive effects on the local population are considered possible, however the proposed development is likely to deliver mitigation measures to result in likely beneficial effect for the species, hence no cumulative impact is anticipated.
- 18.1.7 The transport 2026 Assessment Year assessment referenced above is inclusive of cumulative (committed) development.
- 18.1.8 Potential cumulative heritage effects with Landscape and Visual effects and in-combination effects with the consented development at Bike Park Wales, as well as nearby LDP allocations have been considered. The assessment concludes that no in-combination cumulative effects are anticipated with any committed or proposed development in the Application Site's vicinity. However, the potential for future in combination effect with two sites that are allocated within the LDP and fall within the same Historic Landscape Character Area are identified. Any future plan to develop these sites would need to take this into consideration in their cumulative assessments.



18.1.9 With regards to the water, hydrology and hydrogeology environment, no cumulative impacts have been identified in the surrounding area.

18.1.10 Landscape

18.1.11 With regards to landscape, no cumulative impacts have been identified in the surrounding area.

18.1.12 The current outline drainage proposal results in no cumulative impacts with other developments. No cumulative impacts are expected to arise from the construction nor operation phases of the proposed development.

18.1.13 In respect of noise, no cumulative impacts are predicted for construction phase, meanwhile operational noise levels in cumulation with other committed developments, would not result in any significant noise effects.

18.1.14 No cumulative air quality impacts are anticipated for the construction phase, owing to the best practice measures that will be implemented and secured by a CEMP. During the operational phase of development, the likely effects are Negligible and therefore no significant cumulative impacts are predicted.

18.1.15 No cumulative lighting impact are anticipated during construction phase of the development.

18.1.16 For operational phase, potential cumulative developments have been assessed. 'Allocated Hoover Site 1' lies 800m east of the site and given the distance and lighting in the area around the allocated site, no cumulative lighting impacts are considered likely. In terms of sky glow on dark sky receptors, cumulative impacts are considered to be suitably managed through the planning process and ensuring best practice is implemented, to ensure only negligible cumulative effects.

18.1.17 No cumulative human health impacts are identified, having reviewed likely forthcoming development together with the proposed development.

18.1.18 No cumulative utilities impacts have been identified.



Planning Application Area			
Name	Area	Area (hA)	Area (Acres)
Planning Application Boundary	304,423.0 m²	30.4 hectare	75.2 acres



1 Site Location Plan
1 : 5000

P3	S0	07/12/22	WS	ISSUED FOR PLANNING
P2	S0	11/09/22	WS	Minor adjustments
P1	S0	14/02/22	WS	ISSUED FOR PAC
Rev.	Status	Date	Check	Description

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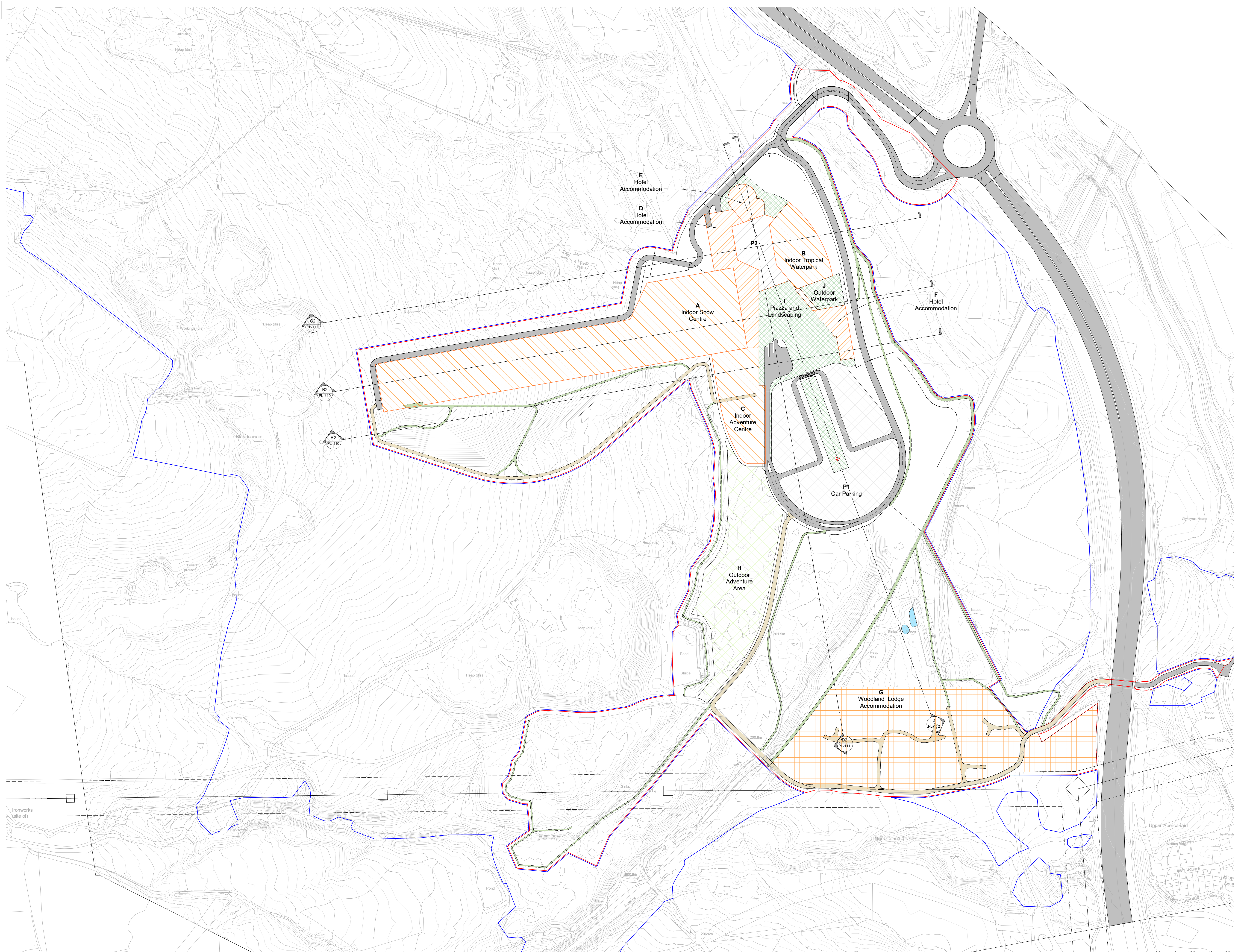
Project
Rhydyar West
Merthyr Tydfil
Marvel Ltd

Title
Site Location Plan

Job No Scale at A1 Status Rev. Ext. Int.
4170 1 : 5000 S0 P3

Project	Originator	Zone	Level	Type	Role	Sheet
RHDR	HMA	LE	ZZ	DR	A	PL-001

ISO 14001 : 2015 ISO 9001 : 2015 RIBA Chartered Practice
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A Indoor Snow Centre	
Use Class	D2: Assembly and Leisure
Land take Footprint	27,600m ²
Gross Building Area	39,200m ²
Length / Width (min)	400.0m / 90.0m
Length / Width (max)	424.0m / 93.5m
Level (min / max)	283.5m AOD / 287.5m AOD
Height (min / max)	15.0m / 17.0m

B Indoor Tropical Waterpark	
Use Class	D2: Assembly and Leisure
Land take Footprint	4,900m ²
Gross Building Area	7,500m ²
Length / Width (min)	91.3m / 57.2m
Length / Width (max)	97.1m / 61.3m
Level (min / max)	203.0m AOD / 213m AOD (localised high point for ride lower up to 218m AOD)
Height (min / max)	8m / 20.5m

C Indoor Adventure Centre	
Use Class	D2: Assembly and Leisure
Land take Footprint	5,800m ²
Gross Building Area	8,700m ²
Length / Width (min)	129.6m / 47.5m
Length / Width (max)	134.5m / 54.7m
Level (min / max)	206.5m AOD / 212.5m AOD (with localised high point for rides of 220m AOD)
Height (min / max)	11.5m / 20.0m

D Hotel Accommodation	
Use Class	C1: Hotel plus ancillary uses
Land take Footprint	4,900m ²
Gross Building Area	15,500m ²
Max Rooms:	up to 198
Length / Width (min)	154.8m / 25.2m
Length / Width (max)	161.6m / 28.5m
Level (min / max)	217.0m AOD / 224.5m AOD
Height (min / max)	22.0m / 32.0m

E Hotel Accommodation	
Use Class	C1: Hotel plus ancillary uses
Land take Footprint	1,275m ²
Gross Building Area	7,000m ²
Maximum Rooms:	up to 100
Length / Width (min)	39.8m / 27.0m
Length / Width (max)	42.8m / 40.3m
Level (min / max)	223.4m AOD / 230.9m AOD
Height (min / max)	28.4m / 39.4m

F Hotel Accommodation	
Use Class	C1: Hotel plus ancillary uses
Land take Footprint	1,400m ²
Gross Building Area	4,900m ²
Maximum Rooms:	up to 120
Length / Width (min)	58.7m / 31.5m
Length / Width (max)	61.7m / 37.3m
Level (min / max)	209.8m AOD / 214.8m AOD
Height (min / max)	16.8m / 21.3m

G Woodland Lodge Accommodation	
Use Class	C1: Hotel plus ancillary uses
Land take Footprint	32,000m ²
Gross Building Area	2,300m ²
Maximum Lodges:	up to 30
Lodges:	
Length / Width (min)	7.5m / 8.0m
Length / Width (max)	13.0m / 8.0m
Height (min / max)	3.5m / 4.5m
Welcome / Management Buildings:	
Length / Width (min)	15.5m / 12.0m
Length / Width (max)	23.0m / 16.5m
Height (min / max)	4.0m / 7.0m

Note that the layout of tracks and lodges within the woodland is indicative, subject to detail design taking into account detailed local topographical and ecological features following a full arboricultural survey

P1 Surface Car Parking Areas	
Land take Footprint	18,500m ²
Parking Spaces	650
Level (min / max)	197m AOD / 199m AOD

P2 Covered Parking, Service Areas and Ancillary Uses to Hotel and Leisure uses	
Land take Footprint	19,00m ²
Gross Building Area	8,500m ²
Car Parking Spaces	180
Max Length / Width	53.5m / 50.5m
Level (min / max)	201.0m AOD / 206.0m AOD
Height (min / max)	6.0m AOD / 13.5m

H Outdoor Adventure Area	
Use Class	Outdoor Activity / Amenity Space
Land take Footprint	15,000m ²

I Piazza and Landscaped Approach	
Use Class	Outdoor Activity / Amenity Space
Land take Footprint	8,900m ²

J Outdoor Waterpark	
Use Class	Outdoor Activity / Amenity Space
Land take Footprint	1,500m ²

P3	S0	07/12/22	WS	ISSUED FOR PLANNING
P2	S0	11/09/22	WS	Minor adjustments
P1	S0	14/02/22	WS	ISSUED FOR PAC
Rev.		Status Date	Check Description	

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Project
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Title
Outline Masterplan
Job No Scale at A1
4170 1 : 2000
Status Rev. Ext. Int.
S0 P3

Project	Originator	Zone	Level	Type	Role Sheet
RHDR	HMA	LE	ZZ	DR	A - PL-010

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