ARUP

CiNER Glass Limited

Dragon Glass Bottle Manufacturing Facility

Environment Statement Addendum

Reference: DRAGON-ARUP-ENVZ-XX-RP-T-000009

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Job number 284431-10

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Abbreviations

Abbreviation	Term
BBNP	Brecon Beacons National Park
BGCBC	Blaenau Gwent County Borough Council
CEA	Cumulative Effects Assessment
EIA	Environmental Impact Assessment
ES	Environmental Statement
ESA	Environmental Statement Amendment
EVEZ	Ebbw Vale Enterprise Zone
GIA	Gross Internal Area
LPG	Liquified Petroleum Gas
PDAS	Planning, Design and Access Statement
RIE	Rassau Industrial Estate
RMS	Regulating and Metering Station
SAC	Special Area of Conservation
SSSI	Site of Special Scientific Interest

Non-Technical Summary

Introduction

This is the non-technical Summary (NTS) of the assessment undertaken for this Environmental Statement Addendum (ESA). The original Environmental Statement (ES) was submitted in support of the planning application (reference: C/2021/0278) for the CiNER Glass Bottle manufacturing facility within Rassau Industrial Estate, Ebbw Vale. Full planning approval was granted by Blaenau Gwent County Borough Council (BGCBC) in March 2023. Since the approval of planning, a design review seeking to deliver operational efficiencies associated with the approved development has been undertaken. As a result, changes to the design of the facility are proposed which therefore requires the 2022 ES to be reviewed to determine whether the design changes would result in any changes to the environmental impacts identified. This NTS should be read alongside the NTS produced for the original application.

The consented development is for the construction and operation of a purpose-built glass bottle manufacturing facility, and associated works comprising:

- A total site area of approximately 14.4 ha on a wider land parcel extending to 21.5 ha;
- 2no. furnaces with associated filters and 2no. chimney stacks;
- 2no. cullet buildings and stores for the storage and processing of rejected and recycled glass;
- 1no. batch and 2no. silo buildings for the storage and mixing of raw materials;
- 2no. production lines for hot and cold processing, inspection and packaging of glass bottles including workshops and storage areas within the process building;
- Office space and welfare facilities including canteen, infirmaries and changing facilities (located internally at eastern extent of the facility);
- An automated warehousing facility for the storage and distribution of glass bottles;
- Utilities building which includes plant space and workshops;
- Waste materials store;
- Liquified Petroleum Gas (LPG) store and Regulating and Metering Station (RMS) building;
- Back up fuel storage facilities;
- Main entrance security lodges and associated weighbridge;
- External hard standing for the storage of materials, parking and loading; and,
- Landscaping to the eastern side of the facility.

Rassau Industrial Estate (RIE) is located adjacent to the A465 Heads of the Valleys road that runs between Abergavenny and Neath, approximately 0.7km north of Rassau village and 3km north of Ebbw Vale town centre. The site is approximately 21.5ha in area and comprises a vacant plot within the RIE, currently within the ownership of Welsh Government and BGBBC.

Proposed design changes

The design changes that are bring proposed have resulted from operational efficiencies being identified. Proposed changes are concerned with several key details relating to height, scale, layout, appearance, access and landscape. A brief summary is set out below:

Proposed change	Description
Height	Reduced height of the main process building (from 28m to 23m) Reduced height of furnace roof (from 35m to 23m) A 12m furnace 'pop-up' building to be included above the furnace area on the southern elevation. Reduced height of warehouse building (from 28m to 12.5m)

Scale & layout	A reduction in the area of the incoming materials yard from 10,800sqm to 5,800sqm Re-orientation of the warehouse to sit behind the packaging area creating a single linear building with a reduced footprint and more opportunities for existing landscaping and ecology to be retained. Moving the main process building away from the northern boundary by 20m and the southern boundary by 24m, along with a reduced width of each process line by 7m.
Appearance	Some changes to the materials being proposed for external parts of the buildings in order to assist with breaking up the massing and lesson the visual impact. Green roofs are also being proposed for the Security building, RMS building, LPG building and Pump House.
Access	Introduction of a dedicated access route each for deliveries and staff vehicles. Delivery access now proposed to the north of the site, with staff access along the southern boundary.
Landscape	Reduced overall extent of the landscaping on the site, retaining more of the existing woodland to the south of the site and around site boundaries where possible, as well as retaining all of the peatland area to the east of the watercourse. However, landscaped corridors are proposed between buildings and the north and south perimeters providing pedestrian access. In addition, amenity areas are being included within the landscaped areas, car park areas would be landscaped with meadow grassland and trees, and four small biodiverse green roofs are proposed on small buildings. Trails and tracks would be provided around the water detention basin which is one of several proposed sustainable water management features.

Assessment outcome

Overall, no new or materially different significant adverse effects have been identified as a result of the proposed amendments to the consented scheme. The proposed amendments have been reviewed against the assessment and conclusions of the original 2022 ES for each of the environmental topics previously considered. For all topics, the changes that are being proposed to the approved planning application are not expected to result in more adverse outcomes or effects than those in the original ES and in some cases indicate an improvement on those previously assessed. This is summarised below in Table 1 below.

Table 1: Addendum Summary

Topic	2022 ES Conclusions	2023 Addendum Conclusion
Air Quality	No significant effects	There are no changes in construction methodology and construction traffic volumes remain the same, therefore there is no increase in adverse air quality effects in relation to construction and the effect remains as not significant. The operational nature of the revised scheme remains the same as the consented scheme and the distance of the receptors are similar. No increased air quality effects are predicted and the effect remains as not significant. No further odour assessment is required.
Climate Change	Significant effects in relation to greenhouse gases. Not significant in relation to climate change resilience.	The changes are likely to result in minor reductions of GHG emissions during construction but remain the same during operation as no changes are proposed to the design of the furnace. As 98% of emissions are associated with operational energy GHG emission outcomes remain the same as those identified in the original ES.

Topic	2022 ES Conclusions	2023 Addendum Conclusion
Ecology	No significant effects Some positive and minor beneficial significance in relation to habitat loss and degradation/disturbance	No significant effects - reduced effects expected. The changes result in no changes to the assessment outcomes. Total habitat loss has been reduced overall and is estimated to be 11.67 ha of habitat areas, and 280 m of linear habitats, compared to a previous loss of 15.82 ha and 280 m of linear habitats. In relation to protected species, the area and extent of impact remains the same for fungi, invertebrates, amphibians, breeding birds, badger, otter, and notable mammals. Bats are likely to experience reduced effects as a result of less loss of habitat and foraging resource. A great crested newt (Amphibian) report has now been prepared in line with the requirements of [planning] Condition 33.
Health	Minor Minor to moderate positive effects in relation to access to and work and training	Minor to moderate effects. The proposed changes that are unlikely to result in more adverse health outcomes than those identified in the ES.
Materials and Waste	No significant effects	No significant effects. The total quantity of excavated materials is expected to increase for the proposed design although the reduced scale of the buildings would result in reduced quantities of imported manufactured materials during construction and less construction waste being generated. The change in the design of the building will not affect the quantities of materials required to operate the manufacturing activities on the site or change the amount of operational waste generated. Potential effects during construction and operation remain as not significant.
Noise and Vibration	No significant effects	No significant effects. There are no changes to the construction programme or methodology to change impact significance during construction. Operational road traffic noise impacts remain not significant. Operational noise sources (chimney stacks and louvres of production building) assessed in the 2022 ES have not been substantially moved, therefore noise effects for these elements will not change. The changes in the batch building, includes the introduction of a new noise source associated with the movement of sand. However, this activity only occurs during the daytime and is not expected to result in more adverse impacts than those presented in the original 2022 ES.
Socio-economics	Minor to moderate beneficial effects	Minor to moderate effects. During construction it is considered unlikely that the workforce required would decrease and so the effect on the local labour market of employment and supply chain impacts would not be worse than under the original design. As there is no change in estimated employment during operation, there is no change in the effect on employment and the local supply chain.

Topic	2022 ES Conclusions	2023 Addendum Conclusion
Transport	Minor adverse effects	Minor adverse effects – some improvements expected. The proposed segregation of access for heavy vehicles from staff vehicles provides a betterment through limiting vehicular conflict. There is no change in the number of HGV movements to/from the site and total staff numbers are also unchanged hence there is no change in the total number of car parking and cycle parking spaces required. The new proposed layout can accommodate over and above the vehicle stacking capacity that was outlined in the previous design, ensuring there is sufficient capacity within the site for goods vehicles to load, unload and wait before departing. These changes result in no increase in adverse transport effects than those identified in the 2022 ES.
Visual Impacts	Moderate adverse effects Some substantial adverse effects relating to Community of Beaufort and Brecon Beacons National Park	Moderate adverse effects. Construction effects from the amended design will be very similar to those previously assessed. The Amended Development will be less prominent and visually intrusive in all assessed views where the main bulk of the built form is visible, however, it remains a large and detracting feature in people's views and will therefore continue to give rise to adverse visual change. The magnitude of this change will be reduced, but not to the extent that outcome of the assessment of significance will be any better than for the Approved Development. As with the Approved Development, the proposed changes are predicted to give rise to moderate significant visual effects on the Community of Rassau, the Community of Garnlydan, the walkers on Mynydd Carn-y-cefn and users of the B4560 Llangynidr Road. In views where only unchanged elements such as the chimneys are visible, there will be no discernible change to visual effects.
Water Environment	Neutral to slight adverse effects	Neutral to slight adverse effects – reduced effects expected. The elimination of deep basements and some of the underground structures would remove the need for dewatering during construction. Therefore, the previously identified impacts such as potential changes to groundwater levels and flows or land contamination mobilisation will no longer have a potential to occur. The elimination of the basements and other underground structures would also eliminate potential impacts during the operational phase associated creating barries to groundwater flows. The reduced development footprint would further reduce the potential impact on the aquifer recharge. It is also considered that other potential impacts such as management of risks associated with land contamination would remain unchanged. Given the above, water environment impacts associated with the proposed amendments are expected to not increase in relation to those assessed in the original ES.
Cumulative Effects	No significant effects with the exception of the potential to lead to impacts on labour supply (i.e. finding suitable people to employ).	No significant effects. The proposed amendments to the development do not result in any increase in construction footprint or programme within the consented scheme and on this basis the committed developments and associated potential cumulative effects identified in the original 2022 ES remain relevant. Potential cumulative impacts were only identified in the 2022 ES in relation to ecology and socio-economic factors. Cumulative effects in relation to these topics are not expected to worsen for the proposed design changes and therefore remain as not significant.

1. Introduction

This Environmental Statement Addendum (ESA) has been developed by Ove Arup & Partners Ltd (Arup) on behalf of CiNER Glass Ltd. This report is an addendum to the Environmental Statement (ES) (ref. DRAGON-ARUP-ENVZ-XX-RP-YE-000003, DRAGON-ARUP-ENVZ-XX-RP-YE-000004, DRAGON-ARUP-ENVZ-XX-RP-YE-000005, DRAGON-ARUP-ENVZ-XX-RP-YE-000006) (the 2022 ES) to support an application made under Section 73 (s.73) of the Town and Country Planning Act 1990 for the variation of Condition 3 (Approved Plans and Documents) and for the removal of Condition 33 (Great Crested Newts) attached to full planning permission reference: C/2021/0278 in relation to Land north and east Rassau Industrial Estate, Rassau, Ebbw Vale (hereafter referred to as 'the site'). The s.73 application is made to Blaenau Gwent County Borough Council (BGCBC) as Local Planning Authority.

Details of plans and documents being updated to capture the proposed amendments are set out in the supporting Cover Letter and referenced in the Planning Design and Access Statement (PDAS)(ref. DRAGON-ARUP-ENVZ-XX-RP-T-000008) where relevant.

1.1 The Site and Surroundings

The site is approximately 21.5ha and located within an empty plot at the eastern extent of the Rassau Industrial Estate (RIE) within the Ebbw Vale Enterprise Zone (EVEZ) to the north of Rassau, Blaenau Gwent. It is situated at the head of the Ebbw Valley, approximately 3.5km north of Ebbw Vale and 35km north of Cardiff. The site is accessed via the A465 Head of the Valleys Road, a strategic route which links to the M470 at Merthyr Tydfil and provides access to Junction 32 of the M4 motorway 25km to the south. The site is currently within the ownership of Welsh Government and BGCBC.

The surrounding occupiers/landowners predominantly consist of B1, B2 and B8 land uses. The northern boundary is shared with the National Grid 400kV Rassau sub-station and EnviroWales Limited comprising warehousing, transformers and overhead electricity infrastructure to the northwest. The western boundary is shared with the existing RIE road network and Sear Seating manufacturing (Use Class B2) with undeveloped land and the Carno Reservoir to the eastern boundary. The southern boundary is shared with TechBoard (Use Class B2) and a wind turbine (77m tip height).

The approved development is for construction over two discrete land parcels. The majority of the development would take place on a cleared plateau within the RIE which is designated as employment land (EMP1.4 and EMP1.5) under the local development plan and safeguarded for B1, B2 and B8 uses. These designations are the final plots of the RIE to be developed and parts of this land has become overgrown with vegetation, and has been vacant for many years (since the late 1970s/1980s). The remainder of the approved development is proposed on undeveloped land to the east of the allocation which is required for ecological mitigation and future use by CiNER Glass Ltd.

A tributary of the River Ebbw (Affon Ebwy) bisects the site between the two land parcels which has been previously diverted around the northern extent of the RIE. The River Ebbw is part of the South East Valleys catchment which eventually flows into the Usk Estuary.

The site is situated on the slopes of Myndd Llangynidr Site of Special Scientific Interest (SSSI), approximately 400m south of the Brecon Beacons National Park (BBNP). The site is situated 1km south west of the Usk Bat Sites Special Area of Conservation (SAC).

Figure 1 below illustrates the site context providing the geographical location of the application site in comparison to adjacent land uses and settlements.

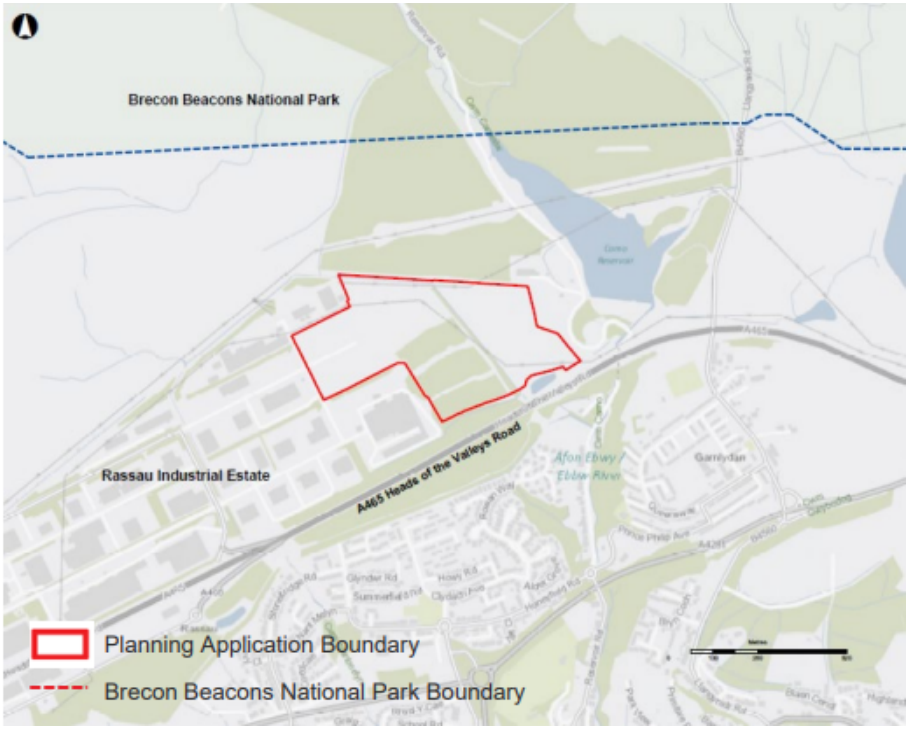


Figure 1: Application Site Context

1.2 Approved Development

CiNER Glass Ltd is proposing to construct a purpose-built glass bottle manufacturing facility on the site of circa 170,000m^2 Gross Internal Area (GIA) including ancillary buildings to commence initial production by 2023 increasing to full production by 2025.

On 22 September 2021, an application for full planning permission was submitted to BGCBC (ref: 07/2021/0278) seeking consent for the construction and operation of a purpose-built glass bottle manufacturing facility, and associated works comprising:

- A total site area of approximately 14.4 ha on a wider land parcel extending to 21.5 ha;
- 2no. furnaces with associated filters and 2no. chimney stacks;
- 2no. cullet buildings and stores for the storage and processing of rejected and recycled glass;
- 1no. batch and 2no. silo buildings for the storage and mixing of raw materials;
- 2no. production lines for hot and cold processing, inspection and packaging of glass bottles including workshops and storage areas within the process building;
- Office space and welfare facilities including canteen, infirmaries and changing facilities (located internally at eastern extent of the facility);
- An automated warehousing facility for the storage and distribution of glass bottles;
- Utilities building which includes plant space and workshops;
- Waste materials store;
- Liquified Petroleum Gas (LPG) store and Regulating and Metering Station (RMS) building;
- Back up fuel storage facilities;
- Main entrance security lodges and associated weighbridge;
- External hardstanding for the storage of materials, parking and loading; and,

- Landscaping to the eastern side of the facility.

Following revisions related to the information and plans submitted in support of this application on 14 January 2022 and 5 April 2022, planning permission was subsequently granted on 1 March 2023.

1.3 Purpose of the Environmental Statement Addendum

This Environmental Statement Addendum (ESA) provides an assessment to identify if any new or different significant environmental effects result from the proposed amendments to the consented scheme (these proposed amendments are outlined in further detail in Section 2 below). As agreed with BGCBC, this assessment in the form of a qualitative review and has been undertaken in relation to the conclusions of the 2022 ES.

This ESA should be read in conjunction with the 2022 ES and supporting documents including maps and appendices.

2. Proposed Amendments

The proposed changes as part of this application have been made following detailed conversations with officers from BGCBC as part of ongoing discussions.

The changes proposed are concerned with several key details relating to height, scale, layout, appearance, access and landscape. A summary of the changes proposed as part of this application is provided in Table 2 below. Where relevant, the appropriate plan being amended to capture the proposed change is indicated for ease of reference.

Table 2: Summary of Proposed Amendments

Proposed Change	Explanation and Details of Amendments	Revised Drawing submitted to capture proposed amendment
Height	The approved scheme had capacity for built in resilience for future flexibility giving an increased overall footprint and height. The proposed combined height reductions sought as part of this application as outlined below, across the site, would help to reduce the massing of the building on site and allow it to sit significantly lower in its context. This application seeks changes to the height of the approved development as follows: The main roof of the process building is proposed to be reduced by approximately 5m (from 28m to 23m). The furnace roof is proposed to be lowered by approximately 12m (from 35m to 23m) to create one consistent parapet height along the perimeter of the building. A 12m furnace 'pop-up' building is proposed to be included above the furnace area on the southern elevation. This new element is proposed to be louvred directly above the furnace area and would allow hot air to escape whilst significantly reducing the overall massing of the building. The warehouse building is proposed to be changed from an automated warehouse to a manual warehouse due to an operational change of requirements. As such, the overall height of this feature is proposed to be significantly reduced by 15.5m (from 28m to 12.5m).	DRAGON-ARUP-XXXX-ZZ-DR-A-003111, Rev: P04 DRAGON-ARUP-XXXX-ZZ-DR-A-003211, Rev: P03 DRAGON-ARUP-XXXX-ZZ-DR-A-003220, Rev: P03
Scale & Layout	As a result of the height reduction, changes to the scale and layout of the approved factory are proposed to be amended through this application as follows: A reduction in the area of the incoming materials yard (from 10,800sqm to 5,800sqm) and the number of cullet bunkers (from 8 no. to 6 no.) is sought. This would free up space on the site and would allow the main process building to shift west by approximately 27m. A reduction in the area and length of the main process building as outlined above, would result in additional vacant space east of the site allowing the warehouse to be re-orientated to sit behind the packaging area. This would create a single linear building with a reduced footprint, allowing opportunity for existing landscaping and ecology to be retained on site. The utilities building is proposed to be incorporated into the main process building. As a result of this, the two process lines are proposed to be pushed closer together. Moving the main process building away from the northern boundary by 20m and away from the southern boundary by 24m. The width of each process line is also proposed to be reduced by approximately 7m (from 64m to 57m). The proposed removal of the utilities building and narrowing of the process lines would create a slimmer building on site, and in doing so, pulls the building further away from the north and south boundaries creating landscape corridors that can be utilised to screen the building. Parking numbers are proposed to remain unaltered as part of this application (total approved provision of 389 no. spaces), however, the car park is proposed to be relocated to the south of the site given the space vacated by the proposed change to the warehouse as explained above. The car park is therefore proposed to be entirely external as opposed to half under the main	DRAGON-ARUP-XXXX-ZZ-DR-A-001201, Rev: P03 DRAGON-ARUP-XXXX-B1-DR-A-003010, Rev: P02 DRAGON-ARUP-XXXX-GF-DR-A-003011, Rev: P03 DRAGON-ARUP-XXXX-01-DR-A-003012, Rev: P02 DRAGON-ARUP-XXXX-02-DR-A-003013, Rev: P02 DRAGON-ARUP-XXXX-03-DR-A-003014, Rev: P02 DRAGON-ARUP-XXXX-RF-DR-A-003015, Rev: P02 DRAGON-ARUP-XXXX-XX-DR-L-001501, Rev: P04

Proposed Change	Explanation and Details of Amendments	Revised Drawing submitted to capture proposed amendment
	building as currently approved. The car park is proposed to be 'greened' to blend into the surroundings and add visual, landscape and ecological interest. The loading yard has also been reduced and is now located to the north of the warehouse. It is proposed that the area of the loading yard would be reduced from the current consented scheme (from 6,600sqm to 2,300sqm)	
Appearance	Several changes relating to the appearance of the approved scheme are proposed as part of this application as follows: The precast concrete façade at ground floor in the materials yard and to the auxiliary buildings is proposed to be replaced with metal panels. A darker plinth is proposed to be added to the lower levels of the façade system to the main building. This would be a profiled metal sheet and would help break up the massing of the building. The enclosure to the filter building is proposed to be removed which similarly would help to lessen the visual impact and massing of the building on the site. Green roofs are proposed to be added to the Security Building, RMS Building, LPG Building and Pump House.	DRAGON-ARUP-XXXX-ZZ-DR-A-003111, Rev: P04 DRAGON-ARUP-XXXX-ZZ-DR-A-003211, Rev: P03 DRAGON-ARUP-XXXX-ZZ-DR-A-003219, Rev: P03 DRAGON-ARUP-XXXX-ZZ-DR-A-003217, Rev: P03
Access	In line with the amendments sought as part of this application to reduce the overall footprint and height of the approved development, and the general pulling away from the north and south boundaries (by 20m from the north and 24m from the south), a dedicated access route for deliveries and staff vehicles is now proposed. Access for goods vehicles is now proposed to be via the north of the site, with staff access along the southern boundary. The proposed amendment would segregate heavy vehicles from staff vehicles and provide a betterment through limiting potential vehicular conflict. The proposal still has a central access road between the two process lines, this route is connected to the outer perimeter roads by access routes that run under the building. Access to this central road provides a route for maintenance vehicles, fire tender vehicles and also an area for large delivery vehicles to deliver materials to the packaging warehouse. All routes around and through the building have been tracked in order to ensure large vehicles can manoeuvre around the site. This is shown on Figure 5-1 below.	DRAGON-ARUP-XXXX-XX-DR-A-001201, Rev: P03 DRAGON-ARUP-XXXX-XX-DR-L-001501, Rev: P04 DRAGON-ARUP-HWAY-GF-DR-C-100001, Rev: P03 DRAGON-ARUP-HWAY-GF-DR-H-130001, Rev: P03 DRAGON-ARUP-HWAY-GF-DR-H-130002, Rev: P03
Landscape	This application seeks to reduce the overall extent of the landscaping on the site, retain more of the existing woodland to the south of the site and around site boundaries where possible as well as retain all of the peatland area to the east of the watercourse. The landscape spaces provide ecological functionality, amenity for staff members and sustainable water management. Landscaping corridors have been created between the perimeter of the building and the north and south boundary in order to create a green buffer, provide pedestrian circulation and integrate rain gardens. A series of amenity areas have been included within these landscape corridors, as well as in front of the main entrance to the building/canteen area, to the south of the car park and within the retained woodland. Car park area has been softened with meadow grassland and tree planting. Four small biodiverse green roofs have been included to small buildings located by the northern access road. Trails and tracks have also been incorporated around the detention basin and into the existing woodland which could be used for running, exercise or walking at break-times or outside of work hours. Sustainable water management features provided as part of the proposal include detention basin, rain gardens, swale and attenuation tank.	DRAGON-ARUP-XXXX-XX-DR-A-001201, Rev: P03 DRAGON-ARUP-XXXX-XX-DR-L-001501, Rev: P04

3. Methodology, Assumptions and Limitations

The methodology followed for this ESA is consistent with that set out in the 2022 ES (Chapter 4: Approach to the EIA) and therefore includes consideration of the following environmental topics:

- Air quality
- Climate change
- Ecology
- Health
- Materials and Waste
- Noise and Vibration
- Socio-economics
- Transport
- Visual Impacts
- Water Environment
- Cumulative Effects

Arup has engaged with BGCBC to understand and agree the proposed approach and scope of the supporting ESA submitted with the s.73 application. It was agreed with BGCBC that a qualitative approach providing an updated review of the conclusions set out under the original ES for the amendments sought as part of this application would be suitable.

As such the following qualitative approach has been undertaken for each of the topics (outlined in detail in chapters 4-14) considered as part of the original ES:

- Review of the identified environmental effects and subsequent conclusions of the original ES
- Outline of where proposed amendments are relevant or may result in a change to assessment outcomes of the original 2022 ES
- Qualitative assessment of whether the proposed amendments are expected to result in any changes or worsening of the environmental effects concluded in the original 2022 ES

As outlined in Section 2, the proposed amendments relate to a reduction in the massing of the building and minor changes to the site layout. These in effect will reflect an overall reduction in the development footprint of the site within the already consented boundary and therefore, it is expected that the development (following the proposed amendments) will still fall within the consented boundary limits and construction timelines outlined in the full planning permission reference: C/2021/0278. As such, this ESA specifically focuses on whether the proposed amendments are expected to result in any changes in environmental effects identified for each topic in the original 2022 ES.

Assessment of Baselines

As discussed above, the proposed amendments are expected to result in a development that is smaller in scale and massing than the currently consented scheme and will be constructed within the consented timelines. Given this, no re-evaluation of the baseline scenarios are required as part of this ESA, on the basis that those already considered for each topic in the 2022 ES remain relevant.

The exception to this is the review of ecological environmental effects, because there is now further data available due to surveys having been undertaken as part of pre-commencement works for protected species. This has included surveys for Great crested newts undertaken in May 2022 and surveys for badger, otter, water vole and Invasive Non-Native Species (INNS) undertaken in July 2023. Given the availability of this data and subsequent further understanding of the existing site conditions, the findings of these surveys have been incorporated into qualitative ecological assessment as part of this ESA. Similarly, in light of this information the overall s.73 application seeks to remove Condition 33.

4. Air Quality

The air quality chapter of the 2022 ES considered the impacts associated with the construction and operational phases. During construction, air quality impacts would be related to construction activities and construction traffic. For operation, air quality impacts would be associated with the additional traffic and onsite combustion sources. A summary of the previous assessment is provided below.

Construction

Construction traffic

Construction traffic was scoped out of the air quality assessment as the number of construction vehicles was below the thresholds detailed in the Institute of Air Quality Management (IAQM) and Environmental Protection UK (EPUK) planning guidance[1]. Therefore, the effects associated with construction traffic at human and ecological receptors were determined to be not significant, in accordance with the IAQM and EPUK planning guidance[1].

Construction dust

Construction dust impacts were considered and assessed using the qualitative approach described in the latest IAQM dust and construction guidance[2]. The consented development was classified as low risk due to dust soiling and human health impacts from all construction activities. The assessment concluded that with the appropriate best practice mitigation measures suitable for low risk sites in place, there would likely be a negligible effect on human and ecological receptors from the dust-generating activities onsite.

Operational

The air quality assessment of the operational phase of the project considered the total impacts associated with the traffic during operation as well as the onsite combustion sources. The additional operational traffic flows during the operational phase were found to be above the thresholds detailed in the IAQM planning guidance[1] and therefore a detailed assessment was undertaken using the advanced dispersion model, ADMS-Roads[3]. The proposed onsite combustion sources consisted of two units of furnace and five back up diesel generators, and the resulting impacts were assessed using the advanced dispersion model, ADMS 5[4].

It should be noted that the furnaces have been designed following the best practice for air quality, including a stack height assessment, sensitivity tests and the proposed emission limit values are more stringent than the values stated in the Local Authority Industrial Pollution Prevention and Control (LA-IPPC) regime for glass manufacturing[5]. The best practice design led to the overall air quality effects to be not significant in the consented scheme.

In addition, the assessment also accounted for the cumulative impacts from the generators associated with the short-term operating reserves (STOR) located in the Rassau Industrial Estate. The overall effects from the above sources at the selected human receptors were predicted to be not significant. The effects on the relevant ecological receptors were assessed in the ecology ES chapter. With the

[1] IAQM & EPUK (2017) Land-Use Planning& Development Control: Planning For Air Quality

[2] IAQM (2016) Guidance on the Assessment of Dust from Demolition and Construction (Version 1.1)

[3] ADMS-Roads atmospheric dispersion model from Cambridge Environmental Research Consultants (CERC)

[4] ADMS 5 atmospheric dispersion model from CERC

[5] Glass Manufacture: sector guidance note IPPC SG2 October 2006 [Available at: https://www.gov.uk/government/publications/glass-manufacture-sector-guidance-note-ippc-sg-2]

implementation of the proposed embedded avoidance measures (landscaping, best practices and licence requirements) no residual effects were anticipated during construction and operation.

Odour

An odour assessment was completed for the consented scheme using the Source, Pathway, Receptor model described in the relevant IAQM guidance[6]. The assessment showed that there would be a low risk of adverse odour impacts from the Proposed Development, and no further assessment or mitigation measures were recommended in the air quality ES.

Proposed amendments relevant to the assessment

The proposed amendments relevant to the air quality assessment are outlined below:

- The building footprint has been reduced and this has resulted in the slight relocation of the proposed furnace stack.
- The relocation of the utilities building has led to the relocation of the proposed backup generators. This has also resulted in the change of the stack heights of the backup generators which will be higher than the consented scheme.
- The reduction in heights from the main roof, furnace roof and warehouse has led to reduction in the assessed heights of the onsite receptors.
- Access for goods vehicles and staff are now to be provided separately with goods vehicles accessing via the north of the site and staff accessing via a newly proposed access road along the southern boundary. The air quality assessment previously submitted only assessed one combined access road (along the northern boundary).
- The car park is proposed to be relocated to the south of the site and it is proposed to be entirely external as opposed to half under the main building as currently approved.

Review of proposed amendments on environmental effects

Construction

Construction traffic

The number of construction vehicles associated with the current proposed scheme remains the same as the number detailed in the submitted ES chapter, which is also below the screening criteria detailed in the EPUK and IAQM planning guidance[1]. Therefore, further assessment is not required and the effects due to the construction traffic remains to be not significant.

Construction dust

The method of construction associated with the current proposed scheme remains the same as that stated in the submitted ES chapter. In addition, the building volume to be constructed is slightly smaller in the revised scheme, as such a worst-case scenario was assessed in the submitted ES chapter and further assessment is not required. The construction dust effects remain not significant after the implementation of the recommended mitigation measures.

[6] IAQM (2018) Guidance on the assessment of odour for planning

Operational

Operational traffic

There are two separate access roads for goods delivery and staff in the revised scheme as opposed to one access road being assessed in the submitted air quality ES, however, the operational traffic will merge and join back on the main roads within the Rassau Industrial Estate, and therefore this change is not considered to be material for air quality. Furthermore, the number of operational vehicles remains the same as the consented scheme, therefore, no further assessment is required.

In terms of the car park relocation, the nearest receptors to the car park are a commercial receptor (29) and a residential receptor (9). These are located approximately 180m southwest and 340m southeast away from the new car park location respectively. Given the nearest receptor is almost 200m away and the low background concentrations[7] for nitrogen dioxide (NO_2) and fine particulate matter including PM_{10} and $PM_{2.5}$, the contribution from the car park is unlikely to change the overall impact significance in the consented scheme, and therefore no further assessment is required.

Onsite combustion sources (furnaces)

In the revised scheme, the stack heights for the two furnaces remain the same as the submitted ES, and the revised stack locations will be relocated to approximately 20m southwest/ northwest of the original locations due to the redesign of the onsite buildings.

The heights of the onsite buildings have been revised (the main roofs have been reduced by approximately 7m and 14m), though the building orientations are largely similar to the original scheme.

The main source of air emissions from the proposed development is the furnaces. The stack heights are unchanged and distances to relevant receptors will only vary by a very small amount of the original distance assessed (up to 20m). Further, the worst case receptors had already been assessed in the consented scheme, notably to be two existing receptors (IDs 11 and 27) and a new receptor assessed in the original ES (ID N20) are all closer to the consented stack locations, in comparison to the revised locations. Therefore, the updated design is unlikely to cause any material difference to the air quality results in the consented scheme, and therefore no further assessment is required.

Onsite combustion sources (generators)

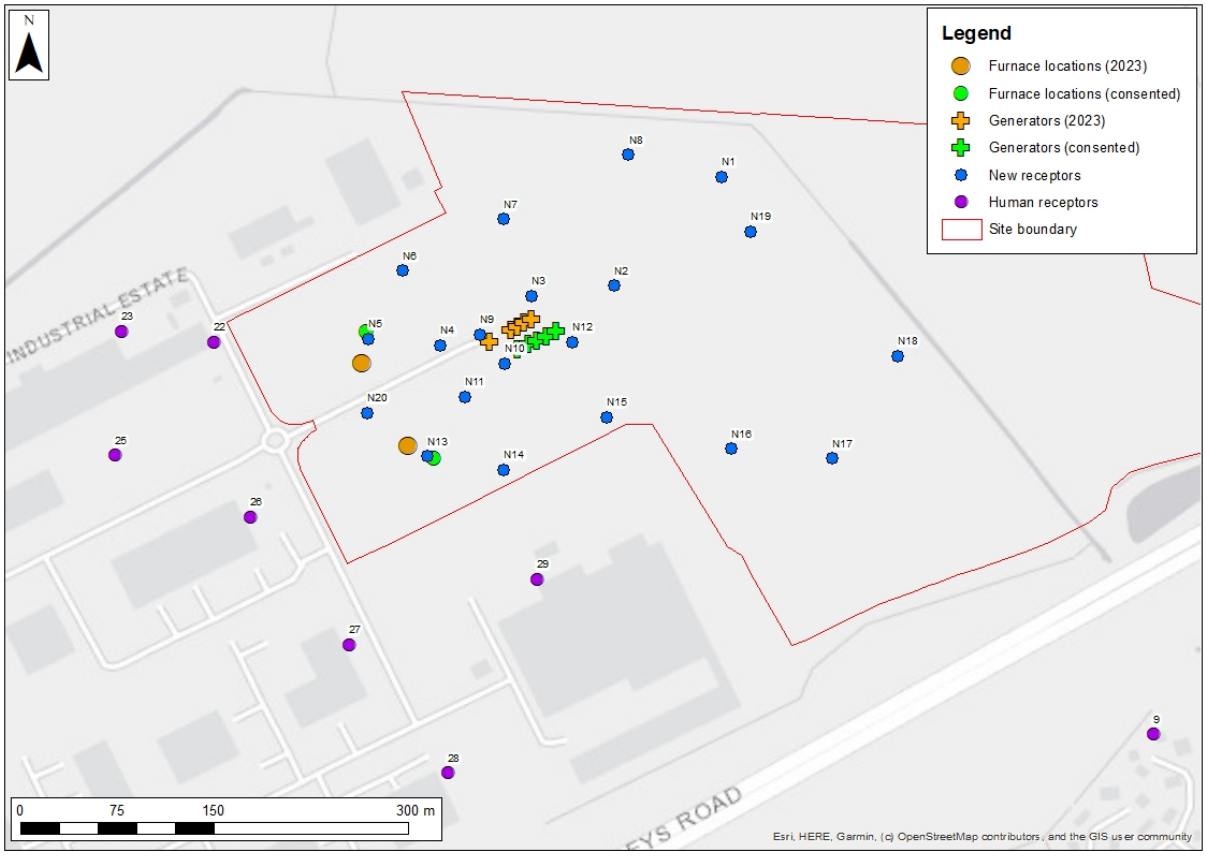
The backup generators stack heights and locations will be changed due to the redesign of the onsite buildings. The stack locations will be moved to approximately 25m northwest of the original locations, and the stack heights will be increased from 10m to 22m, above ground level, but remain at the same height above the building roof.

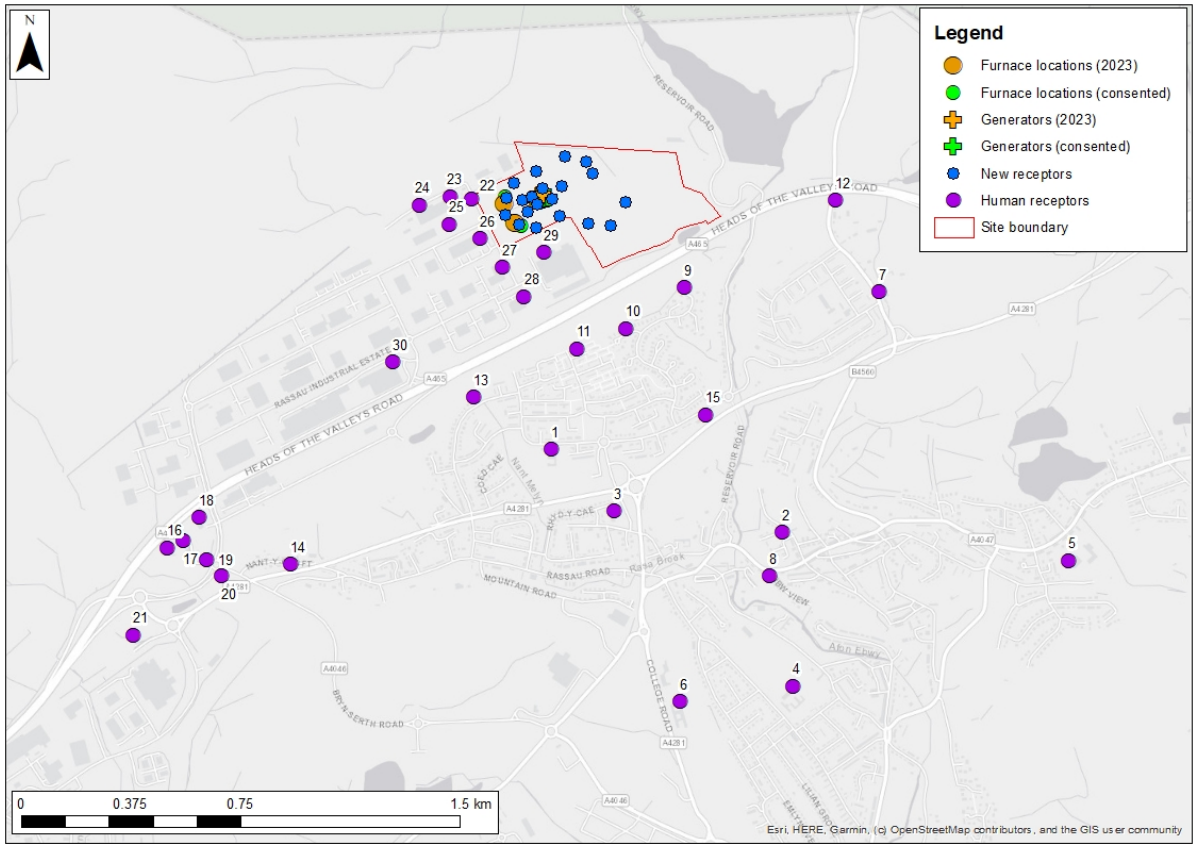
Considering the backup generators will only test for approximately 5 minutes every week with high network reliability for local electricity grids (at around 99.99%), the overall air quality contributions from these generators at the assessed receptors are not considered to be significant. Further, with the increase in stack heights there will be better pollutant dispersion, therefore, the proposed design changes are unlikely to worsen the results in the consented scheme, therefore further assessment is not required.

In support of the above description, Figure 2 shows the furnace and generator locations for the consented and 2023 revised scheme below.

[7] Background concentrations used in the air quality assessment of the consented scheme are NO_2, PM_{10} and $PM_{2.5}$ are 7.2µg/m^3, 11.7µg/m^3 and 7.7µg/m^3 respectively.

Figure 2 Furnace and generator locations for the consented and 2023 revised schemes





Further analysis has been undertaken in relation to the maximum predicted concentrations for the pollutants assessed at the selected receptors reported in the submitted air quality assessment, and a summary is provided below.

Long term pollutants at existing receptors - the maximum predicted concentration for the assessed long-term pollutants were predicted at existing receptors 12, 13 and 18, all located at ground levels. The revised scheme is unlikely to incur material differences at these receptors, as these receptors are located over 500m away from the revised furnace locations.

Long term pollutants at new receptors - The maximum predicted concentration for the assessed long-term pollutants were predicted at new receptors N10_0, N10_1, N11_4, N14_1 and N18_2, located from ground to the 4th level. As the maximum predicted concentrations were generally in the vicinity of the consented and revised furnace and backup generator locations (except for N18), the maximum predicted concentrations are likely to be representative in the submitted air quality ES. In addition, it is not required to assess new receptor locations due to the updated heights in the revised scheme, as the consented scheme buildings were taller and receptors were already considered at a larger variation of heights.

Short term pollutants at existing receptors - the maximum predicted concentration for the assessed short-term pollutants were predicted at existing receptors 26, 27, 28, 29 and 30 allocated at ground level. The revised scheme is unlikely to incur material differences at these receptors, as these receptors are located over 100m away from the revised furnace locations.

Short term pollutants at new receptors - The maximum predicted concentration for the assessed short-term pollutants were predicted at new receptors are N10_1, N11_4, N16_2, N18_2, N20_5, located from ground to the 5th level. As the maximum predicted concentrations were generally in the vicinity of the consented and revised furnace and backup generator locations (except for and N16 N18), the maximum predicted concentrations are likely to be representative in the air quality chapter of the 2022 ES. In addition, it is not required to assess new receptor locations due to the updated heights in the revised scheme, as the consented scheme buildings were taller and receptors were already considered at a larger variation of heights.

In summary of the above changes associated with the operation phase of the revised scheme, as the proposed design changes are unlikely to be material in comparison to the consented scheme, the operational air quality effects remain the same as the 2022 ES and therefore are not significant.

The effects on the relevant ecological receptors are detailed in section 6.

Odour

As the operation nature of the revised scheme remains the same as the consented scheme and the distance of the receptors are similar, no further odour assessment is required and the effect remains as not significant.

5. Climate Change

The climate change chapter of the 2022 ES outlined the impact of the proposed development using the following assessments:

- Impact of the development on climate – this considered the impact relating to greenhouse gas (GHG) emissions from the proposed development; and
- Vulnerability of the development to climate change – this considered the resilience of the proposed development in the context of projected future changes in climate variables (e.g. temperature and precipitation).

GHG emissions

As reported in the 2022 ES, emissions related to construction are predicted to make up 2% of the proposed development's total emissions while operational emissions make up the remaining 98%. These are shown in Table 3 below.

Table 3: Emission sources and corresponding emissions

GHG emission source	Emissions ($ktCO_2$)
Construction	
Buildings and earthworks materials	148.5
Transport – Materials and site workers	16.5
Construction and installation related activities	2.8
Operation	
Energy consumption and transport	7,544.1
Habitat sequestration	-2.8

Construction of the facility is predicted to fall over the end of the 3rd and the beginning of the 4th UK carbon budgets. It also falls within the Wales 2nd Carbon Budget for Wales. The operational lifespan of the proposed development has been assessed as 60 years and therefore falls over the 4th, 5th and 6th UK carbon budgets and the 2nd to 7th Wales carbon budgets. The total carbon emissions of the proposed development are shown as a proportion of these carbon budgets in Table 4.

Table 4: Total carbon emission as a proportion of the UK and Wales carbon budgets

Emission phase	Proportion of Carbon Budgets (%)									
	UK 3rd	UK 4th	UK 5th	UK 6th	Wales 2nd	Wales 3rd	Wales 4th	Wales 5th	Wales 6th	Wales 7th
Construction	0.008	0.007	N/A	N/A	0.094	N/A	N/A	N/A	N/A	N/A
Operation	N/A	0.024	0.039	0.065	0.105	0.584	0.774	1.350	2.815	9.706

Climate Resilience

All climate change risks to assets during the operation of the scheme were found to be 'not significant' due to the embedded mitigation measures built into the design.

Proposed amendments relevant to the assessment

The policy documents referenced in the 2022 ES have not been updated since the ES' publication. As such no further analysis has been done on the relevance of the ES's assessment with regard to policy.

IEMA assessment guidance changes

The guidance used in the original assessment is the first edition of IEMA's Environmental Impact Assessment Guide to: Assessing Greenhouse Gas Emissions and Evaluating their Significance, published in 2017. The assessment of significance for GHG emissions for proposed developments relies on the principle that all GHG emissions are significant:

"GHG emissions have a combined environmental effect that is approaching a scientifically defined environmental limit, as such any GHG emissions or reductions from a project might be considered to be significant."

IEMA published the 2nd edition of this guidance in 2022 which contained several updates to the assessment of significance of GHG emissions. It provides a more nuanced level for significance, placing emphasis on the 1.5°C global warming target set within the Paris Agreement and attaining net zero by 2050, aligning with UK and Welsh national targets. The assessment of significance is based on this trajectory to net zero and is summarised in Figure 3.

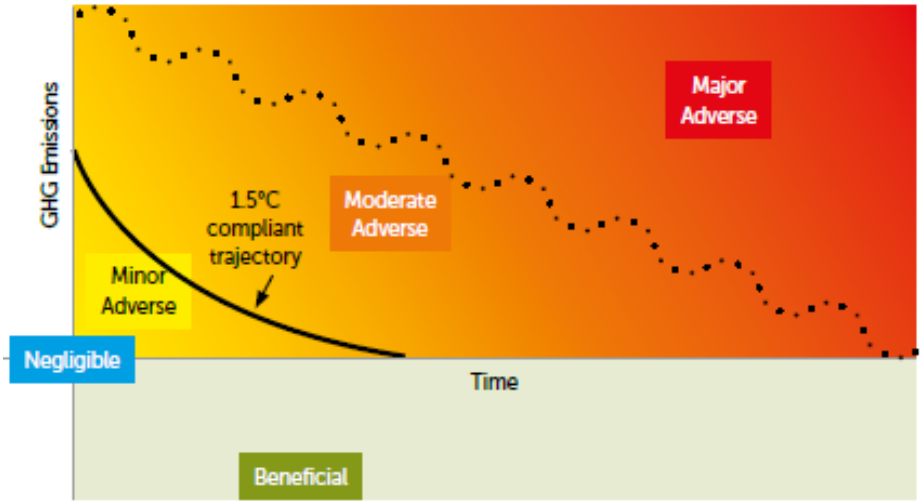


Figure 3 GHG emission significance matrix in relation to the 2050 net zero trajectory.

The 2nd edition of the IEMA guidance takes the view that if a project follows a 'business-as-usual' or 'do minimum' approach, it is not compatible with the UK's net zero trajectory, accepted aligned practice or area based transition targets and would be assessed as having a significant adverse effect. It is down to the practitioner to differentiate, often taking levels of mitigation measures into account, between the 'level' of significant adverse effects e.g. 'moderate' or 'major' adverse effects.

A project that is compatible with the national carbon budgets and aligns with the science based 1.5°C trajectory, also complying with up-to-date policy and containing good practice reduction measures within the design would be considered to have a minor adverse effect that is not significant.

It is noted that, despite the update to the guidance above, this addendum update is to acknowledge where changes in the design are likely to worsen impacts only. For consistency with the original ES chapter, this addendum concludes significance based on the 2017 version of the IEMA guidance.

GHG emissions

The design changes that could impact the GHG emissions of the proposed development are listed in Table 5.

Table 5: Design changes and their impacts on the proposed development's GHG emissions

Emissions Sources	Design Changes	Impact on emissions
Construction		
Materials and Buildings (A1-A3)	The envelop of the building has been reduced, along with the overall height, requiring less materials required during construction	Slight decrease in GHG emissions than previously assessed
Transport (A4)	As the overall amount of materials has been reduced, therefore the number of transport movements will also reduce. The number of workers and the construction programme is not anticipated to change, therefore the number of worker journeys to and from the site will not change.	Slight decrease in GHG emissions than previously assessed
Construction Activity (A5)	The site construction programme is not anticipated to change. It is therefore assumed that the construction activity will remain largely the same.	No change to GHG emissions
Operation		
Land-use (B1)	The building/construction footprint has been amended with a consequent reduction in the area of habitats affected	Slight decrease in GHG emissions
Energy consumption (B6)	The furnaces are remaining the same as the previous design. This also means there is no anticipated change to the electrical supply requirements.	No change to GHG emissions
Transport (B8)	There are no anticipated changes to lorry numbers to and from the site and no change to staff numbers during operation	No change to GHG emissions

Climate Resilience

As the proposed development is remaining on the same site, the climate change modelling data is still relevant. As the original design mitigation, such as keeping sensitive equipment in temperature-controlled areas of buildings and designing the drainage and SuDS around projected climate change, is also being retained.

Review of potential changes to identified environmental effects

There will be minor improvements to some of the GHG emission sources during construction, such as fewer building materials and fewer HGV movements to deliver materials to the site. However, the majority of the GHG emissions generated from the proposed development are associated with operational energy (98%). As the furnace design and provision is not changing, the biggest emission source remains the same. The changes are likely to reduce GHG emissions during construction but remain the same during operation. As such, and in line with the 2017 IEMA guidance, the changes proposed to the approved planning application are unlikely to result in additional adverse GHG emission outcomes than those identified in the original ES.

The changes to the design will not materially change the outcome of the climate resilience assessment in the ES.

6. Ecology

Summary of previous assessment outcomes

Potential effects identified on the ecological receptors included degradation and disturbance to protected sites (including the Usk Bat Site SAC and Mynydd Llangatwyg SSSI) and notable habitats (species rich grassland), in addition to habitats of value for protected/notable species (fungi, foraging/commuting bats, breeding birds, reptiles, invertebrates, notable mammals and badger). There was also the potential for disturbance to protected/notable species (foraging/commuting bats, bat roosts, otter and badger), and harm/injury to protected species (reptiles, breeding birds, otter and badger), as well as fragmentation of habitats (foraging/commuting bats, reptiles, badger and otter), and the spread of invasive species.

General mitigation and best practice methods were recommended during site preparation and construction to safeguard protected sites, notable habitats and protected/notable species. Additional more specific mitigation was required for reptiles, bats, badger, otters and fungi. With the agreed construction mitigation measures incorporated into the development, and post construction habitat management and monitoring plan, effects during the construction and operational phase were reduced to an insignificant level or removed completely.

With the inclusion of enhancement measures and long-term management and maintenance, it was considered likely that there would be an overall positive residual effect from the project for some habitats and species such as species rich grassland, foraging bats, breeding birds, reptiles and invertebrates.

Proposed amendments relevant to the assessment

The building/construction footprint has been amended with a consequent reduction in the area of habitats affected. Updated habitat calculations have been undertaken (Table 7.1) which demonstrate the lessening of previously predicted impacts on the following habitats (savings in brackets): Plantation coniferous woodland (1.32 ha); Mixed plantation woodland (0.32 ha); Marshy grassland (species rich) (1.48 ha); Marshygrassland (species poor) (2 ha); and Ephemeral/short perennial vegetation (0.04 ha). A net loss of 0.92 ha of Semi-improved acid grassland is predicted, which will be compensated for through the offsite habitat management proposals secured through the S106 agreement as detailed in Section 7.3.

Table 7.1 Habitat Losses and Gains (values is italics indicate a change from the previous assessment)

Phase 1 Habitat Type (and value)	Area / length within planning boundary	Area / length to be lost to proposed development	Habitat as defined in the Masterplan	Habitats to be retained	Area / length created	Net habitat gain (and percentage change)	Retained habitats to be enhanced through management
Conifer plantation (local)	3.42 ha	2.1 ha - less if some trees retained during construction *(previous loss 3.42ha*)	Scattered trees along the stream and site's southern periphery	1.32 ha *(previous 0ha)*	0 ha	-2.1 ha (61% decrease) (*previous - 3.42 ha (100% decrease)*	1.32 ha *(previous 0ha)*
Mixed plantation woodland (local)	1.46 ha	1.14 ha – less if some trees retained during construction *(previous loss 1.46ha)*	New broadleaved woodland and wet woodland planting. These will supplement retained scattered trees along the stream and site's southern periphery.	0.32 ha (*previous 0ha)*	*0.12 ha Previous 1.66 ha (woodland) and 0.12 ha (wet woodland) = 1.78 ha*	-1.02 ha (70% decrease) *previous +0.32 ha (22 % increase)*	0.32 ha *(previous 0ha)*
Dense/ continuous scrub (local)	1.3 ha	1.3 ha	NA – no replacement proposed	0 ha	0 ha	-1.3 ha (100% decrease)	0 ha
Semi-improved acid grassland (county)	2.99 ha	2.99 ha	Species rich grassland	0 ha	2.3 ha (*previous 3.22 ha)*	-0.71 ha (24% decrease) *(previous +0.23 ha (7.70% increase)*	0 ha
Marshy grassland - species rich (county)	2.73 ha	2.22 ha *(previous loss 2.73 ha)*	Lost from site	0.51ha *(previous 0ha)*	0.97 ha (*previous 0 ha)*	-1.25 ha (45.8 % decrease) (*previous – 2.73 ha (100% decrease)*	0.51 ha *(previous 0ha)*
Marshy grassland - species poor (local)	5.45 ha	0 ha (*previous loss 2 ha*)	Species rich marshy grassland	5.45 ha (*previous 3.45 ha)*	0 ha	0ha (*previous –2 ha (36.69% decrease)*	5.45 ha (to species rich marshy grassland) *(previous 3.45 ha*)
Ephemeral/ short perennial vegetation (county)	0.16 ha	0.16 ha	Biodiverse green roof	0 ha	0.04 ha (*previous 0ha*)	-0.12 ha (75% decrease) (*previous – 0.16 ha (100% decrease)*	0 ha
Line of mixed scattered trees (local)	1.37 ha	0 ha	NA	1.37 ha	0 ha	0 ha (none lost, retained in site)	1.37 ha

Scattered scrub (local)	1.17 ha	1.17 ha	NA – no replacement proposed	0 ha	0 ha	-1.17 ha (100% decrease)	0 ha
Line of scattered scrub (local) and earth bank	236 m	236 m	NA – no replacement proposed	0 m	0 ha	-236 m (100% decrease)	0 ha
Main Stream (G2) (local)	0.15 ha	0 ha	Stream / watercourse	0.15 ha	0 ha	0 ha (none lost, retained in site)	0 ha
Standing water – ditches and ephemeral waterbodies (local)	812 m (c. 0.16 ha)	812 m (c. 0.16 ha)	SuDS ponds	0 ha	0.18 ha (*previous 0.30 ha)*	+0.02 ha (12.5% increase) (*previous +0.14 ha (87.5% increase)*	0 ha
Acid/neutral flush (local)	44 m	44 m	Acid/neutral flush	0 ha	0 m	-44 m (100% decrease)	0 ha
Building and hardstanding	0.43 ha	0.43 ha	Building and hardstanding	0 ha	10.4 ha (*previous 11.33 ha)*	+9.97 ha (2318% increase) (*previous – 10.9 ha (2584% decrease)*	0 ha
Amenity planting – none currently on site	0 ha	0 ha	Amenity planting and rain garden	0 ha	0.09 ha	+0.09 (100% increase)	0 ha
Sub total	20.79 / 280 m	11.67 ha lost (5.37 ha County habitats and 6.3 ha / 280 m Local habitats) (p*revious loss 15.82 ha (5.88 ha County habitats and 9.94 ha / 280 m Local habitats*)		9.12 ha retained (previous 4.97 ha retained)	10.4 ha buildings and 3.6 ha species rich landscaped habitats = 14 ha of new habitats within the site (*previous 11.33 ha and 5.39 ha = 16.72*)	+10.08 ha (including +9.97 ha buildings /hardstanding) / -7.67 ha / -280 m (p*revious +11.68 ha (+10.89 ha buildings/hardstanding) / -3.46 ha / -280 m*)	8.97 ha retained and enhanced *(previous 4.82 ha*)

In addition, an updated landscaping scheme and Drainage Strategy have been prepared to further minimise effects on these habitats and the species they support.

Updated baseline

Since submission of the ES, the ecological baseline has been updated with surveys for great crested newts undertaken in 2022 (see Appendix A), and surveys for badger, otter, water vole and invasive

non-native species undertaken in July 2023 (see Appendix B). These surveys have not resulted in any significant changes to the ecological baseline reported within the 2022 ES.

The great crested newt report is also provided to discharge the requirements of planning condition 33: '*Notwithstanding other regulatory regimes, the approved strategy for the translocation of Great Crested Newts (GCN) shall be implemented in full, incorporating best practise by a qualified ecologist with the necessary experience and licence for such work. The donor site shall be proactively monitored and managed for the benefit of GCN for a minimum period of 25 years and thereafter retained for this purpose purposes.*
In the event that GCN are not present on site, the local planning authority require documentary evidence submitted by a suitably qualified ecologist prior to works commencing on site.
Reason: To safeguard a protected species and ensure their ongoing habitat and wellbeing.'

No evidence of great crested newts was found on the site, therefore the report provided in Appendix A is considered sufficient to discharge this condition. This species is considered absent from the site.

Assumptions have been made regarding the updated baseline condition of the habitats on site, with fly grazing on the site maintaining the grassland habitats, and minor woodland clearance undertaken during the geotechnical investigations. There is no change to the composition or extent of the habitat baseline as reported within the 2022 ES.

Enabling works have commenced at the site, comprising a reptile translocation programmed for summer 2023 and mitigation for the woodland fungi in September 2023. This has included clearance of scrub and grassland vegetation for the proposed construction area within the site boundary; and the creation of reptile hibernacula in the retained area of the site within the eastern section of the site boundary. The reptile translocation at the site has commenced and is expected to be completed by October 2023.

Review of potential changes to identified environmental effects

The revised habitat calculations demonstrate a reduced impact in terms of direct loss of some habitats, predominantly the woodland in the south of the site which is being retained within the new layout, but also the species poor marshy grassland in the east of the site which will now be retained in its entirety and utilised as a reptile receptor site. This has had a consequent reduction in the effects on some protected and notable species as described below.

- Statutory designated sites: No change to the existing assessment from direct or indirect impacts including dust and vehicle emissions during construction. Qualifying bat species of the Usk Bat Site SAC and Mynydd Llangatwyg SSSI are likely to experience reduced effects from loss of habitat and foraging resource due to the reduction in habitat loss at the site. With the implementation of construction mitigation and embedded landscape planting there would be no significant effects on qualifying bat species associated with internationally and nationally valued designated sites. The updated air quality assessment concludes that the operational air quality effects remain the same as the 2022 ES and therefore are not significant. The assessment and conclusions of the previously submitted HRA therefore remain valid.

- Non-statutory designated sites: No change to the existing assessment from direct or indirect impacts including dust and vehicle emissions during construction; and potential pollution of local watercourses including the Ebbw River SINC will be avoided through implementation of the CEMP.

- Habitats: The extent of habitat loss within the proposed development footprint is detailed in Table 7.1 above. Total habitat loss has been reduced overall and is estimated to be 11.67 ha of habitat areas, and 280 m of linear habitats, compared to a previous loss of 15.82 ha and 280 m of linear habitats. This includes 5.37 ha of County value habitats and 6.3 ha / 280 m of Local value habitats, reduced from the previous application which calculated a loss of 5.88 ha County value

habitats and 9.94 ha Local value habitats. The revised design has retained key habitats including coniferous woodland and marshy grassland, which will be enhanced as part of the landscape and ecological management at the site. In addition, a S106 agreement has been secured which includes commitments to offsite management within four LNRs including coppicing and conifer removal from woodlands, scrub management and bracken control (5% area per annum on rotation; this may equate to around 9ha per annum across the three woodland sites); grassland management single cut and scrub removal and/or grazing regime in relevant areas (20ha grassland management per annum).

- Protected and Notable Species
  - Fungi: The area and extent of impacts on fungi is expected to remain as detailed within the existing assessment;
  - Invertebrates: The area and extent of impacts on invertebrates is expected to remain as detailed within the existing assessment;
  - Amphibians: The area and extent of impacts on amphibians is expected to remain as detailed within the existing assessment. In addition, the great crested newt report has been provided to discharge Condition 33;
  - Reptiles: The area and extent of impacts on reptiles will be reduced due to the area east of watercourse now being retained. Mitigation to translocate animals from the western part of the site remains as detailed in the existing assessment and is ongoing;
  - Breeding birds: The area and extent of impacts on breeding birds is expected to remain as detailed within the existing assessment;
  - Badger: The area and extent of impacts on badger is expected to remain as detailed within the existing assessment. No current evidence of use of the previously identified setts, or any new active setts are located within 30m the construction area;
  - Otter: The area and extent of impacts on otter is expected to remain as detailed within the existing assessment;
  - Roosting and commuting/foraging bats: All bats are likely to experience reduced effects from loss of habitat and foraging resource due to the reduction in habitat loss at the site, in particular the larger woodland corridor which is now being retained along the southern boundary of the site. This will provide foraging habitat and connectivity between the relocated roost site, adjacent habitats and the Usk Bat Site SAC. Mitigation presented in the original assessment will still be undertaken including installation of new bat boxes and woodland management;
  - Notable mammals: No change to the existing assessment; and
  - Invasive species (due to relevant legislation only and not for nature conservation reasons): The extent and species recorded previously has not changed, and there is no change to the existing assessment.

With the agreed construction mitigation measures incorporated into the development, and post construction habitat management and monitoring plan, effects during the construction and operational phase are reduced to an insignificant level or removed completely.

With the inclusion of enhancement measures and long-term management and maintenance, it is considered likely that there would be an overall positive residual effect from the project for some habitats and species such as marshy grassland, foraging bats, breeding birds, reptiles and invertebrates.

7. Health

Health determinants scoped into the 2022 ES assessment included air quality, noise environment, community safety, and access to work and training. Residual effects identified during construction and operation are summarised below:

Air quality

- **Construction**: minor adverse health outcome resulting from exposure to dust generated from demolition, earthworks, construction and trackout.
- **Operation:** minor adverse health outcome resulting from exposure to pollutants from industrial process (which will be managed through adherence to environmental permit).

Noise

- **Construction:** minor adverse health outcome due to exposure to construction noise.
- **Operation:** Exposure to operational noise and traffic resulting in minor adverse health outcomes.

Crime and community safety

- **Construction:** minor adverse health outcome from increased traffic and influx of construction workers.
- **Operation:** minor adverse health outcomes from increased HGV traffic.

Access to work and training

- **Construction:** minor beneficial health outcome from increased opportunities for training and work.
- **Operation:** moderate beneficial health outcomes from increased opportunities for training and work.

Proposed amendments relevant to the assessment

Changes relevant to the health assessment include the relocation of HGV movement to the north of the site and the minor relocation of operational equipment which would result in no increased adverse effects in relation to noise and air quality effects.

Review of potential changes to identified environmental effects

Changes that are being proposed to the approved planning application are unlikely to result in more adverse health outcomes than those identified in the ES for any of the health determinants considered.

8. Materials and Waste

The construction and operation of the proposed development will result in the consumption of material and the generation of waste. An assessment of the effects of the consented development on material and waste was undertaken in line with the IEMA Guide to Materials and Waste in Environmental Impact Assessment.

Materials

Construction

The assessment considered the potential effects of the proposed development on material sources. This included the effects to primary material sources onsite, where the development might sterilise sources of unextracted material located under the development site. The assessment also considered any impact on the availability of primary materials, such as aggregate, and manufactured materials, including concrete and steel used in construction and the associated effects on their supply chains. Mitigation measures, designed to reduce demand on material resources were outlined where adverse effects were identified.

Primary onsite material sources - The assessment of potential sterilisation of minerals onsite found there to be no effect, due to the lack of minerals under the development sites. The significance of effects was assessed as neutral and therefore not significant.

Primary offsite material sources - The previous design earthworks to build the construction platform required 15,000m^3 of material arising from the earthwork's activity on site, assuming the site won material would be suitable for the construction on the site. As material is not required to be imported to site from offsite sources, the significance of effects was assessed as neutral and therefore not significant.

Manufactured imported materials - Construction would require manufactured structural materials to be imported for construction from the regional and national supply chain, including concrete, steel, asphalt and permeable paving blocks. The total quantity of materials required was currently not available, due to the early stage of design. However, the scale of the proposed development was not considered to be significant, in relation to the regional supply chain. The significance of effects was assessed as being neutral or slight and therefore not significant.

Operation

The production of glass requires a mix of various minerals and compounds, the availability and supply of which were considered in the consented assessment. The operation of the glass factory was assessed as having a neutral or slight adverse effect on the supply of these material and therefore not significant.

Proposed amendments relevant to the assessment

Considering changes in the design, net import of primary materials required during construction of the development platform will remain negligible. The reduction in the building sizes will result in a reduction in the quantity of materials that will be required in the construction phases, however this has not been quantified at this stage of the design.

Review of potential changes to identified environmental effects

Materials – Construction

Primary onsite material sources - There are minerals under the development site, which has not changed, so there are no changes in the effects of the development.

Primary offsite materials sources – The use of onsite sources materials from the cut and fill means that there will not be significant quantities of primary offsite materials imported into the site. The significance of the effect remains neutral, as for the consented design, and therefore not significant.

Manufactured imported materials – The reduction in the scale of the buildings means that less manufactured materials will be used in the construction of the proposed development, in comparison to the consented design. Therefore, the significance of the effect remains neutral, and not significant.

Materials – Operation

The change in the design of the building will not affect the quantities of materials required to operate the manufacturing activities on the site. Therefore, the significance of the effect remains neutral or slight, and not significant.

Waste

Construction

The earthworks associated with the consented development was calculated to result in 15,000m^3 of excavated material requiring onward management off site. At that stage of the design no further reuse of the excavated materials was identified, and the material was classified as a waste and assessed in relation to the regional landfill capacity. When assessed against the available inert and non-hazardous landfill capacity of 4,533,861m^3 in South East Wales the assessment found the significance of the disposal of this materials in relation to available landfill capacity to be 'neutral or slight' and therefore not significant.

Waste – Operation

Commercial waste generated during operation will arise from manufacturing and from staff facilities. The manufacturing waste will consist of packaging and maintenance waste and reject glass, that will be reprocessed within the facility. Waste associated with the operation will be segregated on site and managed in accordance with the waste hierarchy, by a commercial waste contractor under a waste services agreement. Potential impacts relating to the generation and disposal of waste during operation were therefore not considered to be significant and were scoped out of the EIA assessment.

Proposed amendments relevant to the assessment

The changes in the design of the development that are key to the waste assessment chapter include the reduction in the size and scale of the building structures and the change in the cut and fill required to construct the site development platform.

The change in the building footprint and landscaping design has resulted in a change in the calculated cut and fill balance of excavated material across the site, to prepare the development platform prior to construction. The change has resulted in a greater quantity of excess materials estimated.

Previously the excess cut materials, or waste, that would need to be exported from the site for disposal amounted to 15,000m^3.

The revised cut and fill estimation[8] consists of:

- Cut: 204,146m^3

[8] Rounded to the nearest 100m^3

- Fill: 94,800m^3

The net excavated material totals 109,346m^3, accounting for portions of topsoil, made Ground/ reworked natural and natural ground to be managed off site. Based on ground investigation reports waste classification has been estimated to be 95% of the arisings inert or non-hazardous (103,878m3) and 5% hazardous (5,467m3).

Construction

The reduction in the scale of the buildings and therefore the construction activities would result in a reduction in the quantity of construction waste generated, in comparison to the consented design. Therefore, the significance of the effect would remain neutral, and not significant.

However, the total quantity of excavated materials would increase to 204,146m^3, of which 109,346 m3 will be exported off site (95% of the arisings are inert or non-hazardous (103,878m^3) and 5% hazardous (5,467m^3) and 94,800m^3 retained as fill.

When compared to the available inert and non-hazardous and landfill capacity of 4,533,861m^3 in South East Wales a worst case scenario that all excess excavated material (not to be reused on site) is disposed of at landfill, 103,878m^3 (inert/non-hazardous) equates to 2.3% of the available capacity. The increase in the quantity of waste means the impact on landfill capacity would increase from Negligible to Minor. Considering the non-hazardous landfill capacity is of medium sensitivity the significance of the effect would change from ***neutral or slight*** to ***slight***, but the effect remains as not significant.

National landfill capacity for hazardous waste is 19,289,444m^3 based on classification estimated from ground investigation data 5,467m^3 is anticipated to be taken off site which equates to <0% of national hazardous waste landfill capacity. This would result in the magnitude of effects would be negligible and significance of effects is assessed as neutral and therefore not significant.

Beneficial opportunities will be sought for the off-site reuse of all waste materials generated. However, it is difficult to make firm commitments for reuse of material in third party schemes due to the uncertainties of those schemes and their alignment with this proposed development.

Operation

The change in the design of the building will not affect the manufacturing activities on the site or the resulting operational waste generation. Therefore, the significance of the effect remains as not significant.

9. Noise and vibration

The 2022 ES presented a noise and vibration assessment for the construction and operation of the proposed development, in line with local and national policy and best practice guidance.

As part of the assessment, an environmental noise survey was undertaken to establish the prevailing conditions at the proposed development site and nearby sensitive receptors.

The assessment of construction noise, undertaken in line with the guidelines presented in BS5228[9], concluded that with the implementation of a suitable Code of Construction Practice (CoCP), the impacts of construction would not cause significant effects at noise and vibration sensitive receptors. The assessment also concluded that the temporary increase in noise associated with construction traffic would be unlikely to result in significant effects.

An assessment of the road traffic noise during operation of the proposed development was undertaken in line with the methods and guidelines presented in CRTN[10] and DMRB LA 111[11]. It concluded that impacts would not result in significant effects.

To assess impacts arising from the operation of the proposed industrial noise sources, a three-dimensional noise model was constructed. Based on the output of this model, mitigation measures were identified to control noise emissions.

An assessment in line with BS4142[12] concluded that there are a few instances where the rating level exceeds the measured background level for the night-time, namely at residential receptors on Llangynidr Road located about 500m south from of the site. These exceedances were driven by the cumulative contribution of various plant items, in particular the main stack chimneys and the acoustic louvres of the production building. However, the exceedances were well below +5dB over background which, as noted in BS4142, would be a positive indication of an adverse impact. Additionally, the predicted external noise levels arising from operation of the facility were assessed as relatively low and the predicted noise levels within the nearest residences would be well below the WHO guideline criteria. Based on this rationale, the effects associated with the operation of the facility were assessed as not significant.

Proposed amendments relevant to the assessment

The proposed changes relevant to the noise and vibration chapter are the relocation of noise sources around the site, including the facades of the production building; chimney stacks and associated servicing plant; rooftop equipment; staff and goods vehicle routes; and car parks.

The proposed changes also alter the layout of the batch building and introduce new noise sources associated with movement of sand. Previously the sand would be tipped from the truck into the hoppers. The redesigned Batch Building has introduced the Aumund-Samson material feeder instead of the hoppers. These are a ground mounted conveyor system that minimises the basement depth, powered by an electric motor.

The enclosure of the filter building which housed the furnace and chimney fans has also been removed, which may alter noise emissions from these sources.

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[9] BS 5228-1:2009+A1:2014 Code of practice for noise and vibration control on construction and open sites Noise

[10] Calculation of Road Traffic Noise (CRTN). Department for Transport (1988).

[11] Design Manual for Roads and Bridges LA 111 Noise and vibration. Revision 2. May 2020.

[12] BS4142:2014+A1:2019 Methods for rating and assessing industrial and commercial sound

Review of potential changes to identified environmental effects

The environmental sound baseline at the proposed site and nearby existing receptors is not anticipated to have changed considerably since ES submission.

There are no expected changes to construction programme or methodology that would worsen the impacts identified at EIA. Therefore, there are no changes to the EIA conclusions for significant effects of construction noise.

Even though there are changes to the operational site routes for heavy vehicles and staff cars, the overall expected traffic flows are not changed. Therefore, there are no changes to the EIA conclusions for operational road traffic noise impacts.

Regarding operational noise sources, all the mitigation measures outlined in EIA (see embedded mitigation section for noise presented in section 10.7 of the ES) are still applicable.

The dominant sources identified at EIA (chimney stacks and louvres of production building) have not been moved significantly in terms of impacts to noise sensitive receptors. The south stack is moving 25m further away from nearest receptor, whilst the north stack is moving 25m nearer. The closest receptor is located approximately 500m south of the source, and therefore the predicted noise emissions presented in the EIA would not change appreciably. Moreover, the internal noise levels at the closest receptors are predicted to be well below the WHO guidelines and hence impacts are unlikely to result in significant effects.

The façades of the production building are all moving north and further away from the closest sensitive receptors. The loading bays and delivery routes are also being moved north and further away from receptors. This would result in a slight betterment of the noise levels from these sources predicted at EIA.

The changes in the batch building, which include the introduction of a new noise source associated with the movement of sand, is unlikely to result in worse impacts than those presented in the EIA. This is because the noise levels associated with the new equipment (a conveyor belt for sand) are similar to the sources modelled at EIA (see appendix F4 Operational assumptions model of the ES) in terms of their sound power level. Moreover, this new equipment will be operational only during the daytime when noise limits are not as onerous as the night-time, and therefore it is unlikely that impacts would result in new significant effects.

In conclusion, the proposed design changes are unlikely to result in worse impacts than those reported in the EIA and therefore the construction and operational noise impacts remain assessed as not significant.

10. Socio-Economics

The 2022 ES reported the following residual effects from a socio-economic standpoint:

- Moderate beneficial effect as a result of employment and supply chain opportunities during construction;
- Minor beneficial effect as a result of training and apprenticeship opportunities during construction;
- Moderate beneficial effect as a result of employment and supply chain opportunities during operation;
- Minor beneficial effect as a result of training and apprenticeship opportunities during operation.

The assessment of construction employment and supply chain effects was based on the total capital cost of construction, which at the time of writing was estimated at approximately £200m. It was estimated that this would result in gross FTE direct employment of 200, resulting in net additional direct employment of 135 FTE jobs that would be retained within the study area (Cardiff Capital and South Powys). The assessment of training and apprenticeship opportunities during construction was based on the project developer's commitment to engaging with local partners including colleges, the local authority and Job Centre Plus / Careers Wales to develop opportunities around apprenticeship and work placements during construction.

The assessment of operational employment and supply chain effects was based on estimates of gross employment provided by CiNER Glass Ltd. At the time of writing, it was estimated that the proposed development, once in operation, would create 671 FTE jobs, including 598 on-site direct jobs. It was estimated that this would result in net additional direct employment of 525 FTE jobs that would be retained within the study area. The assessment of training and apprenticeship opportunities during operation was based on the project developer's commitment to engaging with local partners including colleges, the local authority and Job Centre Plus / Careers Wales to develop opportunities around apprenticeship and work placements once in operation.

The assessment did not report any adverse effects from the construction and operation of the proposed development, including any in-combination effects on amenity for local residents and businesses as a result of noise, air quality, landscape and visual or traffic and transport effects.

Proposed amendments relevant to the assessment

It is understood that the estimated cost of construction has increased, from approximately £200m to approximately £250m. Estimated employment during operation has not changed.

The assessment on in-combination effects on amenity for local residents and businesses draws on significant effects identified in the noise, air quality, landscape and visual and traffic and transport effects. Changes that are relevant to each of these assessments are outlined in the relevant sections of this report. It is not anticipated that any of these changes will result in worse impacts than those reported in the ES.

Review of potential changes to identified environmental effects

It is possible that the increase in the estimated cost of construction could result in an increase in gross and net FTE employment during the construction phase, however the increase in estimated costs could reflect the impact of inflation in the supply chain rather than any need for additional labour. It is considered unlikely that the workforce required would decrease and so the effect on the local labour market of employment and supply chain impacts would not be worse than under the original design.

As there is no change in estimated employment during operation, there is no change in the effect on employment and the local supply chain.

As the air quality, noise, landscape and visual and traffic and transport assessments have concluded that the revised design will not result in any worse impacts, it is not considered that there will be any new in-combination effects on amenity for socio-economic receptors.

11. Transport

The transport chapter of the 2022 ES considered the construction, operational and residual effects of the proposed development.

A temporary increase in HGVs during the construction period was regarded as having negligible effect on severance, pedestrian and cycle delay, fear and intimidation, driver delay and accident and safety. A Construction Traffic Management Plan (CTMP) was also recommended via a planning condition to ensure all reasonable steps were taken to minimise and mitigate the anticipated adverse effects of the construction process. The designated access routes would utilise roads with negligible receptor sensitivity. The monitoring of construction traffic was proposed as part of the CTMP to ensure compliance.

The assessment indicated it would be unlikely that the operation of the proposed development would result in significant adverse effects. It concluded that no further detailed assessment would be necessary, and specific environmental effects would not require mitigation measures. Instead, the adoption of soft measures, such as a Travel Plan, was recommended for the site to mitigate and minimise vehicular traffic to align with the Well-being of Future Generations (Wales) Act.

The evaluation of residual effects resulting from the construction and operation of the development involved an assessment of the anticipated environmental impacts after implementation of mitigation measures. A change in vehicular composition proportions on the local road network was foreseen during the construction period, with any residual effects related to construction traffic deemed minor and temporary for the duration of the works, subject to the successful implementation of the Construction Traffic Management Plan (CTMP). The construction phase was anticipated to have a short-term effect (approximately three years) on the surrounding highway network, with some localised impacts having minimal significance.

Proposed amendments relevant to the assessment

Changes in the design of the proposed development that impact on transport comprise the following:

- proposed vehicular access arrangements and manoeuvring within the site;
- change in staff car parking location; and
- reduction in size of building footprint, relocation of the glass bottle loading yard and a change in the design of the materials yard; that could impact on the number of vehicles that could be stacked on-site.

Vehicular Access Arrangements

Previously, the development featured a single vehicular access point at the northwest corner of the site for materials deliveries, outgoing glass bottle lorries, staff and visitors. Two vehicular access points are now proposed; the first of which in the northwest corner of the site for materials deliveries and outgoing lorries. The second entrance is at the southwest corner of the site and is the designated access point for staff and visitors' vehicles. This arrangement provides a betterment in terms of safety by limiting conflict between HGVs and staff/visitor vehicles.

In terms of vehicle manoeuvring within the site, the materials yard, positioned on the west side of the site, now features a single access point instead of two. Previously, access was both to the north and south of the yard. As part of the revised design, vehicles will enter the materials yard from the north, moving southwards and manoeuvring clockwise.

The glass bottle loading yard, now situated at the northeast corner of the site (previously at the southeast corner), has been relocated. Vehicle access and egress, previously westbound along the southern area, now sees outgoing lorries manoeuvring eastbound to access the glass bottle loading yard along the northern section of the site.

Previously situated on the eastern side, the staff/visitor car park previously required vehicles to traverse the northern and eastern boundary for entry and exit. However, the car park has now been relocated to the southeastern corner of the site, with vehicles manoeuvring along the southern boundary for access and egress.

Car Park Location

As set out above, the staff/visitor car park location has been modified. While maintaining the same parking capacity, it has been relocated to the southern eastern edge and is now entirely external from the building. To blend with the surrounding landscape, the car park will also be landscaped to incorporate greenery.

Recognising that the proposed design modifications will not result in a change to staff numbers, which will remain at a total of 671, the car park accumulation and trip rates generated previously remain relevant. Hence, no changes are required to the capacity of the car park or the number of cycle parking spaces.

Building Footprint/Vehicle Stacking

One of the key issues raised by BGCGC within the previous assessment centred around the stacking of HGVs on the site to ensure there was no risk that vehicles would wait outside the site within the Industrial Estate. A Site Traffic Management Plan (STMP) was subsequently submitted to address the concerns and showed that there was sufficient capacity within the site to accommodate the likely peak HGV movements.

The previous assessment showed the materials yard could accommodate up to eight vehicle loading bays, with sufficient capacity to park five additional vehicles if necessary, while the glass transportation area had the capacity for nine loading bays and a further six waiting spaces.

The assessment has been replicated through use of the revised design for the site, as shown in Figure 4 below. This shows there is sufficient space within the materials yard for 11 vehicles. Meanwhile, the glass bottle yard comprises nine loading bays and an additional vehicle space for stacking, if required. Additionally, a new designated area to the north of the site is proposed with available space for up to 12 vehicles to be parked at this location and would be called when appropriate to unload/load, hence minimising conflict with other vehicles.

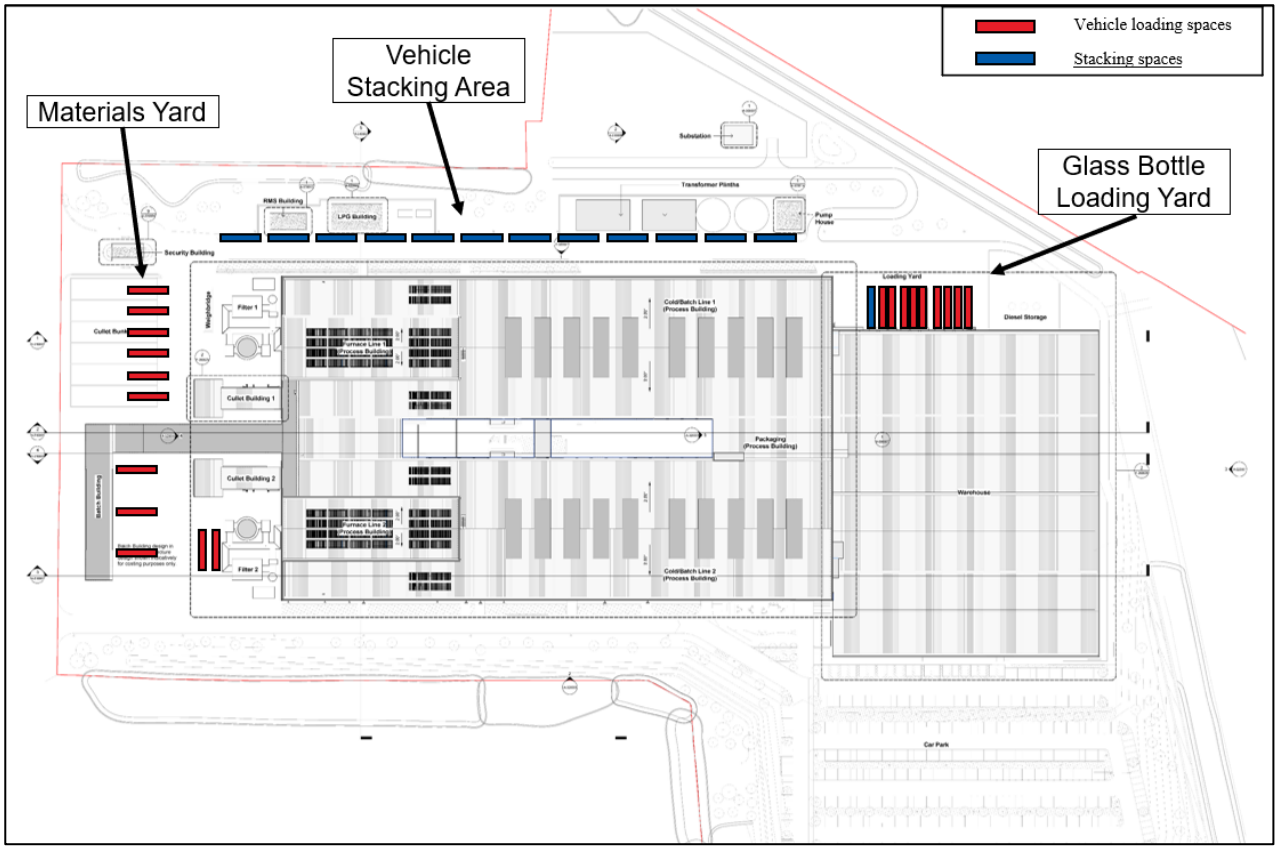

Figure 4: On-Site Stacking Spaces

Table 6 below provides a summary of the number of spaces available on-site, both for loading and stacking. This shows that the design changes have increased the number of loading spaces from 17 to 20, and number of stacking spaces from 11 to 13.

Table 6: Comparison of on-site vehicle loading and stacking space

Location	Number of vehicle loading spaces	Number of stacking spaces
Materials yard	11	0
Glass bottle loading yard	9	1
Vehicle stacking area	N/A	12
Total: Current Proposed Scheme	**20**	**13**
Total: Consented Scheme	**17**	**11**

Review of potential changes to identified environmental effects

The revised scheme design is proposed to introduce two vehicular access points, with one dedicated for goods vehicles, and the second for staff and visitors leading to the car park which has been moved to the southeast of the site. This segregates heavy vehicles from staff vehicles and provides a betterment through limiting vehicular conflict.

There is no change in the number of HGV movements to/from the site and total staff numbers are also unchanged hence there is no change in the total number of car parking and cycle parking spaces required.

The assessment of vehicle stacking capacity demonstrates that the new proposed layout can accommodate over and above what was outlined for the previous design, ensuring there is sufficient capacity within the site for goods vehicles load, unload and wait before departing.

It is therefore considered that the changes in design are safe and appropriate from a transport perspective and do not hold any adverse impacts on the proposed development or surrounding area.

12. Visual Impacts

The 2022 ES provide an assessment considering the visual impact of proposed development in relation to the construction and operational phases to surrounding environment and community.

Construction activities would introduce visually prominent features in impacted views, particularly those from local community and recreational receptors within or in the setting of the Bannau Brycheiniog National Park (BBNP).

The presence of cranes, construction vehicles, personnel, large-scale earthworks and partially constructed buildings would cause small to medium scale visual change. Views to the construction activities would be experienced over a medium geographical extent. Tall elements of the construction activities such as the cranes and partially constructed chimneys would interrupt views out from the designated landscape to the neighbouring hills and around Ebbw Vale. Visual change would last for a short-term duration, would be partially reversible with the removal of the activity once the development is complete.

There are no construction activities planned during the hours of darkness. Therefore, there would be no noticeable visual effects on visual receptors or the Dark Skies International Reserve during the construction phase.

Overall, at worst, the construction activity would result in a medium magnitude visual change due to the introduction of new prominent features of the works in nearby views. Moderate significant visual effects predicted from the previous assessment on the following receptors:

- The Community of Beaufort;
- Visitors to BBNP; and
- Users of the B4560 Llangynidr Road.

During operation, the development would remain prominent in views causing some notable medium to substantial Changes to views.

The chimney stacks at 75m and the large-scale building would interrupt intervisibility with the BBNP in long views and would break the skyline in several views. However, these would frequently be seen in the context of the existing large- scale industrial buildings located within the Rassau Industrial Estate.

At night, it would be possible to gain views of the proposed development as the facility would operate 24 hours a day requiring internal and external lighting. Windows and roof lights have been kept to a minimum to reduce the level of visible internal lighting emitted from the building. External lighting would consist of LED directional lights with shields to reduce the amount of light spill.

Substantial significant visual effects were predicted from the previous assessment on the following receptors:

- The Community of Beaufort; and
- Visitors to BBNP.

Moderate significant visual effects were predicted from the previous assessment on the following receptors:

- The Community of Rassau;
- The Community of Garnlydan;
- Walkers on Mynydd Carn-y-cefn; and
- Users of the B4560 Llangynidr Road.

Proposed amendments relevant to the assessment

The key changes to the design that alter the visual impacts of the development are those that affect its external visual appearance. These include:

- Rationalisation of the arrangement of built form and infrastructure across the site which reduce the footprint and thus the visible horizontal extent of the built form and infrastructure.
- The proposed reduction in the height, scale and overall massing of many the main proposed buildings means the building is less prominent and intrusive in many views and it will break the skyline less.
- Resolution of the design of the façade and external envelop, which articulates and breaks up the massing of the buildings.
- Green rooves have been added to the Security Building, RMS Building, LPG Building and Pump House to soften the built form and the car park has been softened with tree planting.

Review of potential changes to identified environmental effects

Despite the proposed building and site footprint being smaller overall it is understood that the construction process will not be notably different in nature or duration to that previously assessed. It is therefore predicted that construction effects from the amended design will be very similar to those previously assessed.

From a visual perspective, all of the design changes, listed in Table 1 above and visualised in the accompanying Massing Comparison document, will result in reduced visual effects in comparison to the previous scheme. The Amended Development will be less prominent and visually intrusive in all assessed views where the main bulk of the built form is visible (e.g. VPs 3, 5, 6, 7, 8, 14, 16 and 19). Nevertheless, in all of these views, the Amended Development does still represent a large and detracting feature in people's views. It will therefore continue to give rise to adverse visual change. The magnitude of this change will be reduced, but not to the extent that outcome of the assessment of significance will be any better than for the Approved Development.

As with the Approved Development, the proposed amendments are predicted to give rise to substantial significant visual effects on the following receptors:

- The Community of Beaufort; and
- Visitors to BBNP.

As with the Approved Development, the proposed amendments are predicted to give rise to moderate significant visual effects on the following receptors:

- The Community of Rassau;
- The Community of Garnlydan;
- Walkers on Mynydd Carn-y-cefn; and
- Users of the B4560 Llangynidr Road.

In views where only unchanged elements such as the chimneys are visible (e.g. VPs 9, 10, 11 and 12), there will be no discernible change to visual effects.

13. Water Environment

The 2022 ES considered the following potential impacts to the water environment from the proposed development:

Dewatering during construction

Construction of the previously proposed basements would have required excavations up to 15m deep, which would extend into the underlying bedrock. These excavations would have a potential to intercept sandstone bands, which contain groundwater. Groundwater control during excavations was likely to involve active dewatering. This had a potential to impact groundwater levels and flows and subsequently groundwater dependent features. The assessments indicated that these works may have had a moderate adverse impact, which is significant, requiring mitigation measures, on two identified features, a groundwater abstraction well (feature No. 1 – ES Figure 14.3)) and a Groundwater Dependent Terrestrial Ecosystem (feature No. 5 – ES Figure 14.3)). There would have been a neutral to slight adverse effect, which is not significant, on the remainder of the identified features. Impact from dewatering on the water balance within the surface water (the Ebbw River) catchment was assessed to have an effect of slight adverse significance, which is not significant.

Land contamination during construction

Construction of the previously proposed development would have had potential to mobilise existing contamination in soil and groundwater, which could have migrated towards controlled water receptors resulting in pollution. In addition, dewatering activities would have had potential to mobilise contamination from both on-site and off-site sources. Groundwater quality within the site may already be impacted by off-site sources through contamination migration. Contaminated groundwater discharged into the ground or surface water may have also had a potential to impact the controlled waters receptors. The identified potential receptors include on-site and off-site groundwater resources to the south of the site (secondary A aquifer in sandstones), Source Protection Zone 1 (feature ID11), GWDTE (feature ID12) (both ES Figure 14.3) and the Ebbw River and its tributaries. The assessments concluded that the overall effect of mobilisation of contamination during earthworks on controlled waters would have been slight adverse and not significant, and during dewatering as moderate adverse and significant requiring mitigation measures.

Construction phase was assessed to have the potential to result in beneficial impacts such as the removal or treatment of any contaminated soil identified, with the effect that existing adverse effects on receptors are removed with a slight beneficial effect and not significant on the controlled water receptors.

Permanent drainage during operation

No permanent drainage was deemed required as part of the previously proposed basements and therefore the potential effect was assessed to be neutral and not significant.

Underground structures during operation

The previously proposed development required retaining structures, deep piled foundations and basements. These underground structures would have a potential to locally impact groundwater flow paths and levels by forming a barrier to groundwater flow and potentially leading to groundwater flooding. The previous design however incorporated suitable solutions to minimise impact on groundwater flows and therefore it was assessed that it would have a slight adverse effect, which is not significant, on the groundwater flows and levels.

Aquifer recharge during operation

The previously proposed development would have introduced buildings and hard standing across the majority of the site area, which would have reduced the resource extent and recharge area that feeds into the underlying aquifer. The assessments concluded that the reduction of infiltration within the site would have a slight adverse effect on the groundwater resources and not significant.

Land contamination during operation

The previously proposed development would have a potential to impact controlled water due to introduction of new pathways for contamination migration such as deep piled foundations or new service corridors. As the design would incorporate appropriate land contamination assessments, and any subsequent mitigation measures would have already been undertaken to satisfactorily close out any residual land contamination risks identified as part of the construction phase, the risks from contamination on controlled waters during the operation were assessed as slight beneficial and not significant.

Proposed amendments relevant to the assessment

The changes to the proposed development that are relevant to the water environment assessment is primarily the removal of the deep basements, reduction in the building footprint and elimination of some of the retaining walls. The new basement arrangement with new levels is shown on Drawing DRANGON-ARUP-XXXX-B1-DR-A-003010.

The previously proposed development incorporated cullet building basements extending to 405.1m OD and other basements including batch building and the fusion pool basement to between 415.5 m OD and 412.5m OD. These would require up to 15m deep excavations. The revised basement levels are 412.6mOD and 412.6 to 410.8m OD respectively. Considering the site topography, construction of the proposed basements would require maximum depth excavations down to 5.5m below the existing level in the northern plateau and 5m below the existing ground level in the southern plateau.

Review of potential changes to identified environmental effects

The changes to the proposed development would not result in impacts that would be considered worse.

This is because the elimination of deep basements and some of the underground structures would remove the need for dewatering during construction. Based on completed ground investigations, presented in Arup Geotechnical Interpretive Report[13] the earthworks would be primarily undertaken within the superficial deposits and weathered bedrock. In addition, the completed groundwater monitoring indicated the presence of artesian groundwater at 405mOD in the north-western part of the site reducing to 397mOD in the central site area, well below the levels of the proposed basement. Therefore, the construction of the proposed revised basement would be unlikely to intercept the artesian groundwater,

Consequently, the previously identified impacts such as potential changes to groundwater levels and flows or land contamination mobilisation will no longer have a potential to occur. The elimination of the basements and other underground structures would also eliminate potential impacts during the operational phase associated creating barries to groundwater flows. The reduced development footprint would further reduce the potential impact on the aquifer recharge.

It is also considered that other potential impacts such as management of risks associated with land contamination would remain unchanged.

[13] CiNER Glass Limited, Dragon Glass Bottle Manufacturing Facility, Geotechnical Interpretive Report, ref. DRAGON-ARUP-GINV-XX-RP-G-000001, Issue P01, 17 June 2022

14. Cumulative Effects

A Cumulative Effects Assessment (CEA) was undertaken as part of the 2022 ES for the proposed development in combination with other reasonably foreseeable projects in the local area (those that are 'known' to the planning system or are already consented).

A Zone of Influence (ZOI) for assessments was established and all topics were considered as part of the CEA with the exception of traffic, which was scoped out due to the effects of future development on traffic being already captured in the Transport assessment through the development of future baselines.

19 committed developments relevant to the CEA were identified in consultation with BGCBC and represent developments within approximately 5km of the site. Of the 19 developments identified:

- Five were found to be within 500m of the proposed development
- Five were found to be between 500m to 2km of the proposed development
- Nine were found to between 2km to 5km of the proposed development

A review of the 19 committed developments identified that, assuming that all the committed developments would employ appropriate mitigation methods in line with regulatory requirements and best practice, the potential for cumulative impacts in combination with the proposed development would only be in relation to ecology and socio-economic factors.

Five developments were highlighted as having the potential for cumulative construction impacts with regards to ecology, due to these identified sites being found to support some habitats of conservation importance and protected species including common amphibians, common reptiles, breeding birds, commuting and foraging bats, commuting otter and terrestrial invertebrates. However, following the CEA, it was deemed unlikely that any cumulative impacts in regard to ecological factors would arise as a result of the proposed development in combination with these cumulative developments due to:

- mitigation proposed for both the proposed development and committed cumulative developments;
- the majority of these development sites being located beyond 2km from the proposed development, a distance at which effects on habitats and species are unlikely to occur;
- none of the cumulative developments were identified as supporting bats species associated with the Usk Bat SAC and;
- developments within 2 km having no hydrological connectivity.

The potential for cumulative socio-economic impacts were identified in relation to displacement of local construction workers, which could impact on resourcing for other projects in the region, particularly where projects require a similar range of construction skills. While the proposed development in combination with the cumulative developments could lead to impacts in terms of labour supply, it was acknowledged that the site and surroundings are well connected and would reach into the wider region for their workforce therefore not resulting in any significant cumulative effects.

Proposed amendments relevant to the assessment

As outlined in Section 1, the proposed amendments include a reduction in building mass within the consented site boundary. Furthermore, there are no expected changes to the construction programme for the proposed development and therefore no proposed amendments to the current consented timelines for the project.

There are no changes to operation of the facility which would result in any changes to cumulative effects.

Review of potential changes to identified environmental effects

The proposed amendments to the development do not result in any increase in construction footprint or construction programme within the consented scheme. No further cumulative developments have therefore been identified as the ZOI does not increase for the amended scheme and on this basis, there are no changes to the extent or number of committed developments considered within the 2022 ES.

Environmental effects associated with the proposed amendments in regard to ecology and socio-economic are not expected to worsen in relation to those identified and assessed as part of the 2022 ES.

Given these points, the proposed amendments to consented scheme is not expected to result in more adverse cumulative effects than those identified in the 2022 ES.

15. Summary

This ESA has considered whether the amendments to the proposed outline parameter plan and design development alter the findings of the 2022 ES that was submitted in support of the planning application for CiNER Glass Bottle manufacturing facility within Rassau Industrial Estate, Ebbw Vale (planning reference: C/2021/0278).

The proposed amendments have been reviewed against the assessment and conclusions of the 2022 ES for each of the 11 environmental topics previously considered. For all topics, the changes that are being proposed to the approved planning application are not expected to result in more adverse outcomes or effects than those identified in the 2022 ES and in some cases indicate an improvement on those previously assessed.

Overall, it is concluded that there are no new or materially different significant adverse effects as a result of the proposed amendments to the consented scheme.