CiNER Glass Limited

Dragon Glass Bottle Manufacturing Facility

Site Traffic Management Plan

DRAGON-ARUP-ENVZ-XX-RP-YT-00002

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Ove Arup & Partners Ltd
4 Pierhead Street
Capital Waterside
Cardiff CF10 4QP
United Kingdom
www.arup.com

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		Name	Gerallt Dafydd	Alex Welch	Roddy Beynon
		Signature			
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			Prepared by	Checked by	Approved by
		Name			
		Signature			
		Filename			
		Description			
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1 Introduction

1.1 Background

Ove Arup & Partners Ltd (Arup) were commissioned by CiNER Glass Ltd to produce a Transport Statement in support of a planning application for a proposed glass production facility (the site) in Rassau, Wales. The proposed site (centred on National Grid Reference 315582, 212801) is located within the Rassau Industrial Estate in the county borough of Blaenau Gwent, South Wales. The industrial estate 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 Transport Statement (document ref: DRAGON-ARUP-ENVZ-XX-RP-YT-00001) was submitted to Blaenau Gwent County Borough Council (BGCBC) as part of the Pre-Application Consultation (PAC) in September 2021 (planning application ref: C/2021/0278 CiNER), and contained information regarding the existing baseline conditions, future development proposals/travel demand and a Framework Travel Plan (FTP).

Following the completion of the consultation process, the BGCBC Highways response included a requirement for the production of a Site Traffic Management Plan (STMP) '*to demonstrate how HGV transport movements will be effectively managed and accommodated on site without impacting on the local highway network – detail to include proposed weighbridge operations. In particular as this coincides with the peak arrival/departure times for staff. A plan will need to clearly demonstrate that vehicles will not be expected to queue on the public highway*.'

1.2 Purpose of this STMP

The purpose of this STMP is to outline the long-term operation and management of the site and associated service vehicle facilities. This STMP relates to management of access and parking arrangements of Heavy Goods Vehicles (HGVs) and employee vehicles at the facility and seeks to demonstrate that there is adequate stacking space (HGV waiting spaces) within the site, coupled with appropriate mitigation measures that can be put in place to eradicate any detrimental impact on the surrounding highway network.

2 Proposed Development Proposals

The proposed facility consists of a three-part operation for the production of glass bottles; the handling of raw material, the manufacturing of the glass containers and the product-inspection and packaging process. The proposed facility consists of several distinct components which are summarised below:

- 2No furnaces and associated filters and chimney stacks;
- 2No cullet buildings for the storage and processing of rejected and recycled glass;
- Batch building and silos for the storage and mixing of raw materials;
- 2No production lines for hot and cold processing, inspection and packaging of glass bottles;
- A printing area for applied decorations (14,500 sqm);
- An automated warehouse for storage and distribution of glass bottles (17,000 sqm);
- Utilities building which includes plant space, workshops, office space and welfare facilities;
- Visitor building;
- Waste stores;
- Standalone plant buildings;
- Main entrance security lodges and associated weighbridge; and
- External hardstanding for the storage of materials, parking and loading.

As mentioned previously, further information regarding the development proposals is outlined within Section 4 of the Transport Statement (document ref: DRAGON-ARUP-ENVZ-XX-RP-YT-00001) including the proposed multi-modal access arrangements, swept path analysis, car parking layout and cycle parking provision.

3 Traffic Implications

3.1 Vehicular Trip Generation - Staff

The methodology for projecting travel demand for staff working at the future site has been informed by information provided by CiNER from their experience of operating similar facilities in other locations in order to determine and agree the overarching assumptions. These are set out in detail within the Transport Statement.

A summary of trips likely to be associated with staff of the proposed development site within the AM and PM peak periods is provided below in Table 1.

Table 1: Daily Staff Vehicle Trips

	Time	Arrivals	Departures	Total*
AM Peak Period	07:00-08:00	276	0	276
	08:00-09:00	0	98	98
	09:00-10:00	2	0	2
PM Peak Period	16:00-17:00	0	190	190
	17:00-18:00	0	0	0
	18:00-19:00	0	86	86
	Total (24 Hour)	**490**	**490**	**981**

*Number subject to rounding

3.2 Vehicular Trip Generation - HGVs

The methodology for projecting travel demand for HGV movements associated with the proposed development site is set out within the Transport Statement. In summary, it has been confirmed that there will be a total of 190 two-way (380 total) daily HGV trips associated with the site for the delivery of raw materials to the site (60 two-way trips), including sand and soda ash to produce glass and for transportation of glass bottles off site following production (130 two-way trips).

Incoming ‘materials’ deliveries will take place between 08:00 and 17:00, with outgoing ‘glass transportation’ deliveries between 06:00 and 22:00. Deliveries are also likely to be higher in the first half of the day.

The previous trip generation presented in the Transport Assessment assumed that out-going deliveries would need to be delivered to clients before 09:30-10:00 and resulted in a large number of movements between 06:00-09:00. It has since been confirmed by the client that this will not be the case, and the number of movements will largely be dependent on the number of on-site spaces available.

As a result, a revised trip generation has been produced for HGVs, split out by incoming materials and glass transportation leaving the site as shown below in Table 2, Table 3 and *Number subject to rounding

Table 4.

For robustness, 70% of glass transportation deliveries have been assumed to take place within the first half of the day, with the remainder during the second half of the day. It is considered unlikely there will be such a strong bias in deliveries, but this figure has been used to enable a robust calculation.

Table 2: HGV Vehicle Trips - Materials

	Time	Arrivals	Departures	Total*
AM Peak Period	07:00-08:00	0	0	0
	08:00-09:00	7	0	7
	09:00-10:00	7	7	13
PM Peak Period	16:00-17:00	7	7	13
	17:00-18:00	0	7	7
	18:00-19:00	0	0	0
	Total (24 Hour)	**60**	**60**	**120**

*Number subject to rounding

Table 3: HGV Vehicle Trips – Glass Transportation

	Time	Arrivals	Departures	Total*
AM Peak Period	07:00-08:00	11	11	23
	08:00-09:00	11	11	23
	09:00-10:00	11	11	23
PM Peak Period	16:00-17:00	5	5	10
	17:00-18:00	5	5	10
	18:00-19:00	5	5	10
	Total (24 Hour)	**130**	**130**	**260**

*Number subject to rounding

Table 4: HGV Vehicle Trips – Total

	Time	Arrivals	Departures	Total*
AM Peak Period	07:00-08:00	11	11	23
	08:00-09:00	18	11	29
	09:00-10:00	18	18	36
PM Peak Period	16:00-17:00	12	12	23
	17:00-18:00	5	12	16
	18:00-19:00	5	5	10
	Total (24 Hour)	**190**	**190**	**380**

*Number subject to rounding

The tables above show that the site is likely to generate in the order of 29 HGV movements in the typical morning peak period (18 arrivals, 11 departures) and 16 HGV movements in the typical afternoon peak period (5 arrivals, 12 departures).

3.3 Vehicle Stacking Analysis

An assessment has been undertaken to determine whether there is suitable capacity within the proposed facility to accommodate HGVs arriving/unloading/loading manoeuvring/departing thereby ensuring queuing will not extend onto the adjacent road.

The vehicle stacking analysis factors in two components, namely:

- The time which a vehicle spends on-site carrying out waste delivery/ collection activities, also known as the vehicle turnaround time, and
- The number of HGV stacking spaces available on-site.

Available Stacking Space

Two plans have been produced, one showing the materials yard and the other indicating the area where glass produced on-site will be loaded onto HGVs. These have been developed and designed to show how the peak number of HGVs expected on-site could be accommodated. The plans are shown below in Figure 1 and Figure 2.

Figure 1 shows that there is adequate space within the materials yard for a minimum of eight vehicles (large tippers) to unload materials at any given time, with give additional waiting spaces for those waiting to be called (if required).

Figure 2 shows that the area provided for vehicles associated with glass transportation (16.5m articulated lorries) includes nine loading bays, with a further six waiting spaces provided along the site internal road to the east of the site, should they be required at any stage.

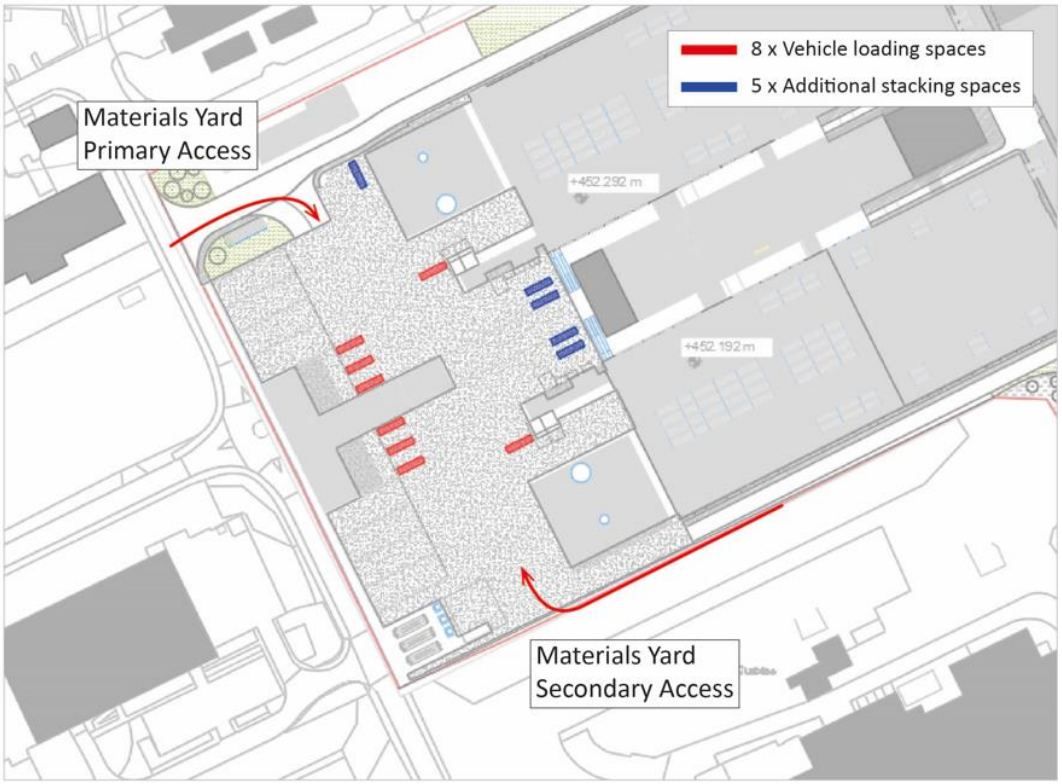

Figure 1: On-Site Stacking Space – Materials

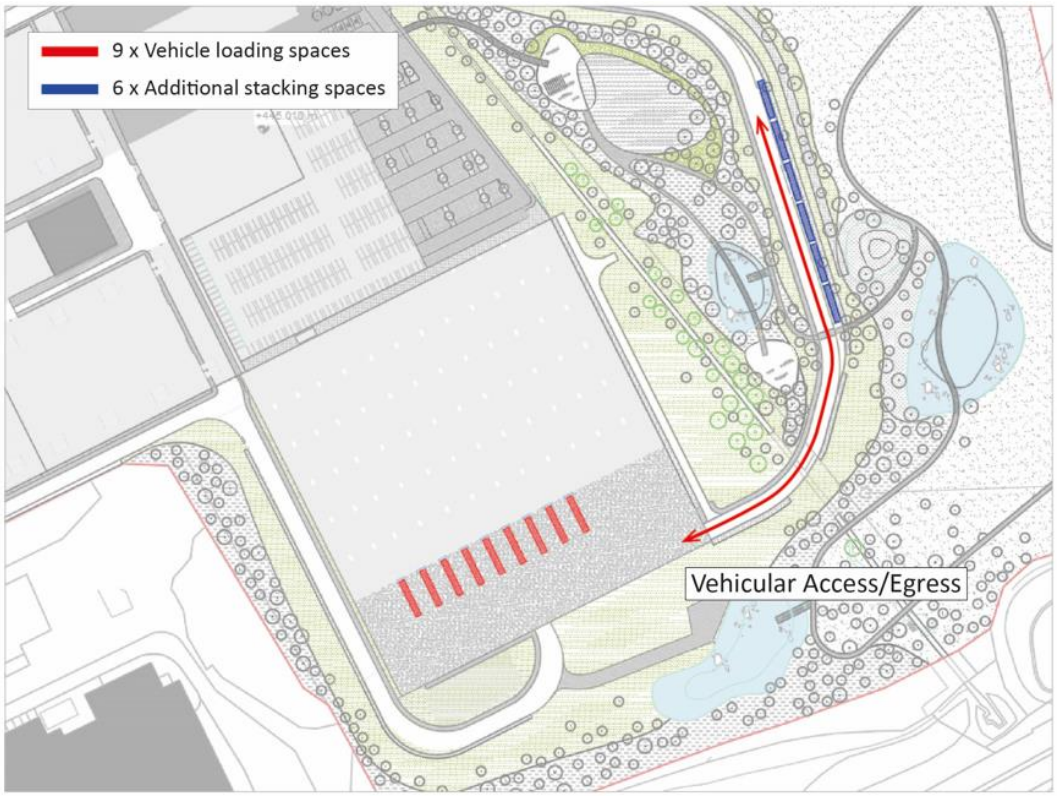

Figure 2: On-Site Stacking Space – Glass Transportation

Stacking Capacity Analysis

It has been confirmed by CiNER that the average duration of a heavy vehicle (based on current 2021 data from the existing factory) in terms of entering the factory, passing the weighbridge empty with a receipt, loading from the warehouse and then passing the weighbridge loaded with a receipt is approximately 60 minutes, although it is expected that the turnaround time of vehicles at loading docks would be 20-30 minutes for Materials and 45 minutes for Glass Transportation.

For the purposes of this assessment, a turnaround time of 60 minutes has been assumed which is also reflected within the trip generation, with vehicles departing the site an hour after arrival.

It is expected that vehicles would wait at a loading dock before being called to the weighbridge to avoid any queuing within the site. Further information regarding the operation of the site is outlined in Section 4.2.

Materials

Based on a turnaround time of 60 minutes, each space within the materials yard could accommodate one vehicle in one hour. There will be a minimum of eight bays for unloading of materials within the yard, which could accommodate the turnover of eight HGVs.

The plan also shows that there is sufficient capacity within the materials yard for five additional vehicles to be parked should they be required.

Based on the above, it is considered that the available space within the materials yard will be able to adequately store the seven HGVs expected to arrive during peak site operation.

Glass Transportation

As illustrated in Figure 2 the Glass Transportation area will have nine loading bays with a further six waiting spaces. Based on a turnaround time of 60 minutes, each loading bay could accommodate at least one vehicle per hour. Therefore, during any hour of operation across the day the available stacking arrangement could accommodate the turn-over of nine heavy vehicles.

In this scenario, there would be two HGVs that would need to be parked along the eastern side of the site and wait for other vehicles within the occupied bays to finish loading/unloading.

The above analysis shows that there will be more than sufficient space onsite to accommodate HGVs during peak periods. Peak operations represent only part of the full-day operation, therefore for most of the day, HGV volumes will be less than assessed above.

To further mitigate any risk of queuing onto the nearby local highway network, it has been confirmed by the client that HGV deliveries in/out of the site will be put on hold 20 minutes prior to start of the work in the morning and 20 minutes following work completion in the evening.

This will ensure that any conflict between staff vehicles and HGV movements is minimised and that there is not an influx of arrivals/departures that occur at the same time. This is already an arrangement that is implemented and in operation at the existing CiNER factory.

3.4 Swept Path Analysis

CiNER anticipate that the largest delivery vehicle requiring access to the site would be a 16.5m articulated vehicle. Vehicle tracking analysis of the site access and car parking arrangement has therefore been undertaken with 16.5m articulated vehicle and demonstrates that these vehicles can manoeuvre within the site appropriately.

The swept path analysis can be found in Appendix E of the Transport Statement.

4 Operational Traffic Management

4.1 Stacking Arrangement

Based on the analysis presented in Section 3.3, the proposed on-site stacking facilities will be sufficient to accommodate the number of HGVs expected to access the site during the busiest period of site operation. Vehicles will be contained wholly within the site without queueing into the Industrial Estate and without impeding other vehicle movements within the site.

The stacking arrangement will adequately accommodate HGVs, with swept path analysis included within the Transport Statement showing that vehicles can manoeuvre within the site appropriately.

4.2 Site Management Plan

Management of vehicles entering/leaving, and the stacking of vehicles will be overseen by site personnel at the weighbridge, within the yard and at the site access. Heavy vehicles accessing the site will be supervised at every stage of the delivery/collection process, as follows:

- Entering the site from the Industrial Estate, site security will supervise turning movements in/out of the site and any potential access conflicts between large vehicles.
- All vehicles will be registered and logged onto the system on arrival and subsequently directed to the factory to unload a delivery or to load product. This will be communicated between warehouse dispatch personnel and vehicle parking security personnel.
- From the main entrance onto site, vehicles will be directed to three locations:
    1. Materials yard - to deliver raw materials;
    2. Warehouse loading bay - to collect packaged goods; or
    3. Staff and visitor carpark.
- Whilst on the weighbridge, the Weighbridge Operator will instruct drivers where to stop for an accurate recording of weight and provide direction on when to proceed towards the stacking spaces.
- Whilst stacking, site personnel will direct drivers to the first available space to queue. When the loading area is ready to accept the next vehicle, the site personnel will instruct the driver to proceed to the relevant area.
- When leaving the site, drivers will proceed to the outbound weighbridge or directly to the exit (if weighed out earlier at storage bays or bulk loadout area) which will be supervised by site personnel.

4.3 Vehicle Routing

The proposed vehicle routing is shown below by blue dashed lines on Figure 3. This route will ensure that HGVs associated with the site will, where possible, use the strategic road network to access the site, therefore via the A465 from the east or west and subsequently Alan Davies Way prior to accessing Rassau Industrial Estate. This is considered a reasonable assumption given the site's proximity to the strategic road network.

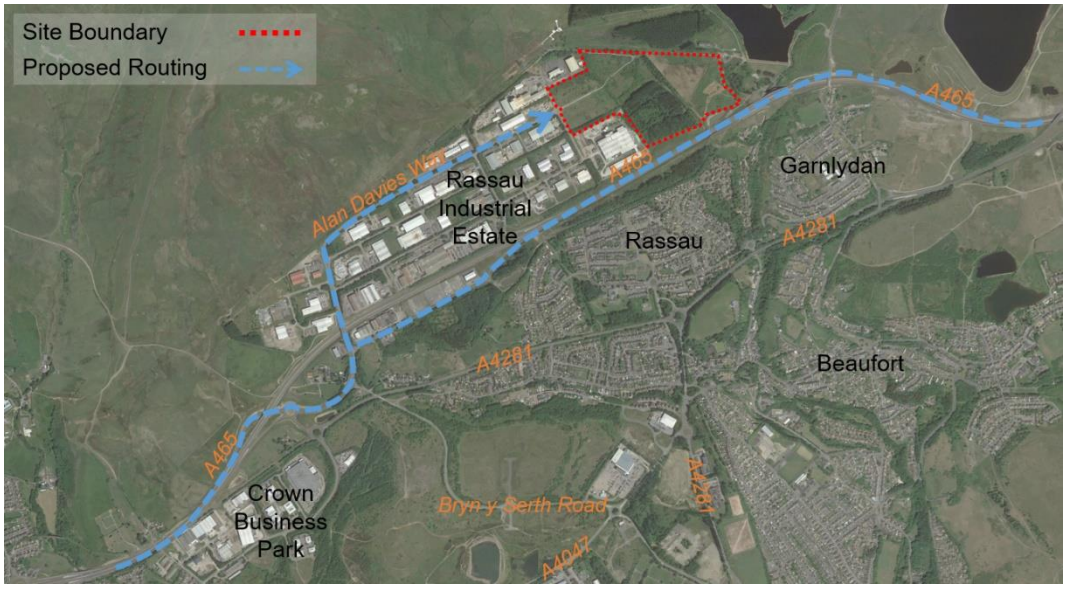

Figure 3: Proposed Construction Vehicle Routing (Copyright: Google Maps)

It is considered that the selected route is the most appropriate in respect of road widths, weight restrictions and suitability of the A465 to accommodate large vehicles.

5 Summary and Conclusions

Based on the analysis presented in this report, the proposed on-site stacking arrangement will be sufficient to accommodate the number of vehicles expected to access the site during the busiest period of site operation. Vehicles will be contained wholly within the site without queueing into the Rassau Industrial Estate and without impeding other turning movements on-site. The movement of vehicles will also be coordinated and managed by site personnel to ensure appropriate operation across the day.

Swept path analysis is included within the Transport Statement submitted alongside the planning application (document ref: DRAGON-ARUP-ENVZ-XX-RP-YT-00001) and stacking plans have been included in Section 4.1 of this report. These show that required manoeuvres can be undertaken and that access to all relevant areas within the site can be achieved by HGVs.

To further mitigate any risk of queuing onto the nearby local highway network, it has been confirmed by the client that HGV deliveries in/out of the site will be put on hold 20 minutes prior to start of the work in the morning and 20 minutes following work completion in the evening. This will ensure that any conflict between staff vehicles and HGV movements is minimised and that they do not arrive and depart at the same time. This is already an arrangement that has been successfully implemented at the existing CiNER factory.

Based on these measures and facilities it is concluded that there will be sufficient space provided on-site for the stacking of vehicles with appropriate measures put in place to ensure that there is no detrimental impact on the local highway network surrounding the site.