
REPORT

65216055
SINGLETON BIRCH HYDROGEN DEVELOPMENT,
MELTON ROSS, NORTH LINCOLNSHIRE
STAGE 1 ROAD SAFETY AUDIT



P01

65216055-SWE-GEN-ZZ-AS-PC-00001

20 November 2025

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Change list

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Key personnel

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1 Introduction

1.1 Scheme Objective

The proposals comprise a new hydrogen production facility to create hydrogen fuel for low-carbon lime. The plant will convert water into hydrogen and oxygen through electrolysis, providing 20% of the energy needed to fuel Singleton Birch's lime kilns, reducing natural gas consumption. The facility will be largely automated and receive and supply materials via pipeline to / from the adjacent infrastructure.

There will be no full-time attendance of staff at this location, as the facility will be monitored remotely. However, staff will visit the facility for maintenance as required which is expected to be at a weekly basis.

Due to the nature of the facility and the limited maintenance and servicing required during its operational phase, no pedestrian or cycle facilities are proposed.

The new site access will also serve the potential future redevelopment of the adjacent site for commercial uses.

1.2 Scheme Description

The site is located off the A18 in a rural area in North Lincolnshire, just northwest of the Humberside Airport. The site is bounded by a railway line to the north and west, agricultural land to the east, and the A18 to the south. The site has formerly been used as a quarry and a recycling centre. When the site was operational, access was undertaken via the existing simple priority-controlled junction off the A18.

The A18 is a single carriageway road that runs in an east-west direction along the southern boundary of the site. To the east, it provides access to the adjacent Humberside Airport, and nearby villages, and connects to the A46 further east. Just west of the site, the A18 forms the major arm of a simple priority junction with the B1211. The A18 continues west where it connects to the wider highway network via the M180 Junction 5.

The A18 is subject to a 40mph speed limit in the vicinity of the site, is not street-lit and there are no footways on either side of the carriageway. Between the site and the M180, the speed limit transitions between 40, 50, 30 and national speed limit.

The former site access is located along the A18, approximately 380m east of its junction with the B1211. A new site access will be provided adjacent to the eastern boundary of the site.

The new access junction forms a ghost island priority junction with the A18. Egressing HGVs will be required to turn left out of the junction, with a traffic island provided to enforce this. It is anticipated that this arrangement will improve the safety of all road users, in particular for motorcyclists.

The provision of a ghost island for right-turning traffic will minimise issues of blocking back on the main carriageway of the A18, and is in keeping with the previously consented (now lapsed) access arrangement for the adjacent industrial development proposals.

The new access junction is designed in accordance with the Design Manual for Roads and Bridges (DMRB) guidance. The design allows for two-way HGV movements at the junction (subject to "left only" egress for HGVs). The new access will require the widening of the existing carriageway along the northern verge to allow the provision of a ghost island with

sufficient deceleration length and waiting area. The widening will require the removal of a section of hedge and conversion of verge to carriageway. The proposals have sought to avoid impacting on a number of trees either side of the proposed access point, although this will need to be confirmed at detailed design stage.

Visibility at the junction is provided in accordance with the guidance for 40 mph roads, namely an X-distance of 4.5 metres and a Y-distance of 120 metres. In order to ensure good visibility to the west, additional hedge removal is required beyond the extent of carriageway widening.

1.3 Road Safety Audit Report

This report results from a Stage 1 Road Safety Audit carried out on the Scheme proposed by Centrica Energy Storage Ltd and designed by Sweco Manchester at the request of Krishanthi Carfrae, the Highway Authority Project Sponsor. The Road Safety Audit was carried out during November 2025.

This Stage 1 audit covers the proposed junction access, as shown in drawing number 65216055-SWE-XX-ZZ-D-TP-0002, titled 'Proposed access junction including visibility splays and swept path analysis'.

1.4 Road Safety Audit Team

The Road Safety Audit Team membership, was as follows:

Team Leader	Andrew Russ
Team Member	Martin Magyar

1.5 Road Safety Audit Brief

A formal Road Safety Audit Brief, with reference 'RSA Brief' and dated 10/11/2025, was provided to the audit team. The Brief was accepted by the audit team.

The documents provided as part of the Brief are listed in Appendix A.

1.6 Terms of Reference

The terms of reference of the audit are as described in GG 119 Rev.2. The team has examined and reported only on the road safety implications of the scheme as presented and has not examined or verified the compliance of the designs to any other criteria. This Road Safety Audit has been undertaken based on the Road Safety Audit Team's previous experience and knowledge in undertaking Collision Investigation, Road Safety Engineering and Road Safety Audits.

1.7 Road Safety Audit

The desk-based review of the documents received took place at the Leeds office of Sweco Ltd on Wednesday, 12 November 2025, with the site visit taking place on Thursday, 13 November 2025.

The scheme has been examined and this report compiled only regarding the safety implications for road users of the scheme as presented. It has not been examined or verified for compliance with any other Standards or criteria. However, to clearly explain a

safety problem or the recommendation to resolve a problem, the Audit Team may on occasion have referred to a design standard for information only. Any audit comments should not be construed as implying that a technical audit has been undertaken in any respect.

Any recommendations included within this report should not be regarded as being prescriptive design solutions to the problems raised. They are intended only to indicate a proportionate and viable means of eliminating or mitigating the identified problem, in accordance with GG 119, and in no way, imply that a formal design process has been undertaken. There may be alternative methods of addressing a problem which would be equally acceptable in achieving the desired elimination or mitigation and these should be considered when responding to this report.

All comments and recommendations are referenced to the design drawings, and the locations have been indicated on the plan supplied with the Road Safety Audit Brief in Appendix B.

1.8 Site Visit

The site was visited by all Road Safety Audit Team members as detailed below:

Day/Date	Time from	Time to	Light Conditions	Weather	Surface	Traffic
Thursday, 13 November 2025	11:25	12:30	Daylight	Fine	Dry	Motor Moderate Cyclist Light Pedestrian Light

Notes:

The levels of traffic observed are relative to the average traffic flows expected on the site.


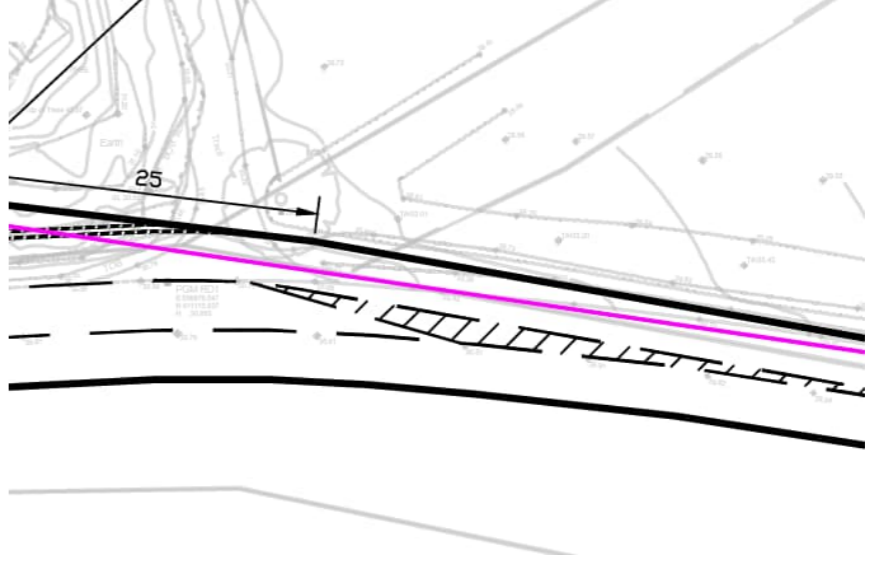
The road surface was slightly wet from previous rain.

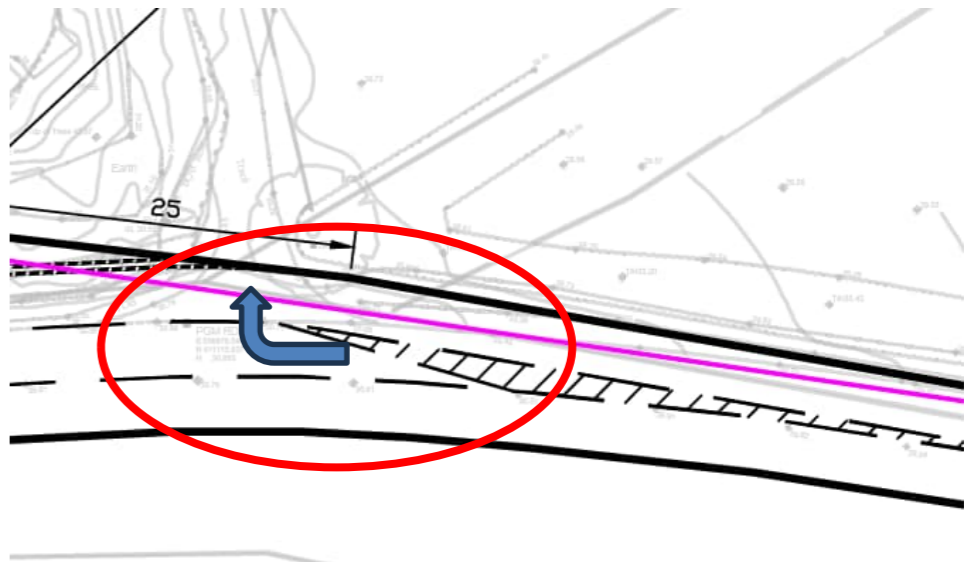
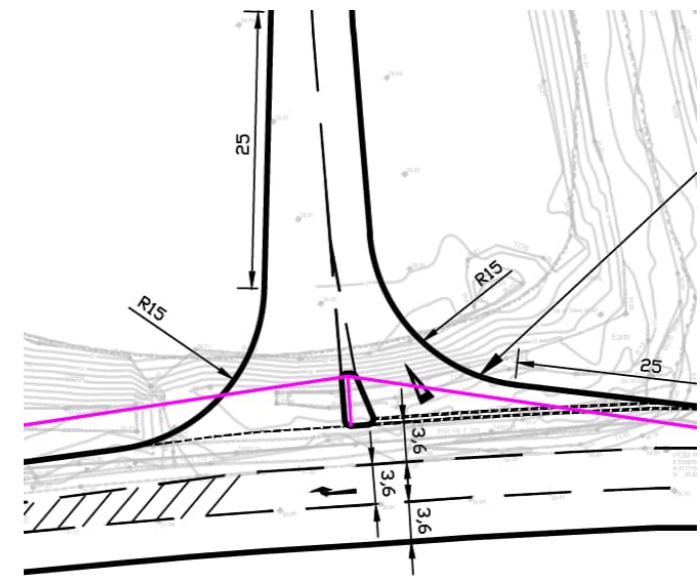
No pedestrians or cyclists were observed within the site area during the site visit.

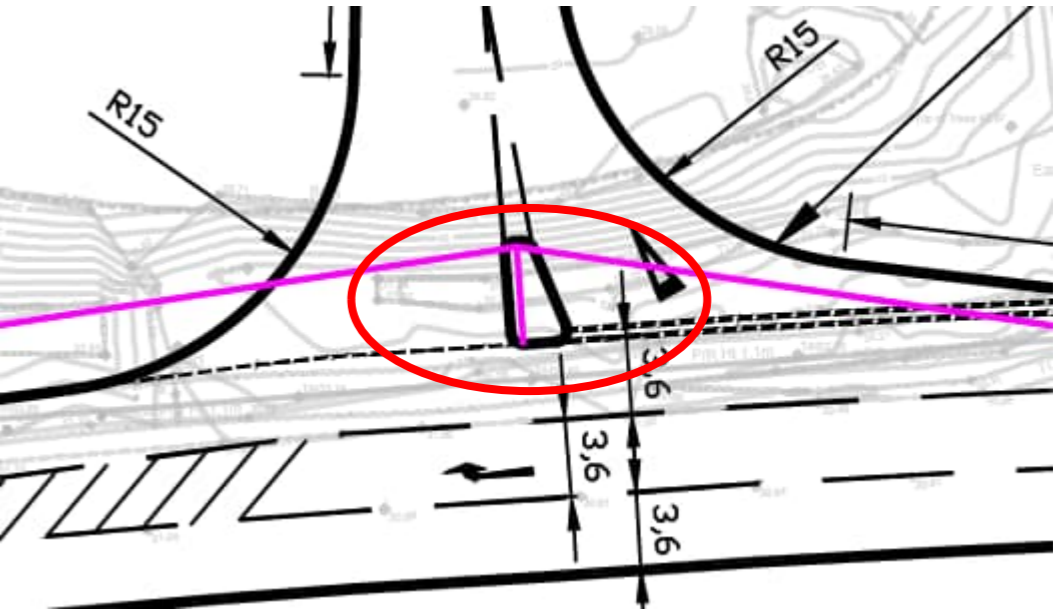

2 Items raised in previous road safety audits



No previous road safety audits have taken place.

3 Items raised at this Stage 1 road safety audit.

Reference	Location	Type of collision	Description	Recommendation	Photographs / Plans
3.1	A18, westbound approach to site.	Vehicular shunts and side-swipes.	<p>There is an existing 'side road' warning sign on the A18 westbound approach to the proposed access junction. The sign warns only of a side road on the left. In future, there will be side roads of similar standard on both the left- and right-hand sides of the road and the existing sign may become misleading to drivers as it gives no indication of the future, staggered side road layout, with ghost-island right-turn facility. This will be exacerbated by the fact that the ghost island will form on a left-hand turn in the road alignment, meaning the new layout could be less clear. This could lead to shunts or side-swipes between vehicles.</p>	<p>Replace the existing traffic sign in the westbound direction with one that warns drivers of the new staggered crossing layout.</p>	 <p>Existing 'side road' warning sign on A18</p>
3.2	A18, westbound approach to site.	Vehicular shunts and side-swipes.	<p>The existing centre line on the A18 incorporates reflective road studs, helping to denote the road layout in poor lighting conditions. The proposed ghost-island will develop on a curve in the road alignment when approached from the east and the new road layout may not be visible enough to westbound drivers in poor light conditions if it is not provided with reflective studs.</p> <p>This poor visibility could lead to westbound vehicles inadvertently straying into the ghost-island and shunting stationary vehicles waiting to turn into the side road, or errant drivers taking evasive action to correct their path and side swiping following vehicles.</p>	<p>Provide reflective road studs along the longitudinal road markings to denote the new ghost-island layout.</p>	 <p>Extract from drawing 65216055-SWE-XX-ZZ-D-TP-0002</p>

Reference	Location	Type of collision	Description	Recommendation	Photographs / Plans
3.3	Proposed ghost-island.	Shunts or head-on collisions.	<p>There is an existing access that is to be retained, immediately east of the new site access road. A driver wanting to turn right into the existing access will position themselves as shown by the blue arrow in the image on the right. Depending on its length, the vehicle will not be fully protected by the ghost island, as the island starts to taper down from a point adjacent to the existing access.</p> <p>Additionally, due to the ghost-island forming on a bend in the road, drivers turning right may not feel comfortable waiting with their vehicle fully between the two lines of the ghost island if they feel there is the potential for eastbound vehicles to over-run the road markings.</p>	Extend the ghost-island further east and widen the lane widths at the curve into the road, so that drivers turning into the existing access can safely wait within the ghost island.	 <p>Extract from drawing 65216055-SWE-XX-ZZ-D-TP-0002</p>
3.4	New access road.	Side-swipe collisions.	Drivers of HGVs egressing the site will be required to turn left out of the proposed access junction, with a traffic island provided to help enforce this manoeuvre. However, the island alone may be insufficient deterrent for HGV drivers, who might be tempted to try to manoeuvre around the island, putting them in the path of oncoming vehicles.	Provide suitable road markings and signing to reinforce the banned left-turn.	 <p>Extract from drawing 65216055-SWE-XX-ZZ-D-TP-0002</p>

Reference	Location	Type of collision	Description	Recommendation	Photographs / Plans
3.5	New access road.	Collision with roadside infrastructure.	A physical splitter island is proposed at the entrance to the access road. No offset between the A18 running lane and the island is shown on the layout drawing (see image on the right), the kerbline runs directly along the channel line. Vehicles proceeding eastbound on the A18 could strike the island kerb, if they mis judge their position in the running lane.	Provide a suitable offset between the mainline running lane and the splitter island to reduce the chance of through vehicles hitting the kerb.	 <p>Extract from drawing 65216055-SWE-XX-ZZ-D-TP-0002</p>
3.6	Existing access road.	Single vehicle loss of control.	The existing access track, which is being retained immediately east of the new site access road, has a short section of asphalt surfacing adjacent the mainline carriageway but is then unsurfaced and muddy for its remaining length (see photograph on the right). Vehicles exiting the existing access track could drag mud and leaf detritus onto the mainline A18, covering over the ghost-island markings and making the road slippery. This could lead to single vehicle loss of control collisions.	Provide a hard surfacing for a suitable distance along the existing site access track, such that mud and leaf detritus cannot easily enter the mainline.	 <p>Photograph of existing access track</p>


Reference	Location	Type of collision	Description	Recommendation	Photographs / Plans
3.7	Ghost-island.	Pedestrians struck by motor vehicles.	<p>There are existing footpaths (public rights of way) on either side of the A18. These meet the A18 immediately east of the existing access road (on the northern side) and slightly west of the new access road (on the south side). There is currently no safe way for walkers to traverse between the two footpaths, the only means being to walk on uneven, sloping grass verges (see photograph on the right) or on the carriageway. Also, walkers on the southern verge cannot easily see vehicles approaching from the east due to the curve in the road and the vegetation.</p> <p>The future ghost-island arrangement may push vehicles closer to the edge of the carriageway, as they avoid travelling within the ghost island, so making the situation even more unsafe for walkers.</p>	Provide a safe, evenly surfaced route for walkers traversing between the two footpaths.	 <p><i>Photograph of grass verge on southern side of A18</i></p>
3.8	New and existing access roads.	Side swipes, or shunts.	Drivers may mistake the existing retained access, which will be immediately east of the new access, for the new access, and vice versa, and mistakenly enter the wrong road. This could lead to unsafe manoeuvres, such as drivers attempting to reverse back out onto the mainline.	Provide advertising boards and signs at the entrance to the new road, making it clear which site it provides access to.	 <p><i>Photograph of existing access track</i></p>

4 Audit team statement

We certify that this Road Safety Audit has been carried out in accordance with GG119 Revision 2.

Road Safety Audit Team Leader

Name Andrew Russ

Signed 


Qualification EngTech MCIHT MSoRSA Certificate of Competence

Position Senior Engineer

Date: 20/11/2025

Road Safety Audit Team Member

Name Martin Magyar

Signed 

Qualification BEng, MSc (Eng), CEng MICE, MSoRSA Certificate of Competence

Position Technical Manager

Date: 20/11/2025

Appendix A – Documents forming the audit brief

Documents

Ref	Title	Date
RSA Brief	Singleton Birch – RSA1, GG119 Road Safety Audit Brief, revision 1	10/11/2025
Centrica Letter signed	Strategic Development Team letter / meeting minutes	21/10/2025
65216055-SWE-XX-XX-RP-TP-0001-P02-Transport Statement	Transport Statement, version P02	15/09/2025

Drawings

Drawing Number	Title
65216055-SWE-XX-ZZ-D-TP-0002	Proposed access junction including visibility splays and swept path analysis

Appendix B – Annotated scheme drawing

