

# **Environmental Impact Assessment Report (EIAR)**

for



Carrickmacross Road  
Kingscourt  
Co. Cavan

by

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## Table of Contents

Non-Technical Summary.....	4
1. EiAR Regulatory Requirements.....	9
1.1 Introduction .....	9
1.2 Screening.....	10
1.3 Scoping.....	11
1.4 Alternatives .....	11
2. Planning Development Context.....	13
2.1 Introduction .....	13
2.2 Planning Policy Compliance.....	13
2.2.1 Cavan County Development Plan 2022-2028.....	13
2.2.2 Project Ireland 2040 – National Planning Framework.....	14
3. Site and Process Description .....	16
3.1 Site Location & History.....	16
3.2. Process Description .....	19
3.3 IE Licence Details.....	30
3.4 Cumulative Impact.....	30
3.5 Assesment of the Risk of Accidents and Unplanned Events .....	30
4. Population and Human Health .....	33
4.1 Population and Human Health - Existing Environment.....	33
4.2 Population and Human Health – Environmental Impact .....	35
4.3 Population and Human Health – <i>Cumulative Impact</i> .....	35
4.4 Population and Human Health – Mitigation Measures .....	35
5. Biodiversity .....	36
5.1. Biodiversity – Existing Environment .....	36
5.2 Biodiversity – Environmental Impact.....	37
5.3 Biodiversity – Cumulative Impact .....	37
5.4 Biodiversity – Mitigation Measures.....	37
6. Land & Soil.....	40
6.1 Land & Soil - Existing Environment.....	40
6.2 Land & Soil – Environmental Impact .....	44
6.3 Land & Soil – Accidents & Unplanned Events .....	44
6.4 Land & Soil – Cumultive Impact .....	44
6.5 Land & Soil – Mitigation Measures .....	45
7. Water.....	46
7.1.1 Surface Water - Existing Environment .....	46
7.1.2 Surface Water – Environmental Impact.....	47
7.1.2 Surface Water – Accidents & Unplanned Events.....	47
7.1.2 Surface Water – <i>Cumulative Impact</i> .....	47
7.1.5 Surface Water – <i>Mitigation Measures</i> .....	48
7.2 Groundwater .....	50
7.2.1 Groundwater - Existing Environment.....	50
7.2.2 Groundwater – Environmental Impact .....	52

7.2.3 Groundwater – Accidents & Unplanned Events .....	52
7.2.4 Groundwater – Mitigation Measures .....	54
7.3 Wastewater.....	55
7.3.1 Wastewater - Existing Environment .....	55
7.3.2 Wastewater – Environmental Impact .....	55
7.3.3 Wastewater- mitigation measures .....	55
7.4 Flooding.....	56
7.4.1 Flooding - Existing Environment.....	56
7.4.2 Flooding - Environmental Impact.....	58
7.4.3 Flooding – Cumulative Impact .....	58
7.4.4 Flooding - Mitigation Measures.....	59
8. Air & Noise .....	60
8.1 Air .....	60
8.1.1 Emissions to Air – Existing Environment .....	68
8.1.2 Emissions to Air – Environmental Impact .....	68
8.1.3 Emissions to Air – Cumulative Impact.....	68
8.1.4 Emissions to Air – Mitigation Measures .....	69
8.2 Noise .....	70
8.2.1 Noise - Existing Environment.....	70
8.2.2 Noise - Environmental Impacts .....	72
8.2.3 Noise - Mitigation Measures .....	73
9. Climate .....	74
9.1 Climate - Existing Environment.....	74
9.2 Climate - Environmental Impact.....	75
9.3 Climate – Mitigation Measures .....	76
10. Material Assets – Roads & Traffic.....	77
10.1 Roads & Traffic – Existing Environment .....	77
10.2 Roads & Traffic – Environmental Impact.....	77
10.3 Roads & Traffic – Mitigation Measures .....	77
11. Cultural Heritage - Archaeology.....	78
11.1 Archaeology - Existing Environment.....	78
11.2 Archaeology – Environmental Impact .....	78
12. The Landscape .....	80
12.1 The Landscape - Existing Environment.....	80
12.2 The Landscape – Environmental Impact .....	82
12.3 The Landscape - Mitigation Measures.....	82
13. Interactions and Cumulative Impacts.....	83
13.1 Population and Human Health Interations and Cumulative Impacts .....	80
13.2 Land & Soil Interations and Cumulative Impacts .....	80
13.3 Water Interations and Cumulative Impacts .....	80
13.4 Air Interations and Cumulative Impacts .....	80
13.5 Noise Interations and Cumulative Impacts .....	80
13.6 Material Assets Interations and Cumulative Impacts .....	80

## List of Figures

Figure 1. Kingscourt Zoning Map 2022-2028	10
Figure 2. Kingspan Ltd Kingscourt Site Outlined in Red	17
Figure 3. Kingspan Ltd Site Map with Main Areas	18
Figure 4. Kingspan Panels – Shop 1 & 2 Processes with Major Emission Points	24
Figure 5. Kingspan Light, Air + Water – COE Rooflight Manufacture	27
Figure 6. Kingspan Light, Air + Water – Circularity Centre	29
Figure 7. Location of Dún na Rí Forest Park & Other Amenities near Kingspan	34
Figure 8. Kingspan Ltd, Kingscourt Site showing Landscaped Areas	37
Figure 9. County Cavan Natura 2000 Sites (SPAs)	38
Figure 10. County Cavan Natura 2000 Sites (SACs)	39
Figure 11. Bedrock Geology at Kingspan Ltd, Kingscourt	41
Figure 12. Subsoil at Kingspan Ltd, Kingscourt	42
Figure 13. Subsoil Sample Locations at Kingspan Ltd, Kingscourt	43
Figure 14. Rivers and Surface Water Sampling Locations	46
Figure 15. Groundwater Vulnerability at Kingspan Ltd, Kingscourt	51
Figure 16. Location of Groundwater Monitoring Wells at Kingspan Kingscourt	53
Figure 17. OPW Flood Maps	56
Figure 18. Groundwater Subsoil Permeability at Kingspan Ltd, Kingscourt	57
Figure 19. Alluvial Deposits within Kingscourt	58
Figure 20. Location of Grille in River Cabra West of Site	59
Figure 21. Location of Air Emission Points, Dec 2024	62
Figure 22. Pentane Recovery System	65
Figure 23. Kingspan Ltd Noise Measurement Locations	70
Figure 24. Map of National Monuments and Architectural Heritage	78
Figure 25. Cavan Landscape Character Types	80

## List of Tables

Table 1. Developments assessed for Cumulative Impact	31
Table 2. CSO Figures for Kingscourt 1996-2022	33
Table 3. Site History at Kingspan Ltd, Kingscourt	40
Table 4. Groundwater Vulnerability Matrix	51
Table 5. Main Air Emission Points at Kingscourt	60
Table 6. Minor Air Emission Points at Kingscourt	61
Table 7. Noise Readings May 2024	72
Table 8. Interactions and Cumulative Impacts Matrix	83

## List of Appendix

1. Kingspan Group PLC Environmental Policy & Climate Change Policy
2. Appropriate Assessment Screening Assessment
3. Soil and Groundwater Baseline Assessment
4. Air Dispersion Modelling

## Non-Technical Summary

Kingspan Ltd manufactures insulated panels and rooflights at its site in Kingscourt, Co. Cavan. Kingspan Insulated Panel (KIP) Division operate the panel manufacturing process and Kingspan Light, Air + Water (KLAW) Division operate the polycarbonate rooflight manufacturing process. The sites' Industrial Emissions Licence P0065-01, issued in 1997 is currently under review and this EIAR is submitted as part of the review process.

Kingspan started as a small engineering business in Kingscourt and has grown to a global business that operates in over 80 countries. The site is located less than 1km to the south east of Kingscourt and a Coillte forest, Dún na Rí lies to the back of the site, with the R179 to the front. An Irish Water Wastewater Treatment Plant lies adjacent to the site on the south western side and O'Reilly's concrete manufacturing site lies nearby to the south west and Paramount Doors factory is located across the road from the site. The entrance to the Boyne Valley to Lakelands Greenway is also located across the road from the site. The site is located on an area zoned "General Enterprise & Employment" in the Cavan County Development Plan 2022 - 2028. The site area is approximately 7.8ha.

There are approximately 230 people employed in Kingspan Kingscourt and the site provide substantial employment to the local area. Generally, Shop 1 and 2 operates two shifts (Monday to Friday) with approximately 187 KIP employees. The COE building operates continuously over four shifts, seven days per week and the Circularity Centre will operate over 1-2 shifts. There are approximately 43 KLAW employees. KIP and KLAW Divisional staff operate off site for a large the majority of the time. A security guard is located on site continuously.

The site operates under ISO 14001 (Environmental Management System), 45001 (Health & Safety Management System), ISO 9001 Quality Management System) and ISO37301 (Compliance Management Systems). KIP also has ISO 50001 (Energy Management Standard).

The site is licensed under Class 5.12(h) *The production of organic chemicals such as plastic materials (polymers, synthetic fibres and cellulose based fibres) (production means the production on an industrial scale by chemical or biological processes)* and the licence was obtained for the manufacture of Insulated panels in Shop 1 & 2.

The site is applying for a licence review as their site boundary has extended since the 1997 licence (Reg No. P0065-01) and the polycarbonate roof light manufacturing activity is now operational in the COE building (Centre of Excellence). The former Shop three building, now called the Circularity Centre has a compounding line for the manufacture of pellets that will be used as a raw material in the COE building. The review licence will also incorporate all major and minor emission points to air from the site, which have changed since the 1997 licence.

The site consists of the following main buildings and activities:

**Shop 1** is the metal forming process, in which cold roll forming of galvanised steel into purlins takes place. Insulated gutters are also manufactured in Shop 1 and a welding shop is in this area. There are 3 major emissions to air from Shop 1, which comprise a sample area dust extractor (A2-8) and two spray booth emissions (A2-14 & A2-15). There are two minor emission points to air from Shop 1 from the welding area.

**Shop 2** is where insulated panels are manufactured and where polyurethane foam is sandwiched between metal sheets, which are passed through a laminator to form a composite panel. Pentane is the blowing agent used in this process and a pentane storage tank is located at the back of this site. A pentane recovery system is being installed at the back of Shop 2 to take air emissions from the laydown and recover it for reuse in the production process. A shredder is also located in Shop 2 to shred and recycle panels. This process has been used intermittently in the past, but it is not currently operational. Emission points from this shredding area will also be diverted to the Pentane Recovery Unit (A2-1) for treatment of Volatile Organic Compounds (VOC) to  $<20\text{mg/m}^3$ . In total, two emissions points from a laydown area (*Stack C – Laydown 1 - extraction under laydown and Laydown 2 - extraction to right and left of laydown*) and emission points from a shredder area (*Stack J Vortex Filter and Shredder Room Exhaust*) are proposed to be diverted to the pentane recovery system,

Apart from major emission point A2-1, there are four other major emissions points to air from the panel line, including extraction from the primer application process before the laydown (A2-4), extraction from a chemical storage room (A2-5) and two dust extractors on the panel line (A2-6 & A2-7). A pyrolysis oven/rake burner is located at the back of Shop 2 and used to clean parts on the panel line (A2-12). There are also 9 minor emissions from Shop 2 from fume cupboards and gas & diesel burners, where the rated thermal input is  $< 1\text{MW}$  for natural gas burners and  $< 250\text{kW}$  for diesel burners.

**COE** (centre of excellence) is where polycarbonate roof-lights are manufactured. This is done by extrusion and forming of resin in five production lines in the COE building. Emissions from the COE process comprising Volatile Organic Compounds discharge to an activated carbon scrubber (A2-2) to treat emissions to  $<20\text{mg/m}^3$ . Other major emissions from the COE building comprise two dust extractors (A2-9 & A2-10) and a vacuum cyclone (A2-11) and a controlled pyrolysis oven for cleaning parts (A2-13). There are four minor emissions from the COE building comprising gas burners, but these are never used as heat generated within the production area heats the entire building.

A water trap is located on the COE extraction line to catch condensate from this process and this is manually drained and stored in a bunded IBC and disposed of as hazardous waste. Spent charcoal is also disposed of as hazardous waste.

An extrusion line (compounding line) is in place in the Circularity Centre to manufacture polycarbonate pellets for use in the COE rooflight process. Part of the raw materials for this line will be regrind waste rooflights from the COE building. An activated carbon scrubber is installed as part of this line, to treat emissions. This is located inside a plant room at the back of the building and the stack discharges through the roof of the building (A2-3).

Air Dispersion Modelling was conducted at the site for the 15 major emission points included in the IE Licence review, to determine worst case scenario ground level concentration of emissions from the site. The modelling study concludes that proposed emissions from the facility combined with baseline conditions will be in compliance with the ambient air quality standards. Therefore emissions to air from the site will have negligible impact on ambient air quality in the area.

Noise at the Kingspan site is assessed annually as part of the IE licence. The company has consistently been in compliance with the licence limits and noise from production activities is not audible extensively beyond the site boundary. Road traffic noise is the predominant noise source to nearby noise sensitive locations. The pentane recovery building proposed for installation in 2025 will not increase ambient noise levels at noise sensitive locations as all equipment will be located within the building and it will be sited behind Shop 2, which will provide a barrier to sound transmission.

The site is located in an area zoned for industrial use and presents little in the way of biological diversity. Dun a Ri forest park located behind the site will not be negatively impacted by the site or its activities. The Appropriate Assessment Screening undertaken as part a planning application Ref. 19362 for the construction of the COE building concluded that *this application, whether individually or in combination with other plans and projects, will have no impacts upon the Natura 2000 sites. The integrity of these sites will be maintained and the habitats and species associated with these sites will not be adversely affected.*

All surface water from the site discharges to the Cabra River, which flows in a culvert between Shop 2 and the COE building. There are shut off valves on the discharge drains in the yard area at the back of Shop 2 to stop flow in the event of a spill. On the new COE building, there are attenuation tanks within the draining system to manage surface water runoff. A baseline investigation of land and soil underneath the site, groundwater and surface water was undertaken and all surveys revealed that no hazardous substances or contamination was detected.

Water supply is from mains, but a production well was installed in 2020 to provide make-up water to the sprinkler water storage tank at the pentane storage area, which requires testing weekly. Water from this test is discharged direct to the stream. The site is connected to the public wastewater treatment

system and all foul water from sinks and toilets discharge via this drain which travel to the adjacent Irish Water wastewater treatment system. Wastewater generated on site arises from the COE extrusion line process and will also arise from the Compounding line extrusion process. This wastewater will be collected by water traps with the lines and then collected in IBC's, prior to removal off site as hazardous waste. The pentane recovery system will use approximately 20m<sup>3</sup> of water annually for steam generation, which will be required to replenish steam condensate water loss in the cooling tower. The pentane recovery is a closed system, so there is no discharge to water from the plant.

The site was subject to flooding in the past (2005 approx.) and this was due to the culvert at their site getting blocked by debris upstream in a high rainfall event. Because of this, the Cavan County Development Plan also list the area of the site as a Flood Zone. This site has measures in place to prevent this reoccurring, with CCTV monitoring of the culvert and 24-hour security on site, along with an Emergency Flood Response Plan.

The Kingspan site and operations have negligible impact on the landscape character of the area as it is located on an existing industrial area. The site is not located near any areas of significance in terms of architectural, archaeological or cultural heritage.

In 2020 the Kingspan Group committed to a 10-year group wide global sustainability strategy called Planet Passionate, which aims to impact on three big global issues: climate change, circularity and protection of our natural world and the company has set ambitious targets to achieve these aims by 2030 and they produce an annual report on these targets. In Autumn 2021, they launched Planet Passionate Communities, the philanthropic arm of their ambitious 10-year sustainability Planet Passionate programme, which provides supports at a local and global level.

The site development and operations have been undertaken in compliance with all relevant Planning Policies and Plans relevant to the area. The site operates under an IED licence (currently under review), so all environmental issues regarding emissions to air, surface water, groundwater, noise and all other environmental management issues relating to site operations will be addressed in the licence. This EIAR report has been prepared in line with Directive 2014/52/EU and in adherence to the EPA Guidelines on the information to be contained in Environmental Impact Assessment Reports Published May 2022. Interactions and Cumulative Impacts have been considered in this EIAR where they arise along with accidents and unplanned events.

## EIAR Contributors

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IE Consulting, Innovation Centre, Green Road, Carlow, Co. Carlow. Contact: Kevin Murphy & Jer Keohane	<ul style="list-style-type: none"> <li>• BSc &amp; MSc in Hydrology</li> </ul>	<ul style="list-style-type: none"> <li>• Safepass</li> </ul>	Experience in hydrogeological risk assessments, karst hydrogeology, EIARs, soil and groundwater baseline assessments, contaminant hydrogeology, site investigations, groundwater resource development, discharge licence applications and GIS.	Land and Soil Chapter and Water Chapter
Odour Monitoring Ireland Ltd Unit 32 De Granville Court, Dublin Rd, Trim, Co. Meath Contact: Brian Sheridan	<ul style="list-style-type: none"> <li>• B.Sc (Biol) Hons Analytical Science</li> <li>• M.Sc Eng. Engineering Science</li> <li>• Ph.D Eng.</li> </ul>	<ul style="list-style-type: none"> <li>• Research Ass. Environmental Engineering - Air Pollution Control University of California, Riverside</li> </ul>	Over 23 years working as an Air quality, Odour and Air Pollution Control Specialist	Air Dispersion Modelling
Whitehill Environmental Edgeworthstown Co. Longford Noreen McLoughlin	<ul style="list-style-type: none"> <li>• BSc Natural Sciences</li> <li>• MSc Freshwater</li> </ul>	<ul style="list-style-type: none"> <li>• MCIEEM.</li> <li>• Ecologist.</li> </ul>	Over 15 years experience in the ecological fields of conservation, impact assessment and water quality	Appropriate Assessment screening for Planning Application 19362, details of which were used in Biodiversity chapter

In addition to the above contributors, details of the proposed site operations and processes was obtained from Kingspan Staff including Paul Gaskell, Production Manager, Mark Lynch, ISO Systems Support Engineer and Samuel Fairbrother, Global Projects Engineer for Insulated Panels (Shop 1 & 2) and also Catriona Reilly, Compliance & QHSE Manager, Shane Kilcolm, Plant Engineer and Oleg Aleksandrov, Divisional Polymer Engineer, Kingspan Light, Air + Water.

# 1. EIAR Regulatory Requirements

## 1.1 Introduction

Kingspan Ltd manufacture insulated panels and rooflights on its site in Kingscourt, Co. Cavan. Kingspan Insulated Panel (KIP) division operate the panel manufacturing process and Kingspan Light, Air + Water (KLA+W) operate the polycarbonate rooflight process. The sites Industrial Emissions Licence P0065-01 issued in 1997 is currently under review and this EIAR is submitted as part of the review process.

Manufacturing began at this site in 1965 under the name of Kingscourt Construction Group. Following several acquisitions, the business was renamed Kingspan Group in 1983. In subsequent years, Kingspan Ltd grew rapidly by a combination of acquisition and globalisation. Heavy investment in Research & Development (R&D) led to the Kingspan Group becoming global leaders in high-performance insulation. Kingspan Ltd have been involved in Ireland's construction industry for over 55 years. It started as a small engineering business in Kingscourt and has grown to a global business, trading in over 80 countries with more than 210 factories employing over 22,000 people.

The site is located less than 1km to the south east of Kingscourt, Co. Cavan. A Coillte forest, Dún na Rí lies to the back of the site and the R179 Kingscourt - Carrickmacross road to the front of the site. An Irish Water Wastewater Treatment Plant lies adjacent to the site on the south western side and O'Reilly's concrete manufacturing site lies nearby to the south west of the site. Paramount Door Systems factory is located across the road from the site and the entrance to the Boyne Valley to Lakelands Greenway is also located across the road from the site. The area is approximately 7.8ha.

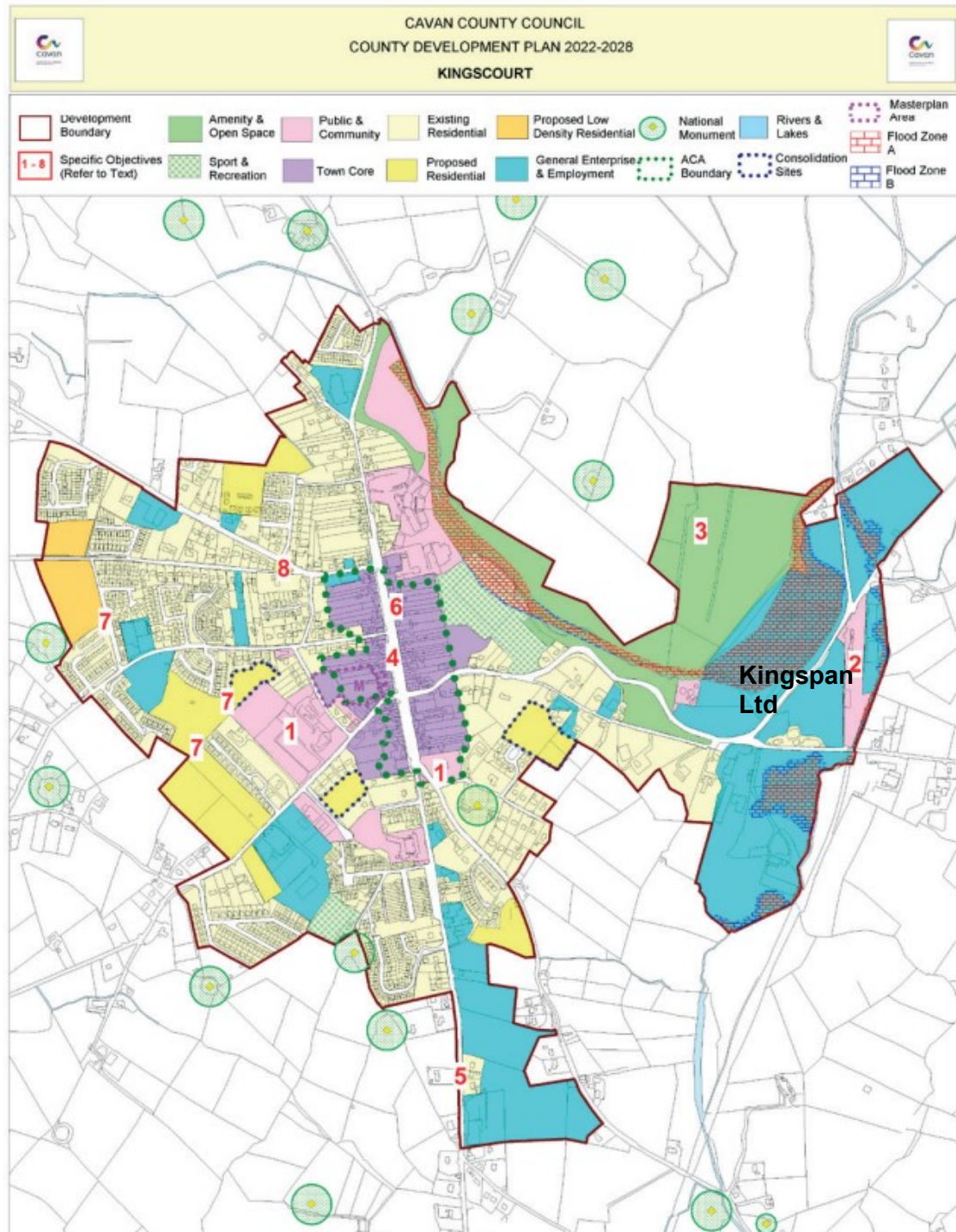
The site is located on an area zoned "General Enterprise & Employment" in the Cavan County Development Plan 2022 – 2028 Cavan County Development Plan and also as a Flood Zone as shown in Figure 1.

The site is applying for a licence review as their site boundary has extended since the 1997 licence (Reg No. P0065-01) and the polycarbonate roof light manufacturing activity is now operational in the COE building (Centre of Excellence). The former Shop 3 building, now called the Circularity Centre has a compounding line for the manufacture of pellets that will be used as a raw material in the COE building. The review licence will also incorporate all major and minor emission points to air from the site, which have changed since the 1997 licence.

This EIAR has been prepared in line with the *Directive 2014/52/EU of the European Parliament and of the Council of 16<sup>th</sup> April 2014 amending Directive 2011/92/EU on the assessment of the effects of certain public and private projects on the environment* and in adherence to the *EPA Guidelines on the Information to be contained in Environmental Impact Assessment Reports*, (May

2022) and the EPA Advice Notes on current practice in the preparation of Environmental Impact Statements (2003).

Figure 1.



© Cavan County Development Plan 2022-2028

## 1.2 Screening

The site falls under the list of activities that require Environmental Impact Assessment as laid down in the Planning and Development Regulations 2001 as amended. Schedule 5, Part 2(6)(a) for the Chemical Industry includes

*Installations for treatment of intermediate products and production of chemicals using a chemical or biological process* and no threshold is specified. Therefore this EIAR has been prepared for the IE Licence Review Application for this site.

### **1.3 Scoping**

An informal scoping exercise was carried out to ensure that a comprehensive EIAR was compiled. The scoping exercise followed current EPA Guidelines and Advice Notes along with knowledge of site operations which are ongoing by Kingspan Ltd, Kingscourt since 1965.

All issues required under Directive 2014/52/EU were examined in this EIAR and specific important issues are listed as follows.

- Population and Human Health
- Biodiversity
- Land & Soils
- Water – Surface Water, Groundwater, Wastewater & Flooding
- Air –Emissions to Air & Noise
- Climate
- Material Assets – Roads & Traffic
- Cultural Heritage
- The Landscape
- Interactions & Cumulative Impacts

This EIAR has been prepared in the ‘Grouped Format’ structure, which examines each aspect of the environment as a separate section, referring to the existing environment and any proposed developments, likely impacts and mitigation measures. No major difficulties were encountered in compiling the EIAR.

### **1.4 Alternatives**

Directive 2014/52/EU requires that the EIAR contains:

*“a description of the reasonable alternatives studied by the developer, which are relevant to the project and its specific characteristics and an indication of the main reasons for the option chosen, taking into account the effects of the project on the environment.”*

The production of insulated panels has been undertaken at this site since 1965, so it is well established in this location. The manufacture of rooflights commenced in 2016 on a small scale on the site also. However, as this part of the business grew, there was a demand to expand this operation and the company applied for planning permission to extend the site and build a new COE facility at the back of the existing insulated panel facility (Shop 1&2).

### **Constraints of existing site**

On the existing site, the only suitable area for expansion was to the back of the site, previously used for storage/lorry parking as this adjoins the existing site and is in the ownership of the company. The R179 lies to the front of the site and an Irish Water Wastewater treatment plant on one side and an agricultural field to the other.

### **Kingspan site zoning**

The Kingspan Kingscourt site are zoned as “General Enterprise & Employment” in the Cavan County Development Plan 2022 – 2028, so its location is in keeping with the objective of promoting economic growth in a sustainable location on zoned land on the edge of Kingscourt.

### **Suitability of the application site**

The Kingscourt site has existing infrastructure in terms of buildings and services for industrial use. The placement of the COE building on this site was chosen as the space was available for development and the number of suitably sized sites zoned for industrial use is limited in the area. No part of the site is located within an area with a statutory environmental designation i.e. Special Protection Area (SPA), Special Area of Conservation (SAC), Candidate Special Area of Conservation (cSAC). There are no "protected" buildings or buildings of architectural merit located with the boundaries of the site. Similarly there are no "specific" protected views into or out of the site. The application site is adjacent to the R179 Regional Road so has immediate linkage to existing regional road infrastructure.

### **Existing Resources**

There is considerable knowledge and experience established on the Kingscourt site for the manufacture of insulated panels and roof lights, so it makes sense to develop and expand at this location. The majority of the staff are within commuting distance and Kingspan and the site have put resources into staff development and training at this site.

## 2. Planning Development Context

### 2.1 Introduction

Kingspan Ltd is applying for a review of its IED licence for the following class of activity: Class 5.12(h) *The production of organic chemicals such as plastic materials (polymers, synthetic fibres and cellulose based fibres) (production means the production on an industrial scale by chemical or biological processes).*

Kingspan Ltd have obtained planning permission for all developments on site from Cavan County Council including the proposed Pentane Recovery Unit (Ref No. 2460375) and the COE building (Ref No. 19362). For the COE Planning Application, an Appropriate Assessment Screening Report was submitted along with an Environmental Impact Assessment Screening Report. Confirmation was obtained from Cavan County Council regarding all abatement systems that were exempt from planning.

### 2.2 Planning Policy Compliance

The following planning policy documents are of primary relevance to current activities at the site:

- Cavan County Development Plan 2022 – 2028
- Project Ireland 2040 - Draft First Revision to the National Planning Framework (July 2024)

#### 2.2.1 Cavan County Development Plan 2022-2028

The Cavan County Development Plan for 2022-2028 sets out the strategic framework for economic development in Kingscourt. Section 2.7.5 of the Plan relates to Economic Development and the following Economic Development Objectives are set:

**Kingscourt Economic Development Objectives**  
It is a development objective of Cavan County Council to:

- KE 01** Support the consolidation and growth of existing enterprises and the development of employment opportunities within the town.
- KE 02** Facilitate the establishment of new enterprise and employment uses on lands identified for employment purposes.
- KE 03** New enterprises shall demonstrate high quality architectural built form, that contributes to a positive sense of space and distinctiveness.

The Kingscourt Economic Development Objectives set out in the 2022-2028 Plan are in line with development works at Kingspan Ltd, as the business continues to

grow with recent construction of the COE Building. Expansion of the site is necessary to meet the growing market demand for insulated panels and rooflights across the world.

Section 13.6.11 of the Plan relates to Enterprise and Employment and states that

*The Planning Authority encourages high quality design, materials and finishes and good quality landscaping for all commercial and industrial developments. In assessing planning applications a number of considerations will be taken into account:*

- *Conformity with relevant Development Plan land use policies and objectives*
- *The intensity and nature of the proposed use*
- *Achievement of an appropriate density and scale of development*
- *Provision of open space and high quality landscaping plans*
- *High quality design*
- *Potential impact of traffic movement and parking provision*
- *Impact on amenities of the surrounding areas*
- *Energy efficiency and overall sustainability of the development*
- *Waste Management measures*

In all developments at Kingspan Kingscourt, all issues outlined in this section were considered at planning stage.

## **2.2.2 Project Ireland 2040 – National Planning Framework**

The Project Ireland 2040 - Draft First Revision to the National Planning Framework (July 2024) lists the following National Strategic Outcomes:

1. Compact Growth
2. Enhanced Regional Accessibility
3. Strengthened Rural Economies and Communities
4. High-Quality International Connectivity
5. Sustainable Mobility
6. A Strong Economy, supported by Enterprise, Innovation and Skills
7. Enhanced Amenities and Heritage
8. Transition to a Low Carbon and Climate Resilient Society
9. Sustainable Management of Water, Waste and other Environmental Resources
10. Access to Quality Childcare, Education and Health Services

In 2020 the Kingspan Group committed to a 10-year group wide global sustainability strategy called Planet Passionate, which aims to impact on three big global issues: climate change, circularity and protection of our natural world and the company has set ambitious targets to achieve these aims by 2030 and they produce an annual report on these targets.

In Autumn 2021, Kingspan launched Planet Passionate Communities, the philanthropic arm of their ambitious 10-year sustainability Planet Passionate

programme, which provides supports at a local and global level. The goals of the Kingspan Planet Passionate strategy are in line with the vision of the Project Ireland 2040 - Draft First Revision of the National Planning Framework.

## 3. Site and Process Description

### 3.1 Site Location & History

The site is located less than 1km to the south east of Kingscourt, Co. Cavan. A Coillte forest, Dún na Rí lies to the back of the site and the R179 Kingscourt - Carrickmacross road to the front of the site. An Irish Water Wastewater Treatment Plant lies adjacent to the site on the south western side and O'Reilly's concrete manufacturing site lies nearby to the south west of the site also. Paramount Door Systems factory is located across the road from the site and the entrance to the Boyne Valley to Lakelands Greenway is also located across the road from the site. A site map is provided in Figure 2.

There are approximately 230 people employed by the site. Generally, Shop 1 & 2 operates two shifts Monday to Friday; 8am to midnight. The COE operates four shift cycles 24/7, seven days per week. It is anticipated that the Circularity Centre will operate one to two shifts and office staff generally work 9am-5pm. A security guard is located on site continuously. A detailed site map of the main buildings and process areas on site is provided in Figure 2. Details of all manufacturing areas on the site are provided in the following sections. A detailed site map of the main buildings and process areas on site is provided in Figure 3.

According to Cavan County Council Planning Records, the site first obtained planning permission in January 1974 (Ref No. 645689) to erect factory offices. Since this time, numerous Planning Applications were submitted to expand and develop the site.

The site lies on a small stream, which previously flowed at the back of the original buildings (Shop 1 & 2). In 2006, the site was granted planning to culvert this stream and it now lies between Shop 2 and the new COE building.

Figure 2. Kingspan Ltd, Kingscourt Site Outlined in Red

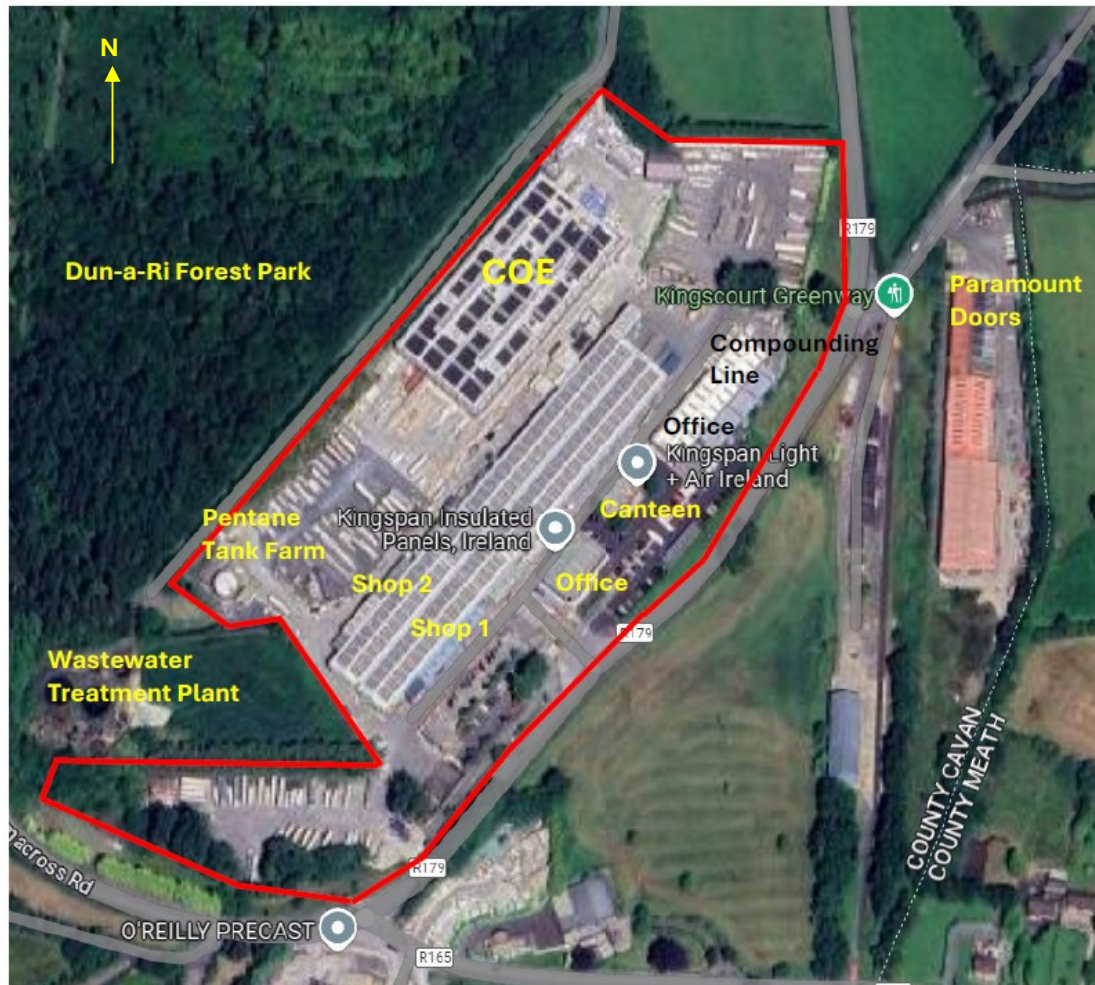
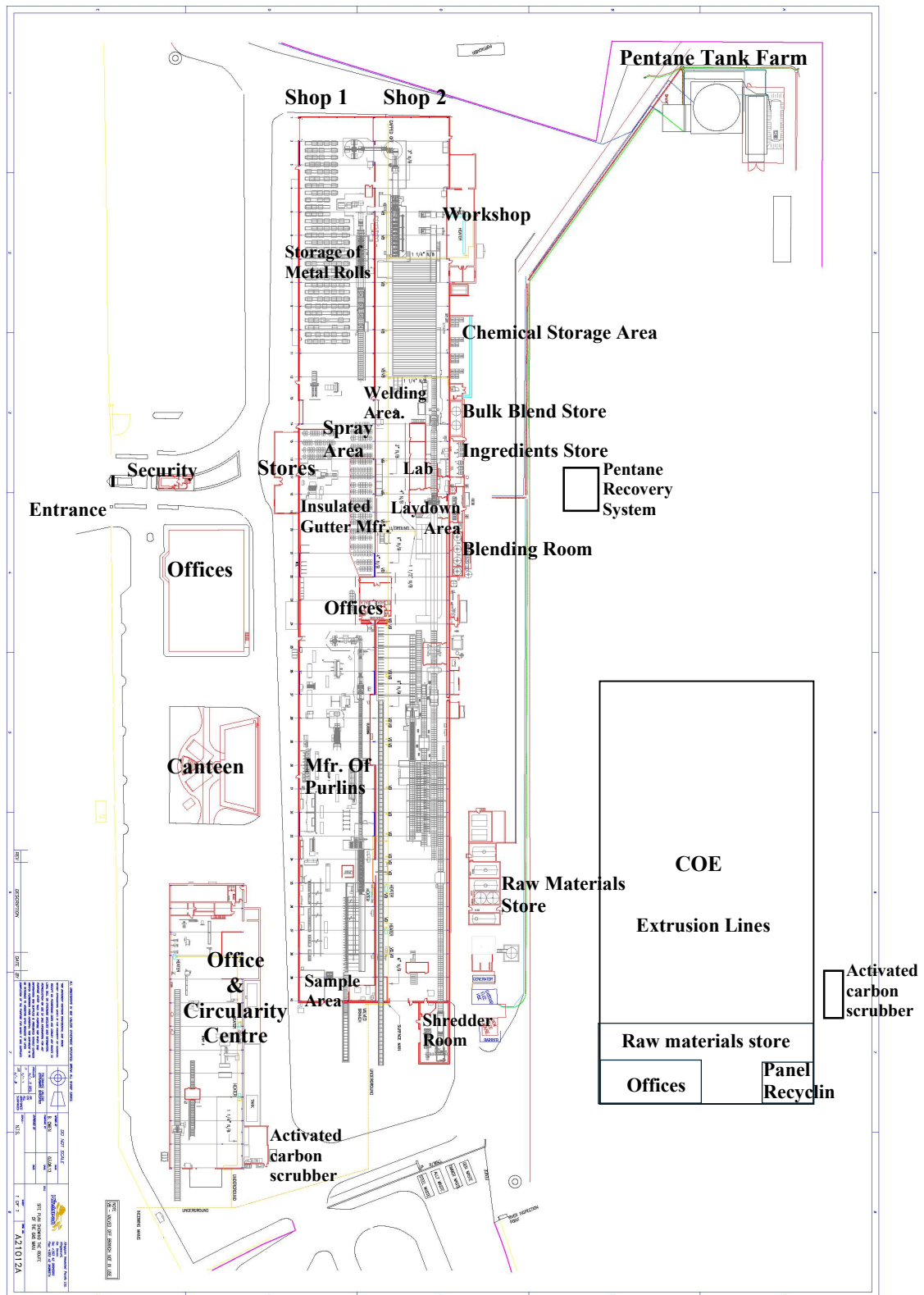


Figure 3. Kingspan Ltd, Kingscourt Site Map with Main Areas



### 3.2. Process Description

The site operates under ISO 14001 (Environmental Management System) and 45001 (Health & Safety Management System). Each site also has ISO 9001 Quality Management System) and ISO37301 (Compliance Management Systems). Kingspan Insulated Panels also has ISO 50001 (Energy Management Standard). The Kingspan Group PLC Environmental Policy and Climate Change Policy is provided in Appendix 1.

At this site, manufacturing takes place within four main areas on the site; Shop 1 & 2, COE building and Circularity Centre.

- Shop 1 is the metal forming process, in which cold roll forming of galvanised steel into purlins takes place. Insulated gutters are also manufactured in Shop 1 and a welding shop is in this area.
- Shop 2 is where the insulated panels are manufactured, where polyurethane foam is sandwiched between metal sheets, which are passed through a laminator to form a composite panel.
- COE (centre of excellence) building is where polycarbonate roof-lights are manufactured.
- A Circularity Centre is in place in the former Shop 3 building with a Compounding Line. This area will have one extrusion line to manufacture polycarbonate pellets and will re-use waste polycarbonate. The product from the Circularity Centre will be used as a raw material for the COE rooflight process.

In addition to the main production activities there is also an office building, canteen and security hut to the front of the site and a workshop and chemical storage areas to the back.

#### Shop 1

The Purlin Line automatically rolls galvanised steel into purlins, for use as steel support structures for the Insulated Panels manufactured by the site.

The insulated gutters are manually manufactured in a separate area in Shop 1. This entails assembling the structures with steel panels, spraying them with solvent based glue, sticking the insulation to them and adding a top panel also. 1.5 tonnes of solvent is used per annum and the glue is sprayed in a dedicated spray booth with two discharge stacks (**A2-14 & A2-15**), subject to a BAT limit of 50mg/m<sup>3</sup> as per the adhesive coating BAT Guidance Note for Solvent Use in Coating. The spray booths have pre-filter and carbon filter to capture solvent emissions and differential pressure monitors are being installed on these units to aid preventative maintenance. A Standard Operating Procedure is also being developed to ensure effective maintenance, to determine the optimum time to change the carbon filters, to prevent emissions exceeding limit values. The glue and thinner are stored in this area in a flammable bunded cabinet.

A welding area is located across from the spray booth area where small parts are manufactured. This area has two minor emission points (A3-1 & A3-2) which are flexible Local Exhaust Ventilation points used intermittently in this area when welding occurs. A3-1 extracts from a plasma cutter and separate flexible arm. A3-2 extracts from three separate flexible arms. The welding area is not in use continuously.

A 'Sample Area' is located at the corner of Shop 1. This small building is used for cutting samples of final product for supply to customers. It contains a crosscut saw, with its own dust extraction system. Dust from the saw is automatically extracted to a dust filter housing located externally outside the sample area (A2-8). The sample area has limited usage, approximately 1 hour per day.

The remainder of Shop 1 is used for storing rolls of metal. A store room is located in front of Shop 1 close to the office building, which contains small volumes of chemicals and consumables used in the production area.

Waste materials generated in Shop 1 include non-hazardous waste metal, timber and plastic which are recycled. Hazardous wastes generated include empty drums, contaminated rags and spray booth filters.

Water is not required for the production process in the Shop 1, so no process wastewater is generated from this building. Foul sewerage from sinks and toilets discharge to the public wastewater system. Rainwater from roof areas discharges directly to the stream at the back of the site.

## Shop 2

The main chemical processing takes place within Shop 2 and its associated activities externally to the back of the site, which are detailed in this section.

**The Pentane Tank Farm** is located at the back of the site. The Pentane tank is a double walled semi-submerged tank with capacity of 50m<sup>3</sup> hidden under a grassy mound. Pentane has a density of approximately 624kg/litre so the tank stores a maximum of 33 tonnes of pentane. Pentane is a highly flammable gas and is used as the blowing agent for the foam in the insulated panels. Deliveries take place once per month and the tank delivery area is specially designed to ensure safety and detailed procedures for off- loading pentane are in place at the site. A large water tank for use by the sprinkler system is located beside the Pentane Tank Farm. There is also a 1,225 litre self-bunded diesel tank beside the sprinkler system.

**The Pentane Line** from the tank farm to the site runs underground and is double skin. There are two lines for pentane, one for delivery to the factory and one return line to the tank, to provide an open valve loop system, designed to safeguard against any build-up of pressure within the system. The two pipelines

enter the production area at the corner of Shop 2 (nearest the pentane tanks) and run at roof level up the factory to a Pentamat Booth and from here to the Laydown Area.

**The Pentamat Booth** is located upstairs beside the Blending Room. This has an enclosed pentane pumping machine, with an emergency discharge stack (A3-22), with alarms and associated safety features. The stack is in place as a safety feature in case of leakage of pentane. If a leak occurs, an alarm is triggered and ventilation increases to discharge the flammable gas to safety. In normal operation there is no discharge through the pentamat booth stack and a leak has never occurred at the site.

**The Raw Materials Store** is located in a dedicated separate bunded building at the back of the site. This building stores raw materials for the process in three MDI tanks and two Polyol tanks. A gas burner is in place in this area with one minor emission point (A3-17).

**The Chemical Ingredients Store** is located internally at the back of the site near the Bulk Blend Store. It contains chemicals required for the process. Chemicals are stored in 1,000 litre IBCs in this store, which is bunded. This room is heated by a gas burner, with minor emission point (A3-14).

**The Blending Room Store** contains a Pol tanks 4/5/6/7 in which ingredients are mixed and these are then stored in the Bulk Blend Store. Pol 5 tanks is used for mixing and the other tanks are used for trial products.

**The Bulk Blend Store** contains Pol tanks 1 & 2 in which ingredients from Pol 5 tank area are stored, prior to use in the production laydown area.

**The Laydown Area** is where the raw materials (pentane and foam mixture) are pumped into a dedicated distribution head which distributes the foaming mixture between two metal sheets, which expands and forms the composite panel. A dedicated control room is located beside the Laydown Area and a smaller nozzle cleaning room is located beside this. This room has one minor extraction vent to air (A3-6). A gas burner is also in place before the laydown, called the preheating sauna, with minor emission point (A3-15).

The main extraction from the Laydown area is from under the area (Laydown 1, formally called Stack C). In addition, there is also extraction from both sides of the Laydown Area (Laydown 2). Currently these emission points discharge in separate emissions points to air (Laydown 1/Stack C & Laydown 2) but it is planned to discharge these two stacks to a pentane recovery abatement system, planned for installation in 2025. There will be one main emission point from the pentane recovery system – **A2-1**. A primer is applied to the panels prior to the Laydown Area. This has an extraction to air (**A2-4**).

**PA1 Room** - This is a small room located externally at the back of Shop 2. It contains a raw material, which is automatically fed to the production area. The room has PA1 chemicals to the left and Quad Core Chemicals to the right in bunded areas. The room has an extraction system in place to remove unwanted fumes (A2-5).

**The Laminator** section of the line after the Laydown Area is heated by burners fuelled by Natural Gas, with minor emission point (A3-16).

**The Saw Area** after the laminator has automatic dust extraction to a dedicated bag filter extraction unit, located in a room at the back of Shop 2. Extraction from the saw area to atmosphere is in place at this location and two extractors are in place; A2-6 – formally Stack D, which is the emission from the main saw and A2-7 Cyclone, which is a back-up saw with intermittent use.

**A Shredder Room** is a dedicated room at the end of Shop 2 and has currently ceased operation due to high VOC emissions. Its function is to recycle waste / off-spec panels by separating the metal from the insulation for recycling and re-introduce the insulation to the line for re-use within the panels. This system has two discharges to air associate with it; One is a discharge direct from the shredder – Shredder Stack - and the second is a Vortex Filter located externally at the back of the site. The vortex filter is an enclosed system where dust is collected and a major emission point is in place (formally stack J). Both emission points from the shredder will be directed to the pentane recovery system. When this occurs, the shredder room will be used again.

**Pentane Recovery System** - Air emissions from four stacks mentioned previously i.e. Laydown 1 (Stack C) - extraction under laydown, Laydown 2 - extraction to right and left of laydown, Shredder Room Exhaust and Stack J Vortex Filter will be collected via pipework from each stack at high level and travel via a pipeline service bridge between Shop 2 and the proposed building containing the pentane recovery system.

Pentane recovered is stored in a 500litre buffer tank and then piped back to the pentane line in Shop 2 via the pipeline service bridge, for re-use in panel manufacturing. It is estimated that approximately 5.6 tonnes of pentane will be recovered annually. Treated gas from the carbon beds will be discharged via a 6.5m exhaust stack (A2-1) which is designed to treat gases to <20mg/m<sup>3</sup>.

**A Laboratory** is located beside the Laydown Area. A small amount of chemicals are kept in secure cabinets in the labs. There are two fume cupboards in the chemical lab and one in the material lab and two minor emission points from fume cupboards (A3-4 & A3-5).

**Waste** – A waste area is located at the back of the site, which comprise 3 x 1,000 litre bunded IBC's and 200l drums. Waste ISO/POL from purging the line during

start up stages or product changes and from samples taken for lab testing are manually placed in these tanks, which are disposed of as hazardous waste.

A large **Chemical Storage Area** is located at the back of the site, which has product stored in 1,000 litre IBC's. This area has a secondary bund. Old waste products are also stored in this area, awaiting disposal.

**Oven** - a PCP rake burner oven - Controlled pyrolysis cleaning oven, is located in a small room at the back of Shop 2. The purpose of the oven is to clean distribution heads used in the Laydown Area so they can be reused. The furnace has two burners, the first one heats the flue and second one heats the oven. The second one won't start until the first one has heated up. There is one emission point from the oven – **A2-12**. This oven has a capacity of 1.53m x 1.04m x 1.11m = 1.8m<sup>3</sup> or 1.8 tonnes. The oven will typically be used twice per day to clean nozzle parts and each cycle takes 4 hours. Assuming the oven is used over a maximum of three shifts (3 times/day) the capacity is 5.4 tonnes per day. A limited volume of waste ash is generated from the oven and this is to be stored and tested to determine the correct disposal route.

A **Workshop** is located at the back of the site connected to Shop 2. This has one Local Exhaust Ventilation minor emission point to air from a welding area, which has limited use (A3-3). It also has a gas burner with two discharge vents at the back of the workshop (A3-12 & A3-13).

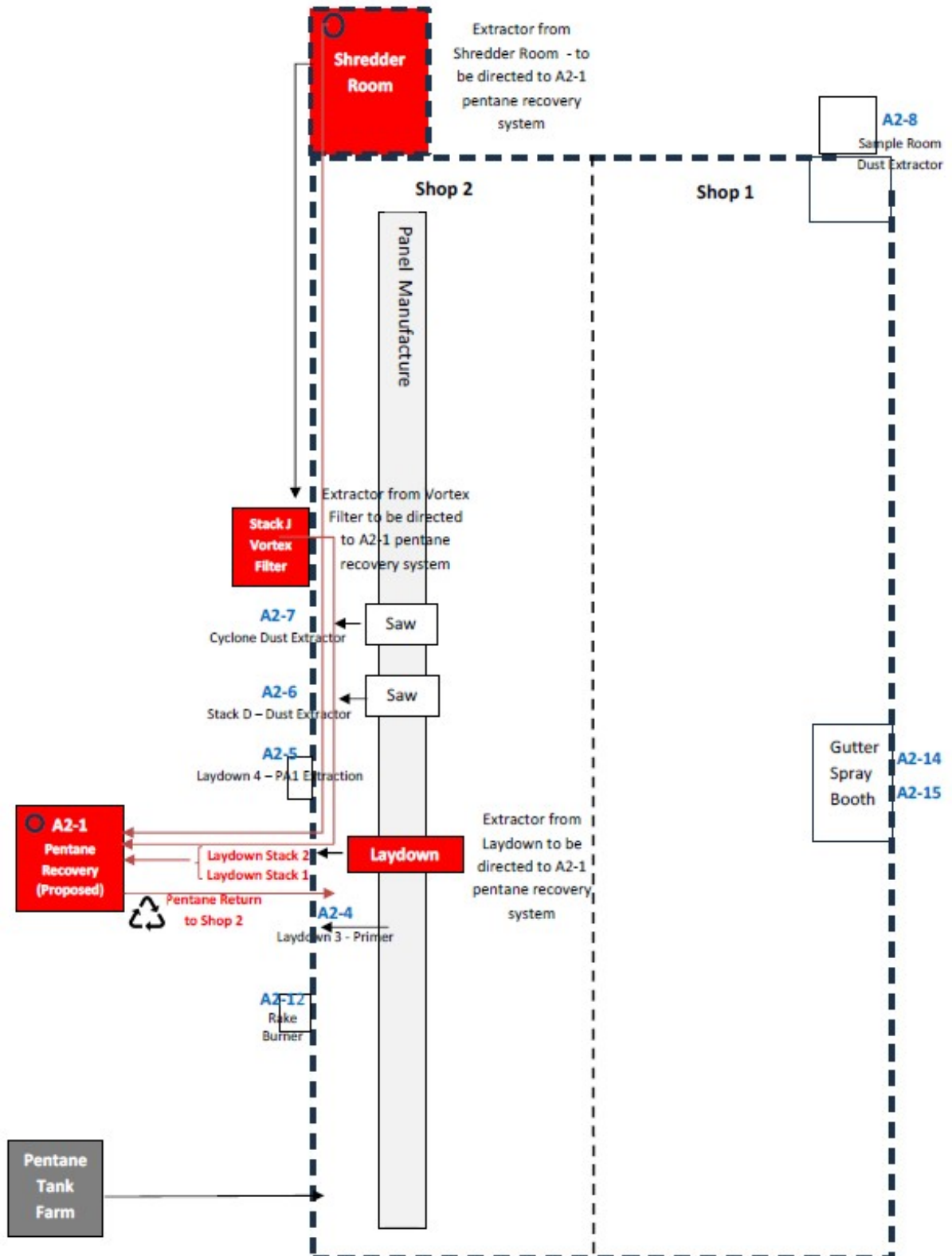
**Gas Burners** - There are two gas burners in Shop 2 for space heating with minor emission point (A3-10 & A3-11).

Waste materials generated in Shop 2 include non-hazardous waste metal, timber and plastic which are recycled. Hazardous wastes generated include empty drums, contaminated rags and waste chemicals.

Water is not required for the production process in the Shop 2, except 20m<sup>3</sup> of water annually for steam generation in the pentane recovery room. No process wastewater will be generated in Shop 2. Foul sewerage from sinks and toilets will discharge to the public wastewater system.

The testing of the sprinkler system for the pentane tank is undertaken on a weekly basis and water used in the test is discharged to the stream on site. Water to refill the sprinkler tank was formally obtained from mains, but this put pressure on the local water supply to the area, so a production well was drilled in 2020 to supply make-up water for the sprinkler system test. It is estimated that 10m<sup>3</sup> of water is pumped from the production well weekly for this purpose. A schematic of Shop 1 & 2 operations is provided in Figure 4 showing all major emissions to air.

**Figure 4. Kingspan Panels – Shop 1 & 2 Process with Major Emission Points**



## COE Building - KLAW

**Extrusion** – The COE building has five lines for the manufacture of polycarbonate roof lights (Lines 1, 2, 3, 4 & 5) and a sixth line may be introduced in the future. The process is a polycarbonate resin extrusion process. Raw polymer resin, stored in silos externally and other raw material in 1 tonne bags are mixed with a small volume of additive and forced through a die into continuous lengths of flat sheets or profiles with uniform cross sections, to make the roof light sheeting.

On lines 1-4 there is an emission point from each extruder. Line 5 does not have an emission point. The extraction system from lines 1-4 (and potentially 6 when installed), is to an activated charcoal scrubber at the back of the building, which has one emission point to air (**A2-2**). Once the activated carbon from the abatement system is saturated, it is replaced and disposed via a hazardous waste disposal contractor. Condensate water is generated in the extrusion process and this is collected in a condensate trap, which drains to a bunded IBC. This is disposed off-site via a hazardous waste disposal contractor.

**Line 4 Saw** – Line 4 in the COE building includes a section for cutting roof lights and an enclosed saw is in place for this. Resin cuttings from this process discharge to a Coral dust extraction system, which is a closed system located externally at the back of the COE plant. There is a vent from the extractor, which discharges clean air (**A2-9**). Resin shavings from the system is collected in bags at ground level under the extractor and recycled to the process.

**An off-line saw** is in place in the COE building for cutting roof lights and this is used intermittently. Resin cuttings from this process discharge to a Modesta dust extraction system, which is also a closed system located externally at the back of the site. There is a vent from the extractor, which discharges clean air (**A2-10**). Resin dust from the system is collected in bins at ground level under the extractor and recycled to the process.

There is a **vacuum system** in the COE building with dedicated vacuum lines discharging to a Silbia cyclone dust extractor, which is a closed system located externally at the back of the site. The vacuum system is used intermittently by site operators. There is a vent from the extractor, which discharges clean air (**A2-11**). Resin dust from the system is collected in a bag at ground level under the extractor and recycled to the process.

A **controlled pyrolysis cleaning oven (cfm)** is located in the COE building, to clean dies used in the extrusion of plastic material. The oven burns off the material at the end of the die (extrusion head) so that the die can be reused. The oven has a heated oven chamber to remove plastics from the dies and post burner to ensure complete oxidation in the post-combustion chamber to transform the harmful components into harmless substances (carbon dioxide and water vapour), for discharge via the stack (**A2-13**). This oven has a capacity

of 0.56m x 0.62m x 2.6m = 0.9m<sup>3</sup> or 0.9 tonnes. Currently this oven is used once per week or once every two weeks and a cleaning cycle takes 4 hours. Assuming the oven is used at the end of every shift (3 times/day) the capacity is 2.7 tonnes per day. A limited volume of waste ash is generated from the oven and this is to be stored and tested to determine the correct disposal route.

Two Thermoformer ovens are in place in the COE building for heating/moulding plastics. These ovens have intermittent and limited use currently and they discharge heat into the workplace and there is no discharge to air from them.

There are four gas burners in the COE building, with minor emission points (A3-18, A3-19, A3-20 & A3-21). These burners are not used as the production process generates heat and they are not required.

**Regrind Room** - At the back of the COE building there is a regrind room, where waste polycarbonate sheets are grinded for reused in the production process. This room has a grinder, which is manually fed by one operator. The material is extracted from the base of the grinder to a Kramer collection/transportation system and dust collection unit in the room. Grinded material goes to reclamation cyclones, which separate out re-usable polycarbonate from the dust. In the cyclone, the lighter (dust) particulates are drawn off to the dust collection unit, which comprises two units of 6 filter bags. The heavier, re-usable grinded material is fed to flexible silos in an adjoining room, for reuse in the process. There are no discharges to air from the regrind room.

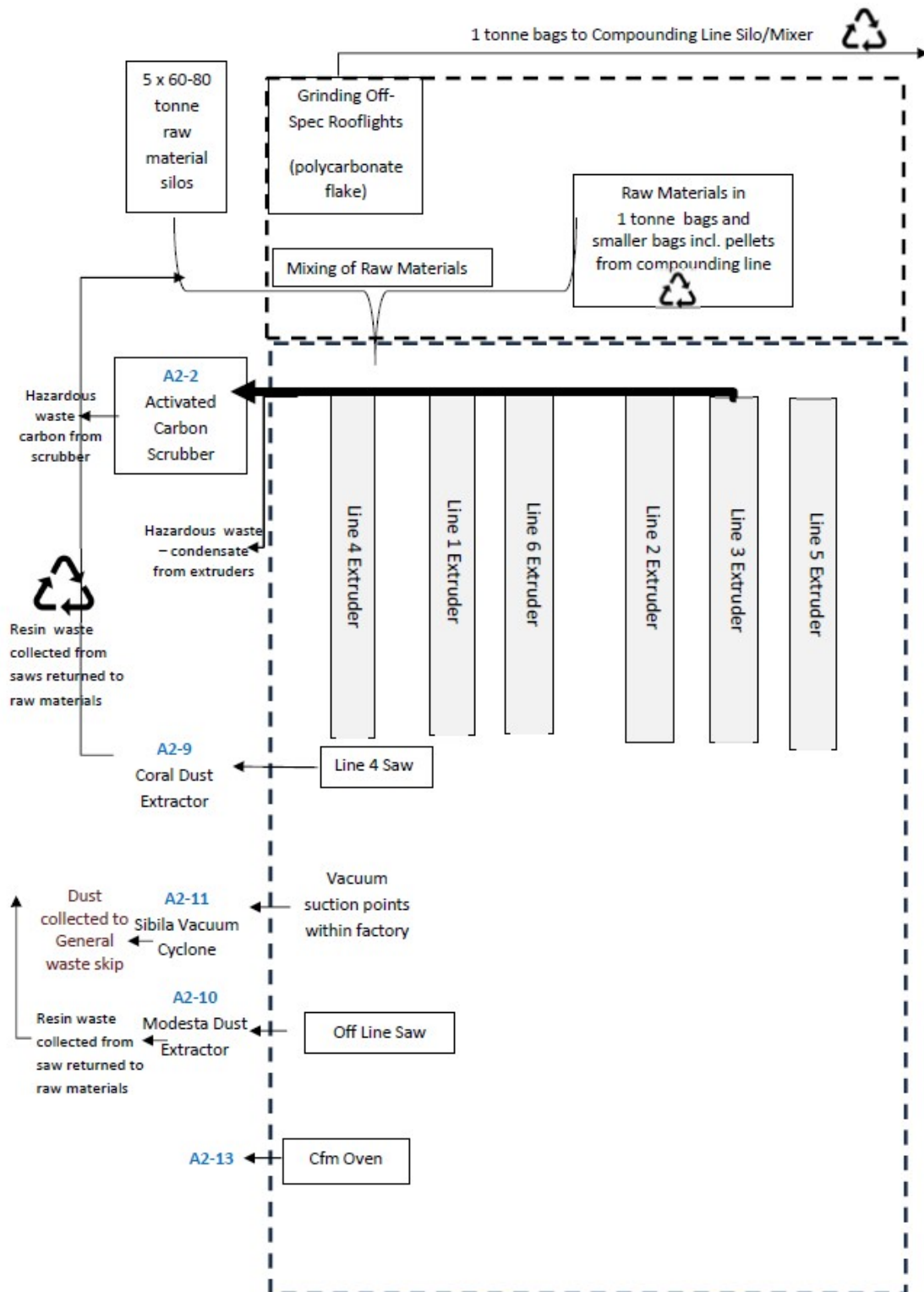
The room adjoining the grinding room has a bandsaw, where polycarbonate sheets are cut to the size required by the grinder. A small dust extractor is attached to the saw. Operators also manually cut polycarbonate sheets with a handsaw. There are no discharges to air from this room.

Water is not required for the production process in the COE building, but water is generated by the extrusion process, so condensate water is generated as a by-product, which is taken off site as hazardous waste. Foul sewerage from sinks and toilets will discharge to the public wastewater system.

Waste materials generated in the COE building include non-hazardous waste timber and plastic which are recycled. Hazardous wastes generated include condensate waste water from the extrusion line and waste saturated carbon. Out of spec roof lights are recycled in a grinder on site and recycled to the process and they will also be used as a raw material for the compounding line.

A schematic of the COE K LAW operations is provided in Figure 5 showing all major emissions to air.

**Figure 5. Kingspan Light, Air + Water – COE Rooflight Manufacture**



## Circularity Centre - Compounding Line

An extrusion line is in place in the former Shop 3 building, now called the Circularity Centre. This will manufacture polycarbonate pellets for use in the COE rooflight process. Part of the raw materials for this line will be regrind waste rooflights from the COE building. An activated carbon scrubber is installed as part of this line, to treat emissions. This is located inside a plant room at the back of the building and the stack discharges through the roof of the building (A2-3).

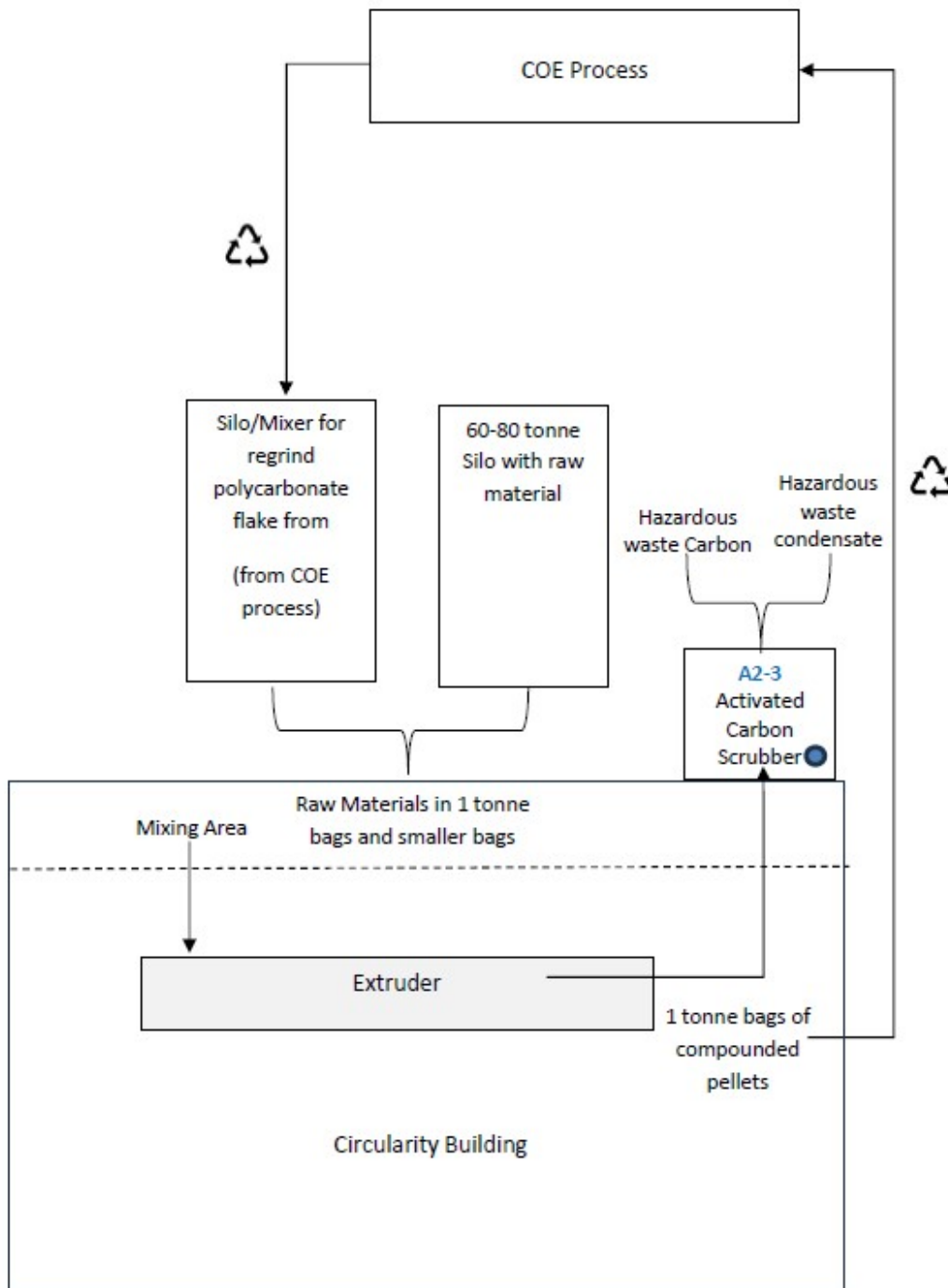
Water is not required for the production process in the compounding line, but water is generated by the extrusion process, so condensate water is generated as a by-product and this is collected from the line in a bunded IBC, which is taken off site as hazardous waste. Foul sewerage from sinks and toilets will discharge to the public wastewater system.

Waste materials that will be generated in the Circularity Centre include non-hazardous waste timber and plastic which will be recycled. Hazardous wastes include condensate waste water from the extrusion line and waste saturated carbon from the scrubber.

A schematic of the Circularity Centre compounding line operations is provided in Figure 6 showing the major emission point to air.

There are three other minor emissions to air from the site, the diesel generator exhaust (A3-7) at the back of the site near the raw materials store, the kerosene burner for the office (A3-8) and the diesel boiler for stores (A3-9).

**Figure 6. Kingspan Light, Air + Water - Circularity Centre**



The site uses energy in the form of electricity and natural gas, which is piped to the site. Currently the site has solar panels on Shop 1, Shop 2 and the COE roof and generates approximately 650MWh of electricity annually. There are plans to install solar panels on the Circularity Centre roof also, as part of the groups Planet Passionate strategy.

### 3.3 IE Licence Details

The site currently holds Industrial Emissions Licence P0065-01 which was issued in 1997. The site is applying for a review of its IE licence for the following class of activity:

*Class 5.12(h) The production of organic chemicals such as plastic materials (polymers, synthetic fibres and cellulose based fibres) (production means the production on an industrial scale by chemical or biological processes).*

The site is applying for a licence review as

1. Their site boundary for production operations has extended since the 1997 licence.
2. The site has a new building (COE – Centre of Excellence) for the manufacture of polycarbonate roof lights with new raw materials and new emission points.
3. The site is installing a compounding line for the manufacture of pellets for use as a raw material in the COE building in the former Shop 3 building, now called the Circularity Centre. This process has similar raw materials to the COE building and a new emission point.
4. New air emission points are also installed in Shop 1 and 2, which are included in the licence review. A new pentane recovery system is also being installed for Shop 2 emissions.

### 3.4 Cumulative Impact

Cumulative effects are defined as the addition of many minor or significant effects, including effects of other projects, to create larger, more significant effects. Cumulative impacts may arise from the combined effects of a number of existing or proposed developments, in combination with the proposed development being evaluated, on a single receptor/ source. Where appropriate, potential cumulative effects have been identified in relevant sections of this EIAR.

Cavan and Meath County Council Planning Register, the Department of Housing, Local Government and Heritage EIA Portal, Cavan County Development Plan 2022-2028, the EPA Geoportal Site and Google Earth were consulted in order to determine if there were any other plans or projects in the area which could result in cumulative impacts. Six developments were noted in the last five years and are shown in Table 1. Four developments were on the Kingspan site itself, one was at the old railway across the road from the site for use for educational purposes and one is for continued use of the clay quarry operated by Breedon Brick Ltd.

It is also noted that there are a number of existing and permitted developments in the local area that mostly relate to domestic dwellings or agricultural facilities, as would be expected within a rural setting. The majority of these developments due to their size, scale and nature to the proposed development

do not generate significant environmental effects during the construction or operational stages that would result in cumulative effects. These developments are also subject to compliance with planning conditions and would have been assessed during the application stage, as necessary, by the relevant planning authorities.

**Table 1. Developments Assessed for Cumulative Impact**

<b>Planning Ref. No.</b>	<b>Date</b>	<b>Company</b>	<b>Description</b>	<b>Comments</b>
<b>19362</b>	13/11/2019	Kingspan light & Air - On site	To construct a manufacturing facility with associated stores, toilets and staff facilities, 1st floor offices, silo's, PV solar roof panels, signage, concrete yard area, connection to all existing services and to include all ancillary siteworks to rear of existing facility	COE Building activities considered in this EIAR as it is already operational, therefore cumulative impact considered throughout the EIAR
<b>20420</b>	06/11/2020	Kingspan Ltd - On site	For the installation of photovoltaic solar panels on the roof of existing buildings and associated works	Not Relevant for cumulative impact
<b>2048</b>	10/12/2020	Breedon Brick Ltd, Cormey Clay Pit - 1.5km North East	For development consisting of the continued use of the existing clay pit and ancillary works permitted under planning ref. 17/75 and a lateral extension to the clay pit over an area of c 4.2 ha to a final depth of 14m OD over a period of up to 20 years, with restoration to biodiverse habitat after uses following completion of extraction, within an overall application area of c. 14.99 ha. The application is accompanied by an Environmental Impact Assessment Report. The application site forms part of EPA Integrated Pollution Control Licence Ref: P0528-01 for Breedon Brick Ltd. Significant further information and revised plans have been submitted	This development is existing and operational. It entails extension of the quarry area. As the scale of activities (e.g. extraction rate and number of employees etc) remains the same as has existed for a long period, no additional cumulative impacts need to be considered by Kingspan site.
<b>20517</b>	19/01/2021	Kingspan light & Air - On site	For the construction of a two storey office extension to front of existing manufacturing building, alterations to front, side and rear of existing building, internal alteration, change of use from manufacturing to offices, PV Solar roof panels, signage, new car park area, boundary treatments, landscaping, connection to all existing services and associated site works	Not Relevant for cumulative impact

<b>Planning Ref. No.</b>	<b>Date</b>	<b>Company</b>	<b>Description</b>	<b>Comments</b>
<b>21656</b>	17/12/2021	Kingspan Ltd - On site	To carry out alterations to existing facades and elevations of existing office building, new solar car port in carpark area, RETENTION of additional amount of Solar PV roof panels to exisign building, Solar Invertor Building and associated site works	Not Relevant for cumulative impact
<b>21165</b>	08/03/2022	Kingscourt Community Development Association - across road from site	Change of use of existing Railway Station buildings to educational purposes on a 5 year temporary basis and all associated site works, these buildings are within the curtilage of a Protected Structure. Significant further information and revised plans have been submitted.	Small scale development for educational purposes so no cumulative impacts need to be considered by Kingspan site.

### **3.5 Assessment of the Risks of Accidents and Unplanned Events**

In accordance with EPA Guidelines on the information to be contained in Environmental Impact Assessment Reports the risk of accidents and unplanned events that may be either caused by or impact the proposed development has been assessed in the relevant sections of this EIAR, particularly the Land & Soil and Water sections.

## 4. Population and Human Health

### 4.1 Population and Human Health - Existing Environment

Kingscourt is located in the most easterly part of County Cavan. The County Development Plan 2022-2028 outlines that Kingscourt is located 1km from the boundary with County Meath and is also close to the border with County Monaghan and County Louth. The Regional Routes R165 and R179 converge in the town.

Kingscourt is identified as a Self-Sustaining Town in the Cavan County Development Plan 2022-2028, which is a town with high levels of population growth, but which require consolidation and targeted ‘catch up’ investment to become more self-sustaining.

Kingscourt has experienced a significant population growth in the past number of years as shown in Table 2, take from CSO data. Figures indicate that the population growth continues to rise, with the total population of Kingscourt rising 18.2% between 2016 (2,499) and 2022 (2,955)

**Table 2. CSO Figures for Kingscourt 1996-2022**

	Census 1996	Census 2002	Census 2006	Census 2011	Census 2016	Census 2022
<b>Population (No.)</b>	1,190	1,307	1,748	2,326	2,499	2,955
<b>Actual Change since previous census (No.)</b>		117	441	578	173	456
<b>Population increase since previous census %</b>		9.8%	33.7%	33.1%	7.4%	18.2%

Results from the 2022 Census found that the current population is split evenly between 51% female and 49% male. The largest number of people lie in the 10-14 years age brackets (9.1%) while the second largest number of people lie in the 35-35 years age bracket (9%). The nationality statistics for Kingscourt from the 2022 Census are 79.5% Irish, with 20.5% born outside Ireland.

### Employment

The Development Plan 2022-2028 states the service employment sector within Kingscourt is essential to the vitality of the Town. Kingscourt has a number of large and smaller employment providers including Kingspan, O’Reilly Concrete, Gypsum Industries, Kingscourt Bricks and Paramount Doors, in addition to other services provided within the town core area. The largest industries are commerce and trade, followed by manufacturing then professional services. In total, there are 1026 jobs located within Kingscourt (2016 Census Data), which accounts for 5% of all jobs in Co. Cavan (POWCAR 2016). There are opportunities in Kingscourt to zone additional lands for General Enterprise and

Employment purposes to support an expansion of economic development in the town. Kingspan is an important employer to the town and surrounding area.

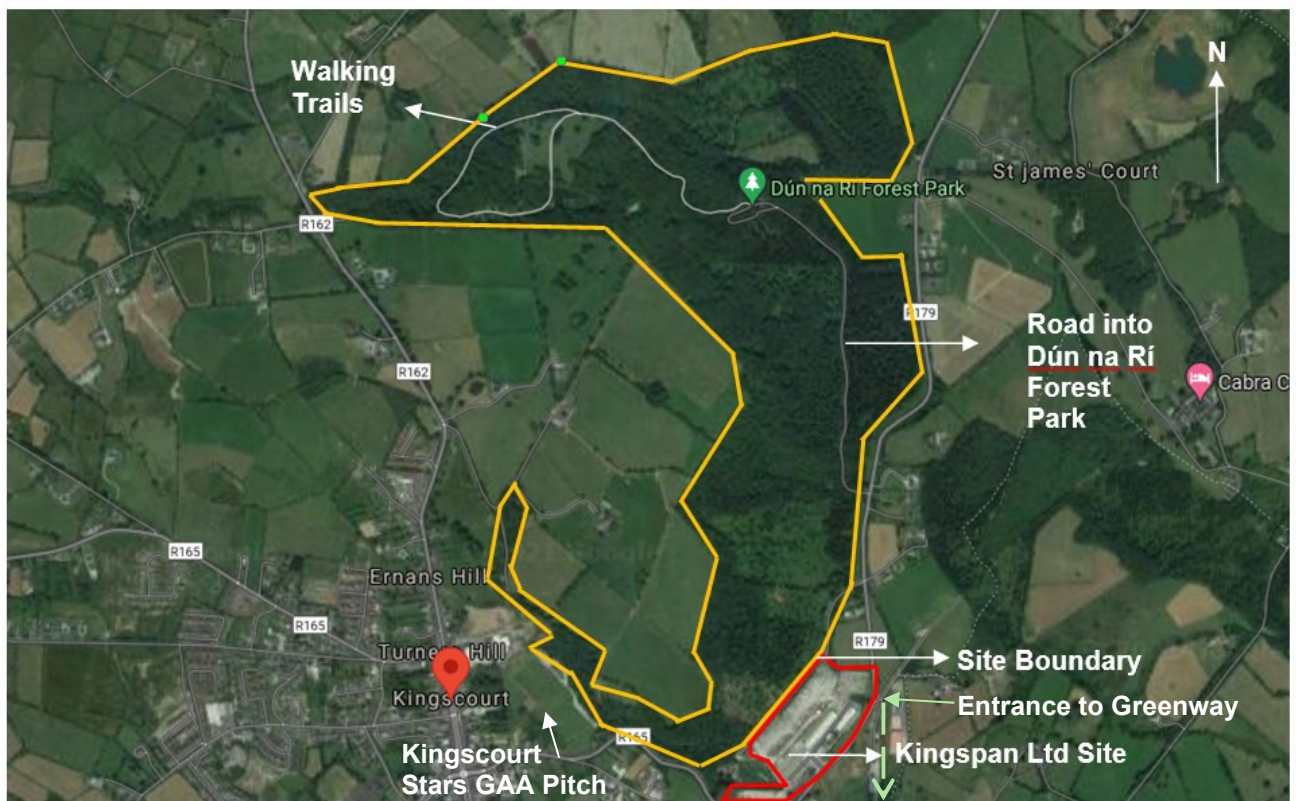
### Amenity

The Kingspan site has been in industrial use since 1965 so it offers no amenity use to the area. It is surrounded on the western and northern side by rural agricultural farmland and forest. Site operations will not impact on this area. Land surrounding the site is currently used as a Waste Water Treatment Facility, a concrete manufacturing business (O'Reilly's) and door systems factory (Paramount Doors).

The closest amenity service to the site is Dún na Rí Forest Park, adjoining the site on the western boundary, as shown in Figure 7. The 565 acre Forest Park consists of walks of approximately 1.5-2km in length, all with points of interest and plentiful varied wildlife. A pedestrian track on the edge of the park, linking the town to the park runs just outside the boundary of the Kingspan site at the back, along the COE building. Kingscourt Stars GAA club is also accessible from this path near the town approximately 500m the west of the site.

The Boyne Valley to Lakelands Greenway entrance is located across the road from Kingspan site. This is a 30km greenway opened in 2024 along the route of the old railway line from Navan in Co. Meath to Kingscourt in Co. Cavan.

**Figure 7. Location of Dún na Rí Forest Park & other Amenities near Kingspan**



## **4.2 Population and Human Health – Environmental Impact**

The manufacturing activities at the site generate additional traffic movements, during peak times when employees enter and exit the site and from the movement of raw materials in and goods out. Such activities can impact on road safety for those walking, cycling or driving. This is discussed in Section 10, Roads & Traffic. A footpath is accessible to the public, stretching along one side of the adjoining R165 and R179 roads. This footpath extends from Kingscourt town to Kingspan’s site, to ensure the safety of pedestrians at all times.

Air emissions, dust and noise are potential emissions from Kingspan Ltd operations that can impact on human health. The company has almost 60 years’ experience in this business and will continue to operate under IE Licence using Best Available Techniques (BAT). Air emissions and noise are discussed in detail in Sections 8.1 and 8.2.

The manufacturing buildings on the site are set back from the road at a distance of approximately 60m. Some buildings on site have recently been upgraded and modernised with new Kingspan sheeting and any new/upgraded buildings on site are designed to blend in with existing site buildings, so that there is no loss of visual amenity. The operation of the site will not change the character of the immediate landscape of the site, classified as “General Enterprise & Employment” in the Cavan County Development Plan 2022 - 2028.

## **4.3 Population & Human Health - Cumulative Impact**

The addition of the Kingspan Light, Air + Water operations to the IE Licence represents an expansion of the existing site. In combination with the existing Insulated Panel process and other local businesses, enterprises and recreational facilities in the area, the proposed development will contribute to the local economy and community.

## **4.4 Population and Human Health – Mitigation Measures**

To ensure that activities at Kingspan Ltd, Kingscourt do not impact on those in the immediate vicinity of the site and beyond, the site will:

1. Ensure traffic travelling to and from the site complies with all local speed limits so as not to cause a hazard.
2. Ensure existing traffic routes at the entrance into the site are managed appropriately to minimise delays for other road users.
3. Carry out regular services on plant and haulage vehicles used on-site and off-site to maintain the plant/vehicles in good condition. This will help to reduce noise and air emissions generated from vehicles in the area.
4. Operate the site in compliance with Best Available Technology to ensure emissions do not impact on the wider area.

## 5. Biodiversity

### 5.1. Biodiversity – Existing Environment

The Biodiversity Chapter for this EIAR was prepared with information provided in the Appropriate Assessment Screening Report undertaken by Whitehill Environmental. A full copy of the Report is provided in Appendix 2.

The site comprises buildings and artificial surfaces, mainly concrete hard standing, as shown in Figure 8. There is an area of grass lawn, some ornamental hedgerow and some scattered trees at the front of the site along the main road and evergreen trees along the two sides. To the west of the site, outside the site boundary, lies a Coillte forest, Dún na Rí, which forms part of the Cabra Woodland.

**Figure 8. Kingspan Ltd, Kingscourt Site showing Landscaped Areas**



From the AA Screening, it was revealed from the National Biodiversity Data Centre Website that there are records for the presence of two protected mammal species in the 1km square in which the site is located. These species include the Badger *Meles* and the Pine Martin *Martes*. Both mammals are fully protected under the Irish Wildlife Acts. Further examination was conducted and it was concluded that these records do not pertain to the site itself.

The AA Screening conducted a review on the proximity of Natura 2000 Sites to Kingspan Ltd, Kingscourt. It was concluded that the site is not within or adjacent to any site that has been designated as a Special Area of Conservation (SAC) or Special Protection Area (SPA). No Natura 2000 sites are located within 15km of the site. The closest designated site to Kingspan Ltd, Kingscourt is Killyconny Bog SAC (Site Code 000006) and this is 16.5km south west of the site. Natura 2000 sites in County Cavan are identified in Figures 9 and 10.

## **5.2 Biodiversity – Environmental Impact**

The AA Screening Report concluded objectively that development at Kingspan Ltd, Kingscourt will have no impact upon any SPA or SAC. The integrity and the conservation objectives of all sites will be maintained, and the habitats and species associated with the sites will not be adversely affected. Therefore, Stage two of the Appropriate Assessment process was not required.

The Coillte forest, Dún na Rí located west of the site will not be disturbed by development at Kingspan Ltd, Kingscourt and will be retained in full. Construction of the COE Building did not require removal of trees from Dún na Rí forest. Removal of trees was last granted permission for planning in February 2006 (Ref No. 051584).

## **5.3 Biodiversity - Cumulative Impact**

The AA Screening Report assessed any in-combination effects with adjoining developments. This assessment concluded that there will be no potential direct, indirect or cumulative impacts upon any designated site arising from the proposed development when considered in-combination with other developments.

## **5.4 Biodiversity – Mitigation Measures**

The ornamental hedgerow, scattered trees and amenity grass at the front of the site will be retained on site and no disturbance to the forest park will be made by site operations.

Figure 9. County Cavan Natura 2000 Sites (SPAs)

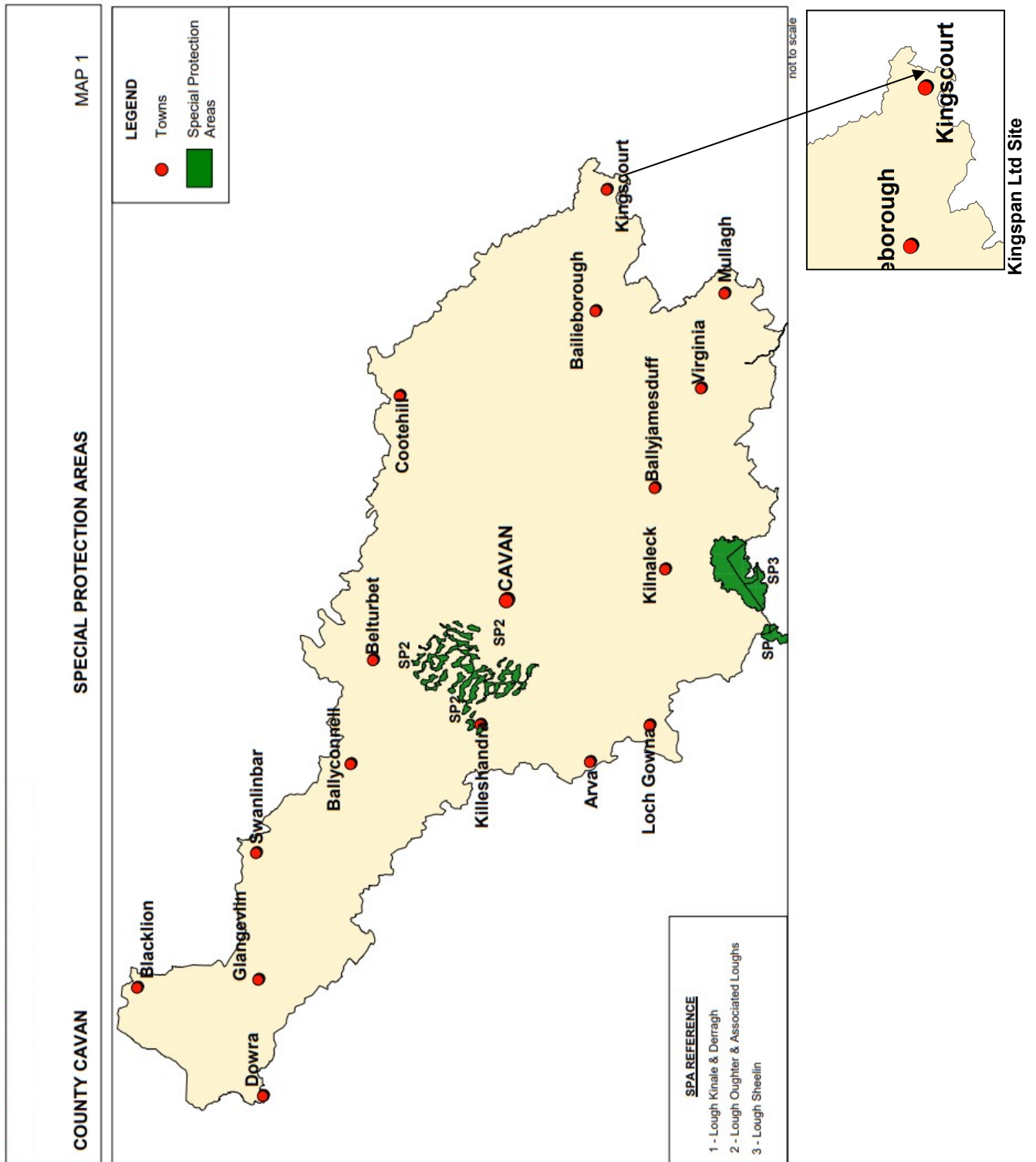
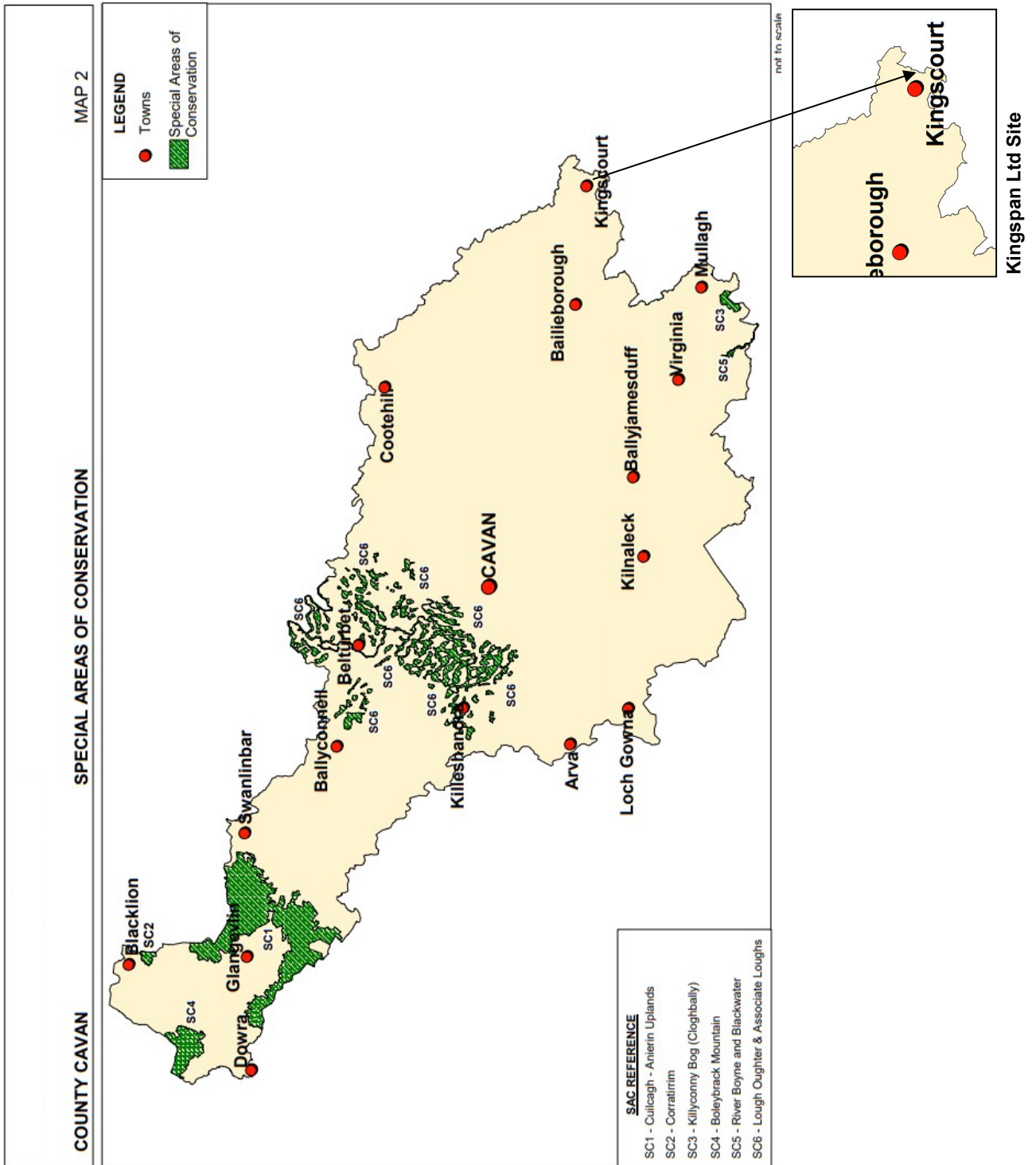


Figure 10. County Cavan Natura 2000 Sites (SACs)



## 6. Land & Soil

### 6.1 Land & Soil - Existing Environment

The Land and Soils Chapter for this EIAR was prepared with information provided by IE Consulting Engineers “Soil & Groundwater Baseline Assessment (March 2021). A full copy of the report is provided in Appendix 3.

Regionally, the site is located within the Mullantra River valley. The landscape falls gently from a spot height of 121 mOD in the west and from 50 mOD in the east to the Cabra flood plain at 40 mOD. The region has many glacial features, most notably drumlins.

The site land history is described in Table 3.

There have been no reported chemical leaks or fuel spillages at the facility.

**Table 3. Site History at Kingspan Ltd, Kingscourt**

OS Map Date	Site Description	Surrounding Area Description
<b>1847 – 1842</b>	Green field site, no industrial development. Field boundaries defined within the site and several trees mapped. River Cabra mapped to the west of its current position following its natural course.	Dún na Rí forest to the west. Kingscourt railway station and freight yard to the east (across the road from current site). Kingscourt Brick & Tile works noted to the south in the townland of Larchfield Glebe.
<b>Aerial Imagery 1995/2000/2005</b>	Industrial development on site. Forestry on eastern bank of river Cabra. The River Cabra has been diverted through the site in a culvert from its natural course.	Local Authority wastewater treatment plant to the south west, scaled back railway operations to the east; industrial development to the south (O’Reilly Concrete) and east (Paramount Doors).
<b>Aerial Imagery 2012/2020</b>	Present day site layout. Development of HGV parking area to the west of the existing factory site and removal of forestry east of the River Cabra.	Local Authority wastewater treatment plant (now under Irish Water control) to the south west, railway operations ceased; industrial development to the south (O’Reilly Concrete) and east (Paramount Doors). Brick factory operations continuing as Breedon Kingscourt Brick Works.

### **Geology**

The composition of Quaternary Geology at Kingspan Ltd was examined by IE Consulting Engineers.

The site is mapped within the Kingscourt Sandstone Formation (TRKGCT). This formation consists of Triassic red sandstone and a basal siltstone member which is between 80 – 100m thick.

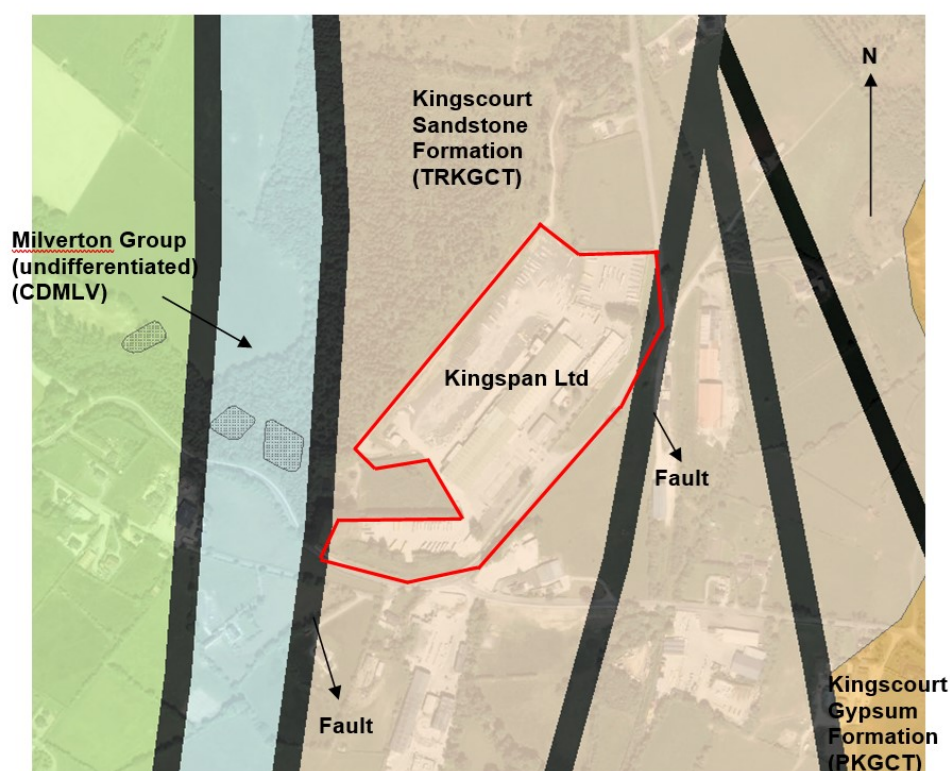
The Milverton Group (undifferentiated) (CDMLV), which consists of Carboniferous crinoidal grainstone/packstone (carbonate rocks) is mapped <150 m to the west of the site. The boundary between the Kingscourt Sandstone Formation and the Milverton Group is a faulted contact.

The Permian Kingscourt Gypsum Formation (PKGCT) is located c.350 m to the east of the site, in contact with the Kingscourt Sandstone Formation. The Kingscourt Gypsum Formation is made up of gypsum and anhydrite units with lower units of conglomerate and mudstone. The wider area is crossed by several North – South striking faults. One fault line is mapped <20 m to the south west of the site, the other runs along the north eastern portion of the site.

The GSI Karst Database was consulted. There are no karst features mapped on or within 2 km of the Kingspan Ltd factory complex.

Bedrock geology is presented in Figure 11.

**Figure 11. Bedrock Geology at Kingspan Ltd, Kingscourt**



### **Subsoils**

The composition of Quaternary subsoils at Kingspan Ltd, Kingscourt was examined by IE Consulting.

The subsoils underlying the site are mapped as till derived from Lower Palaeozoic sandstones and shale. Bedrock or subcrop is mapped in the south

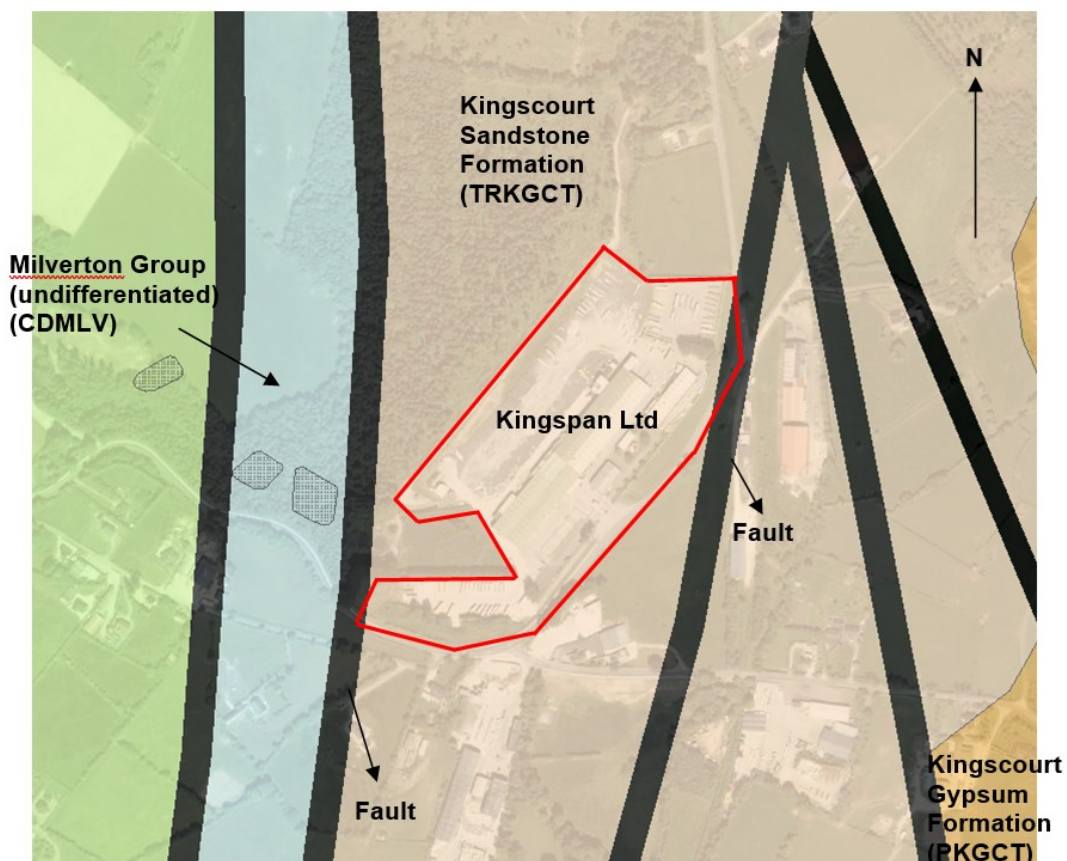
western portion of the site, in the area which is currently used for parking HGVs and trailers. Alluvium is mapped c. 150 m to the east of the site, on the banks of the River Mullantra.

There is limited information regarding the depth of subsoils across the site. However, based on groundwater vulnerability mapping, subsoils appear to deepen from bedrock outcrop/subcrop (extreme vulnerability) in the south of the site to >10 m depth in the north of the site (low vulnerability).

Subsoils have been excavated along the north/north west boundary to level the site for HGV trailer parking. In the south west of the site there have been extensive excavations into the subsoils to level the site also.

Subsoil mapping is presented in Figure 12.

**Figure 12. Subsoil at Kingspan Ltd, Kingscourt**



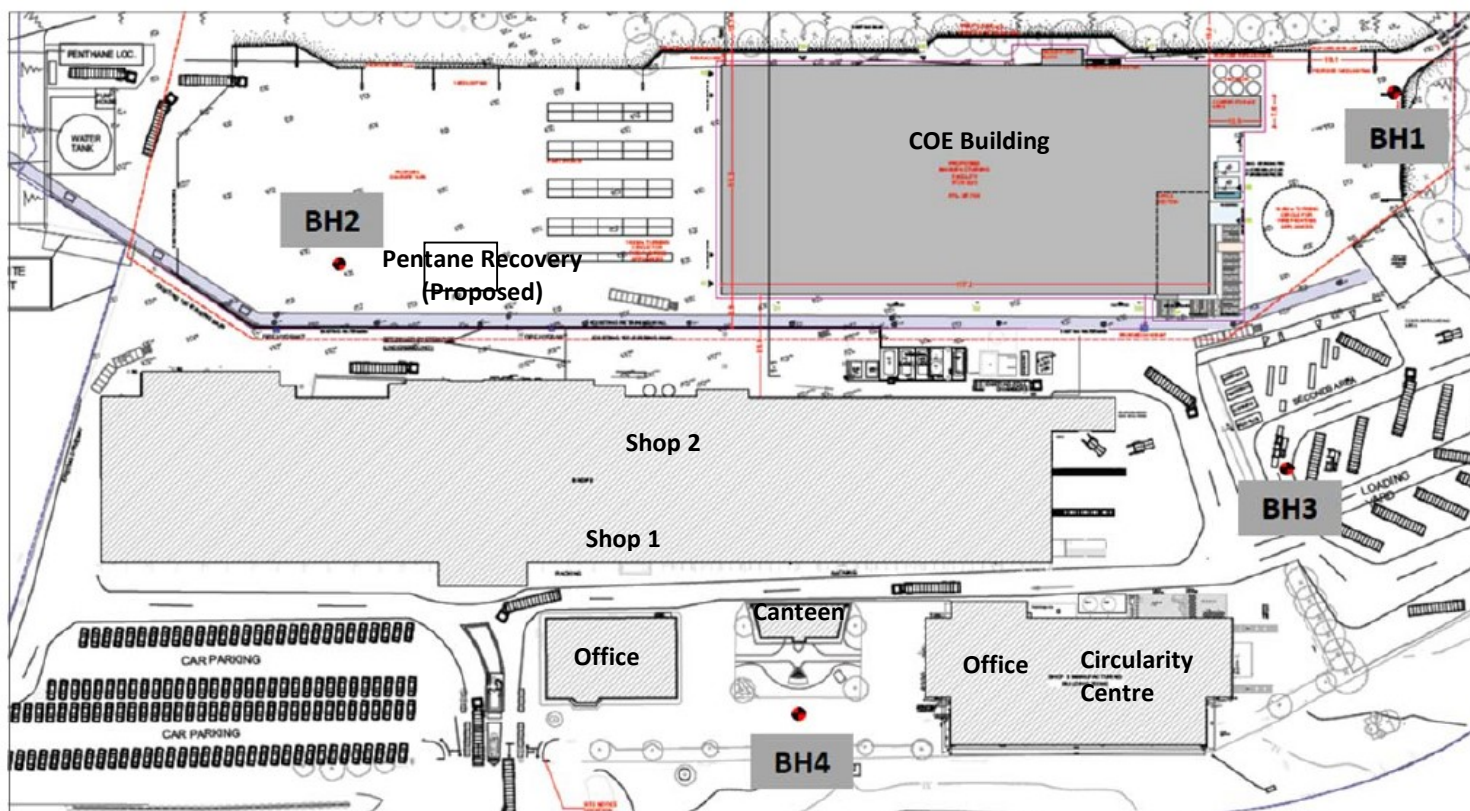
### **Analysis of Soil Conditions**

Causeway Geotechnical were contracted to Kingspan Ltd site to drill four shallow subsoil boreholes with a Dando Terrier window sampling rig. The relative positioning of the boreholes was influenced by the location of existing services,

such as gas, electricity and water pipes. The aim of the sampling strategy was to review the chemistry of the soil and identify hazardous contaminants.

In total four composite samples were collected of the natural subsoils underlying the fill material/concrete (BH1-BH4). The location of each sampling point is outlined in Figure 13.

**Figure 13. Subsoil Sample Locations at Kingspan Ltd, Kingscourt**



© IE Consulting Engineers

The samples were placed in suitable containers and sent to Element Materials Technology laboratory in Deeside, UK for analysis. The following parameters were analysed by the laboratory:

- Chloride
- PAHs
- Phenols
- Metals
- Total Petroleum Hydrocarbons Combined Working Group (TPH-CWG)
- Rilta Suite (includes PCBs)
- Asbestos quantification

Results from the subsoil analysis revealed that no asbestos was detected in the samples collected from the Kingspan Ltd site. The soil chemistry results were compared to the LQM/CIEH S4ULs for Human Health Risk Assessment. The

LQM/CIEH S4ULs provides generic assessment criteria based on the minimal or tolerable risk that is intended to be protective of human health for individual or mixtures of substances for specific land uses. The results of the analysis did not exceed any of the thresholds set out under the LQM/CIEH S4ULs scenarios for commercial and residential soils with home grown produce (concerns lead only). In conclusion, no hazardous substances were identified in the soil samples analysed.

A full breakdown of soil and subsoil monitoring results are provided in the IE Consulting Report in Appendix 3.

## 6.2 Land & Soil – Environmental Impact

### Source-Pathway-Receptor

#### **Potential Sources of Contamination:**

Potential sources of contamination include drips and spills of chemicals during loading into machines in the shops or laboratory, or from unloading from trucks, tankers, or IBCs around the site. Failure of containment mechanisms, leaks from pipelines, underground tanks, or accidental spillages are also potential sources. Collisions between vehicles with IBCs, poor management of the sumps and shut off valves for surface water entering into the River Cabra or leaks of fuel from machinery operating on site e.g., trucks, forklifts can all pose as potential sources of contamination.

#### **Potential Pathways:**

The following pathways are considered possible for migration of contamination to soil:

- Direct ingress through vertical migration via joints, cracks or hairline fractures in concrete, tarmac or the shop floors.
- Leaks through poorly maintained pipelines or underground tanks/sumps/valves.

#### **Potential Receptors:**

The following receptors are considered possible for migration of contamination to soil and subsoils:

- Soils are an immediate receptor of contaminants migrating through joints, fissures or hairline cracks in the concrete, tarmac or shop floors.
- The Locally Important Aquifer will be a receptor of any contamination which migrates vertically through the unsaturated subsoils zone into the underlying bedrock.

## 6.3 Land & Soil - Accidents and Unplanned Events

Due to the storage of chemicals at Kingspan site, there is a risk of spillage/leakage to land and soil causing contamination. This would have a major impact in terms of local contamination of soil and a wider impact if

contaminants enter groundwater. Measures in place to control chemicals and spills are in place at the site and ongoing preventative maintenance will ensure that the risk is low.

## **6.4 Land & Soil - Cumulative Impact**

The addition of Kingspan Light, Air + Water (KLAW) operations to the site is on the same footprint of the existing Kingspan Insulated Panels Site. This introduces additional raw materials to the site but most raw materials in KLAW are in solid powder/pellet form, which will be stored in silos or indoors. Therefore it is considered that the proposed development either alone or in combination with other plans or projects will not result in any significant cumulative impacts in relation to Land & Soil.

## **6.5 Land & Soil – Mitigation Measures**

Kingspan Ltd has the following procedures in place to control and limit contamination of soil and subsoils on and surrounding the site:

- All bunds and tanks are integrity tested every three years by a certified contractor.
- The site will continue to maintain concrete paving where chemicals are loaded/unloaded in a good condition.
- The site and operations will be maintained to a high standard and corrective actions implemented immediately when identified.

## 7. Water

### 7.1 Surface Water

#### 7.1.1 Surface Water - Existing Environment

The Water Chapter for this EIAR was prepared with information provided by Whitehall Environmental and IE Consulting Engineers. A full copy of the reports are provided in Appendices 2 & 3.

Kingspan Ltd, Kingscourt is located within the Mullantra River valley as shown in Figure 14. The EPA water feature database marks a stream flowing through the site. This is referred to as the Cabra Stream and its course under the site is via a culvert. The River Cabra flows northwards under the site, while the River Mullantra flows northwards c. 170 m east of the site. The River Cabra converges with the Mullantra River, approx. 260 m north of Kingspan Ltd, where it flows northwards to the River Glyde c. 2 km north of the Kingspan Ltd site. The River Glyde discharges to the Irish Sea at Dundalk Bay c. 30 km east of the site.

The WFD Status of the River Cabra and River Mullantra for the 2013 – 2018 monitoring was ‘good’, and it is listed as ‘not at risk of achieving good status’. Under the requirements of the Water Framework Directive, this is satisfactory, and status must be maintained. The latest Q value for the River Glyde (Station Code RS06G020070) is 4-5 (High Value). However, the River Glyde (Code IE\_NB\_06G020070), according to the WFD River Waterbodies Risk is projected to be at risk.

**Figure 14. Rivers and Water Sampling Locations at Kingspan Ltd, Kingscourt**



Storm water from all yard areas around Shop 1, Shop 2, the COE and Circularity Centre, along with roof rainwater from all buildings, the trailer parking areas (north east/south west), the chemical intake area and the concrete hard standing area adjacent to the pentane tank farm, discharge to the culvert (River Cabra). A drainage map is provided with the IE Licence Application - Kingspan Drainage Plan QED2 Dec 2024.

Sumps and shut off valves are in place on the discharge lines to prevent spills entering the surface water system. At the COE building, stormwater attenuation tanks are in place prior to discharge. The site checks the surface water in the culvert upstream and downstream daily when manufacturing is taking place. The upstream sample on the Kingspan Ltd site is located on the boundary of the public wastewater treatment works so discharges from the treatment works influence the quality of water flowing through the Kingspan site.

Storm water from the main car park area and site entrance to the front is discharged to a surface water line under the public road.

A separate foul water drainage system collects foul water sinks and toilets and this is pumped to the Irish Water (Kingscourt) Waste Water Treatment plant, which is located to the south west of the Kingspan site. The treated water from the wastewater treatment plant is discharged into the River Cabra, upstream of the site.

### **7.1.2 Surface Water – Environmental Impact**

As part of the Baseline Report, the River Cabra was sampled on the 3<sup>rd</sup> of November 2020 at two locations (see Figure 14):

- SW1 – Upstream of the Kingspan site and the Kingscourt WWTP outfall point.
- SW2 – Downstream of the Kingspan site prior to the River Cabra's discharge to the river Mullantra.

The samples were collected using a grab sampler by a hydrogeologist from IE Consulting. The samples were analysed for;

- Metals
- Phenols
- Total Petroleum Hydrocarbons Combined Working Group (TPH-CWG)
- Extractable Petroleum Hydrocarbons (EPH)
- Volatile Organic Compounds & Toxic Industrial Chemicals (VOC & TICs)
- Semi-volatile Organic Compounds & Toxic Industrial Chemicals (sVOC & TICs)
- Alcohols & Acetates

Due to the proximity of the site to the Kingscourt Wastewater Treatment Plant the following additional key wastewater parameters were analysed: Nitrogen,

Phosphorous, Chloride, Ammonia, Sodium, Potassium, COD, BOD and Orthophosphate.

The surface water samples were compared to the following regulations:

- S.I. No. 272/2009 - European Communities Environmental Objectives (Surface Waters) Regulations 2009
- S.I. No. 77/2019 - European Union Environmental Objectives (Surface Waters) (Amendment) Regulations 2019

No hazardous substances were identified in the river samples taken.

Orthophosphate, Total Ammonia and BOD were detected at notably higher concentrations downstream of Kingspan Ltd site/Kingscourt Wastewater Treatment Plant. The elevated concentrations downstream (SW2) are attributed to the discharge of treated wastewater from the Kingscourt Wastewater Treatment Plant upstream of the Kingspan Ltd site. Ammonia and Orthophosphate are not used at the site and therefore it is concluded there was no impact detected on the River Cabra from the operations at Kingspan Ltd site, Kingscourt.

### **7.1.3 Surface Water - Accidents and Unplanned Events**

Due to the storage of chemicals at Kingspan site, there is a risk of spillage/leakage to surface water causing contamination. Due to the close proximity of the stream on site, the risk is high. This would have a major impact in terms surface water contamination where a spill to occur. The site has a system in place to control chemicals and spills, as well as measures for checking surface water quality. Ongoing preventative maintenance and improvements of controls will ensure that the risk is low.

### **7.1.4 Water - Cumulative Impacts**

The addition of the Kingspan Light, Air + Water process to the site increases the number of surface water discharges to the river. Efficient management of the site and raw materials will ensure that surface water discharges are from clean roofs and yard areas only, posing no risk of contamination. Attenuation tanks and interceptors are in place on discharges from the COE building.

Waste water is generated by the COE and Circularity Centre as a by-product in the extrusion process. This is collected at source and stored in bunded IBCs and disposed of off-site, so efficient management of wastewater will ensure that there will be no impact to surface or groundwater on site.

### **7.1.5 Surface Water – Mitigation Measures**

In order to protect surface water at this site, the following mitigation measures should be maintained:

- The site will ensure surface water runoff from the site and raw materials offloading area is controlled in a manner to prevent it entering the River Cabra through a series of sumps and valves.
- The site will ensure IBCs are transported around the site in spill pallet sumps.
- The site will ensure a spill kit is available in all chemical storage areas.
- Monitoring of surface water will be undertaken daily
- Security staff are on site 24/7 and check chemical tanks and surface water discharges on an ongoing basis.

## 7.2 Groundwater

### 7.2.1 Groundwater - Existing Environment

#### Regional Hydrogeology

The sandstone bedrock underlying the factory complex is classified as a Locally Important Aquifer (LI) - Bedrock which is Generally Moderately Productive.

An elongated, spatially constrained Locally Important Karstified Aquifer stretches North - South (the Milverton Group of carbonate bedrock) <100 m west of the site. The contact between both aquifers correlates with the North – South striking fault line.

In contrast, the Kingscourt Gypsum Formation which out crops to the east of the site is designated as a Poor Aquifer - Bedrock which is Generally Unproductive except for Local Zones.

The site is located within the Kingscourt Groundwater Body (IE\_NB\_G\_017). The Kingscourt GWB has the following characteristics:

- Recharge occurs through rainfall percolating through the shallow/highly permeable soils and directly through the bedrock outcrop.
- Groundwater levels are mainly 0-5 mbgl, but deeper flow zones are noted throughout the GWB.
- Groundwater flow zones are thought to be long, on a regional scale (up to 2 km), but discharge zones will lead to shorter paths (100-300 m).
- Topography will have a strong control on both groundwater flow paths and direction.
- Groundwater flow will be concentrated in fractures, fissures and long faults.
- Groundwater discharges to surface water features – most notable lakes and rivers along with springs. Higher transmissivities are associated with the Locally Important, Moderately Productive Aquifers and it is expected that the streams crossing these aquifers will receive a considerable input from base flow.

#### Site Hydrogeology

There is currently no site-specific groundwater quality data available for the site. The WFD status of the Kingscourt GWB was “good” for the 2013 – 2018 monitoring period and the GWB is deemed “not at risk of achieving good status”.

#### Groundwater Vulnerability

The Geological Survey of Ireland (GSI) has produced a groundwater vulnerability classification system to assess the vulnerability of groundwater across the country.

The GSI uses five groundwater vulnerability categories – Extreme rock at or near surface or karst (X), Extreme (E), High (H), Moderate (M) and Low (L) for mapping purposes and in the assessment of risk to ground waters. The classifications are based on the thickness and permeability of the subsoils overlying the aquifer. The classification is presented in Table 4.

**Table 4. Groundwater Vulnerability Matrix**

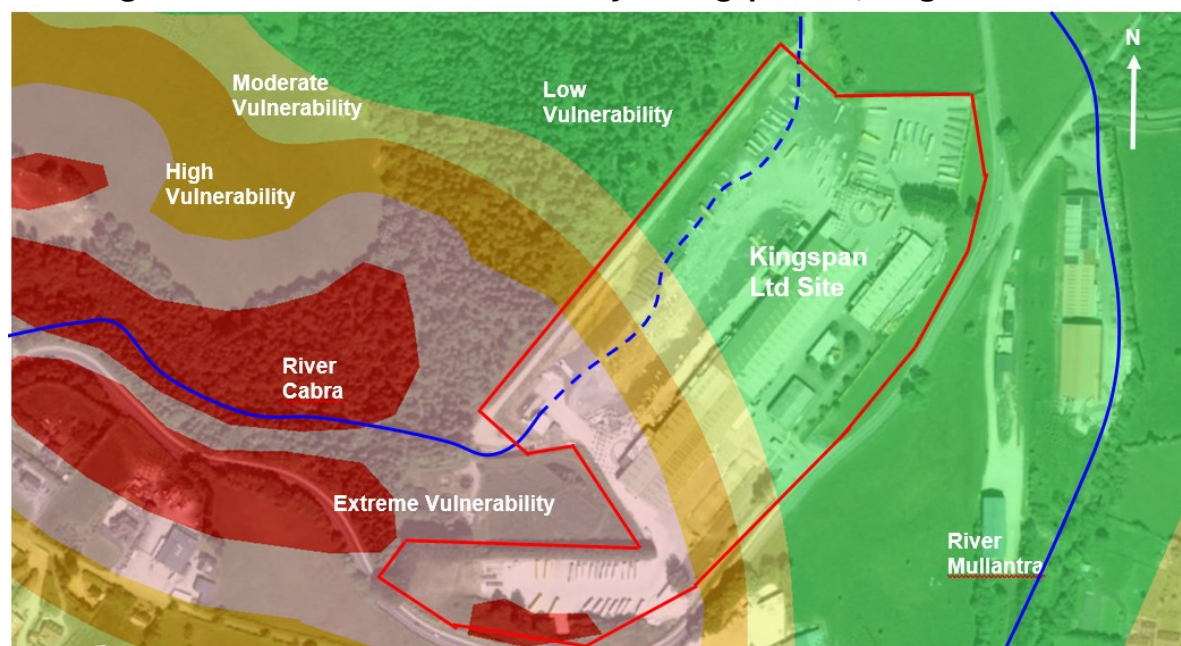
Vulnerability Rating	Hydrogeological Conditions				
	Subsoil Permeability (Type) and Thickness			Unsaturated Zone	Karst Features
	High permeability (sand/gravel)	Moderate permeability (e.g. Sandy subsoil)	Low permeability (e.g. Clayey subsoil, clay, peat)	(Sand/gravel aquifers only)	(<30 m radius)
Extreme (E)	0 - 3.0m	0 - 3.0m	0 - 3.0m	0 - 3.0m	-
High (H)	> 3.0m	3.0 - 10.0m	3.0 - 5.0m	> 3.0m	N/A
Moderate (M)	N/A	> 10.0m	5.0 - 10.0m	N/A	N/A
Low (L)	N/A	N/A	> 10.0m	N/A	N/A

Notes: (1) N/A = not applicable.  
 (2) Precise permeability values cannot be given at present.  
 (3) Release point of contaminants is assumed to be 1-2 m below ground surface.

The north of the site is mapped as L – Low Groundwater Vulnerability. The southern areas of the site are mapped as M – Moderate and H – High Groundwater Vulnerability. The south and south west of the site are mapped as E/X – Extreme Groundwater Vulnerability.

Groundwater vulnerability mapping is shown in Figure 13.

**Figure 15. Groundwater Vulnerability at Kingspan Ltd, Kingscourt**



## **Protected Areas**

There are no Natura 2000 Sites (designated or proposed), Nutrient Sensitive Areas or Salmonid Rivers located on or within 2 km of the Kingspan Ltd site.

The closest area is Ballyhoe Lough (Site Code 001594), which has been proposed for designation as a Natural Heritage Area. However, the Lough is situated 5km from the site therefore it is deemed unlikely to be adversely impacted.

## **7.2.2 Groundwater – Environmental Impact**

### **Source-Pathway-Receptor**

#### **Potential Sources of Contamination**

The main potential sources of contamination for groundwater at the site are leaks from pipelines, underground tanks or accidental spillages.

#### **Potential Pathways**

As the entire site is covered by concrete hard standing, the pathways from the surface to groundwater are limited. Any cracks in the hard standing or leakage from the stormwater drains or poorly maintained pipelines or underground tanks/sumps/valves could lead to the contaminants infiltrating to the subsurface.

#### **Potential Receptors**

The groundwater resource is a receptor of any contaminants, leaking from underground tanks onsite, pipelines, sumps or valves.

#### **Groundwater Analysis**

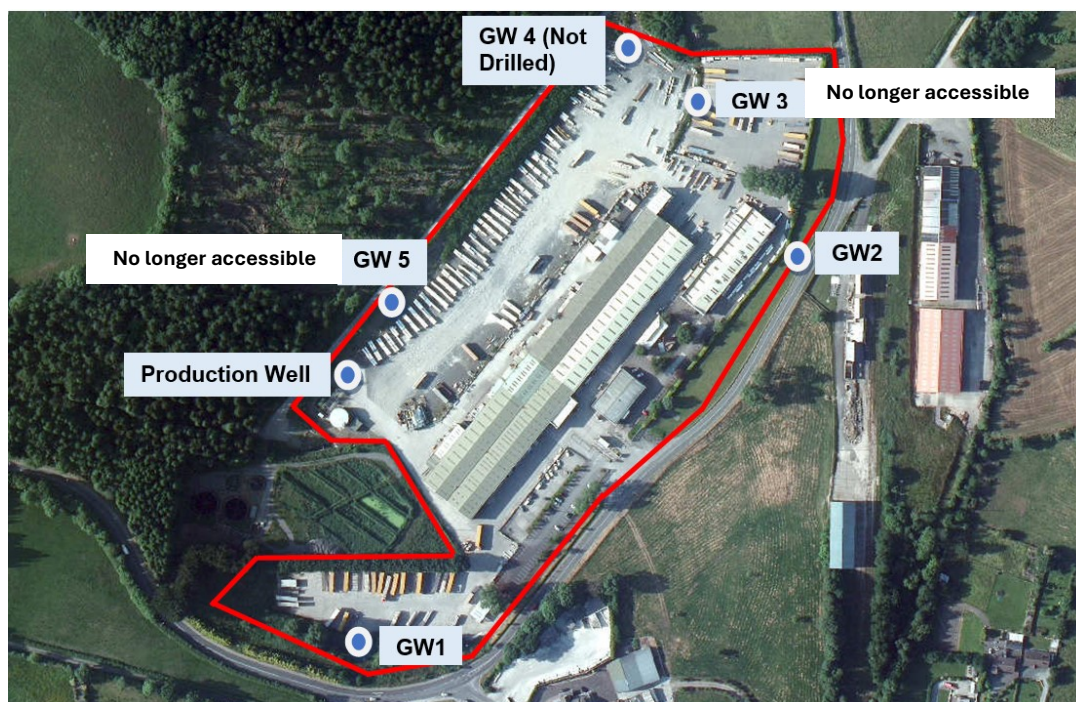
As part of the baseline report, in 2020 Causeway Geotechnical were contracted to drill 5 groundwater monitoring points across the Kingspan Ltd site. A Comacchio 205 air rotary rig was used to drill the monitoring wells. The drilling operation was supervised by a hydrogeologist from IE Consulting.

The monitoring wells and production wells were surveyed to a common datum by McDonalds Surveys on 9th November 2020. The newly drilled monitoring wells, along with the production well drilled by Dunnes Drilling in August 2020 were sampled on the 3<sup>rd</sup> of November 2020 by a Hydrogeologist from IE Consulting.

The wells were designed to capture groundwater flow in the subsoils and upper, weathered bedrock zone. The transition zone may contain a locally perched water table, which would be slow moving, but potentially contain contamination from surface activities.

The location of the groundwater monitoring wells, and the production wells are shown in Figure 16. Note that two of the wells drilled in 2020 – GW3 and GW5 are no longer accessible.

**Figure 16. Location of Groundwater Monitoring Wells at Kingspan Ltd, Kingscourt**



**GW1** was installed in gravels, with a major water strike at 6 mbgl. This is in a position to act as an upgradient monitoring point.

**GW2** was installed in silty clay, with no major water strike encountered. Bedrock was not met at 11.30m– the maximum depth the rig could drill to in subsoils. The well filled, slowly with water over the next 48 hours and was retrofitted as a monitoring point in the subsoils. This is positioned to act as a side gradient monitoring point, along the eastern flank.

**GW3** was drilled to 11.30 mbgl, but due to blowing sands, it was retrofitted to 5.70 mbgl. A major water strike was encountered in gravel at 3.70 mbgl. This was positioned to monitor shallow groundwater, underlying the largely concreted yard area and to act as a down-gradient monitoring point. This well is no longer accessible.

**GW4** was not drilled as construction of the COE building was ongoing in this area at the time of well drilling so access was not possible. GW5, which was located to the south west of GW4 was drilled to 21.08 mbgl with no water strikes. Based upon the geological mapping it was anticipated the same hydrogeological conditions would be encountered at GW4.

**GW5** was drilled into bedrock at 21.64 mbgl. The natural subsoils were excavated in this area to make way for the HGV parking area, prior to drilling. Bedrock was encountered at 2.00 mbgl and the arisings were observed to be of mudstone. During the installation of the gravel pack, the borehole was bridged. Thus, a large portion of the screened section does not have a gravel pack. No water strikes were encountered during drilling. At the time of sampling, the well was noted to be flowing artesian. GW5 is in a position to act as a side gradient monitoring point, along the western flank. This well is no longer accessible.

To sample the wells, GW1, GW2, GW3 were purged with a bailer to avoid drawing in fine sediment to the wells which would clog them. The samples were placed in a secure cooler box with a temperature blank and sent to Element Materials Technology Laboratory, Deeside, UK for analysis.

All parameters measured for the Surface water samples were analysed in the groundwater samples and no hazardous substances were detected.

A full breakdown of groundwater sampling results is provided in the IE Consulting Report in Appendix 3.

### **7.2.3 Groundwater - Accidents and Unplanned Events**

Due to the storage of chemicals at Kingspan site, there is a risk of spillage/leakage to ground and therefore groundwater causing contamination. This would have a major impact in terms groundwater contamination to a wider area. Measures in place to control chemicals and spills are in place at the site and groundwater wells are in place for checking ground water quality. Ongoing preventative maintenance and improvements of controls will ensure that the risk is low.

### **7.2.4 Groundwater – Mitigation Measures**

The mitigation measures needed to protect the quality of the groundwater beneath the site are as follows:

- Routinely check the concrete hard standing for cracks and stormwater and foul water drains at the site for leakage.
- Maintain the current groundwater network and undertake annual groundwater sampling on the designated monitoring wells (GW1, GW2, and Production Well) at the site.

## 7.3 Wastewater

### 7.3.1 Wastewater - Existing Environment

There is no wastewater from Shop 1 or 2 production process. The pentane recovery system will use an estimated 20m<sup>3</sup> of water annually for steam generation, which will be required to replenish steam condensate water loss in the cooling tower. The pentane recovery is a closed system, so there is no discharge to water from the plant.

In the COE building and Circularity Centre, condensate water is generated in the extrusion process and this is collected in a condensate trap, which drains to a bunded IBC. This is disposed via a hazardous waste disposal contractor.

Water is used for domestic use only (canteen, sinks/taps and toilets) and this is supplied from the public water system and rainwater harvested from the site. A separate foul water drainage system collects foul water from offices, canteens and factory areas. All foul water drainage is connected to a pumping station adjacent to the Chemical Intake Area. The foul water is pumped to the Irish Water (Kingscourt) Waste Water Treatment Plant, which is located to the south west of the site. The treated water from the Wastewater Treatment Plant is discharged into the River Cabra, upstream of the site.

### 7.3.2 Wastewater – Environmental Impact

Leakage from a crack in the pipes is the only way that foul water could reach the subsurface at the site. No hazardous substances were detected in the groundwater samples analysed from the monitoring wells. This would suggest that the foul water drains at the site are competent.

### 7.3.3 Wastewater- mitigation measures

The mitigation measures needed to prevent the foul water from contaminating the underlying soils and aquifers are as follows:

- Routinely check the integrity of the drains used to carry the foul water off site.
- Undertake annual groundwater sampling at the monitoring wells at the site and test for faecal coliforms.

## 7.4 Flooding

### 7.4.1 Flooding - Existing Environment

Kingspan Ltd, Kingscourt is located within the Mullantra River valley. The EPA water feature database marks a stream flowing through the site. This is referred to as the Cabra Stream and it flows through the site in a culvert. The River Cabra flows northwards under the site, while the River Mullantra flows northwards c. 170 m east of the site. The River Cabra converges with the Mullantra River, approx. 260 m north of the site, where it flows northwards to the River Glyde c. 2 km north of the site. The River Glyde discharges to the Irish Sea at Dundalk Bay c. 30 km east of the site.

#### OPW Flood Maps Website

In order to assess the flood risk to the site, the OPW Flood Maps Website (<https://www.floodinfo.ie/>) was referred to, to examine available historical or anecdotal information on any flooding incidences or occurrences in the vicinity of the site. Figure 17 illustrates mapping of past flood events.

Figure 17.OPW Flood Maps

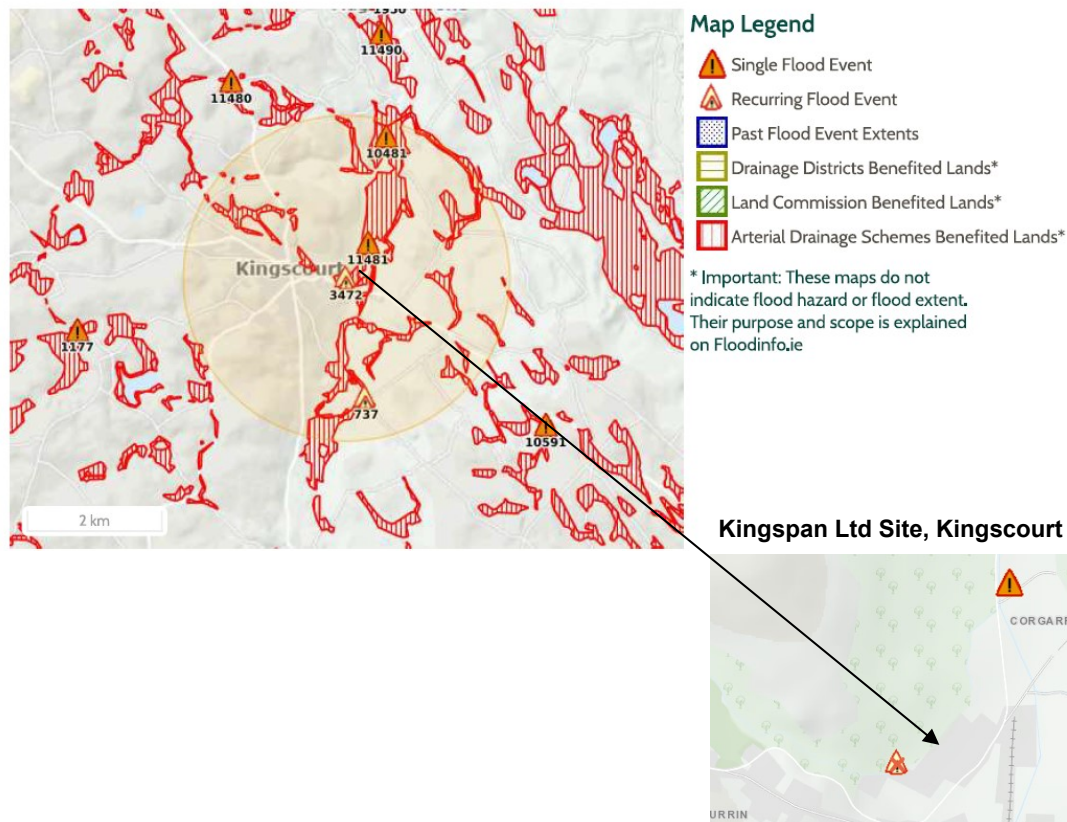


Figure 17 indicates that there are a number of recorded incidents of flooding in the immediate vicinity of Kingspan Ltd, Kingscourt site. A single flood event point is mapped north to the site (ID-11481), which relates to the following flood event:

- “2011: Two houses flooded due to very heavy rainfall on the 24/10/2011. Two families had to leave their homes. The source of the flood waters was a channel, C2(42A) a tributary of the River Glyde. The flooding was in the Glyde catchment.”

This flood event related to the River Mullantra, which does not flow through the site.

A recurring flood event is also mapped (ID-3472) west of the site boundary and on the flood info website a 2005 record of this states that;

*“Kingscourt – River overflows its banks every year after heavy rain. Kingspan manufacturing facility is affected.”*

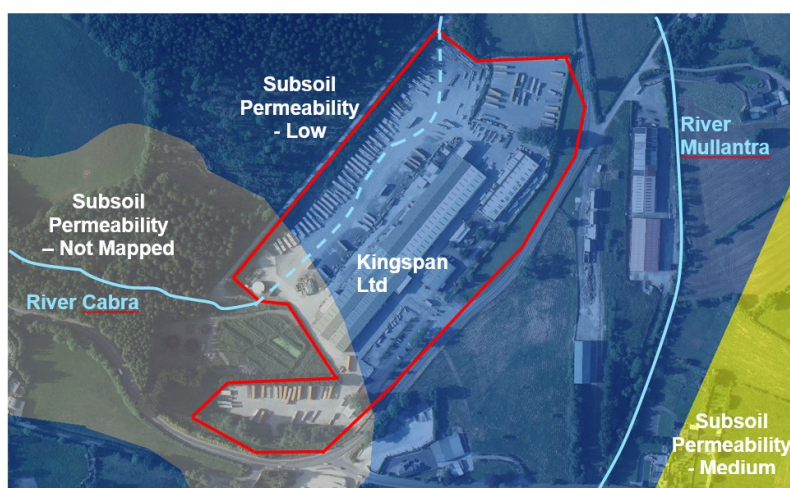
According to site personnel, flooding has not occurred at this site since the mid 2000’s and it occurred as debris from the wastewater treatment plant blocked up the culvert, so water could not flow through it and it overflowed and flooded the Kingspan site in high rainfall. Control measures were put in place to prevent this recurring and an Emergency Response Flood Plan is in place at the site.

## Geological Survey of Ireland Mapping

### Subsoil Permeability

The groundwater subsoil permeability maps of GSI were used to assess the extent of soil permeability in the vicinity of the site and these were found to be low as shown in Figure 18. On the Kingspan site, artificial surfaces, mainly concrete hard standing dominate land composition.

**Figure 18. Groundwater Subsoil Permeability at Kingspan Ltd, Kingscourt**

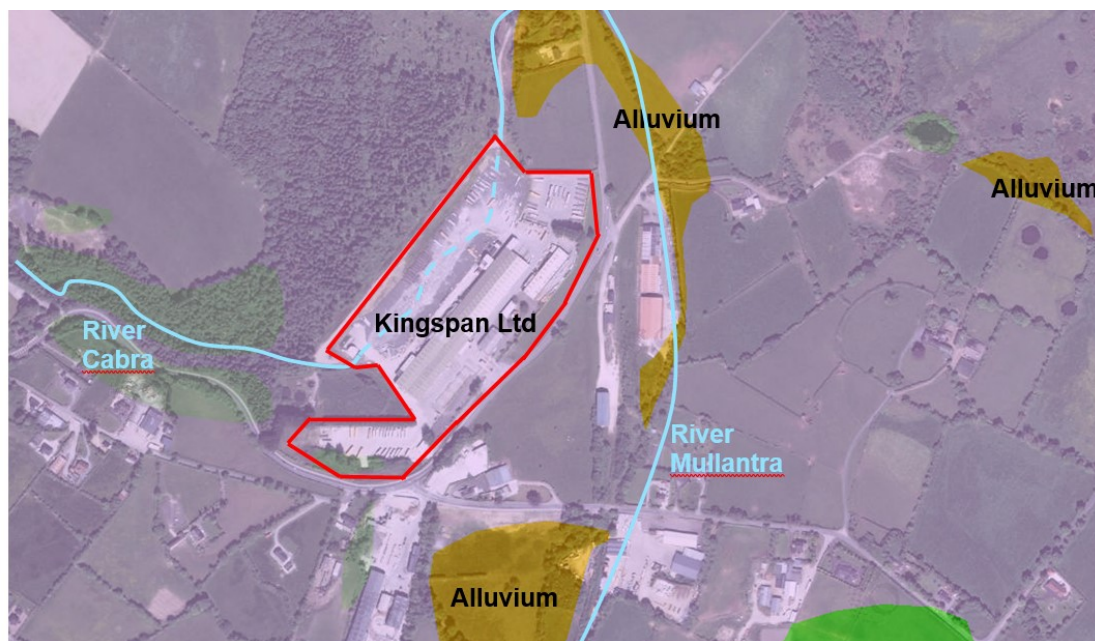


### Alluvial Deposits

Alluvial deposit maps of the Geological Survey of Ireland (GSI) were examined to assess the extent of any alluvial deposits in the vicinity of the site as shown in Figure 19. Alluvial deposits can be an indicator of areas that have been subject

to flooding in recent geological past and Figure 19 identifies alluvium deposits 150m east of the site, on the banks of the River Mullantra, in the vicinity of the two houses that were flooded in 2011. No alluvial deposits are identified on the banks of the River Cabra, so it can be determined that it has not experienced severe flooding in recent geological past.

**Figure 19. Alluvial Deposits within Kingscourt**



#### **7.4.2 Flooding - Environmental Impact**

Artificial surfaces such as concrete hard standing prevent rainfall from infiltrating the ground. This can accelerate the time it takes for rainfall to reach waterways, increasing the risk of flooding. The COE building was built on the existing site on hardstanding ground. It was designed using the principles of sustainable draining systems (SuDS), so it should not increase surface water runoff from this site.

#### **7.1.3 Flooding - Accidents and Unplanned Events**

Due to the culvert on site, there is a risk of flooding of the Kingspan site (as occurred in 2005) in a large rainfall event combined with blockage of the culvert. This combined with the storage of chemicals on site would have a major impact in terms of surface water contamination to a wider area. Measures are in place to prevent blocking the culvert and security staff are on site 24/7 to check and maintain this. Ongoing preventative maintenance and improvements of controls will ensure that the risk is low.

### 7.4.3 Flooding - Mitigation Measures

To prevent recurring flood events west of the site boundary, Kingspan Ltd have adopted an Emergency Response Flood Plan. The objective of the Plan is to safely minimise the impact of a flood from the River Cabra under the culvert at the rear of the facility and to ensure a return to normal operation as quickly as possible. Kingspan Ltd have adopted the following measures to prevent flooding:

- The site is manned 24-hrs 7 days a week and the river is monitored daily by both security CCTV and water testing staff daily where samples are taken prior to the culvert and the exit from the site.
- Site security monitor the water level and debris build up on the grille in the river entering the culvert with site CCTV (Figure 20). Should there be signs of build-up of debris on the grille restricting flow the security will contact the Emergency Response Flood Plan coordinator to organise to clear the grille.

**Figure 20. Location of Grille in River Cabra West of Site**



## 8. Air & Noise

### 8.1 Air

#### 8.1.1 Emissions to Air – Existing Environment

There are currently 18 major emission points to air from the site but four of these are to be discharged to the pentane recovery system, which is due to be complete in Q2 2025, therefore there will be 15 major emission points for the revised IE licence.

A list of major emission points is provided in Table 5 and a list of minor emission points is provided in Table 6. A map of all emission points is shown in Figure 21 and a discussion of emissions from each building is also provided. An Air Dispersion Modelling study was undertaken on all 15 proposed emissions points A2-1 to A2-15 in Table 1 and this is discussed in section 8.1.2.

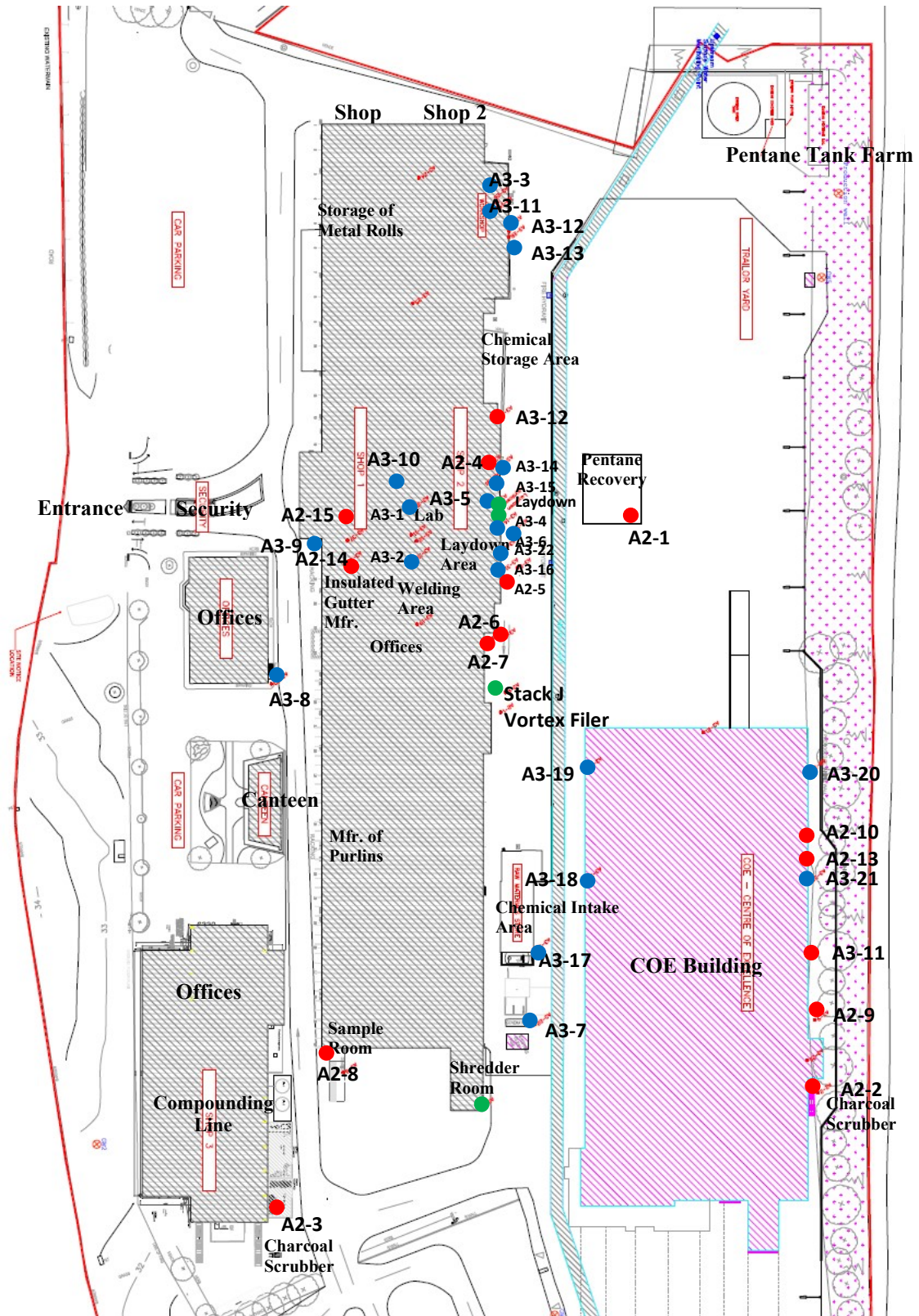
**Table 5. Main Emission Points at Kingspan Kingscourt**

Ref No.	Major Air Emissions	Location
A2-1	Proposed Pentane Recovery unit	Back of Shop 2
To be diverted to A2-1	<i>Laydown 1 (Stack C) - extraction under laydown</i>	<i>Back of Shop 2</i>
	<i>Laydown 2 - extraction to right and left of laydown</i>	<i>Back of Shop 2</i>
	<i>Stack J Vortex Filter</i>	<i>Back of Shop 2</i>
	<i>Shredder Room Exhaust</i>	<i>Shredder Room</i>
A2-2	Activated Carbon Scrubber	Back of COE
A2-3	Activated Carbon Scrubber	Circularity Centre
A2-4	Pre-Laydown - Primer	Shop 2
A2-5	PA1 Room Extraction	PA1 Room
A2-6	Dust Extractor (Stack D)	Back of Shop 2
A2-7	Dust Extractor (Cyclone)	Back of Shop 2
A2-8	Dust Extractor (Sample Room)	Side of Shop 1
A2-9	Dust Extractor (Line 4 - Coral )	Back of COE
A2-10	Dust Extractor (Modesta)	Back of COE
A2-11	Dust Extractor (Sibila Cyclone)	Back of COE
A2-12	PCP Oven (Rake Burner)	Back of Shop 2
A2-13	CFM oven	Inside COE
A2-14	Gutter Spray Booth Stack 1	Inside Shop 1
A2-15	Gutter Spray Booth Stack 2	Inside Shop 2

**Table 6. Minor Emission Points at Kingspan Kingscourt**

<b>Ref No.</b>	<b>Major Air Emissions</b>	<b>Location</b>
A3-1	LEV 15 – Plasma Cutter & Capture Hood from Welding Area	Shop 1
A3-2	LEV 16 – Three Capture Hoods from Welding Area	Shop 1
A3-3	LEV 17 - Maintenance Workshop Capture Hood	Shop 2
A3-4	Chemical Lab Fume Cupboard	Shop 2
A3-5	Materials Lab Fume Cupboard	Shop 2
A3-6	Nozzle cleaning Fume Cupboard	Shop 2
A3-7	640kW Diesel Generator	Between Shop 2 & COE
A3-8	198kW Kerosene Boiler	Back of Main Office
A3-9	9.2kW – 33.5kW Diesel boiler	Stores
A3-10	35-110kW Gas Burner	Shop 2 (near Lab)
A3-11	35-110kW Gas Burner	Shop 2 (near workshop)
A3-12	22kW Gas Burner Exhaust 1	Shop 2 workshop
A3-13	22kW Gas Burner Exhaust 2	Shop 2 workshop
A3-14	35-110kW Gas Burner for Chemical Ingredients Room	Shop 2
A3-15	35-110kW Gas Burner (preheating sauna)	Shop 2
A3-16	55-550kW Gas Burner for Laminator	Shop 2
A3-17	25kW Gas Burner for Raw Materials Store	Raw Materials Store
A3-18	35-78kW Gas Burner COE	COE
A3-19	35-78kW Gas Burner COE	COE
A3-20	35-78kW Gas Burner COE	COE
A3-21	35-78kW Gas Burner COE	COE
A3-22	Pentomat Emergency Discharge	Shop 2

Figure 21. Kingspan Ltd, Kingscourt Air Emission Points, Dec 2024



## **Shop 1 Air Emissions**

Details of air emission points associated with Shop 1 are discussed in Section 3.2 Process Description and major emissions are also shown in the schematic in Figure 5. A summary is provided here:

**Dust Extractor:** There is one dust extractor which takes dust from a saw in the sample room at the corner of shop 1 (A2-8). This is used to cut samples to send to clients. It has intermittent use. This emission point was originally included in the IE Licence granted in 1997 but was removed when dust results were continuously under the emission limit values and not problematic.

**Spray Booth Stacks:** There is one spray room on the site with two spray booths (A2-14 & A2-15). In the spray room, glue is manually sprayed onto panels to manufacture insulated gutters. The spray process is intermittent when this process takes place. Approximately 1.5 tonnes of solvent glue are used in this process annually. Spray booths have prefilters and carbon filters and management of these will ensure that emissions are within limit values. The site are implementing preventative maintenance controls and a standard operating procedure for these emission points to ensure emissions are controlled.

**Welding Stacks:** There are two emission points from welding stacks in the welding area on site (A3-1 & A3-2) from a plasma cutter and form moveable welding arms. Welding is carried out intermittently at this site.

**Gas Burners:** There is a small diesel burner externally at Shop 2 for stores (A3-9) also a small kerosene boiler for at the back of the offices to heat the office building (A3-8).

## **Shop 2 Air Emissions**

As with Shop 1, details of air emission points associated with Shop 2 are discussed in Section 3.2 Process Description and major emissions are also shown in the schematic in Figure 5. A summary is provided here:

**Laydown:** There are 5 emission points associated with the laydown process;

1. Laydown 1 - extraction from under the laydown (Stack C in current IE Licence). This will be diverted to the Pentane Recovery System once installed in Q2 - 2025.
2. Laydown 2 - extraction from sides of the laydown. This will be diverted to the Pentane Recovery System once installed in Q2 - 2025.
3. Laydown 3 – A2-4 – this is extraction from the primer applied to the process before the laydown area.
4. Laydown 4 – A2-5 – this is an extraction from the PA1 room which stores raw materials for the laydown line.

5. Laydown 5 – A3-22 – this is an extraction from the pentomat machine, which does not extract in normal operation but discharges to air in the event of a pentane leak for safety reasons.

**Dust Extractors:** There are two dust extractors associated with the laydown line (A2-6 & A2-7)

1. Dust Extractor (A2-6) is a stack D licensed emission point and is a bag filter abatement system. This extracts dust from the main saw after the laminator on the laydown line. Dust emissions from this location are measured annually and are consistently low.
2. Dust Extractor (A2-7) is from a dust cyclone, which extracts dust from a backup saw on the laydown line, used intermittently as required.

**Shredder Room:** The shredder room is located at the end of Shop 2. It was installed to recycle panels so that their components could be reused in the process. This area is not currently operational and it is planned to discharge emissions from this area (containing VOC) to the pentane recovery system in Q2 – 2025. When this is in place, the operation will re-commence. There are two emission points associated with the shredder room.

1. Stack J licensed emission point. Dust levels are measured from this area annually and are consistently low. This will discharge to the pentane recovery system once installed.
2. The shredder room stack will discharge air direct from the shredder. This will discharge to the pentane recovery system once installed.

**Pentane Recovery System** - Air emissions from four stacks mentioned previously i.e. Laydown 1 (Stack C) - extraction under laydown, Laydown 2 - extraction to right and left of laydown, Shredder Room Exhaust and Stack J Vortex Filter will be collected via pipework from each stack at high level and travel via a pipeline service bridge between Shop 2 and the proposed building to the pentane recovery system.

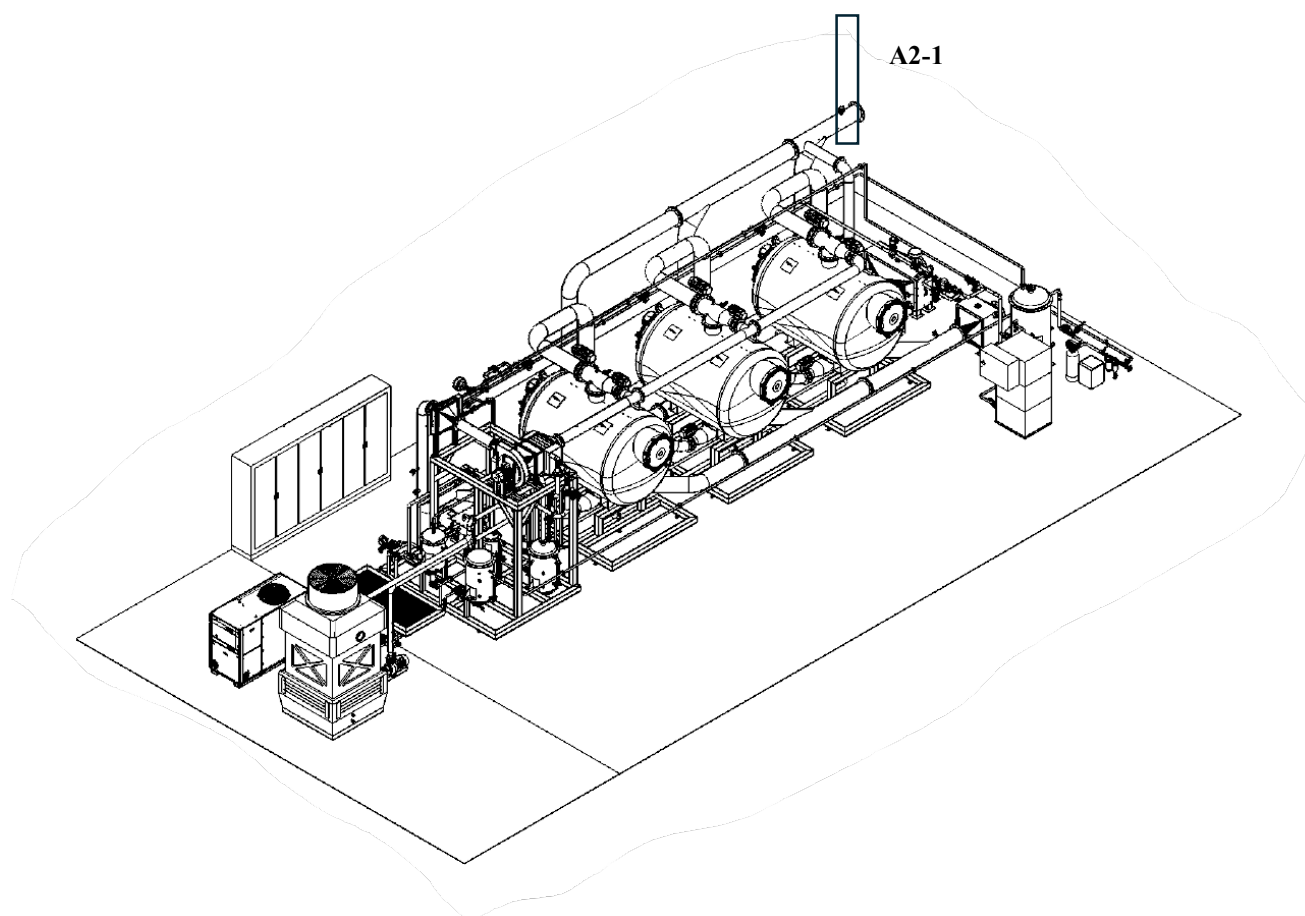
Within this system, the air will pass through filters and will also be heated and then discharged to activated carbon beds where pentane will be absorbed. There will be three activated carbon beds, two for the laydown stacks and the third for the shredder stacks. Once the absorption capacity of an activated carbon bed is reached, it will be regenerated with hot water for up to 3.5 hours. This process strips the pentane from the carbon and restores its adsorption properties. The mixture of water vapour and pentane is condensed and sent to a separator called “Fiorentina” which separates the pentane from the water. The area of the plant where condensation and separation of pentane is performed, is called “distillery area”. The separated water will be recycled for subsequent generations of steam or reintegrated in the cooling tower, without further treatment. When one of the activated carbon beds is under regeneration, the adsorption shifts to one of the other beds. Regeneration can take place automatically as required or can be done manually.

Pentane recovered will be stored in a 500litre buffer tank and then piped back to the pentane line in Shop 2 via the pipeline service bridge, for re-use in panel manufacturing. It is estimated that approximately 5.6 tonnes of pentane will be recovered annually. Treated gas from the carbon beds will be discharged via a 6.5m exhaust stack (A2-1) which is designed to treat gases to <math><20\text{mg}/\text{m}^3</math>.

The proposed system purifies the air by recovering pentane and reusing it in a closed-loop process. A schematic of the proposed pentane recovery system is provided in Figure 22. The plant is supplied turnkey, complete with electrical panel, electric system, PLC and operator interface terminal, assembled, ATEX controls, calibrated and ready for production.

The site operators will be trained in the Pentane Recovery system and conduct daily checks. The system will use an estimated 20m<sup>3</sup> of water annually for steam generation, which will be required to replenish steam condensate water loss in the cooling tower. The pentane recovery is a closed system, so there is no discharge to water from the plant. The charcoal of the activated carbon system has a long life (>8years). If it needs to be replaced, it will be removed and replacement with new carbon. The discharged carbon will be disposed of as hazardous waste. Dust filters will be removed annually and discharged as general waste.

**Figure 22 – Pentane Recovery System**



**Fume Cupboards:** There are three fume cupboard in the laboratories. Two in the chemical laboratory discharge to one stack (A3-4) and one in the materials laboratory discharge to stack (A3-5). These have intermittent use on site. In the laydown area, nozzles are used to distribute product onto the line. When the product hardens on these nozzles, they have to be cleaned to be reused. There is a small nozzle cleaning fume cupboard (A3-6) near the laydown area which provides room ventilation.

**Rake Burner:** After manual nozzle cleaning, dies are taken from this room to the furnace/rake burner/oven, which burns off the hardened product and has an emission point (A2-12). The rake burner is a Controlled Pyrolysis Cleaning Furnaces which cleans the nozzle heads on the laydown line after each shift. 'Pyrolysis' means the degrading or breakdown of an organic substance by the application of heat, but without any flame. Applying heat in a controlled manner allows Pyrolysis without flames and forms the basic effectiveness of the cleaning system to remove coatings without any damage to the parts.

The coating is turned to smoke and other gases. The Pyrolysis smoke and gases generated by the process is drawn into an integral afterburner where its temperature is raised and the smoke is completely burned at 850°C. The emissions then consist of primarily carbon dioxide and water vapour.

When operational the burner is used twice daily from approximately 16:00 hours to 20:00 each evening and then from 00:00 hours to 04:00 each morning, so total usage of 40 hours per week. This oven has a physical capacity of 1.53m x 1.04m x 1.11m = 1.8m<sup>3</sup> or 1.8 tonnes. The oven will typically be used twice per day to clean nozzle parts and each cycle takes 4 hours. Assuming the oven is used over a maximum of three shifts (3 times/day) the capacity is 5.4 tonnes per day.

**Gas Burners:** There are five gas burners in Shop 2. Natural gas is piped to the site to fuel these burners, which heat the area as required; A3-10 is near the laboratory for space heating. A3-11 is near the workshop for space heating, A3-14 heats the chemical ingredients room, A3-15 is the preheating sauna and A3-16 is for heating the laminator.

**Workshop:** There are three emission points in the workshop: One from a welding area (A3-3) used intermittently and two from gas burners providing space heating to the workshop (A3-12 & A3-13)

### **COE Air Emissions**

Details of air emission points associated with the COE building are discussed in Section 3.2 Process Description and major emissions are also shown in the schematic in Figure 6. A summary is provided here:

**Charcoal Scrubber:** The Airprotec charcoal scrubber was installed in 2021 and consists of two charcoal chambers, through which air from lines 1-4 in the COE building discharge. Line 5 in the COE building does not have a discharge to air. VOC's in the discharge are adsorbed by the charcoal and once saturated, the charcoal is replaced and disposed of as hazardous waste. Condensate water generated by the extrusion process is collected in a water trap and discharged to a bunded IBC area. The charcoal scrubber is designed to achieve a VOC of <math>20\text{mg}/\text{m}^3</math> in this discharge stack (A2-2) and this is exceeded when the carbon becomes saturated. Ongoing maintenance of this system is being undertaken by the site to ensure that this limit is achieved by carbon replacement and monitoring checks.

**Dust Extractors:** There are two dust extractors in the COE building. Both are small dust extractors.

1. Dust Extractor 6 – COE Line 4 Coral Dust extractor (A3-9) from the saw on line 4. This extracts plastic offcuts from the saw.
2. Dust Extractor 7 – COE Modesta Dust Extractor (A3-39) is from a saw used intermittently to cut panels to size.

**Cleaning oven (ctm):** Similar to the oven for cleaning nozzles in Shop 2, there is an oven for cleaning dye heads in the COE building to remove plastic with emission point A3-13. The oven is also based on the process of pyrolysis where a furnace removes the hydrocarbon molecules and the gaseous air is passed thorough an afterburner for complete oxidation.

'Pyrolysis' means the degrading or breakdown of an organic substance by the application of heat, but without any flame. Applying heat in a controlled manner allows Pyrolysis without flames and forms the basic effectiveness of the cleaning system to remove coatings without any damage to the parts.

The coating is turned to smoke and other gases. The Pyrolysis smoke and gases generated by the process is drawn into an integral afterburner where its temperature is raised and the smoke is completely burned at 850°C. The emissions then consist of primarily carbon dioxide and water vapour which are harmless products.

This oven has a capacity of  $0.56\text{m} \times 0.62\text{m} \times 2.6\text{m} = 0.9\text{m}^3$  or 0.9 tonnes. Currently this oven is used once per week or once every two weeks and a cleaning cycle takes 4 hours. Assuming the oven is used at the end of every shift (3 times/day) the capacity is 2.7 tonnes per day.

**Gas Burners:** There are four small wall-mounted gas burners in the COE building (A3-18 – A3-21). Natural gas is piped to the site to fuel these burners, which heat the area as required. These are not used as the production process generates space heating.

## **Other Air Emissions**

Two other minor emission points are in place on the site; A3-7 is an exhaust from a back-up diesel generator and A3-17 is a discharge from a natural gas burner used for heating the raw materials store.

### **8.1.2 Emissions to Air – Environmental Impact**

To determine the impact of emission to air currently in place and proposed for this site, air dispersion modelling was conducted by Odour Ireland using the AERMOD Prime Dispersion Model (23132). The study assessed the impact of the following air pollutants from the site;

- Nitrogen Dioxide (NO<sub>2</sub>)
- Particulate Matter <10mg (PM<sub>10</sub>)
- Particulate Matter <2.5mg (PM<sub>2.5</sub>)
- Carbon Monoxide (CO)
- Volatile Organic Compounds (VOCs)
- Isocyanate
- Dioxins and Furans

The report of air dispersion modelling is provided in Appendix 4.

Fifteen emissions points propose for the IE Licence were included in the modelling study to determine worst case scenario ground level concentration of emissions from the site. Modelling assumed that all emission points were running continuously.

The air dispersion modelling study shows that when the combined predicted emissions and baseline air quality are compared to the SI 739 of 2022 and Directive 2008/50/EC, all parameters are less than the limit values specified in the Regulations. Therefore all emissions from the facility under normal operations will be in compliance with the ambient air quality standards and direct emissions to air from the site will have negligible impact on ambient air quality in the area.

The company are currently upgrading abatement systems at the site (e.g. Pentane Recovery System) to ensure Best Available Technology is used so that emissions are within limit values. Monitoring of emissions in 2024 has found that A2-2 scrubber and A2-13 CFM Oven in the COE building, along with A2-14 / A2-15 emissions from the glue spray booth area in Shop 1 have exceeded emissions limit values. Where exceedance in emission limit values are found, corrective action is implemented by the site. For emission points A2-2, A2-14 & A2-15, this entails more frequent changing of carbon in the abatement systems, combined with more frequent monitoring. For A2-13 a fault was identified with the after burner on the oven where it wasn't reaching its set point and this has been rectified. Ongoing preventative maintenance and monitoring of the site's air emissions and abatement systems will ensure that emissions from the site are in compliance with the relevant limit values.

### **8.1.3 Emissions to Air – Cumulative Impact**

The addition of KLAW to the site has increased the number of emission point to air, however abatements systems are put in place to minimise emissions and continuous management and maintenance of these will ensure that emissions are within limit values. The air dispersion modelling study shows that emissions from the facility under normal operations will be in compliance with the ambient air quality standards and direct emissions to air from the site will have negligible impact on ambient air quality in the area.

### **8.1.4 Emissions to Air – Mitigation Measures**

To ensure that the operations at Kingspan site do not impact on air quality in the immediate vicinity of the site and beyond, the site will;

- Visually check emission points on a daily basis when operational
- Conduct preventative maintenance to all air abatement equipment as required, to ensure air emissions do not become problematic.
- Conduct periodic monitoring on major emission points, as required under IED licence.
- Ensure BAT is used to manage emissions at the facility.

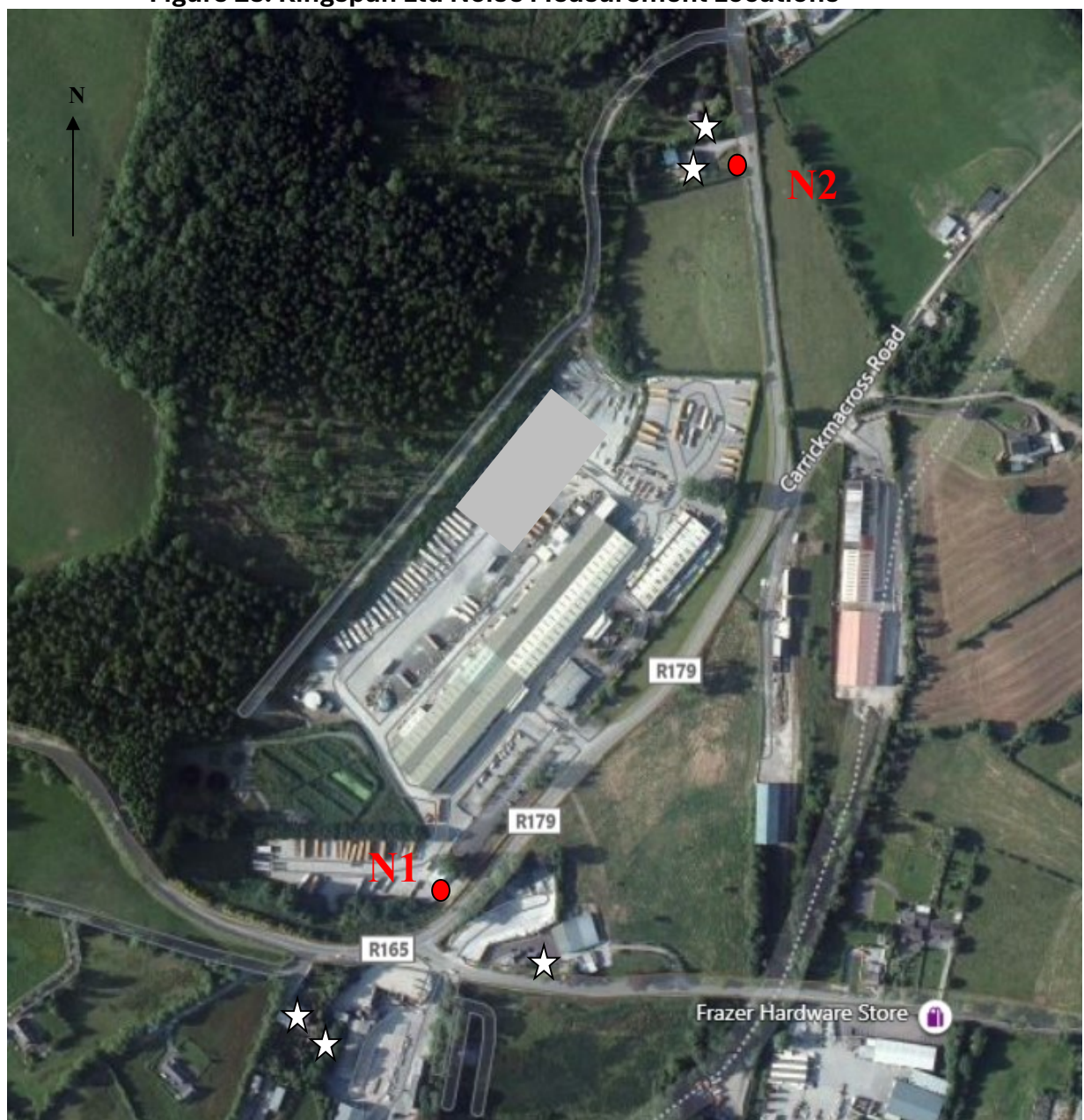
## 8.2 Noise

### 8.2.1 Noise - Existing Environment

Noise from Kingspan Ltd is generated from the manufacturing processes within the existing buildings and from the movement of goods on site via forklift or trucks, as well as traffic noise from deliveries also.

The site lies on the R179, less than 1km from Kingscourt town. Agricultural land dominates the land surrounding the site, with the forest park along the north western boundary. The closest residential houses (☆) are located north and south of the site as shown in Figure 23.

**Figure 23. Kingspan Ltd Noise Measurement Locations**



An Environmental Noise Assessment is undertaken annually at the site as part of the IE licence requirements. In general, noise levels from the site are low and not problematic. Noise at the nearest noise sensitive locations is dominated by traffic on the R165 and R179.

A summary of results of annual noise survey conducted in 2024 is provided in Table 7. The survey was conducted during day, evening and night-time at two locations as shown in Figure 23.

- N1 within the site boundary to the south of the site. There are three noise sensitive locations located in this direction of the site
- N2 to the north of the site. There are two noise sensitive locations at this location.

The survey was conducted during normal operation of the site in line with EPA Guidance Note NG4: *Guidance Note for Noise: Licence Applications, Surveys and Assessments in Relation to Scheduled Activities (NG4) 2016*.

The objective of the noise survey is to assess compliance with the following noise limits set for Noise Sensitive Locations;

- *Daytime Noise Limit (7am-7pm)*                      55dBA
- *Evening Noise Limit (7pm-11pm)*                      50dBA
- *Night-time Noise Limit (11pm-7am)*                      45dBA

*There shall be no clearly audible tonal component or impulsive component in the noise emission from the activity at any noise sensitive location.*

The predominant noise source during the 2024 survey was road traffic with some site traffic. Noise from production activities are minimal externally at the noise measurement locations. Give that the road traffic was the predominant noise source, the background  $L_{A90}$  gives a better representation of noise from the site in the absence of road traffic noise.

The  $L_{A90}$  noise level at the two noise measurement locations N1 & N2 was under the EPA Daytime Noise Limit of 55dBA, the Evening Noise Limit of 50dBA and the Night-time Noise Limit of 45dBA. In addition no tonal noise or impulsive noise was present at the noise measurement locations.

**Table 7. Kingspan Noise Readings, 15<sup>th</sup> May 2024**

Ref.		Time	L <sub>Aeq</sub> dBA	L <sub>A10</sub> dBA	L <sub>A90</sub> dBA	L <sub>Amax</sub> dBA	Comments
N1	Day	10:00-10:30	62	65	51	81	Road traffic noise prominent and frequent. Some site traffic. No noise from Shop 1 & 2.
		10:30-11:00	62	65	49	90	
		11:00-11:30	63	65	48	95	
	Evening	22:17-22:47	55	59	41	77	Road traffic noise. Site forklift operating along front of site.
	Night	23:00-23:30	57	58	31	88	Some road traffic noise and site traffic. Low noise from site
		23:30-00:00	49	50	30	69	
N2	Day	10:18-10:48	62	66	39	82	Road traffic noise dominant. No site noise
		10:48-11:15	63	68	40	79	
		11:18-11:48	63	68	41	79	
	Evening	22:11-22:41	58	61	33	77	Road traffic noise dominant. Low noise level from site.
	Night	23:00-23:30	55	51	29	76	Road traffic noise and low level of noise from site.
		23:30-00:00	54	50	29	75	

### 8.2.2 Noise - Environmental Impacts

Manufacturing activities at Kingspan take place in Shop 1 & 2 and the COE building and a new line will operate in the Circularity Centre. The main areas of concern regarding noise is the external plant and equipment and external yard activities. The external plant that is already operational includes dust extractors and the COE Activated Carbon Adsorption Scrubber, all of which do not impact on the surrounding area.

A new activated scrubber will operate at the compounding shed and this is located internally and will not impact on external noise. Similarly the pentane recovery system to be installed will be located indoors and the building will be shielded by Shop 2 to a large extent, so noise from this process will not impact on the wider area. A repeat noise survey will be undertaken in Q2 2025.

Since obtaining the IE Licence in 1997, an annual noise survey has been undertaken at this site and has been in compliance with the licence limits. The site has not experienced any incidents of elevated noise levels within this period. Under the proposed new IE licence, annual noise monitoring at the site will continue.

### **8.2.3 Noise - Mitigation Measures**

In general, activities at Kingspan Ltd will not result in nuisance noise levels. Manufacturing processes take place in covered sheds and buildings. Movement of lorries and forklifts around the site is the site's main outdoor activity. To ensure noise does not become problematic the following mitigation measures will be implemented during the development and operation of the site.

1. The company will take noise levels into account for all new/second hand plant and equipment purchased.
2. Noisy plant will be carefully positioned away from noise sensitive locations and in an area where the buildings act as a noise barrier.
3. All mobile plant, equipment and vehicles used by the site will be well maintained so that excessive noise does not result from poor maintenance.
4. Construction activities will take place during daytime hours only.
5. Noise monitoring will be undertaken on an annual basis under the IE licence and a Noise Management Plan will be prepared annually as part of this work.

## 9. Climate

### 9.1 Climate - Existing Environment

Climate refers to the long term patterns of temperature, precipitation, wind and other atmospheric conditions in a particular area. The climate of an area can have a significant impact on the environment, including the flora, fauna and water resources. Cavan has a temperate climate with warm summers and some rainfall in all months. The average annual temperature is approximately 12°C with the warmest months being July and August and coldest in January. The average annual rainfall is approximately 720mm, which is distributed evenly throughout the year, with slightly higher levels during the winter months.

Increasing use of greenhouse gases including carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), nitrogen trifluoride (NF<sub>3</sub>), hydrofluorocarbons (designated HFCs), perfluorocarbons (designated PFCs), and sulphur hexafluoride (SF<sub>6</sub>) has caused climate change impacts throughout the world and global agreements e.g. Kyoto Protocol and more recently national legislation has been adopted to regulate emissions in an effort to slow down or reverse the climate change impacts. The majority of greenhouse gas emission from manufacturing sites like Kingspan comprises CO<sub>2</sub> emissions from energy use (electricity and diesel). Emissions of methane, nitrous oxide, and fluorinated compounds from the site are low. Deliveries of raw materials and final products can also contribute significantly to emissions from transport.

The site uses energy in the form of electricity and natural gas, which is piped to the site. Currently the site has solar panels on Shop 1, Shop 2 and the COE roof and generates approximately 650MWh of electricity annually. There are plans to install solar panels on the Circularity Centre roof also, as part of the groups Planet Passionate strategy.

In Ireland, the Climate Action and Low Carbon Development (Amendment) Act, 2021 has committed Ireland to a 51% reduction in emissions by 2030 and to moving towards achieving “net-Zero” greenhouse gas emissions (GHG) by 2050. The Climate Action Plan 2023 plan sets out a roadmap for achieving these targets. Cavan County Council has also published a Climate Action Plan 2024-2029.

Kingspan Group are on the Climate Change ‘A List’, published by CDP (Carbon Disclosure Project). Of the 21,000 companies that were scored by CDP, Kingspan was one of just 346 to make the 2023 CDP Climate Change A List. CDP’s annual environmental reporting and disclosure assessment encourages companies to be transparent about their environmental impacts, risks and progress and provide data that demonstrate action and performance against climate-related targets. Those on the ‘A List’ have been recognised by CDP for their comprehensive climate strategies and targets and must also achieve a minimum of 4.2% emissions reductions annually. The Kingspan Group CDP

disclosure includes detailed information on the businesses climate risk management strategies and further details are available from:

<https://www.kingspangroup.com/content/dam/kingspan-group-website/documents/2024-reports---presentations/kingspan-cdp-cc2023-280723.pdf>

## 9.2 Climate - Environmental Impact

In 2020 the Kingspan Group committed to a 10-year group wide global sustainability strategy called Planet Passionate, which aims to impact on three big global issues: climate change, circularity and protection of our natural world and the company has set ambitious targets to achieve these aims by 2030.

In relation to climate change, Kingspan have proposed a number of targets in the 2020 Planet Passionate Report detailed here.

### Target 1 – Net Zero Caron Manufacturing by 2030

At Kingspan, greenhouse gas emissions (GHG) are classified as energy related (e.g. emissions from the combustion of fuel for the generation of heat), process related (e.g. emissions from the use of blowing agents) and generation of purchased or acquired electricity, heating and/or cooling.

In 2023, Kingspan Group achieved a 26% absolute reduction in its Scope 1 and 2 emissions since 2020, as published in their 2023 Planet Passionate report. The Kingscourt Site has achieved carbon reductions by the installation of solar panels on manufacturing buildings.

<https://viewer.ipaper.io/kingspan/c239481-planet-passionate-report-2023/kingspan-planet-passionate-report-2023/?page=43>.

### Target 2 – 50% reduction in product CO<sub>2</sub> intensity from primary supply partners by 2030

Kingspan are a global leader in high-performance insulation and building envelope solutions. Relying on a global network of suppliers for raw materials and transportation, Kingspan are dedicated to proactively reducing GHG emissions across the value chain. Addressing emissions across the value chain will enable Kingspan to support the delivery of a net zero carbon built environment.

Although Kingspan do not have direct control over supply chain emissions, strengthening relationships between key suppliers have progressed, in particular with raw material suppliers.

### Target 3 – Zero Emission Company Cars by 2025

To support the acceleration of low carbon transport and minimise Kingspan's carbon footprint, Kingspan aims to accelerate company car fleet conversion to zero emissions by 2025.

The site does not contravene any of the Climate Change Policies or Objectives in the Cavan County Development 2022-2028 and it is striving to become more sustainable by adhering to the objectives set out in its Planet Passionate programme. The site also has a Climate Change Policy in place (Appendix 1).

### **9.3 Climate – Mitigation Measures**

1. Kingspan Ltd will comply with any requirements of the Local and National Climate Action Plans as they apply to their operations
2. Fuel sources will be from renewable sources where possible in an effort to reduce greenhouse gas emissions from site operations.
3. All plant, equipment and vehicles will be maintained so that it operates in the most energy efficient manner. New plant, equipment and vehicles purchased will consider energy efficiency of their operation.
4. The site will strive towards the Net Zero carbon manufacturing by 2030.

## 10. Material Assets – Roads & Traffic

### 10.1 Roads & Traffic – Existing Environment

The site lies on the R179, a regional road linking Kingscourt to Carrickmacross. Traffic into and out of the Kingspan site entails production and office employees, raw materials in and products out. The addition of the COE building and Circularity Centre to the site will increase production volumes hence increase the traffic volumes but the existing infrastructure on the site and capacity of the R179 can absorb any increases in traffic experienced by the site.

### 10.2 Roads & Traffic – Environmental Impact

Traffic emissions in terms of NO<sub>2</sub>, CO and PM<sub>10</sub> will be generated as a result of traffic movement on and off site. Traffic movement from the site has remained constant and on the gradual increase at this site since the 1970's. Kingspan aims to accelerate company car fleet conversion to zero emissions by 2025 and will keep in line with technological advancements for commercial vehicles to ensure minimal environmental impact. The addition of the compounding line to the site and the pentane recovery abatement system will have negligible impact traffic wise.

### 10.3 Roads & Traffic – Mitigation Measures

Kingspan Ltd have maintained the entrance in good repair. To limit the risk of accidents at the entrance to the site, Kingspan Ltd will continue to:

- Ensure lorries are cleaned regularly and that the entrance laneways continue to be maintained in a good state. This is to ensure the R179 adjoining the site is not degraded significantly as a result of activities from the site.
- Maintain their current road safety policy in which the delivery lorries reduce driving speeds when approaching, entering and navigating around the site.
- Maintain signage at each laneway so that individuals entering the site are guided to the relevant laneway.
- Provide infrastructure on site for electric vehicle charging in line with the vision of increasing electric vehicle use.

## 11. Cultural Heritage - Archaeology

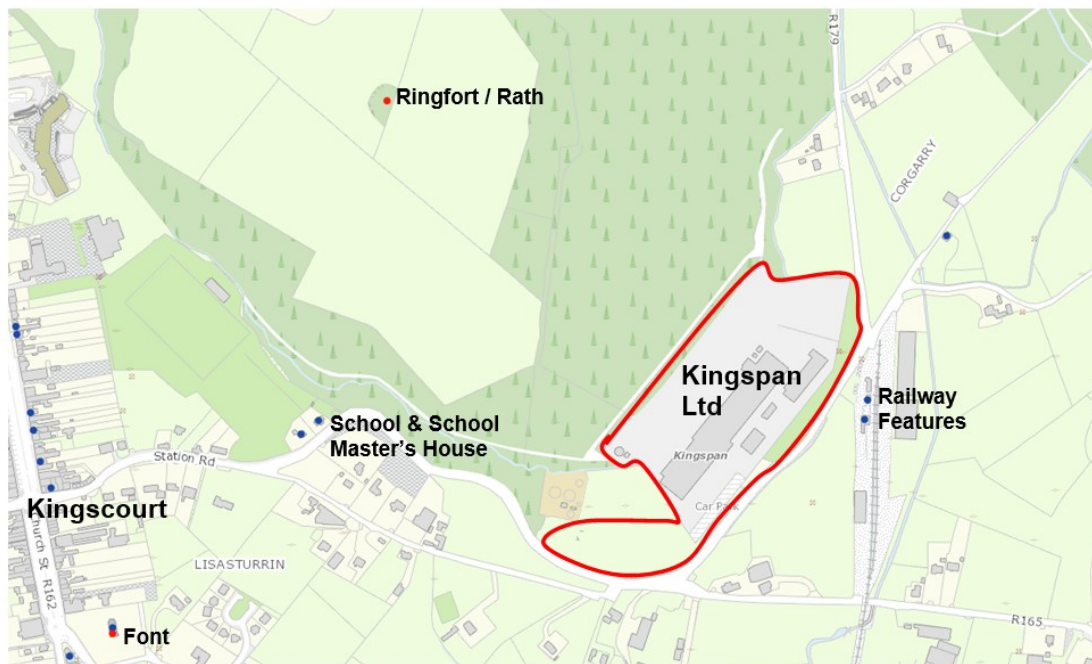
### 11.1 Archaeology - Existing Environment

Cavan has a rich cultural heritage with links to many historic figures and events. The Cavan Development Plan 2022-2028 Built and Cultural Heritage Policy Objective BCHPO 01 is to *undertake to preserve, conserve, enhance and promote understanding of the cultural heritage of County Cavan by:*

- *Making heritage more accessible to all citizens of Cavan*
- *Promoting heritage learning and its value as an educational resource*
- *Developing heritage-based tourism products by facilitating the development of infrastructure both hard and soft, heritage events and festivals*
- *Supporting the development and implementation of the forthcoming Cavan Heritage Plan (currently in development).*

The Archaeological Survey for County Cavan conducted in late 1980s / early 1990s did not identify Kingscourt as a Zone of Archaeological Potential. The national monuments records were examined and the national inventory of architectural heritage, to determine if any lie on or near the Kingspan site. A map is provided in Figure 24 which shows that there are two recorded structures in the immediate vicinity.

**Figure 24. Map of National Monuments Service Records (in red) and National Inventory of Architectural Heritage (blue)**



The nearest national monument record is a font (Monument No. CV035-063) situated approximately 895m south-west from Kingspan Ltd, in the townland of Lisasturrin. The next nearest is a ringfort / rath (Monument No. CV035-010) approximately 923m distant to the west of Kingspan Ltd, in the townland of abra.

Two recorded structures of architectural heritage are located in the immediate vicinity of Kingspan Ltd to the east. Both structures are railway features from Kingscourt Station (Reg. No. 40403504). The next nearest recorded structures are situated approximately 578m and 601m south-west (Reg. Numbers 40310017 & 40310016) from Kingspan Ltd. These features comprise of an old school and school master's house. Both buildings are in use today as modern dwellings.

## **11.2 Archaeology - Environmental Impact**

The site will continue as a manufacturing facility in the same manner since it first obtained planning permission. Therefore, the site is not significant in terms of architectural, archaeological or cultural heritage.

There are no mitigation measures proposed under Cultural Heritage as these are not deemed necessary.

## 12. The Landscape

### 12.1 The Landscape - Existing Environment

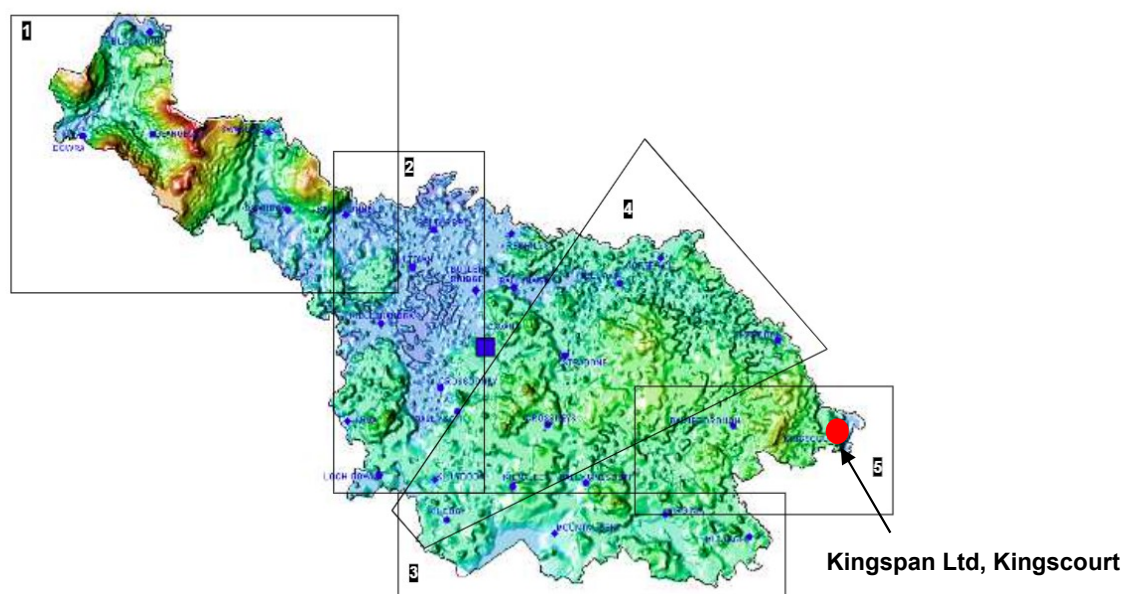
County Cavan is commonly known as the Drumlin and Lakeland County, however, there are a number of landscape types all of which contribute to the uniqueness and local distinctiveness of the county from the Cuilcagh-Anierin Uplands of West Cavan to the Highlands of East Cavan. The range of landscape types found in County Cavan have varying visual and amenity values, topography and contain a variety of habitats. Each landscape type has a varying capacity to absorb development related to its overall sensitivity

The 2022-2028 County Development Plan identifies five main Landscape Character Areas (LCAs), as shown in Figure 25. These areas have been chosen mainly due to their physical geological and geomorphological features which make them distinctive in the County and include:

1. Cuilcagh-Anierin Uplands of West Cavan;
2. The Lakelands;
3. Lake Catchments of South Cavan;
4. Drumlin Belt and Uplands of East Cavan;
5. Highlands of East Cavan (Kingspan in this Area).

This provides an understanding of the value and sensitivity of the county's landscapes and its future management needs. Kingspan site lies in type 5 – Highlands of East Cavan.

**Figure 24. Cavan Landscape Character Types**



© Draft Cavan County Development Plan 2022-2028

Highlands occupy the most eastern area of the county and is distinguished by the prevalence of drumlins. The Archaeological Survey for County Cavan

conducted in late 1980s / early 1990s described the landscape of Cavan in relation to drumlins,

*‘The county is a patchwork of drumlin hills interspersed with low-lying ground, rivers and streams, and lakes of varying sizes. Co. Cavan forms part of one of the most extensive drumlin belts in the world, which extends across Ireland from the southern part of Co Donegal in the north-west to Co. Down in the north east.’*

Landscape Characterisation is intended to provide information to landowners, those seeking to develop on lands and the local communities of the area with regard to the biodiversity and the unique character and distinctiveness of the county’s landscapes.

The area of Kingscourt including Kingspan Ltd is bisected by two Regional roads – R165 and R179. Apart from the R165/R179, the area is traversed by a network of tertiary roads which in places run in view of the drumlin landscape and creates a picturesque landscape. However, little habitats are associated with drumlins due to their composition. Soils in these areas tend to be poorly-drained. It is difficult to drain these landscapes as drumlins typically have slopes above 12°. The most common soils in drumlin landscapes tend to have a high clay content (40-60%) and have a heavy texture and weak structure, meaning these soils are limited to grassland or forestry, with rushes dominating the grasslands.

Rivers in the area include the River Mullantra, Cabra and Rectory River. The River Cabra converges with the Mullantra River, approx. 260m north of Kingspan, where it flows northwards to the River Gldye c. 2 km north of the Kingspan site. Kingscourt’s natural assets include the Rectory River which flows along the east of the Town and Dún a Rí Forest Park located to the north-east of the Town. The Forest contains a variety of flora and fauna and other features of natural heritage many of which are accessible from trails throughout the Forest.

Activities at Kingspan Ltd, Kingscourt are not considered to adversely impact on the natural landscape of Kingscourt. Kingspan Ltd is set back from the R179 by approximately 20m and so does not impose on the R179. The COE building merges with existing buildings thus maintains the industrial setting of the site. Kingscourt Waste Water Treatment Facility lies south west of the site and is similar in setting to the Kingspan Ltd site. An area of amenity grassland is located to the front of the Kingspan site and the rear is screened by part of the Dún a Rí Forest Park and agricultural land. The nearest house to the south is approximately 50m from the site boundary and the nearest house to the north is approximately 140m distant from the boundary.

The site location does not have any designated protected views or prospects. Map-Based Specific Objectives for Kingscourt in the County Development Plan 2022-2028 outline the role of Dun a Rí Forest Park, as defined in the Eastern and Midland Regional Assembly - Regional Spatial and Economic Strategy (RSES), as *an amenity attraction with growth potential. The Planning Authority will ensure*

*the protection and conservation of Dun na Rí Forest Park in recognition of its cultural and historical importance to the town and as an important urban amenity with strong tourism value. The Planning Authority will:*

- a) Liaise with Coillte Teoranta on matters relating to Dun a Rí Forest Park and encourage the use of part of Dun na Rí Forest Park as an amenity area.*
- b) Protect Dun a Rí Forest Park and regulate development to ensure compatibility with recreational and amenity uses (including commercial forestry).*
- c) Require any development on lands adjoining Dun a Rí Forest Park to be sited and designed to take cognisance of this Park and maximise habitat preservation and conservation.*
- d) Protect the Dun a Ri Forest Parks looped walk which connects the Park to the Town of Kingscourt and other existing walks within the Park.*

## **12.2 The Landscape – Environmental Impact**

The site is established on an existing industrial area, with recent construction of the COE building located on the same footprint as the existing site. Therefore, construction at Kingspan Ltd, Kingscourt is not intrusive on the area and will not change the character of the immediate landscape of the site. The compounding line and abatement system are in an existing production building on site. The pentane recovery building is a new small building, which will be hidden from public view at the back of Shop 2.

Although Dún a Rí Forest Park runs along the boundary of the site, it will not be adversely impacted by activities from the site. A walking path is located outside the boundary of the site near the COE building. This walking path is used by locals and the operation of the site has not impacted this area. As natural vegetation progresses in the area between the site and the path, this will eventually block the site from public view.

The site and surrounding areas are low lying and zoned as industrial use. Therefore, Kingspan Ltd will continue to have a negligible impact on the landscape character of the area.

## **12.3 The Landscape - Mitigation Measures**

1. Any expansion at the site will maintain the same style, height and colour of existing buildings, so will blend into the existing surroundings.

### 13. Interactions and Cumulative Impacts

Cumulative impacts, indirect impacts and main interactions between different aspects of the environment likely to arise due to the operation of the Kingspan Kingscourt site are detailed in this chapter.

To identify and assess potential for significant cumulative and indirect impacts and interactions, a matrix assessment was undertaken, as outlined in the EU Guidelines. This was undertaken by Q.E.D. Engineering Ltd Environmental Consultants, who are familiar with all aspects of Kingspan activities and operations.

The effects matrix (Table 8) examines the potential for the topic on the left hand column to have an effect on the environmental media listed in the top row of the matrix. If interactions and cumulative impacts are relevant they are ticked and where there is no interaction or cumulative impact the column is blank (-).

Where there is a potential for interactions and cumulative impacts, these are discussed in the following section. These effects and their significance are also discussed in the relevant chapter of the EIAR.

**Table 8. Kingspan Kingscourt  
Interactions and Cumulative Impacts Matrix**

Potential for this ↓	To have an impact on this →	Population & Human Health	Biodiversity	Land & Soil	Water	Air	Noise	Climate	Material Assets – Roads & Traffic	Cultural Heritage – Archaeology	The Landscape
<i>Population &amp; Human Health</i>			-	-	X	X	X	-	X	-	-
<i>Biodiversity</i>		-		-	-	-	-	-	-	-	-
<i>Land &amp; Soil</i>		-	-		X	-	-	-	-	-	-
<i>Water – GW /SW - Wastewater/Flooding</i>		X	-	X		-	-	-	-	-	-
<i>Air</i>		X	-	-	-		-	-	-	-	X
<i>Noise</i>		X	-	-	-	-		-	-	-	-
<i>Climate</i>		-	-	-	-	-	-		-	-	-
<i>Material Assets – Roads &amp; Traffic</i>		X	-	-	X	X	X	X		-	-
<i>Cultural Heritage – Archaeology</i>		-	-	-	-	-	-	-	-		-
<i>The Landscape</i>		-	-	-	-	-	-	-	-	-	

### 13.1 Population and Human Health Interactions and Cumulative Impacts

**Water** - During operation of the site, human error from staff can inadvertently result in spills and accidental discharges to surface water. Staff training, bunding and regular checks by site management will ensure that this risk is managed.

**Air** - Traffic from the site will create air emissions, such as particulate matter, Carbon Monoxide, Carbon Dioxide, Sulphur Oxides, Nitrous Oxides etc which have the potential to impact on human health.

Air emissions from site processes will be managed by preventative maintenance of abatement equipment, which include charcoal scrubbers and a pentane recovery system and dust filters and cyclone. Periodic monitoring of air emission points at the site will provide reassurance that site emissions are not problematic to human health.

**Noise** - Increased traffic during operation of the site will result in additional noise for those nearby. However as the site is located on a busy regional road, where traffic noise is the main source already so this impact will be negligible.

Site operations will generate noise but this is primarily internally within buildings. External noise sources will be blocked by buildings so their operation will not impact on the wider environmental and will not cause a noise issue to neighbouring properties. A noise management plan will be maintained by the site.

**Roads & Traffic** - The operation of the site generates traffic, but this level is absorbed by the existing traffic on the regional road.

### 13.2 Land & Soil Interactions and Cumulative Impacts

**Water** – Operation of the site has the potential to generate spills and accidental discharges to surface and groundwater. Staff training, bunding, impermeable surfaces on site, oil interceptors and regular checks by site management will ensure that this risk is managed.

### 13.3 Water (Groundwater/Surface Water/Wastewater/Flooding)

**Population and Human Health** – Increases in staff on site during operation will increase the volume of wastewater produced. This is discharged to the local authority sewerage treatment system, which has the capacity to treat this increased volume.

**Land & Soil** – Operation of the site has the potential to generate spills and accidental discharges to surface and groundwater. This has the potential to contaminate land and soil. Staff training, bunding, impermeable surfaces on site, oil interceptors and regular checks by site management will ensure that this risk is managed.

The surface water from this site discharges to the Cabra river. There are stop valves in place to prevent flow in the event of a contaminant event.

The new COE building has been designed with attenuation tanks to alleviate any increases in surface water runoff.

### 13.4 Air Interactions and Cumulative Impacts

**Population and Human Health** – Any increases in traffic from the operation of this site will create air emissions, such as particulate matter, Carbon Monoxide, Carbon Dioxide, Sulphur Oxides, Nitrous Oxides etc which have the potential to impact on human health.

Particulate emissions from the dust extractors on site have the potential to create suspended matter which can cause nuisance to nearby residents. Management and maintenance of dust extractors will be undertaken by the site. VOC emissions have the potential to arise from Shop 2, the COE building and the Circularity Centre, which can impact human health. The abatement system for each building will prevent any potential VOC emissions to atmosphere and periodic checking of the unit will confirm this.

**The Landscape** – Particulate emissions from this dust extractors on site and from general traffic movement in the yard have the potential to be deposited on surrounding trees and hedges and cause a visual impact. Management and maintenance of dust extractors will be undertaken by the site and yards will be dampened down in dry weather where necessary to prevent this occurring.

### 13.5 Noise Interactions and Cumulative Impacts

**Population and Human Health** All production operations on the site will be indoors and noise is not predicted to have an impact.

### 13.6 Material Assets – Roads and Traffic Interactions and Cumulative Impacts

**Population and Human Health** - During operation, increased traffic will increase vehicle emissions and noise, both impacts of which are considered to be negligible.

**Water** – Increased traffic on site will increase the potential for small oil spills or leaks from vehicles. Vehicles will be managed and maintained to ensure that this does not occur.

**Air** – Traffic during operation will create air emissions, such as particulate matter, Carbon Monoxide, Carbon Dioxide, Sulphur Oxides, Nitrous Oxides etc. Site vehicles will be managed and maintained to ensure emissions are minimal.

**Noise** – Traffic during operation may increase site noise, but this is similar to the existing background traffic on the R179 and R165, so the impact is negligible.

**Climate** – Vehicles generate CO<sub>2</sub> emissions, which is a greenhouse gas and this can impact climate. Kingspan aims to accelerate company car fleet conversion to zero emissions by 2025.

# Appendix 1



## KINGSPAN GROUP PLC

### Environmental Policy

Kingspan Group plc (“Kingspan”) is committed to conducting all its business activities in a responsible manner, with due regard to environmental impacts and sustainability.

Kingspan aims to adopt and apply best practice sustainable development principles by ensuring environmental, social, and economic parameters are considered in an integrated way in product and service design. Kingspan seeks to meet and improve its environmental standards while working to minimize any negative impact on the local and global environment as the Company expands and grows its business.

#### Objectives

Kingspan aims to protect the environment in the following manner:

- Kingspan will comply or exceed applicable legal and policy requirements related to the environmental performance of its products and operations;
- Kingspan is committed to the continual improvement and minimisation of its environmental impacts;
- Kingspan aims to conduct its business in a manner that will minimize pollution and demonstrate its respect for the environment;
- Kingspan will cooperate fully with any Government agencies in all countries where it operates to identify solutions to environmental problems resulting from its activities;
- Kingspan will implement and manage an effective environmental documentation system;
- Kingspan will communicate and actively promote awareness and acceptance of this policy and its relevant procedures and strategy within the group.

#### Materials/Resource Management

Kingspan recognises the importance of the efficient use of natural resources and the significance of optimising raw material usage and preventing or minimizing the impacts on the environment.

Kingspan commits to the efficient use of resources and aims to:



- Reduce its dependence on natural resources by investing in Research & Development (R&D) and strive to reduce the amount of resources used for the manufacturing of its products, where feasible;
- Use, where possible, renewable materials over non-renewable materials in both its manufacturing processes and its packaging;
- Use, where feasible, recycled input materials over virgin materials in both its manufacturing processes and its packaging;
- Embed circular economy thinking/principles throughout its operations and product development;
- Where feasible, purchase only certified timber for the manufacturing of its products;
- Provide sustainability training for relevant employees;

### **Energy & Emissions**

Kingspan recognises that climate change represents one of the major challenges facing our world in the 21<sup>st</sup> century. As a global product manufacturing company, Kingspan recognises the importance of achieving operational energy and carbon performance improvements to help limit its impact on climate change. In keeping with its Planet Passionate vision and strategy, Kingspan aims to:

- Continually improve operational energy and carbon performance through the setting of relevant long-term objectives and targets, and to review progress on an ongoing basis;
- Report its energy consumption, greenhouse gas emissions, targets and activities openly, and in accordance with the Greenhouse Gas Protocol;
- Invest in alternative or renewable energy technologies, where practical, to increase the use of renewable energy in our facilities;
- Work with suppliers to reduce the carbon embedded in raw materials to minimise their carbon footprint;
- Communicate and actively promote awareness and acceptance of this policy and our overall strategy and ambition and to everyone working for or on behalf of the organisation (e.g. employees, shareholders, suppliers/sub-contractors, customers).

*\* Note: For our approach to climate change, please see our Climate Change policy, which is available on our website.*



### **Waste Management**

Effluents and waste, along with spills of fuels, chemicals and various other substances, can pose a significant threat to human life and the environment when not managed and treated properly. Kingspan is committed to continually improving its performance in the area of waste management. Kingspan recognises that it has a duty to ensure that all waste generated in its facilities is disposed of and treated in a responsible manner, using certified, registered waste contractors. Kingspan monitors waste streams to ensure compliance with its policy, objectives and target programs. Kingspan aims to ensure all employees comply with the pertinent legislation. Kingspan aims to:

- Ensure that waste management and treatment is performed in accordance with all waste legislative requirements, including the duty of care, and to plan for future legislative changes and to mitigate their effects;
- Ensure the safe handling and storage of waste at all office locations and construction sites;
- Implement waste minimisation strategies that give priority to reuse, recycle and recovery over disposal;
- Have robust procedures in place to reduce the likelihood of fuel, chemical and other substance spills. In the event that such occur, to ensure that proper procedures are in place;
- Promote environmental awareness in order to increase and encourage waste minimisation, reuse and recycling;
- Provide appropriate training for staff on proper waste management;
- Promote industry waste management best practice.

### **Water Management**

Due to the nature of Kingspan's business, water constitutes only a small percentage of its material inputs. Nevertheless, recognizing the importance of this precious resource, Kingspan aims to manage it in the most responsible manner possible. Kingspan continues to aim to maximise water conservation using rainwater harvesting and other water saving initiatives such as sensor systems and water-flow regulators.

Kingspan constantly monitors water consumption to identify areas for improvement and continues to develop procedures and investigate technologies that will help minimize the withdrawal of ground water on site and water from municipal water supplies, as well as mitigating the impact of wastewater released from sites.



## **Biodiversity**

Kingspan bases its development on the respect for people and their environment. As a global provider of systems and solutions for the construction sector, Kingspan is aware of the potential impact of human activities on the planet and recognises climate change as a considerable threat to biodiversity globally. Through its Planet Passionate programme, Kingspan aims to help protect and preserve biodiversity by means of:

- The management of greenhouse gas emissions by using clean energy and increasing energy efficiency;
- Increasing the use of harvested rainwater thereby reducing the reliance on local water resources;
- Where feasible, to purchase only certified timber for the manufacture of its products;
- Implement waste minimisation strategies that give priority to reuse, recycle, and recovery over disposal;
- Have robust procedures in place to reduce the likelihood of fuel, chemical and other substance spills. In the event that such occur, to ensure that proper procedures are in place.



## KINGSPAN GROUP PLC

### Climate Change Policy

Kingspan Group plc (“Kingspan”) recognises that climate change represents one of the major challenges facing our world in the 21<sup>st</sup> century. We believe that businesses have a key role to play in finding sustainable solutions to climate risks and challenges, and in mitigating the adverse impacts of climate change on natural and human systems.

As a global building product manufacturer, Kingspan provides products and services to the construction industry that contribute towards the reduction of energy consumption, the improvement of energy efficiency, and to the consequential reduction in greenhouse gas emissions.

In addition, Kingspan has realised that climate change impacts could be disruptive to its business. Kingspan has introduced procedures and measures to reduce the impact current business activities have on the climate and continues to approach all new business ventures with climate change considerations firmly at the forefront of decision making.

Kingspan seeks to continuously improve its performance in all areas of business and maintain its reputation within the construction industry as a company actively addressing the challenges raised by climate change.

In this regard, Kingspan aims to:

- Continually improve operational energy and carbon performance through the setting of relevant long-term objectives and targets, and to review progress on an ongoing basis;
- Report its energy consumption, greenhouse gas emissions, targets and activities openly, and in accordance with the Greenhouse Gas Protocol;
- Invest in alternative or renewable energy technologies, where practical, to increase the use of renewable energy in our facilities;
- Conduct regular assessments to identify climate change risk and opportunities, and based on which, adapt its strategy and invest in the appropriate mitigation and adaptation measures;
- Align its climate strategy with the latest climate science and stay up to date with all the developments in the field;
- Invest in Research and Development (R&D) for low-carbon products and services;



- Work with suppliers to reduce the carbon embedded in raw materials to minimise their carbon footprint;
- Engage with stakeholders to tackle climate change and be an active part of sectoral partnerships and groups that work to share knowledge and expertise on the issue;
- Communicate and actively promote awareness and acceptance of this policy and our overall strategy and ambition and to everyone working for or on behalf of the organisation (e.g. employees, shareholders, suppliers/sub-contractors, customers).