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Environmental Impact Assessment Report Non-Technical Summary Volume 1

Proposed Plasterboard Manufacturing Plant

On behalf of
GABM Limited
Gorteens, Co. Kilkenny



MALONE O'REGAN



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Ground Floor – Unit 3
 Bracken Business Park
 Bracken Road, Sandyford
 Dublin 18, D18 V32Y
 Tel: +353- 1- 567 76 55
 Email: enviro@mores.ie

Title: Environmental Impact Assessment Report Non-Technical Summary Volume 1, Proposed Plasterboard Manufacturing Plant GABM Limited, Gorteens, Co. Kilkenny

Job Number: E2077

Prepared By: Caoimhe Fox

Signed: Caoimhe Fox

Checked By: Gus Egan

Signed: Gus Egan

Approved By: Kevin O'Regan

Signed: Kevin O'Regan

Revision Record

Issue No.	Date	Description	Remark	Prepared	Checked	Approved
01	29/02/24	EIAR Volume 1 - NTS	FINAL	CF	GE	KO'R

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Environmental Impact Assessment Report Non-Technical Summary

Volume 1

Proposed Plasterboard Manufacturing Plant

GABM Limited

Gorteens, Co. Kilkenny

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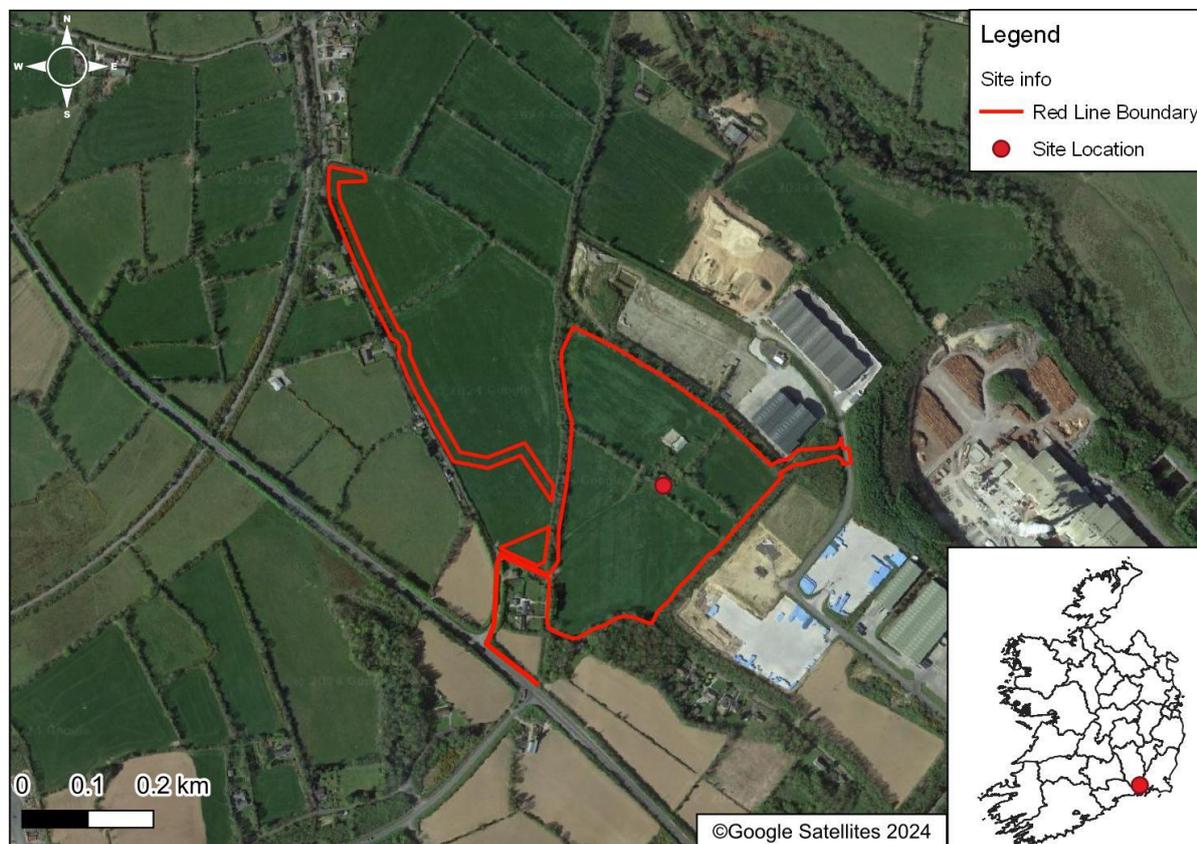
1 INTRODUCTION

1.1 General

Malone O'Regan Environmental (MOR) has been commissioned by GABM Limited to prepare an Environmental Impact Assessment Report (EIAR) in support of a planning application for the construction and operation of a plasterboard manufacturing plant ('Proposed Development') in Gorteens, Co. Kilkenny ('the Site'), refer to Figure 1-1.

This Non-Technical Summary (NTS) document (Volume 1) provides a summary in non-technical language of the information contained within the main Environmental Impact Assessment Report (EIAR) that is contained in Volume 2, while the supporting technical documents are presented in Volume 3 (Appendices). It should be noted that the phrase "not significant" is a term which usually means that the activity referred to will have effects, but these will not cause any unacceptable environmental effects or a nuisance to neighbours.

Figure 1-1: Site Location



1.2 Overview of the Site and Context

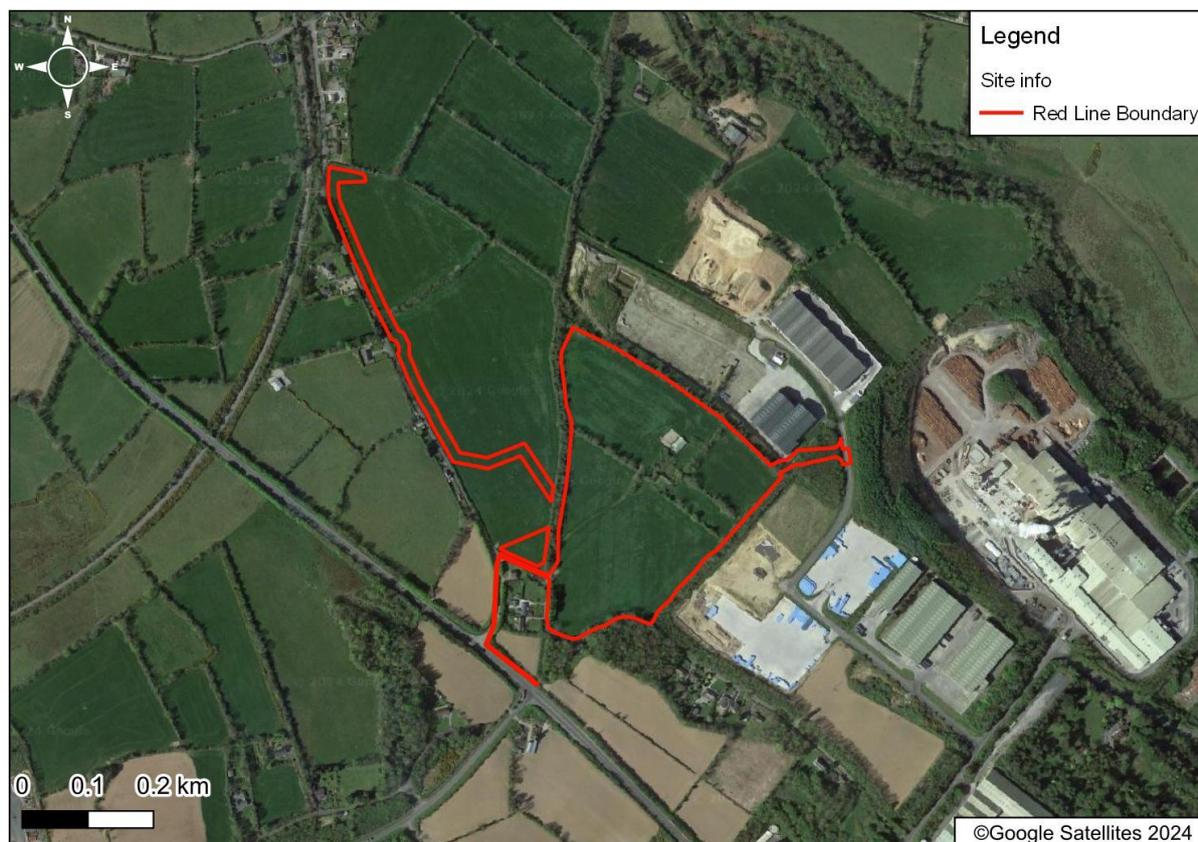
The Site encompasses approximately 11.57 hectares (ha.) of agricultural land, that is located ca. 0.9km northwest of Belview Port. The Site is accessible via industrial roads within the Belview Port estate, that connect to major national routes N25 and N29 for efficient transportation. A local road L3482 borders the western side of the Site.

The closest waterbodies, Lower Donney Stream and Luffany River, lie to the east of the Site and flow into the designated Special Area of Conservation, the River Suir (see Figure 1-2). The zoning designation "Port Facilities and Industry" aligns with the Local Development Plan, favouring the expansion of port-related infrastructure. Sensitive environmental features are protected within designated "Passive Open Space" zones.

The Proposed Development will be a continuation of the development of suitably zoned lands in the vicinity of Belview Port. Existing industrial establishments like SmartPly Europe DAC and warehousing units occupy the north, northeast, and southeast areas, with a railway line running alongside the River Suir, 870 metres east-southeast of the Site. Additionally, Tirlán Limited and the under-construction Kilkenny Cheese Limited facility lie southwest of the Site across the N29. Belview Port, a vital trade gateway for Ireland, is situated just under 1 kilometre southeast.

Farmlands with occasional houses mark the surrounding landscape. While agricultural fields dominate the south, north, and west, some residential properties are located in the general vicinity.

Figure 1-2 Site Context



1.3 Applicant

GABM Limited is a new company that has not traded previously. The company will manufacture and supply a range of products that will include plasterboard, powdered gypsum skim coats and bonding coats.

1.4 Environmental Impact Assessment Report (EIAR)

This Environmental Impact Assessment Report (EIAR) has been prepared in accordance with all relevant legislative and best practice guidelines in support of the planning application.

1.5 Consultation

As part of the Environmental Impact Assessment a non-statutory consultation document was issued to all relevant stakeholders inviting their comments on the Proposed Development. All the responses received were considered throughout each stage of the design of the Proposed Development and the Environmental Impact Assessment process. In addition, as part of a

comprehensive consultation process, meetings were held with the following statutory stakeholders:

- Kilkenny County Council;
- Uisce Éireann / Irish Water;
- Bord Gáis; and,
- ESB.

1.6 Licencing Requirements / Other Consents

The Proposed Development will not require an Industrial Emissions Licence (IEL) from the Environmental Protection Agency (EPA) as it will process a maximum of 195,000 tonnes per annum which is below the threshold of 200,000 tonnes per annum.

The Proposed Development will require a Waste Permit from Kilkenny County Council in order to operate. The proposal to abstract groundwater will need to be registered with the EPA, even if the relevant groundwater abstraction will only occur occasionally. GABM Limited will also comply with any future water abstraction regime.

2 PLANNING CONTEXT & NEED FOR THE PROPOSED DEVELOPMENT

2.1 Zoning

The Site is zoned under the Ferrybank-Belview Local Area Plan (LAP) (2017) as mainly 'Port Facilities and Industry'. This is to allow for the further development and expansion of port facilities and associated industries. There are also partial areas of the Site zoned as 'Passive Open Space' in the LAP in order to protect sensitive environmental features. The Kilkenny County Development Plan 2021-2027 is the current active County Development Plan.

2.2 Planning History at the Site

The Site is currently in agricultural use. Planning has not been granted for any development at this Site.

2.3 Planning Policy Context

The planning context of the Proposed Development has been considered in terms of all national, regional, and local planning contexts. The Proposed Development accords with all relevant planning policies and objectives at National, Regional and Local Planning levels. The Site for the Proposed Development has been chosen and designed in accordance with relevant development management standards outlined in the Kilkenny County Development Plan and the Ferrybank Belview Local Area Plan. The Proposed Development will deliver further economic growth and employment for the Southeast. The waste plasterboard recycling on-site will deliver on the Government Waste Management Policies and the Circular Economy.

2.4 Need for the Proposed Development

There is currently only one plasterboard manufacturer in Ireland. The Proposed Development will meet the construction demands of both the Irish, British and European markets.

By importing gypsum raw material via Belview Port and processing it into standard-sized plasterboard drywall products, the project strives to fulfil construction needs. Importantly, the end product, plasterboard, is a lightweight, sustainable building material with excellent structural, sound insulation, and fire-resistant qualities, making it ideal for residential, institutional, and commercial use. It's a fundamental building block for various construction projects.

Beyond utilising raw gypsum, the Proposed Development aims to become a key player in the C&D circular economy by incorporating the capacity to recycle in the region of 25,000 tonnes of waste plasterboard annually, transforming it back into usable new plasterboard.

Therefore, the need for this project is driven by two key factors:

- **Growing demand:** Increased housing and general construction activities drive the need for reliable sources of construction materials like plasterboard.
- **Sustainability:** The development promotes sustainability by both processing raw gypsum into a much-needed building material and contributing to the C&D circular economy through waste gypsum recycling.

3 DESCRIPTION OF THE PROPOSED DEVELOPMENT

3.1.1 Construction Phase

The construction works are currently planned to begin in mid to late 2024 and will take approximately 14 months to complete. The construction works will be undertaken in seven (7No.) distinct phases of work, although there will be some overlap between these different phases. Summary details for the different phases are outlined in the Volume 2 of the EIAR.

The manufacturing plant boasts a substantial footprint of approximately 22,367 square metres with a maximum building height of 26 metres. It has the capacity to process up to 195,000 tonnes of gypsum annually, resulting in a production output of approximately 20 million square metres of plasterboard. A detailed description of the manufacturing process can be found in Chapter 3 of the EIAR (Volume 2).

3.1.2 Operational Phase

The Proposed Development will be a plasterboard manufacturing plant that will produce plasterboard and powdered gypsum.

Gypsum rock, sourced from southern Spain and northern Africa, will arrive at Belview Port in ca. 25,000 tonne shipments. The ships will be unloaded, and the gypsum rock will be transported via the local road network to be stored in two (2No.) raw material warehouses. A front-end loading shovel will be used to stockpile the gypsum rock in the raw material store. The daily throughput of the plant will be approximately 585 tonnes of gypsum. The storage capacity of the two (2No.) raw material warehouses will be approximately 48,000 tonnes which will provide in the region of 80 days of supply of raw material.

The gypsum rock will undergo several steps to manufacture plasterboard. These steps are described below:

- Milling, Calcining and Stucco manufacturing;
- Conveying and Plasterboard Formation;
- Drying; and
- Warehousing of the finished product.

The process will be fully automated and will be controlled by computer software specifically designed for the gypsum plasterboard manufacturing industry. The system will be equipped with both local and global manual stop mechanisms.

Recycling of waste plasterboard will also be carried out at the Site. The integrated recycling plant will allow for the utilisation of waste plasterboard. Recycling involves removing the paper and collecting the recovered plasterboard, which then re-enters the manufacturing process as described above.

The Proposed Development will be powered by a combination of natural gas and electricity. However, demonstrating a strong commitment to minimizing its environmental impact, GABM Limited has incorporated several innovative energy-saving and low-carbon features into the plant design. A dedicated waste heat recovery system will capture heat generated from the calciner and repurpose it to maintain a stable temperature in the finished products warehouse, significantly reducing overall energy consumption and corresponding carbon emissions. Operational Hours and Staffing.

This integrated approach highlights GABM Limited's commitment to sustainable practices and reducing environmental impact, exemplifying the principles of the circular economy. Approximately 30% of the water used in the process will be recycled. Furthermore, to lessen reliance on grid electricity, the building will be equipped with a substantial array of ca. 3,400 solar panels on its roof, generating a significant portion of the plant's electrical needs. In a further commitment to sustainable water management, harvested rainwater collected in three designated silos at the rear of the building will partially replace the water required for the production process, reducing reliance on municipal water supplies. Finally, all equipment installed within the plant will be rigorously selected based on its low energy consumption ratings, ensuring efficient operation, and minimizing energy demand. These combined measures effectively showcase GABM Limited's dedication to responsible resource management and a significantly reduced carbon footprint for the Proposed Development.

The Proposed Development will operate 24 hours per day, 7 days a week for 333 days per annum. The plant will operate on a 3-shift cycle. The facility will employ a total of 45 staff, with 10-15 staff per shift and three shift changeovers per day.

Delivery and collection hours are likely to be 6am to 10pm Mondays to Fridays, excluding the port unloading campaigns, which will consist of ca. 8No. campaigns (24hour events) per annum.

4 ALTERNATIVES CONSIDERED

4.1 Alternative Locations

The evaluation of alternatives was a key component of this Environmental Impact Assessment process.

The location of the building was limited by suitably zoned lands, access to the port for delivery of the raw materials and a suitable road infrastructure to enable delivery of the raw materials to the facility. Several sites were examined by GABM Limited surrounding the port. A number of sites were discounted as being too small to incorporate the required building length. Some of the sites were discounted due to proximity to receptors and anticipated difficulties with wayleaves.

The Site for the Proposed Development was chosen based on the following:

- Suitably zones lands;
- Large enough area to incorporate the Proposed Development;
- Availability of services – water, foul water, gas and electricity;
- Excellent road access from the port and proximity to the N29; and,
- Distance from receptors.

4.2 Alternative Design

4.2.1 Access

The design of the Proposed Development was very much an iterative process, informed by the Environmental Impact Assessment process. Several alternative designs and layouts were considered but were discounted for a variety of reasons. The favourable design measures which led to the chosen site layout and design includes:

- Provision of a safe site access and safe internal transit routes;
- Provision of energy savings by incorporating solar panels on the roof of the building;
- Integration of water management via rainwater harvesting and storage;
- Integration of the drainage and ecological enhancement measures;
- Avoidance of direct archaeological impacts;
- Avoidance of direct impacts on trees; and,
- Main facility and utilities allow for optimal efficiency on-site.

4.3 Do Nothing Scenario

The Site is a greenfield site zoned as Industrial and Port Related Operations within the Ferrybank Belview Local Area Plan 2017. As the Site is on development zoned lands, it is unlikely that the Site would remain in agricultural use.

In the event that this Site would not be developed, an alternative site will be sought to ensure the future viability of business opportunities are achieved.

Therefore, a 'Do-Nothing' scenario will have limited environmental benefits, such as energy and natural resource use, waste generation, emissions to air or water, and traffic impacts would not occur. However, this scenario would adversely impact on the economic development of GABM Ltd. The employment and associated social benefits for the local area would also not be realised. Refer to Chapter 2 for the need for the Proposed Development.

5 POPULATION AND HUMAN HEALTH

A desk-based study was carried out to characterise the environment in relation to the human population, including the receiving population, population changes over time, employment levels and human indicators. Information from the Central Statistics Office (CSO) was analysed according to guidance from the Institute of Public Health (IPH), particularly the Health Sensitivity Conceptual Model. The sensitivity of the local population to any potential impacts was deemed low.

The Proposed Development will have a long-term positive effect on employment opportunities and economic activities in the region. The construction phase will have a short-term positive effect in the local area generating ca.100 jobs both on-site and off-site. There will also be a short-term positive effect on existing businesses operating in the area through the potential for local enterprise to provide materials and services during construction.

Once operational, the Proposed Development will directly provide up to 45 jobs but will also indirectly provide additional jobs in sectors such as transport, maintenance and supply of goods and services. The residual effects will have a positive, long-term impact on the local economy and employment as well as on the wider economy.

The potential human health risks associated with the Proposed Development during the operational phase have been considered, including the risk of biological agents, gas, and fire/explosion. The residual effect regarding human health and safety will be not significant

given all the control measures that will be put in place, the industrial zoning of the lands, the distance from houses and the lack of impact on health services.

As stated above the Proposed Development will be located within industrial zoned lands. The closest residential properties will be located ca. 15m to the west. The conclusions in the specialist sections of the EIAR taking account of the design and mitigation measures, concluded that the predicted impacts on these properties from the Proposed Development would not be significant or imperceptible.

6 BIODIVERSITY

A comprehensive suite of ecological surveys and assessments, based on best practice guidance, were conducted at the Site. The assessments considered the full life cycle of the Proposed Development including the construction phase and operational phase. The Site was assessed by suitably qualified MOR ecologists.

The ecological composition of the Site itself comprises improved agricultural grassland, recolonising bare ground, scrub, mixed broadleaf woodland, derelict residential buildings, and an agricultural shed. Linear features such as hedgerows and treelines are also present. The main portion of the Site is bordered by mature treelines, agricultural fields, and mixed broadleaf woodland. A detailed description of the habitats and features of ecological significance can be found in Chapter 6 of the EIAR. The study included an assessment of the sensitivities of ecological receptors and potential for cumulative effects. All Special Protection Areas and Special Areas of Conservation within a 15 kilometre radius were considered to evaluate their potential ecological pathways and functional links. Six (6No.) Natura 2000 designated sites were identified within this radius, but none are directly located within the Site boundary of the Proposed Development area. While no Natural Heritage Areas or potential National Heritage Areas (pNHAs) are present within or adjacent to the Site, three (3No.) pNHAs lie within 5 kilometres (refer to Chapter 6 of the EIAR).

Given the Proposed Developments sensitive design, the implementation of Biodiversity Enhancement Measures along with a Landscape Masterplan, there will be an overall net gain of landscape planting to compensate for any loss of vegetation, along with measures resulting in a potential increase of associated biodiversity within the Site.

Following the implementation of the mitigation measures and due to the nature of the Proposed Development, there will be no likely significant residual effect on flora or fauna.

7 LANDS, SOILS AND GEOLOGY

Underneath the Site lies bedrock composed of multiple volcanic units, primarily felsic volcanics from the Campile Formation. A mafic unit of Dolerite intersects the northwest corner, while the eastern and western boundaries feature Rhyolitic volcanics from the Campile Formation. Two north-south faults run near the Site, one approximately 100m east and the other 70m west.

No significant geological heritage features are found within a 5km radius. The nearest one, a low coastal cliff section, is 7.25km southeast of the Site.

The southern portion of the Site has "moderate" crushed rock aggregate potential, with a small area of "high" potential. Similar "high" potential zones exist in the north for access roads and a berm construction area in the west.

AminDW (deep well-drained mineral) soils dominate the Site, with AminSW (shallow well-drained mineral) soils present in the north and southern edge. Based on IEMA guidance and the Site's characteristics, the impact of soil removal is considered "negative and slight," not material for decision-making purposes.

All excavated materials will be reused on-site. The material will be reused on-site for the construction of screen berms around the perimeter of the Site. Subject to the implementation

of all the stipulated mitigation measure the residual impacts on land and soils will be not significant. Mitigation measures will be taken to prevent any pollution by accidental spills.

Following the implementation of the mitigation measures and due to the nature of the Proposed Development, there will be no likely significant residual effect on soils and geology.

8 WATER

A comprehensive desk study utilising publicly available water quality and flood risk data was completed. According to the GSI, there is no sand and gravel aquifer present beneath the Site, but the bedrock aquifer underlying the Site is classified as a (Rf) Regionally Important Aquifer – Fissured bedrock.

The desk-based studies were supplemented by a site investigations and monitoring. Three groundwater test wells (PW1, PW2, and PW3) were installed in March 2023 to assess the aquifer's yield potential for supplying water to the Proposed Development. Step and pumping tests were conducted on PW1 due to its promising water volume potential. Three groundwater monitoring wells were installed in April 2023 to evaluate the drawdown area caused by water abstraction. Groundwater samples were collected from three on-site wells: two monitoring wells (MW1 and MW3) and one production well (PW1).

No public water source protection areas are located within the vicinity of the Site. The closest, Glenmore PWS, is situated approximately 9.6 kilometres north of the Site. A search of the Geological Survey of Ireland (GSI) groundwater well database identified approximately 13 registered wells within a 2 kilometre radius of the Site. Based on the comprehensive analysis that was undertaken, it was concluded that a sustainable yield of ca. 7.5m³/hour (approx. 180m³/day) was determined for the test well. Abstracting groundwater at this rate will result in negligible effects on any private wells located in the vicinity of the Site.

Flood risk for the Site was assessed using the Office of Public Works (OPW) Catchment Flood Risk Assessment and Management (CFRAM) maps, Flood Hazard Mapping, and historical mapping (6" and 25" base maps). CFRAM mapping confirmed that the Site is not located within any fluvial or pluvial flood zones. Additionally, no historical maps indicate areas within the Site boundary prone to flooding. Furthermore, OPW Flood Hazard Mapping does not identify any past flood events or recurring incidents at the Site or its vicinity.

Groundwater quality beneath the Site was determined to be of a reasonably good quality. Groundwater analytical results for indicators, inorganics and nutrients were observed to be below the respective legislative limits. The only exceptions were some slight nitrate, nitrite and coliforms exceedances, all assumed to be associated with background agricultural activities.

As a result of the proposed design and the mitigation measures to be implemented, there will be no significant effect on surface and groundwater quantity or quality from the Proposed Development. The Proposed Development will not cause a deterioration in surface or groundwater quality status to compromise the ability of any surface or groundwater to meet the objectives of the Water Framework Directive.

9 AIR QUALITY

Construction activities have the potential to generate dust, impacting air quality and causing soiling of surfaces and ecological receptors. However, with the implementation of appropriate mitigation measures, no significant impact on air quality, dust soiling, or ecological receptors is predicted.

To assess potential impacts from point sources on-site, an air dispersion model was developed to identify any effects on nearby sensitive receptors. Background PM10 concentrations in Zone D are relatively low (12.3 µg/m³), resulting in a classification of "Low" sensitivity for all receptors in the area.

Dust emission magnitudes for key construction activities are as follows:

- Earthworks: Medium (due to ca. 28,500m³ of material movement within the Site and access track).
- Trackout: Small (due to <10 HGVs daily on a paved access road).
- Construction: Medium (due to building construction with <100,000m³ volume).
- Demolition: Small (due to limited demolition of one farmhouse with low dust potential).

Both construction and operational traffic have the potential to affect air quality. However, the short construction duration (14 months) and limited vehicle movements (including HGVs and personal cars) are predicted to have no significant impact on air quality during either phase.

A comprehensive dust management plan will be implemented to minimise dust emissions during construction. This plan will include:

- Speed restrictions for on-site vehicles;
- Regular watering of exposed surfaces;
- Covering stockpiles and loads during transport; and
- Use of wheel washing facilities for exiting vehicles.

While construction activities have the potential to generate dust, the implementation of mitigation measures ensures no significant air quality impacts. Similarly, limited traffic movements during both phases minimise traffic-related air quality concerns.

Air quality emissions from the Proposed Development at sensitive receptors will be not likely and not significant.

10 CLIMATE

A key element of the design of the Proposed Development was the reduction of operational greenhouse gas (GHGs) emissions as far as practicable. All practicable alternatives were assessed in choosing technologies for GHG abatement and the best alternative was chosen.

The potential risks of climate change to the Proposed Development have also been assessed by completing a climate change risk assessment. By utilising available policy and guidance, the vulnerability of assets associated with the Proposed Development to potential climate hazards was determined. The identification of climate hazards was achieved through a detailed desk-based review of local, regional and continental scale tools.

Due to the size, nature and location of the Proposed Development, there will be no potential effects on microclimate in terms of wind tunnelling and shading. As such, the potential effects on microclimate were not assessed.

A range of other technologies have been included in the design to reduce GHG emissions through on-site generation includes heat recovery systems, solar panels, recycling of water and a range of energy efficiency and conservation measures.

Electricity will be purchased from the national grid, all of which will be purchased from renewable energy suppliers. GHG emissions will arise from the facility during its operational phase and during the construction phase.

These GHG emissions were assessed against national and sectoral GHG emissions projections and Sectoral Emission Ceilings under Climate Action Plan 2021. There will be no significant impact on national projections and Sectoral Emission Ceilings for industry sector. No likely significant impact is expected to arise from transport on national projections and Sectoral Emission Ceilings for the transport sector.

Due to its location, type of fuel selected, drainage design, and other design features, the Proposed Development will be in accordance with the relevant actions and objectives of the relevant Sectoral Adaptation Plans.

Once operational, the primary GHG emissions directly arising from the Proposed Development will be energy related emissions which are unlikely to have any significant effects on the surrounding air quality, human health, or sensitive receptors.

Finally, the Proposed Development design, including drainage, will ensure that potential effects of climate change, such as increased rainfall and extreme weather events, will have no significant impact on the Proposed Development or the environment.

11 ACOUSTICS (NOISE AND VIBRATION)

A comprehensive noise and vibration impact assessment was conducted based on best practice guidance that took account of both statutory and non-statutory noise impact assessment criteria for the construction and operational phases of the Proposed Development.

Based on a review of the construction methods to be employed and the distance to sensitive receptors to the Proposed Development, it was determined that the potential impacts were negligible (imperceptible) for vibration during the construction phase. Due to the types of machinery working on the Site, vibration impacts during the operational phase of the Proposed Development were determined as negligible (imperceptible) at sensitive receptors.

Under the Environmental Noise Directive (END), noise emissions from major roads L7582 Industrial Access Road / Development Access Road priority junction, the existing N29 / L7582 Industrial Access Road priority junction and the existing N29 / L3412 / L7482 crossroads junction were reviewed in the context of the publicly available prepared Strategic Noise Mapping. The review, combined with noise monitoring results undertaken in April 2024, indicates that the major roads are the dominant contributions to noise emissions west of the Site.

The detailed assessment that was undertaken of potential noise emissions that could arise during construction activities concluded that any impacts will be short-term, local, and not significant. The Site was assessed under EPA criteria for Quiet Noise (desk-based) and Low Noise (ambient measurement based) and found that the Site was categorised as a 'typical Site' in terms of acoustic setting.

To characterise the future noise associated with the Proposed Development, noise modelling software "Predictor", which is recognised as a leading software package for assessing future development noise, was used. The sound levels predicted from the model were compared against typical limit values for day, evening, and night-time noise.

The predicted noise at sensitive receptors, during the typical operational phase of the Proposed Development will be below the typical limit values for protection against noise at all sensitive receptors.

Furthermore, the predicted noise levels were compared to existing ambient background sound levels at sensitive receptors, utilising best practices for assessing the acoustic change, (the rise above measured background sound levels), and the Proposed Development was found to have a negligible impact (not significant), as the existing ambient sources, such as road noise remain the dominant source of noise in the environment.

The predicted emissions from the Proposed Development were cumulatively assessed with the background conditions and were determined to present no significant change in relation to noise. Based on the relevant limits at sensitive receptors typically applied in Ireland and the World Health Organizations guidance on night-time noise levels, the impacts on human health were determined as not significant.

12 LANDSCAPE AND VISUAL

The Landscape Character Value and Sensitivity was assessed for the Site and surrounding area. It is considered that both the Site and the study area have a landscape sensitivity of medium-low.

The landscape Impact magnitude was assessed for both construction and operational phases. During the construction phase, there will be permanent physical effects to the land cover of the Site which are not reversible, including soil excavation.

Overall, the magnitude of landscape impact at the operational stage will be 'medium' to 'low' given the scale and intensity of the industrial facility in this hinterland landscape setting.

A Visual Impact Assessment (VIA) that involved assessing 20 No. viewpoints was undertaken. Photomontages were prepared to fully illustrate the Proposed Development. For the vast majority of the VPs, the Proposed Development will not be clearly visible due to intervening screening by terrain or vegetation.

It should be noted that mitigation planting is included within the adjacent warehousing application, which will also provide screening for the Proposed Development.

The main mitigation by avoidance measure has been the siting of the Proposed Development in well contained industrial zoned lands within a peri urban area where such development is already a characteristic feature envisaged. In addition, the proposed colour scheme mitigation subtly reduces the visual presence of the proposal, recessing it with low contrast against the sky. Landscaping and ca.3m berms are also proposed which will be planted with native woodland and grassland mix.

Overall, it is considered that the landscape and visual impact of the Proposed Development will be moderate and slight respectively and is not considered significant.

13 CULTURAL HERITAGE

The assessment was based on-site inspection, cartographic and documentary research. The lands where the development is proposed is currently in agricultural use and contain ruined 19th century farm buildings. These buildings are not listed in the National Inventory of Architectural Heritage. The land is currently laid out in four fields, two rectangular fields to the north, a small rectangular field on the eastern side of the derelict farm buildings and a large triangular field to the south.

Five archaeological sites are listed in the Record of Monuments and Places (RMP) for the townland of Gorteens, Co. Kilkenny. Four of the monuments are known only from historical references, therefore the exact location of these sites is unknown. The precise location of only one site is recorded in the Record of Monuments and Places, RMP KK047-001. There are no recorded archaeological sites listed in the Record of Monument and Places for the areas directly affected by the Proposed Development or in the immediate vicinity. In addition to being a Recorded Monument Gorteens Castle is also listed as a Protected Structure (RPS C659) in the County Kilkenny Development Plan.

No other archaeological sites, or landscape anomalies that might be interpreted as archaeological sites were identified in the course of the study.

The greatest potential impacts of the proposed development will likely arise from the large-scale soil removal arising from the excavation of foundations, and other related services and access roads. Risk of inadvertent impact on hitherto unknown buried archaeological material will be mitigated by pre-development geophysical survey followed by archaeological test-trenching. A geophysical survey of the site will indicate potential subsurface archaeological features or deposits on the site. Archaeological test-trenching may be necessary to clarify the nature of any anomalies identified in the geophysical survey. These works will be carried out

under licence to the National Monuments Service of the Department of Housing, Heritage & Local Government.

There will be no impacts on the archaeological resource of the Site during the operational phase. There will be no residual impact from the Proposed Development if the appropriate mitigation outlined above is put in place prior to construction phase.

14 MATERIAL ASSETS – TRAFFIC

A detailed transportation and traffic impact assessment was undertaken the findings of which are presented in the EIAR. The scope of this assessment included 12-hour traffic counts at a number of locations. The traffic count data was then used to develop an PICADY model. The model assessed predicted traffic volumes for year of opening 2025, 2030 and 2040.

Access to the Proposed Development will be via a proposed priority junction onto the existing industrial access road. This permanent entrance will also be used for specified construction activities.

The design of the Proposed Development will ensure that no surplus soils will be removed offsite during the construction phase, that will significantly reduce the construction traffic numbers. During the construction phase there will be some oversized deliveries (process equipment etc.).

The Proposed Development has been specifically located in close proximity to Belview Port to minimise the transport distance on the road network. There will be an increase in traffic movements during the period of unloading a ship importing the gypsum rock. It is predicted that there will be approximately eight ships per year required to deliver the gypsum rock. Based on the findings of this assessment and the mitigation measures it can be concluded that there will be a small change in cumulative traffic demand that will occur from the Proposed Development in the locality. Once operational it can be concluded that the Proposed Development will not have a significant impact on the surrounding road network or nearby residences.

15 MATERIAL ASSETS – NATURAL RESOURCES, WASTE AND ENERGY

A desk-based study was undertaken focusing on all relevant legislation and guidance to assess the effect of the Proposed Development on natural resources, waste, and energy and the traffic impacts associated with the Proposed Development, the findings of which are presented in Chapter 15 of the EIAR. During the operational phase, the material assets considered are raw ingredients and energy.

15.1 Raw Materials

The proposed industrial production process involves importation of gypsum raw material and processing in the manufacturing plant to produce plasterboard drywall products in standard construction sizes. The Proposed Development will import ca. 0.1% of the estimated total annual global production of gypsum mined in 2022, which is considered immaterial.

15.2 Energy

The Proposed Development is anticipated to have an installed energy demand of 2075 Kw. The electricity demand will be on average ca. 1,556 Kw. Photovoltaic panel arrays have been proposed on the roof of the Proposed Development. It is estimated that these panels will generate up to ca. 1,105kw.

The Facility will aim to reduce GHG emissions through the use of renewable energy as much as practicable. This will be provided by a combination of the following sources:

- Capture of water in the manufacturing process for reuse;
- A heat recovery system on the calciner that will be used as space heating in the finished goods warehouse;
- A heat recovery system on the final plasterboard dryer where heat will be re-circulated into the Dryer; and,
- The photovoltaic (PV) panel arrays.

GABM Limited wishes to minimise energy and water usage at the Site. The building will have several energy control measures to reduce water usage, energy usage and to help lower the carbon footprint of the manufacturing process. All the manufacturing stages will be linked to an automated PLC control system.

15.3 Waste

Recycling of waste plasterboard will also be carried out at the Site. A specialist gypsum manufacturing plant equipment supplier will be retained by GABM Ltd. to construct the gypsum manufacturing plant inside the building. The equipment that will be installed will be state of the art pieces of plant that will be maximised for energy efficiency.

The Proposed Development will accept waste plasterboard from construction and demolition wastes in the region of 25,000 tonnes per annum. As the levels of plasterboard waste delivered to the Site increases, the quantity of gypsum rock imported will decrease. The paper on the plasterboards will be stripped and recycled. The gypsum will be brought to the calcinating plant, dried and crushed and water and additives added to form a slurry mix. This material will be blended with the virgin calcinated gypsum to make plasterboards as described above. A Waste Permit for this process will be obtained from Kilkenny County Council.

The residual impact on the raw materials supply chains, waste infrastructure and national electricity supply, associated with the Proposed Development will be not likely and not significant.

16 MATERIAL ASSETS – WATER SUPPLY AND WASTEWATER TREATMENT

A desk-based review of all relevant legislation, planning permissions, environmental plans, EPA reports and best practice guidance in relation to water supply and water treatment was carried out. Also, specific confirmation of feasibility with Uisce Éireann was undertaken.

16.1 Water Supply

Water will be supplied from a combination of mains water supply, rainwater harvesting, water recycling and/or abstracted groundwater (see Chapter 16 for further details). The Proposed Development will require 363m³/day of water for the manufacturing process. The design incorporates water-saving technologies like low-flow fixtures and rainwater harvesting systems. The Proposed Development will use a combination of recycled water from the manufacturing process, rainwater harvesting, mains water and / or abstracted groundwater from an on-site well. 3No. rainwater silos (900m³) will be used to harvest roof rainwater. Irish Water has provided a 'Confirmation of Feasibility' that confirms the daily volume of water required will be available for the process. Robust hydrogeological testing has confirmed that ca. 7.5 m³ per hour of groundwater can be abstracted from the underlying bedrock aquifer in a sustainable manner. Refer to Chapter 8 and Chapter 16 for further details.

The Gorteens plant prioritises efficient water usage throughout its construction and operation phases. Here's how it will manage water resources:

Though the nearby Mullinabro water treatment facility needs future upgrades, the development will address this by:

- Collaborating with Irish Water to expand water supply services in the Belview Industrial area;
- Connecting to an on-site well for construction needs (lasting about 14 months); and,
- Utilising collected stormwater or abstracted groundwater from the on-site well for construction activities like dust control.

Recovered water will be reused within the plant to further minimize reliance on external sources.

Impact on Public Water Supply:

While an extension to the existing water network will be required (detailed in Section 3), the overall impact on the public water supply was considered to be not significant due to several factors:

- Agreement with Irish Water for water supply;
- Low water usage design of the plant;
- Rainwater Harvesting;
- On-site groundwater abstraction reducing reliance on the mains supply; and
- Water reuse and rainwater harvesting measures further minimizing demand.

No additional mitigation measures were deemed necessary.

It's important to note that drinking water will solely come from the public mains. Abstracted groundwater will not be used for this purpose.

16.2 Wastewater Treatment

During construction, temporary toilets and sinks for workers will have their wastewater collected by trucks and treated at a different location. Additionally, construction activities like washing vehicles will follow strict guidelines to minimize the impact on wastewater. The wastewater generated during construction will be transported for off-site treatment if needed. This approach ensures that the impact on the local water environment is minimal.

Once the plant is operational, only a small amount of foul wastewater will come from the toilets and staff facilities. This foul wastewater will flow directly into the public sewer system and be treated at a nearby facility. The treatment plant has plenty of capacity to handle the expected amount of wastewater from the Proposed Development, so the overall impact on the wastewater system would be considered very small. To ensure proper wastewater management, the on-site pipes and equipment will be regularly checked and maintained. There will be no process wastewater generated at the Proposed Development.

17 INTERACTION OF ENVIRONMENTAL EFFECTS

In accordance with Environmental Impact Assessment Report (EIAR) best practice procedures, the relevant interactions have been addressed in the specific specialist chapters of the main EIAR report.

18 SCHEDULE OF ENVIRONMENTAL COMMITMENTS

As part of the EIAR, all of the mitigation measures arising from each of the individual assessments for both the construction and operational phases were summarised in an overall Schedule of Environmental Commitments that is presented at the end of Volume 2 of the

EIAR. GABM Limited are fully committed to implementing all these commitments. The implementation of these measures will ensure that the Proposed Development will not result in any significant adverse impacts on the receiving environment.

18.1 Further Information

The EIAR will be available for inspection at Kilkenny County Council, Planning Department, John Street, Kilkenny, R95 A39T or at:

<https://kilkennycoco.ie/eng/services/planning/>

RECEIVED: 01/03/2024