

# Ballinrooaun Quarry

## Photomontages

This book contains imagery for the viewpoints chosen for the LVIA study

November 2017

Prepared by



[www.macroworks.ie](http://www.macroworks.ie)

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## LVIA viewpoint locations selected for the Ballinrooaun Quarry





Existing View



Montage View - Year 5



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To view these panoramas on a flat surface one must move from left to right along its length whilst maintaining a perpendicular viewing direction and the specified correct viewing distance of 30cm. To see this entire panoramic scene in reality would necessitate turning one's head through 40°.

For correct viewing - please print page with a vertical height of 40cm

Easting (ITM):	708804	Lens:	50mm / Full Frame Sensor	Date:	03-Oct-17
Northing (ITM):	629444	Camera:	Canon 1-D Mark II digital SLR	Time:	16:03
Direction of View:	40° E of Grid North	Camera Height:	1.7m Above Ground Level		
Angle of View:	80°				





Montage View - Year 9



Montage View - Year 14



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Direction of View:	40° E of Grid North	Camera Height:	1.7m Above Ground Level		
Angle of View:	80°				





Montage View - Year 20 (Reinstated)



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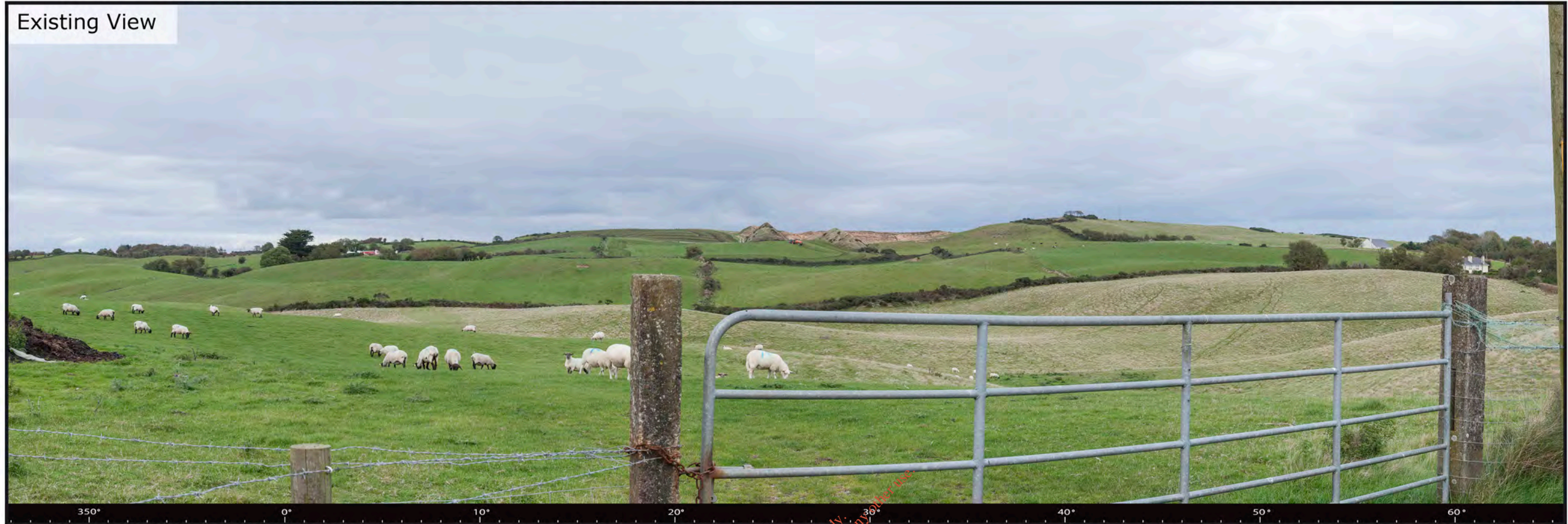
For correct viewing - please print page with a vertical height of 40cm

Easting (ITM):	708804	Lens:	50mm / Full Frame Sensor	Date:	03-Oct-17
Northing (ITM):	629444	Camera:	Canon 1-D Mark II digital SLR	Time:	16:03
Direction of View:	40° E of Grid North	Camera Height:	1.7m Above Ground Level		
Angle of View:	80°				





Existing View



Montage View - Year 5



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Easting (ITM):	709136	Lens:	50mm / Full Frame Sensor	Date:	03-Oct-17
Northing (ITM):	629448	Camera:	Canon 1-D Mark II digital SLR	Time:	16:14
Direction of View:	26° E of Grid North	Camera Height:	1.7m Above Ground Level		
Angle of View:	80°				





Montage View - Year 9



Montage View - Year 14



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Direction of View:	26° E of Grid North	Camera Height:	1.7m Above Ground Level		
Angle of View:	80°				





Montage View - Year 20 (Reinstated)



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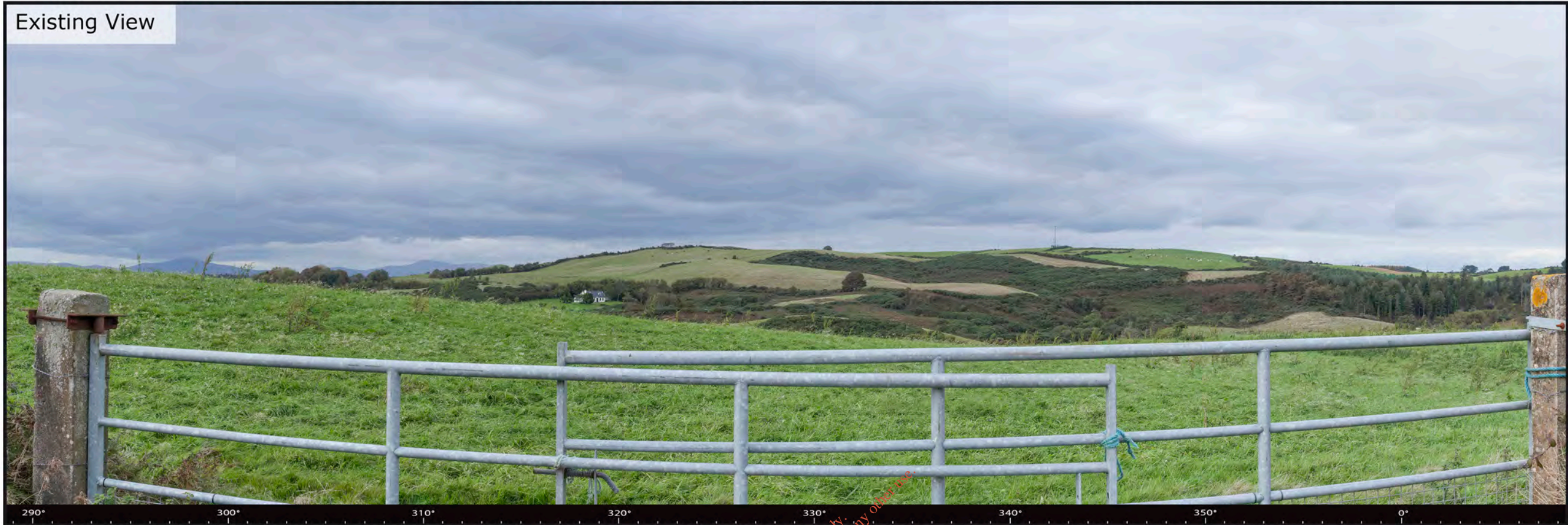
For correct viewing - please print page with a vertical height of 40cm

Easting (ITM):	709136	Lens:	50mm / Full Frame Sensor	Date:	03-Oct-17
Northing (ITM):	629448	Camera:	Canon 1-D Mark II digital SLR	Time:	16:14
Direction of View:	26° E of Grid North	Camera Height:	1.7m Above Ground Level		
Angle of View:	80°				





Existing View



Montage View - Year 5, 9, 14 and 20 (Reinstated)

Extraction works will not be visible from this viewpoint



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Easting (ITM):	710326	Lens:	50mm / Full Frame Sensor	Date:	03-Oct-17
Northing (ITM):	629283	Camera:	Canon 1-D Mark II digital SLR	Time:	16:26
Direction of View:	31° W of Grid North	Camera Height:	1.7m Above Ground Level		
Angle of View:	80°				





Existing View



Montage View - Year 5



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For correct viewing - please print page with a vertical height of 40cm

Easting (ITM):	708304	Lens:	50mm / Full Frame Sensor	Date:	03-Oct-17
Northing (ITM):	629700	Camera:	Canon 1-D Mark II digital SLR	Time:	16:40
Direction of View:	78° E of Grid North	Camera Height:	1.7m Above Ground Level		
Angle of View:	80°				





Montage View - Year 9



Montage View - Year 14



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Easting (ITM):	708304	Lens:	50mm / Full Frame Sensor	Date:	03-Oct-17
Northing (ITM):	629700	Camera:	Canon 1-D Mark II digital SLR	Time:	16:40
Direction of View:	78° E of Grid North	Camera Height:	1.7m Above Ground Level		
Angle of View:	80°				





Year 20 (Reinstated) - Montage View



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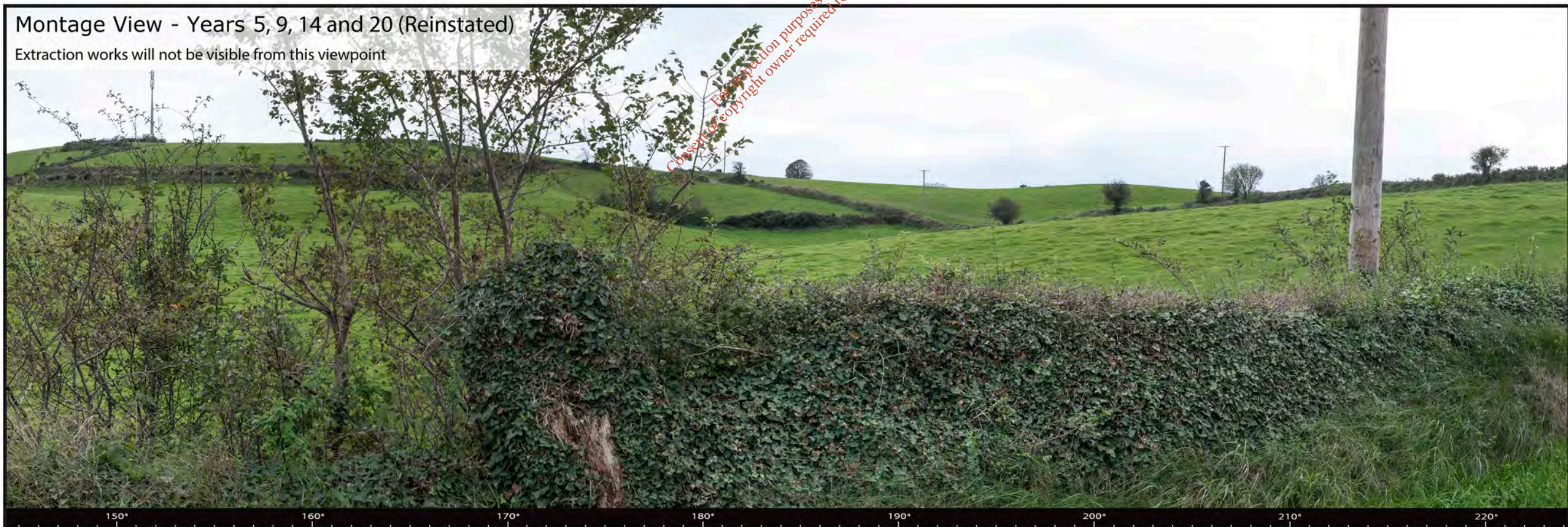
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Northing (ITM):	629700	Camera:	Canon 1-D Mark II digital SLR	Time:	16:40
Direction of View:	78° E of Grid North	Camera Height:	1.7m Above Ground Level		
Angle of View:	80°				







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Easting (ITM):	709817	Lens:	50mm / Full Frame Sensor	Date:	03-Oct-17
Northing (ITM):	630073	Camera:	Canon 1-D Mark II digital SLR	Time:	16:56
Direction of View:	176° W of Grid North	Camera Height:	1.7m Above Ground Level		
Angle of View:	80°				





Existing View



Extent View - Years 5, 9, 14 and 20 (Reinstated)

Extraction works may be possible from this viewpoint upon removal of foreground crop vegetation



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Easting (ITM):	708655	Lens:	50mm / Full Frame Sensor	Date:	03-Oct-17
Northing (ITM):	630517	Camera:	Canon 1-D Mark II digital SLR	Time:	17:15
Direction of View:	110° E of Grid North	Camera Height:	1.7m Above Ground Level		
Angle of View:	80°				





Existing View



Montage View - Year 5



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For correct viewing - please print page with a vertical height of 40cm

Easting (ITM):	706797	Lens:	50mm / Full Frame Sensor	Date:	03-Oct-17
Northing (ITM):	630517	Camera:	Canon 1-D Mark II digital SLR	Time:	17:39
Direction of View:	92° E of Grid North	Camera Height:	1.7m Above Ground Level		
Angle of View:	80°				





Imagery depicting the view towards the extraction site (Years 9, 14 and 20 (Reinstated))

Montage View - Years 9, 14 and 20 (Reinstated)

Extraction works will not be visible at these periods from this viewpoint



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Northing (ITM):	630517	Camera:	Canon 1-D Mark II digital SLR	Time:	17:39
Direction of View:	92° E of Grid North	Camera Height:	1.7m Above Ground Level		
Angle of View:	80°				





Existing View



Montage View - Year 5, 9, 14 and 20 (Reinstated)

Extraction works will not be visible from this viewpoint



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Easting (ITM):	707287	Lens:	50mm / Full Frame Sensor	Date:	03-Oct-17
Northing (ITM):	632112	Camera:	Canon 1-D Mark II digital SLR	Time:	17:52
Direction of View:	127° E of Grid North	Camera Height:	1.7m Above Ground Level		
Angle of View:	80°				





Imagery depicting the view towards the extraction site (Existing and Year 5)

Existing View



Montage View - Year 5



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For correct viewing - please print page with a vertical height of 40cm

Easting (ITM):	708420	Lens:	50mm / Full Frame Sensor	Date:	03-Oct-17
Northing (ITM):	627745	Camera:	Canon 1-D Mark II digital SLR	Time:	18:13
Direction of View:	24° E of Grid North	Camera Height:	1.7m Above Ground Level		
Angle of View:	80°				





Imagery depicting the view towards the extraction site (Years 9, 14 and 20 (Reinstated))

Montage View - Years 9 and 14  
showing reseeded surface



Montage View - Year 20 (Reinstated)  
showing reinstated hedgerow



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For correct viewing - please print page with a vertical height of 40cm

Easting (ITM):	708420	Lens:	50mm / Full Frame Sensor	Date:	03-Oct-17
Northing (ITM):	627745	Camera:	Canon 1-D Mark II digital SLR	Time:	18:13
Direction of View:	24° E of Grid North	Camera Height:	1.7m Above Ground Level		
Angle of View:	80°				







## 12.0 TRAFFIC AND TRANSPORT

### 12.1 Introduction

#### Background

Transport Insights has been commissioned by Tom Phillips + Associates on behalf of the Applicant to prepare an Environmental Impact Assessment Report Traffic and Transport Chapter in relation to the proposed extension of an existing quarry at Ballinrooan, Screen, Co. Wexford.

#### Overview of Development Proposals

The proposed development seeks to expand the existing sand and gravel quarry into neighbouring lands to the west with a proposed output rate of 100,000 tonnes per annum and to progressively restore the quarry void. Further details of the proposed development are provided in Chapter 3 of this EIAR.

#### Contents of this Chapter

The remainder of the chapter is structured as follows:

- Section 1.2 outlines the methodology pursued in undertaking the study;
- Section 1.3 identifies the baseline traffic and transport conditions at the site;
- Section 1.4 outlines likely significant impacts as a result of the development;
- Section 1.5 investigates potential mitigation measures; and
- Section 1.6 addresses residual impacts.

### 12.2 Methodology

This study examines the operation of the existing road network and the potential traffic impacts of the proposed development. If necessary, suggested mitigation of identified development related impacts shall also be detailed.

This chapter has been prepared taking into account the following policy documents:

- Wexford County Development Plan, 2013-2019;
- Transport Infrastructure Ireland's (TII) Traffic and Transport Assessment Guidelines, 2014;
- The TII Project Appraisal Guidelines Unit 16.2 Expansion Factors for Short Period Traffic Counts, 2012 and Unit 5.5 Link-Based Traffic Growth Forecasting, 2011; and
- TII's Design Manual for Roads and Bridges (DMRB).



## 12.3 The Existing Environment

### Existing Road Conditions

An assessment of the site's receiving environment was undertaken on the morning of 17 November 2015. Weather conditions on the day of the assessment were noted as being wet and windy. The local area is mostly agricultural in nature with a limited number of residential dwellings within the site's general vicinity. The site's location is shown at Figure 12.1.

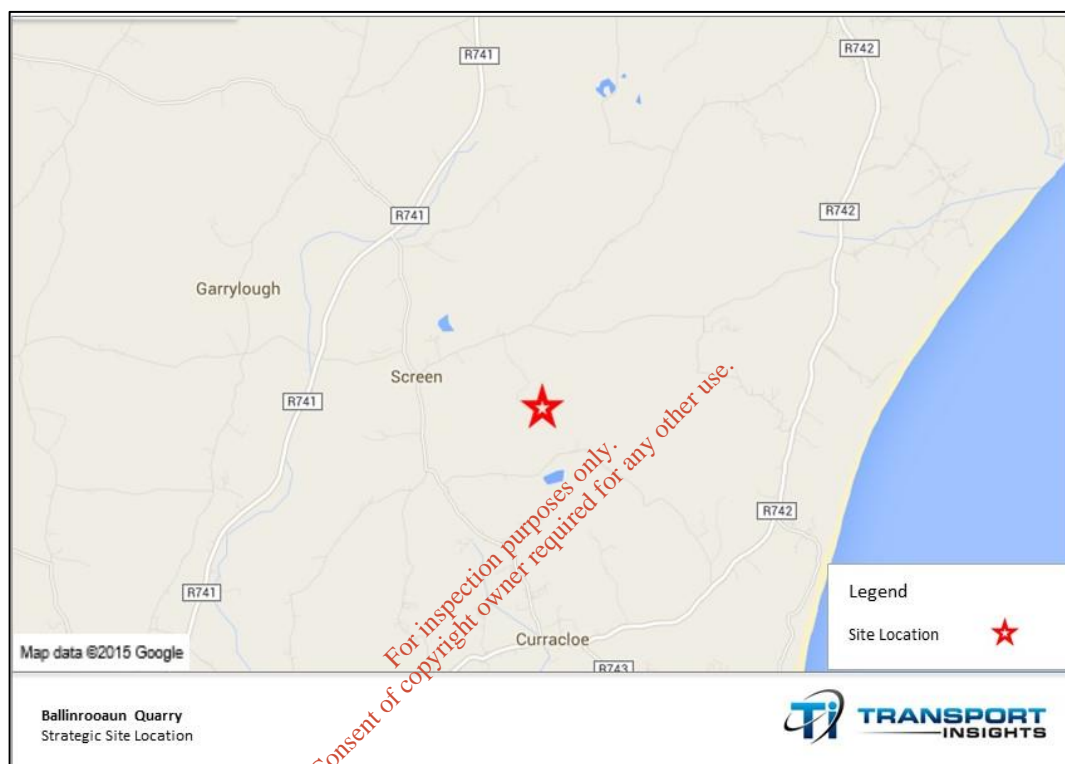


Figure 12.1: Site Location Plan

#### L-7003-1

The site is located on a local road L-7003-1, approximately 1 kilometre from the village of Screen, Co. Wexford. L-7003-1, also known as St. Cyprian's Villas, is a narrow (4.5 metres wide), two-way rural road which connects Screen, to the west, with the R742 regional road to the east. As is the case with the majority of rural roads, no footpaths or street lighting are present, and the road is subject to an 80 km/h posted speed limit.

The L-7003-1 was observed to have a meandering horizontal alignment with a number of bends along its length. Changes in the road's vertical alignment were also noted, with the road carriageway rising for approximately 200 metres to the east of the site and falling for approximately 50 metres to the west.

The L-7003-1 was deemed to operate satisfactorily for standard vehicular traffic, and a number of laybys between the quarry and the village of Screen, installed to accommodate traffic associated with the existing quarry, and which provide adequate passing opportunities for HGVs accessing the site. Traffic volumes and speeds were both noted to be low. No pedestrians or cyclists were observed during the assessment. A 'Quarry





Entrance Ahead' warning sign is located approximately 100 metres in advance of the western approach to the quarry access.

### Access/ Egress

Access to the site is via a private road, which intersects with the L-7003-1 via a priority junction. Access to a residential dwelling is located directly opposite the site access, with a farm access approximately 40 metres further east on the northern side of the road. The private access road is approximately 4.7 metres wide along its length, however it flairs to approximately 19 metres in width at its intersection with L-7003-1.

### Survey Data Collection

A short period traffic survey of L-7003-1 was undertaken on the morning of Tuesday 17 November 2015 in the vicinity of the quarry access. The results of the survey are provided in Table 12.1, below.

Direction Time Period	No. of Vehicles Westbound		No. of Vehicles Eastbound	
	Light Vehicles	Heavy Vehicles	Light Vehicles	Heavy Vehicles
10:00 - 10:14hrs	4		6	0(1) <sup>1</sup>
10:15 - 10:29hrs	4		3	
10:30 - 10:44hrs	3		1	
10:45 - 10:59hrs	0		1	
<b>Total, 10:00 - 10:59hrs</b>	<b>11</b>	<b>0</b>	<b>11</b>	<b>0</b>

Table 12.1: L-7003-1 Traffic Survey Results (10:00 to 11:00hrs)

As can be seen from Table 12.1, total 2-way traffic movements of 22 vehicles were recorded on L-7003-1 within the one hour survey period. A single heavy vehicle movement associated with the existing quarry was also recorded, however has been removed from the total row in the above table, thus ensuring an accurate representation of baseline (or Do Nothing) traffic levels.

### Annual Average Daily Traffic (AADT)

The traffic survey data set out in Table 12.1 was expanded in accordance with Transport Infrastructure Ireland's Project Appraisal Guidance Unit 16.2 – Expansion Factors for Short Period Traffic Counts (August 2012), to derive average annual daily traffic (AADT) on the L-7003-1.

Table 12.2, below outlines the factors used to expand the survey data.

Variable	Hour	Day of Week	Month of Year
<b>Data Recorded</b>	10:00hrs-11:00hrs	Tuesday	November
<b>Factor</b>	0.056	0.98	1.04

Table 12.2: AADT Expansion Factors

<sup>1</sup> Heavy vehicle associated with the existing quarry development, removed from Total row





Based on the two-way short period survey data presented in Table 12.2, 24 hour traffic was calculated using the above referenced expansion guidance. From this, weekly average daily traffic (WADT) and annual average daily traffic (AADT) was calculated. These figures are presented at Table 12.3.

	Two-way Traffic
1 hour traffic count	22
24 hour Traffic Flow	393
Weekly Average Daily Traffic (WADT)	385
Annual Average Daily Traffic (AADT)	400

**Table 12.3: AADT Calculation**

### Existing Development

The existing development consists of a sand and gravel quarry with permitted extraction rates of 125,000 tonnes per annum. The development operates from 08:00hrs to 18:00hrs Monday to Friday and from 08:00hrs to 13:00hrs on Saturdays as per a condition of its planning permission.

Between 2 and 3 staff are present on site during operational hours, and these staff are understood to arrive before 08:00hrs and depart after 18:00hrs.

Currently, and in accordance with the maximum permitted extraction rates, 125,000 tonnes of sand/ gravel per annum are permitted to be processed at the site. This equates to an average of approximately 10,400 tonnes per month. Associated vehicle movements are based on the following assumptions:

- Operational periods differing throughout the year, with the two distinct periods referred to as standard months and busy months:
  - during standard months, 50 two-way weekday heavy vehicle movements occur; and
  - during busy months, 60 two-way weekday heavy vehicle movements occur.
- Heavy vehicle movements on Saturdays are half those during weekdays, i.e. 25 and 30 daily two-way vehicle movements during standard and busy months respectively.
- Staff movements are based on 3 staff working 5.5 days per week throughout the year.

The current monthly materials processed and associated heavy vehicle and staff trips are shown at Table 12.4.





Month	Materials Processed	Two-way Heavy Vehicle Movements <sup>2</sup>	Two-way Staff Movements <sup>3</sup>
January	9,766	1,100	144
February	9,766	1,100	144
March	9,766	1,100	144
April	9,766	1,100	144
May	9,766	1,100	144
June	11,719	1,320	144
July	11,719	1,320	144
August	9,766	1,100	144
September	9,766	1,100	144
October	11,719	1,320	144
November	11,719	1,320	144
December	9,766	1,100	144
<b>Total Yearly</b>	<b>125,000 tonnes</b>	<b>14,080 vehicles</b>	<b>1,728</b>
<b>AADT Equivalent<sup>4</sup></b>	<b>-</b>	<b>39</b>	<b>5</b>

Table 12.4: Existing Monthly Development Material, Heavy Vehicle and Staff Movements

As can be seen from Table 12.4 above, there are currently 44 two-way AADT equivalent total vehicle movements (39 heavy vehicle movements and 5 staff vehicle movements) associated with the existing development.

#### Committed Development

No committed development within the site's vicinity have been identified that would impact on the development proposals.

## 12.4 Likely Significant Impacts

### 12.4.1 Construction Phase Impact

The construction phase impact can be assessed under the following heading:

- plant and machinery requirements;
- materials; and
- staff.

Plant and machinery requirements would be similar to that which already operates at the site and hence no traffic impact on the local road network would be expected. If additional machinery is required, this would likely be accommodated via a single two-way vehicle trip on the local road network and will have minimal impact.

<sup>2</sup> Calculation based on 5.5 working days per week, and 4 working weeks per month (based on a 48 week working year)

<sup>3</sup> Calculation based on 3 staff working 6 days per week (5 full days and 1 half-day), and 4 working weeks per month

<sup>4</sup> AADT equivalent represents total yearly vehicle movements divided by 365.25 (days per year)





Materials excavated as part of the proposed quarry will be used to fill the existing quarry, and as such, delivery of materials on-site is expected to be minimal.

Staffing levels during the construction phase will be equivalent to the operational phase of the development and will result in 3 staff arriving before 08:00hrs and departing after 18:00hrs.

As the development proposals consist of an extension to the existing quarry, and no new operational buildings or access roads etc. are required, and insignificant construction phase traffic impacts are expected.

#### 12.4.2 Operational Phase Impact

In the 'Do Something' scenario the quarry will expand into the adjoining lands to the west from 2018 onwards. The proposed development will not operate in parallel with the existing permitted quarry development. As a result of this, traffic volumes on the adjacent road would consist of background traffic, in addition to traffic associated with the proposed development. The following section quantifies the expected operation phase impact.

##### Background Traffic Forecasting

Background traffic has been adjusted to reflect likely future traffic adjacent to the site in accordance with TII's Project Appraisal Guideline Unit 5.5 Link-Based Traffic Growth Forecasting, 2011. A medium growth scenario was deemed appropriate and has been used to assess future growth, with the growth factors used presented in Table 12.5.

2006-2025		2026-2040	
LV	HV	LV	HV
1.015	1.01	1.013	1.001

Table 12.5: Growth Factors

##### Development Trip Generation

The existing development traffic presented consists of 39 AADT equivalent two-way heavy vehicle movements, in addition to 5 AADT equivalent two-way staff movements as derived in Table 12.4 i.e. 44 daily two-way development trips and is based on extraction of 125,000 tonnes of material on-site.

The expected maximum number of trips associated with the site will now be slightly less than the trips presented for the current development, outlined in Section 12.3, as extraction levels are anticipated to be 100,000 tonnes per annum. Staff numbers will be the same as at present, despite the reduced extraction rates.

The proposed monthly materials processed and associated heavy vehicle and staff trips are shown at Table 12.6.





Month	Materials Processed	Two-way Heavy Vehicle Movements <sup>5</sup>	Two-way Staff Movements <sup>6</sup>
January	7,813	880	144
February	7,813	880	144
March	7,813	880	144
April	7,813	880	144
May	7,813	880	144
June	9,375	1,056	144
July	9,375	1056	144
August	7,813	880	144
September	7,813	880	144
October	9,375	1,056	144
November	9,375	1,056	144
December	7,813	880	144
<b>Total Yearly</b>	<b>100,000 tonnes</b>	<b>11,264 vehicles</b>	<b>1,728</b>
<b>AADT Equivalent<sup>7</sup></b>	<b>-</b>	<b>31</b>	<b>5</b>

**Table 12.6: Monthly Development Material, Heavy Vehicle and Staff Movements (Year 1-13)**

It is understood that there is approximately 1,354,400 tonnes (846,500 cubic metres) of extractable commercial sand available from the proposed quarry extension. Assuming extraction at a rate of 100,000 tonnes of material per annum, all material will be extracted by the 14<sup>th</sup> year of operation, when the final 54,400 tonnes will be extracted. From the 4<sup>th</sup> year of operation onwards, backfilling of the quarry to its full pre-extraction level will commence at a rate of 80,000 tonnes per annum, with this task completed by the 20<sup>th</sup> year of operation. It should be noted that no additional HGV movements will be associated with this task before the 14<sup>th</sup> year of operation as HGVs will be loaded on the return leg of an outward journeys with material required for backfilling the quarry. From year 14, a reduced level of development related HGV trips is anticipated.

Based on the information provided in Table 12.6 and above, the following table, Table 12.7, outlines the operational phase impact (Do Something) scenario for the development and includes the impact for:

- year of opening (2018);
- year of opening +5 (2023); and
- year of opening +15 (2033).

Year	Background AADT (Do Nothing)	Development Traffic (HGV+LV)	Operational Phase Traffic (Do Something)
Year of Opening (2018)	419	36	454
Year of Opening +5 (2023)	451	36	487

<sup>5</sup> Calculation based on 5.5 working days per week, and 4 working weeks per month (based on a 48 week working year)

<sup>6</sup> Calculation based on 3 staff working 6 days per week (5 full days and 1 half-day), and 4 working weeks per month

<sup>7</sup> AADT equivalent represents total yearly vehicle movements divided by 365.25 (days per year)





Year	Background AADT (Do Nothing)	Development Traffic (HGV+LV)	Operational Phase Traffic (Do Something)
Year of Opening +15 (2033)	515	29 <sup>8</sup>	545

**Table 12.7: Background Traffic, Development Trip Generation and Operational Phase Traffic**

### Trip Distribution

Trip distribution patterns associated with the proposed development are expected to be the same as that experienced at present at the existing quarry:

- All heavy vehicle traffic exiting the site will turn left at the L-7003-1/ site access junction towards Screen village, approximately 1km to the west. At Screen village, traffic will head northwards, towards the R741 for approximately 1.3 kilometres. Upon arrival at the priority junction with the R741, heavy vehicle traffic will head north or south along the R741, depending on final destination.
- Development related traffic will return to the site via the same route.

### Road Safety

Road collision data from the Road Safety Authority's Online Collision Database (for collisions between 2005 and 2013) was analysed to determine any adverse safety performance characteristics on the local road network. The review demonstrates that no minor, serious or fatal accidents have occurred in the vicinity of the site over this time period.

### Internal Layout

The internal layout for the proposed site will consist of a private access road leading directly to the quarry. The majority of the access road will remain unchanged, however it will now provide access to an area extending further west than the existing access road.

### Parking

Parking will be provided on-site for 3 staff cars.

### Do Something Impact – Operational Phases

The proposed development will result in a small increase in traffic on the local road network, with an additional 36 vehicles per day anticipated on the L-7003-1 during its operational phase. Such a small increase in traffic, as demonstrated by the current on-site operations is deemed likely to have an insignificant impact on the local road network.

<sup>8</sup> HGV traffic consists entirely of backfilling related activities, at a reduced level to years 1-13.





### 12.4.3 Do Nothing Impact

In the 'Do Nothing' scenario the quarry will cease to operate from 13 April 2019 onwards, as per the existing permission granted for the site (Reg Ref: 20082323). As a result of this, traffic volumes on the adjacent road would be equivalent to the Background AADT presented in Table 12.7 from April 2019 onwards and L-7003-1 would therefore continue to operate satisfactorily.

### 12.5 Mitigation Measures

The existing site access junction and local road network has the capacity to cater for the small volume of vehicle movements envisaged as a result of the development proposal. This has been demonstrated by the existing quarry site which operates at an identical intensity to that currently proposed. As a result, traffic generated by the proposed development at the existing site access junction will be considerably below the junction's capacity, and an insignificant impact on the performance of the local road network is anticipated. Mitigation of the proposed development's traffic impacts is not therefore deemed necessary.

### 12.6 Residual Impacts

Based on the level of traffic generated and taking into account the capacity of the local road network, no construction or operational phase residual impacts are predicted as a result of the proposed development.

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## 13.0 CULTURAL HERITAGE

### 13.1 Introduction

#### 13.1.1 General

Irish Archaeological Consultancy Ltd has prepared this report on behalf of Tom Phillips and Associates for the Applicant, to assess the impact, if any, on the cultural heritage resource by the proposed extension to an existing quarry at Ballinrooaun, c. 2km north of Curracloe Village, located 9km northeast of Wexford Town (Figure 13.1).

This study determines, as far as reasonably possible from existing records, the nature of the cultural heritage resource within the area of proposed development using appropriate methods of study. Desk-based assessment is defined as a programme of study of the historic environment within a specified area or site that addresses agreed research and/or conservation objectives. It consists of an analysis of existing written, graphic, photographic and electronic information in order to identify the likely heritage assets, their interests and significance and the character of the study area, including appropriate consideration of the settings of heritage assets (IFA 2012). In order to compile a complete baseline, a site inspection is carried out to complement the results of the desk-based assessment. This leads to the following:

- Determining the presence of known archaeological/ architectural heritage sites that may be affected by the proposed development;
- Assessment of the likelihood of finding previously unrecorded archaeological remains during the construction programme;
- Suggested mitigation measures based upon the results of the above research.

The study involved detailed interrogation of the archaeological and historical background of the development site. This included information from the Record of Monuments and Places of Wexford, the County Development Plan, the topographical files of the National Museum of Ireland, and cartographic and documentary records. Aerial photographs of the study area held by the Ordnance Survey were also consulted. Field inspection was undertaken on 16th November 2015 in an attempt to identify any known cultural heritage sites and previously unrecorded features, structures and portable finds within the proposed development area.

An impact assessment and a mitigation strategy have been prepared. The impact assessment is undertaken to outline potential adverse impacts that the proposed development may have on the cultural heritage resource, while the mitigation strategy is designed to avoid, reduce or offset such adverse impacts. The definitions of the degree of impact on the potential archaeological resource are described in Appendix 13.4.

#### 13.1.2 Definitions

In order to assess, distil and present the findings of this study, the following definitions apply:

‘Cultural Heritage’ where used generically, is an over-arching term applied to describe any combination of cultural heritage features, where –





- the term 'archaeological heritage' is applied to objects, monuments, buildings or landscapes of an (assumed) age typically older than AD 1700 (and recorded as archaeological sites within the Record of Monuments and Places)
- the term 'cultural heritage', where used specifically, is applied to other (often less tangible) aspects of the landscape such as historical events, folklore memories and cultural associations. This designation can also accompany archaeological or architectural designation.

### Impact Definitions

<i>Imperceptible</i>	An effects capable of measurement but without noticeable consequences.
<i>Not significant</i>	An effects which causes noticeable changes in the character of the environment but without noticeable consequences.
<i>Slight Effects</i>	An effects which causes noticeable changes in the character of the environment without affecting its sensitivities.
<i>Moderate Effects</i>	An effects that alters the character of the environment in a manner that is consistent with existing and emerging trends.
<i>Significant Effects</i>	An effects which, by its character, magnitude, duration or intensity alters a sensitive aspect of the environment.
<i>Very Significant</i>	An effects which, by its character, magnitude, duration or intensity significantly alters the majority of a sensitive aspect of the environment.
<i>Profound Effects</i>	An effects which obliterates sensitive characteristics.

Impacts as defined by the Draft EPA 2015 Guidelines (pg 42).

### 13.1.3 Consultations

Following the initial research a number of statutory and voluntary bodies were consulted to gain further insight into the cultural background of the background environment, receiving environment and study area, as follows –

- Department of Arts, Heritage and the Gaeltacht – the Heritage Service, National Monuments and Historic Properties Section: Record of Monuments and Places; Sites and Monuments Record; Monuments in State Care Database and Preservation Orders;
- National Museum of Ireland, Irish Antiquities Division: topographical files of Ireland;
- National Inventory of Architectural Heritage: County Wexford;
- Wexford County Council: Planning Section;
- Trinity College Dublin, Map Library: Historical and Ordnance Survey Maps.





## 13.2 Methodology

Research has been undertaken in three phases. The first phase comprised a paper survey of all available archaeological, historical and cartographic sources. The second phase involved a field inspection of the proposed development area.

### 13.2.1 Paper Survey

This is a document search. The following sources were examined and lists of areas of archaeological heritage potential were compiled –

- Record of Monuments and Places for County Wexford;
- Sites and Monuments Record for County Wexford;
- Monuments in State Care Database;
- Preservation Orders;
- Topographical files of the National Museum of Ireland;
- Cartographic and written sources relating to the study area;
- Wexford County Development Plan 2013–2019;
- National Inventory of Architectural Heritage;
- Place name analysis;
- Aerial photographs;
- Excavations Bulletin (1970–2014).

*Record of Monuments and Places (RMP)* is a list of archaeological sites known to the National Monuments Section, which are afforded legal protection under Section 12 of the 1994 National Monuments Act and are published as a record.

*Sites and Monuments Record (SMR)* holds documentary evidence and field inspections of all known archaeological sites and monuments. Some information is also held about archaeological sites and monuments whose precise location is not known e.g. only a site type and townland are recorded. These are known to the National Monuments Section as 'un-located sites' and cannot be afforded legal protection due to lack of locational information. As a result these are omitted from the Record of Monuments and Places. SMR sites are also listed on the recently launched website created by the DoAHG – [www.archaeology.ie](http://www.archaeology.ie).

*National Monuments in State Care Database* is a list of all the National Monuments in State guardianship or ownership. Each is assigned a National Monument number whether in guardianship or ownership and has a brief description of the remains of each Monument. The Minister for the Department of Arts, Heritage and the Gaeltacht may acquire national monuments by agreement or by compulsory order. The state or local authority may assume guardianship of any national monument (other than dwellings). The owners of national monuments (other than dwellings) may also appoint the Minister or the local authority as guardian of that monument if the state or local authority agrees. Once the site is in ownership or guardianship of the state, it may not be interfered with without the written consent of the Minister.

*Preservation Orders List* contains information on Preservation Orders and/or Temporary Preservation Orders, which have been assigned to a site or sites. Sites deemed to be in danger of injury or destruction can be allocated Preservation Orders under the 1930 Act.





Preservation Orders make any interference with the site illegal. Temporary Preservation Orders can be attached under the 1954 Act. These perform the same function as a Preservation Order but have a time limit of six months, after which the situation must be reviewed. Work may only be undertaken on or in the vicinity of sites under Preservation Orders with the written consent, and at the discretion, of the Minister.

*Topographical files* of the National Museum of Ireland is the national archive of all known finds recorded by the National Museum. This archive relates primarily to artefacts but also includes references to monuments and unique records of previous excavations. The find spots of artefacts are important sources of information on the discovery of sites of archaeological significance.

*Cartographic sources* are important in tracing land use development within the development area as well as providing important topographical information on areas of archaeological potential and the development of buildings. Cartographic analysis of all relevant maps has been made to identify any topographical anomalies or structures that no longer remain within the landscape.

Sir William Petty, Down Survey Map, 1654–56, *Barony of Ballaghkeen*

Ordnance Survey maps of County Wexford (1840, 1903 and 1939–41)

*Documentary sources* were consulted to gain background information on the archaeological and cultural heritage landscape of the proposed development area.

*Aerial photographic coverage* is an important source of information regarding the precise location of sites and their extent. It also provides initial information on the terrain and its likely potential for archaeology. A number of sources were consulted including the Ordnance Survey and Google Earth.

*Place Names* are an important part in understanding both the archaeology and history of an area. Place names can be used for generations and in some cases have been found to have their root deep in the historical past.

*Development Plans* contain a catalogue of all the Protected Structures and archaeological sites within the county. The County Wexford Development Plan (2013–2019) was consulted to obtain information on cultural heritage sites in and within the immediate vicinity of the proposed route.

*The National Inventory of Architectural Heritage* is a government based organisation tasked with making a nationwide record of significant local, regional, national and international structures, which in turn provides county councils with a guide as to what structures to list within the Record of Protected Structures. The architectural survey for County Wexford was completed by 2008. The NIAH have also carried out a nationwide desk based survey of historic gardens, including demesnes that surround large houses. This has also been completed for County Wexford and was examined in relation to the surviving demesnes within the surrounding area of the proposed development.

*Excavations Bulletin* is a summary publication that has been produced every year since 1970. This summarises every archaeological excavation that has taken place in Ireland during that year up until 2010 and since 1987 has been edited by Isabel Bennett. This





information is vital when examining the archaeological content of any area, which may not have been recorded under the SMR and RMP files. This information is also available online ([www.excavations.ie](http://www.excavations.ie)) from 1970–2015.

### 13.2.2 Field Inspection

Field inspection is necessary to determine the extent and nature of archaeological remains, and can also lead to the identification of previously unrecorded or suspected sites and portable finds through topographical observation and local information.

- The archaeological field walking inspection entailed:
- Walking the proposed development area and its immediate environs;
- Noting and recording the terrain type and land usage;
- Noting and recording the presence of features of archaeological or cultural heritage significance;
- Verifying the extent and condition of recorded sites;
- Visually investigating any suspect landscape anomalies to determine the possibility of their being anthropogenic in origin.

## 13.3 The Existing Environment

### 13.3.1 Archaeological and Historical Background

The proposed development area is located within the townland of Ballinrooaun c. 2km north of Curracloe Village and 9km northeast of Wexford Town (Figure 13.1). It is located within the Parish of Ballyvaloo and Barony of Ballaghkeen (Figure 13.1). The topography of the site is undulating and currently under good quality pasture, with an existing quarry located within the northeast corner.

There are only four Recorded Monuments located within a 1km radius of the proposed development area, none of which are situated within a 500m radius (Figure 13.1). They comprise a cluster of sub-records including a church, graveyard, font and holy well (WX033-008001-4) located c. 920m to the west.

No stray finds were recorded in the NMI Topographical Files within the vicinity of the proposed development area.

#### Prehistoric Period

Given the proximity of the landscape containing the proposed development area, to the coast, the area would have been ideal for settlement throughout prehistory. However, there is little recorded evidence for prehistoric activity within the vicinity of the proposed development.

The most common Bronze Age sites within the archaeological record is the burnt mound or *fulacht fiadh*. Over 4,500 *fulachta fiadh* have been recorded in the country making them the most common prehistoric monument in Ireland. Although burnt mounds of shattered stone occur as a result of various activities that have been practiced from the Mesolithic to the present day, those noted in close proximity to a trough are generally interpreted as





Bronze Age cooking/industrial sites. *Fulachta fiadh* generally consist of a low mound of burnt stone, commonly in horse-shoe shape and are found in low lying marshy areas or close to streams and rivers. Often these sites have been ploughed out and survive as a spread of heat shattered stones in charcoal rich soil with no surface expression in close proximity to a trough. While no previously burnt mound sites are recorded within the vicinity of the proposed development area several are known in the wider region, such as at Ballymore (WX033-027) 2km southwest and at Ballynaclash (WX033-036) 4.5km northeast.

### Early Medieval Period (AD 400–1100)

The early medieval period is depicted in the surviving sources as entirely rural characterised by the basic territorial unit known as *túath*. Byrne (1973) estimates that there were probably at least 150 kings in Ireland at any given time during this period, each ruling over his own *túath*. The Annals of the Four Masters refer to a monastic foundation, dedicated to St. *Ibar* or *Iubhar*, which was situated most probably on an island in Wexford harbour. It was mentioned in AD 499-501 when *Iubhar* died; in 819 when the settlement was sacked by Vikings; in 884 on the death of Diarmait, Abbot of Beg Eire and again in 964 on the death of another Abbot Crundmael (Furlong 2003, 11).

During the 7th and 8th centuries, control of the area now known as Wexford was consolidated by the *Uí Chennselaig* clan, based at Ferns, and the possession of Ferns came to mean the possession of power. From c. 769 AD the abbey there was elevated to the rank of royal monastery, replacing St. Mullin's, County Carlow as the principal religious base in south Leinster. However, a new power was to arrive in the country, and from 795 AD onwards, Viking raids are recorded in the County Wexford. Even the county name itself derives from the Viking name for "the land of the flats" – Waesfjords.

During this sometimes violent period, roughly circular defensive enclosures known as ringforts were constructed to protect farmsteads. The ringfort or rath is considered to be the most common indicator of settlement during this period. In a study of the ringfort Stout (1997) suggested that there is more than 45,119 potential ringforts or enclosure sites throughout Ireland. Ringforts were often constructed to protect rural farmsteads and are usually defined as a broadly circular enclosure delimited by a bank and ditch. There are no ringforts or enclosures recorded within a 1km radius of the proposed development area; however 11 of them are sited within the wider landscape (c. 5km radius).

In general, the organisation of the Irish church was primarily monastic. It was not until the beginning of the 12th century that it was gradually reorganised into dioceses, and abbots were replaced by bishops. The evidence for early Christian sites within the receiving environment is supported by the church at Ballymore (WX033-008001). The medieval parish church was dedicated to St. Maelruan of Tallaght who died in AD 792 (Culleton 1999, 213). The church was known as *Scrín Maelruain*, meaning 'the shrine of Maelruan' which suggests that veneration of a shrine was known here although O'Donovan noted that the pattern was abolished during the 1820s (*ibid.*). Culleton (*ibid.*) suggests that the shrine was probably the 14th century carved oak statue of the saint which was decked with flowers on the eve of his feast day, 7 July, however this was reportedly stolen in 1981 and its whereabouts are no longer known.

The veneration of holy wells is one of the oldest traditions in Irish Christianity and most likely has its origins in earlier pagan ritual activities. These wells can manifest themselves in





a variety of forms ranging from natural springs to rain collecting rock depressions. In County Wexford alone over 120 holy wells were surveyed in 1983-84, and an example is recorded near the church at Ballymore (WX033-008004).

### **Medieval Period (AD 1100–1600)**

The first of the Anglo-Norman landings and invasions took place in County Wexford, at the invitation of the former king of Leinster, Dermot MacMurrough Kavanagh. The Anglo-Normans, joined by 500 *Uí Chennselaig* men, took the Viking town of Wexford and the town of Ossory. Through a policy of military force and integration, the Anglo-Normans colonised much of the country. Marriages between Norman leaders and the women of Ireland's great families aided this integration. In their replacement of the Norse of Wexford after 350 years, for example, the Norman feudal culture, techniques, language and legal systems were to have a profound effect in the county.

During this period moated sites (defended farmsteads) began to appear regularly in the landscape of Wexford. These sites are characterised by a water-filled moat and are situated in low-lying or poorly drained inaccessible land. The displaced material from the moat was laid in the interior to create a raised platform which was further defended by a palisade. Like the ringfort of the early medieval period the moated enclosure represented the small farming class of the Anglo-Norman settlement of the county. Around 130 extant and levelled examples exist in County Wexford, with a substantial extant site (WX033-012) located c. 1.6km west of the proposed development area in Ballymore.

The initial stage of the invasion was marked by the construction of defensive earthworks, referred to as mottes, earth and timber castles constructed from the 12th century onwards. Mottes were sited at strategic points along the borders of recently conquered land or guarding important routes by the Anglo-Normans in the late 12th/early 13th century. Once the Anglo-Normans had consolidated their military position, they erected permanent fortifications at strategic settlement centres. The large military castles, dominant in the countryside prior to the advent of siege ordnance, were built at this time. These castles had a great tower or 'keep' as their main feature, either incorporated into the outer defences or isolated within their walls. Castlebridge, or '*Fearann na gCenél*', is located c. 4.5km southeast of the proposed development area. It is mentioned by Diaramait Mac Murchada's charter to Ferns Abbey in 1160 (Culleton 1999, 221).

### **Post-Medieval Period (AD 1600–1900)**

The receiving environment of the proposed development area is characterised by a rural landscape scattered with small farms and residential dwellings of various ages. Many of the small structures marked on the early OS map editions no longer survive within the landscape, or have been replaced with modern structures. In many cases, small farms have completely disappeared.

The proposed development area is located within rich agricultural lands which would have continued to flourish during this period. Two farmyards are marked within the northwest corner and western boundary of the proposed development area on the 1840 6-inch OS map; however no features were noted in the earlier mid-17th century Down Survey maps.

Typically the single storied thatched cottage would be considered to represent the real vernacular style in Ireland. During the late 18th and 19th centuries, strong farmers along





with more successful traders started to develop more substantial two storied houses, which are clearly elaborations on basic vernacular patterns. Examples of these vernacular houses are recorded in Skreen Village c. 920m to the west.

### 13.3.2 Summary of Previous Archaeological Fieldwork

A review of the Excavations Bulletin (1970–2014) and the available resource has shown that only one program of archaeological investigation has been carried out within 1km of the site. This comprised monitoring of topsoil clearance and excavation of foundation trenches for a single house in Ballyvalloo Upper (McCarthy 2003; Licence Ref.: 03E0557). No features of archaeological potential were identified.

### 13.3.3 Cartographic Analysis

*Sir William Petty, Down Survey Map, Barony of Ballaghkeen, 1654–56*

The area of proposed development is located on the Ballevolloe Parish map within a plot annotated as 'Blacke-Conigers', west of Balleralloe (Ballyvolloo) townland. The area is described as arable, meadow and pasture in the ownership of George Cheevers, Irish Papist. There are no structures shown within the townland. To the northwest in Skreen Parish a plot of land is annotated as 'Balliroan & 1/3 of Connigers'. It is described as arable meadows and Moorish pasture in the ownership of Arthur Sinnot an Irish Papist. Conigar or *cuinicer* means rabbit warren and given the proximity of the coastal sand dunes this is not surprising. The medieval parish church at Ballymore (WX033-008001) is shown to the west. A general note on the parish of 'Ballevolloe' describes the lands as 'heathy and mountainous but very good soyle'.

*First Edition 6-Inch Ordnance Survey Map, 1840–41, Scale 1:10560*

This is the first accurate historic mapping coverage of the area containing the proposed scheme (Figure 13.3). The site comprises all or part of c. 23 irregular-shaped fields. Two farmyards are located within the northwest and southwest limit of sites. A road/access track leads east from both the farmyards crossing the area of proposed development and these link up along the eastern boundary. Small pools of water are shown dotted around the landscape with one located to the south of the southern boundary of the proposed development area. Individual farm buildings are shown scattered within the fields. The R.C. chapel at Ballymore is illustrated adjacent to 'Skreen Graveyard' c. 920m west of the proposed development. Ballinrooaun Lodge is located c. 790m northwest and a small demesne parkland is highlighted 1km to the north around Newfort House.

*Ordnance Survey Map, 1896–1904, Scale 1:2500*

By the time of this edition there has been some reorganisation of the fields and plot boundaries within the surrounding lands (Figure 13.4). The proposed development area is now comprised of all or part of 19 fields. There are no major changes to note since the earlier mapping although a possible quarry pit is shown within the centre of site. The lands within the existing quarry to the east are shown as boggy marginal land. The village of Screen has grown with a post office, school and smithy now annotated. St. Cyprian R.C. Church is also labelled for the first time.

*Third Edition 6-Inch Ordnance Survey Map, 1926–1937, Scale 1:10560*

There are no major changes to note within the area of proposed development in the intervening years since the 25-inch map (Figure 13.2).





### 13.3.4 County Development Plan

The Wexford County Development Plan (2013–2019) aims to protect, conserve and manage the archaeological and architectural heritage of the county and to encourage sensitive sustainable development so as to ensure its survival and maintenance for future generations. It is an objective of the plan to protect and preserve archaeological sites discovered since the publication of the Record of Monuments and Places. There are four Recorded Monuments located within a 1km radius of the proposed development area (listed in Table 1 and Appendix 13.1). They comprise a cluster of sub-records including a church, graveyard, font and holy well (WX033-008001-4) located c. 920m to the west.

The development plan also includes a list of Recorded Protected Structures in the county, of which three are located within 1km of the proposed development area (Table 13.1). They comprise of a thatched cottage (WCC0826), a house (WCC0827 and St. Cyprians Church (WCC1178) located c. 920m west of the site. These three sites are also all included within the National Inventory of Architectural Heritage for Wexford (see below).

RMP No.	RPS/ NIAH No.:	Location	Classification	Distance to proposed development area
WX033-008001	-	Ballymore	Church	920m west
WX033-008002	15703315	Ballymore	Graveyard	920m west
WX033-008003	-	Ballymore	Font	920m west
WX033-008004	-	Ballymore	Ritual site - holy well	1km west
-	15703318	Ballylemin	Parochial House or Presbytery	750m west
-	WCC0826 / 15703311	Ballyheige	Kelly's Thatch Cottage	920m west
-	15703312	Ballyheige	Detached two-storey house	920m west
-	WCC0827/ 15703313	Ballyheige	Detached single-storey lobby entry[?] house	920m west
-	15703316	Ballymore	Detached single-storey lobby entry house	920m west
-	WCC1178/ 15703317	Ballymore	St. Cyprians Church	920m west

**Table 13.1: Recorded Cultural Heritage sites within 1km of proposed development area**

### 13.3.5 National Inventory of Architectural Heritage

A review of both the architectural survey and garden survey was undertaken as part of this assessment. An area up to 1km that surrounds the proposed development area was examined in order to identify any buildings or areas of architectural significance. As shown in Table 13.1 seven buildings are included in the survey within this area, c. 920m west of site. These include three vernacular houses, St. Cyprians Church, a parochial Hall, a thatch cottage and the old graveyard. Of these three buildings are also recorded as Protected Structures and the graveyard is also listed as a Recorded Monument.

The garden survey lists one parkland located within 1km of the proposed development that associated with Newfort House (NIAH: WX-69-T-089316). There are few original features surviving and modern agricultural buildings and houses have been constructed on the site.





### 13.3.6 Aerial Photographic Analysis

Inspection of the aerial photographic coverage of the proposed development area held by the Ordnance Survey (1995, 2000 and 2005), Google Earth (2010 and 2012) and Bing Maps (2011) failed to reveal any definitive features of archaeological potential within the proposed development area.

### 13.3.7 Townlands

The townland is an Irish land unit of considerable longevity as many of the units are likely to represent much earlier land divisions. However, the term townland was not used to denote a unit of land until the Civil Survey of 1654. It bears no relation to the modern word 'town' but like the Irish word baile refers to a place. It is possible that the word is derived from the Old English tun land and meant 'the land forming an estate or manor' (Culleton 1999, 174).

Gaelic land ownership required a clear definition of the territories held by each sept and a need for strong, permanent fences around their territories. It is possible that boundaries following ridge tops, streams or bog are more likely to be older in date than those composed of straight lines (ibid. 179). The vast majority of townlands are referred to in the 17th century, when land documentation records begin. Many of the townlands are mapped within the Down Survey of the 1650s, so called as all measurements were carefully 'laid down' on paper at a scale of forty perches to one inch. Therefore most are in the context of pre-17th century landscape organisation (McErlean 1983, 315).

In the 19th century, some demesnes, deer parks or large farms were given townland status during the Ordnance Survey and some imprecise townland boundaries in areas such as bogs or lakes, were given more precise definition (ibid.). Larger tracks of land were divided into a number of townlands and named Upper, Middle or Lower, as well as Beg and More (small and large) and north, east, south and west (Culleton 1999, 179). By the time the first Ordnance Survey had been completed a total of 62,000 townlands were recorded in Ireland.

The proposed development area lies within the townland of Ballinrooaun and Parish of Ballyvaloo. The townland boundaries are located c. 170m to the south (with Glenbough) and c. 180m to the west (with Ballylemin). These also represent the parish boundaries with St. Margarets in the south and Skreen in the west.

### 13.3.8 Place name Analysis

Townland and topographic names are an invaluable source of information on topography, land ownership and land use within the landscape. They also provide information on history; archaeological monuments and folklore of an area. A place name may refer to a long forgotten site, and may indicate the possibility that the remains of certain sites may still survive below the ground surface. The Ordnance Survey surveyors wrote down townland names in the 1830's and 1840's, when the entire country was mapped for the first time. Some of the townland names in the study area are of Irish origin and through time have been anglicised. The main reference used for the place name analysis is Irish Local Names Explained by P.W Joyce (1870) and the online resource of Logainm.ie.





The townland name Ballinrooaun is derived from '*Baile Ruadh*' meaning homestead or town of the reddish land. This area is located in the Parish of Ballyvaloo and Barony of Ballaghkeen. Ballyvaloo is derived from *Baile Ui Mhaoilumha* and in 1840 this was taken to mean 'O'Maeloo's town'. Ballaghkeen is derived from '*Bealach caoin*' or beautiful road. Explanations for surrounding townland names are included in Table 13.2.

Placename	Derivation	Possible Meaning
Ballinrooaun	<i>Baile an Ruáin</i>	Homestead/'town' of reddish land
Ballyvaloo Upper	<i>Baile Ui Mhaoilumha</i>	'O'Maeloo's town'
Ballaghkeen	<i>Bealach caoin</i>	Beautiful road
Ballaghblake	<i>Bealach an Bhlácaigh</i>	Blakes road or pass
Ballinra	<i>Baile an Rátha</i>	Town of the raths (ringforts)
Ballyhowbeg	<i>Baile Eochú Beag</i>	Town of the yew wood
Ballylemin	<i>Baile Léimín</i> <i>Baile Uilliaimin (1840)</i>	the town of William (1840)
Ballymore	<i>An Bhuaille Mhór</i>	The big cattle-hold/ summer pasture
Glebe	Latin ' <i>Gleba</i> '	Early meaning plod land or soil. Used in post-medieval period to indicate an area of land within parish to support priest.
Kilmacoe	<i>Cill Mochua</i>	St. Mochua's church
Glenbough	<i>Gleann Beathach / Boinn</i>	Glen of the Birch/ huts
Skreen	<i>Scrín</i>	Shrine

Table 13.2: Placename Analysis

### 13.3.9 Field Inspection

The field inspection sought to assess the site, its previous and current land use, the topography whether any areas or sites of archaeological or cultural heritage potential were present. During the course of the field investigation the proposed development area and its surrounding environs were inspected for known or previously unknown archaeological sites.

A field inspection was carried out on 16th November 2015 in dry but overcast conditions. For the most part, the proposed development area is formed by four pasture fields and the existing quarry in the northeast. These are labelled on Figure 13.1. Generally the area consists of undulating pasture, with slightly higher ground to the north. To the south there are excellent views of Wexford Harbour.

#### Field 1 (proposed development does not incorporate this field)

Located to the northwest of the proposed development area, this is a small triangular field that slopes steeply from the north with undulations that vary the slope slightly. The field is surrounded by a denuded bank and hedge and under good quality pasture (Plate 13.1). A modern access track to the existing quarry runs between Field 1 and 3, although this roughly follows the course of a track marked on the historic OS maps. A post medieval farmstead is marked to the immediate southwest of the field, but there are no standing





remains left of that site, which is marked on all OS map editions. No specific features of archaeological potential were noted within Field 1.

### **Field 2**

Field 2 is located to the immediate east of Field 1 and to the immediate west of the existing quarry. The field is bordered by a wire fence to the north and south; by denuded bank and hedge to the west and by bunds associated with the existing quarry to the east (Plate 13.2). A modern access track to the existing quarry runs between Field 2 and 4. The field slopes steeply to the south and is currently under good quality pasture. No specific features of archaeological potential were noted within Field 2.

### **Field 3**

Field 3 is located to the immediate north of Field 5 and west of Field 4. Field 1 located to the north on the opposite side of the access track into the existing quarry. The field is surrounding to the west, north and east by bank and hedge boundaries that are denuded in places. It is currently under good quality pasture and slopes steeply to the south (Plate 13.3). The northern boundary is formed by a rough scarp that sees the ground level fall by several metres, where the field borders Field 5. The 25 inch OS map edition (Field 13.4) indicates that localised quarrying may have been carried out in this area, resulting in the presence of this scarp. No specific features of archaeological potential were noted within Field 3.

### **Field 4**

This field is located to the immediate east of Fields 3 and 5 and borders the existing quarry to the southwest (Plate 13.4 and 13.5). The field is sub-rectangular in plan and slopes moderately to the south, with some natural undulations. It is bordered to the west and south by bank and hedgerows, to the north by a modern wire fence and the eastern boundary is characterised by the presence of spoil heaps associated with the existing quarry. No specific features of archaeological potential were noted within Field 4.

### **Field 5**

Field 5 is located to the immediate south of Field 3 and west of Field 4. The site of a post medieval farm stead is located to the south of the field, which is marked on the historic OS maps. The field slopes moderately to the north and contains natural undulations (Plate 13.6). The northern boundary is characterised by the presence of an overgrown scarp that separates Field 3 from Field 3 to the immediate north (Plate 13.7). No specific features of archaeological potential were noted within Field 5.

### **Field 6 (proposed development does not incorporate this field)**

This field is located to the south of the proposed development lands. The northern section is reasonably level (Plate 13.8), but the southern section is characterised by a steep drop to the south where a natural hollow has formed (Plate 13.9). The first edition OS map shows this area as containing a pond. Today the hollow is present but no standing water was observed within the feature. The land also drops away to the west in the western section of the field. A number of undulations were noted but all appear to be natural in form. Slightly further to the southwest of Field 5, another small pond was noted that does



contain water. It is clear from the first edition OS map that small ponds were common within the surrounding landscape. However, such features have the potential to attract human activity and as such it should be considered to be an area of archaeological potential. No other specific features of archaeological potential were noted within Field 6.

Just within the proposed development area, between Fields 5 and 6 the historic OS maps show that a small farm stead once occupied this area (Plate 13.10). Today nothing remains of the vernacular buildings marked on the historic maps. These have been removed and replaced with modern agricultural structures including a relatively early 20th century concrete built barn (Plate 13.11). The site is reached via a small track that traverses the southern slope from the north. The track is marked on the OS maps and possesses a hollow profile, suggesting usage over a long period of time (Plate 13.12). However, the subsoil in the area is formed by sand, which is far more susceptible to erosion.

The tracks leads to the southerly post medieval farm stead from a one that was once located in the north-westerly part of the proposed development. This is shown on the 25 inch OS map as containing a number of buildings. However, today all the structures have been removed and the area contains a small yard for the storage of materials (Plate 13.13). As such, no buildings of architectural heritage merit were found to be present in or within the landscape surrounding the proposed development.



Plate 13.1 – Field 1, facing northwest





**Plate 13.2 – Field 2, facing northeast**



**Plate 13.3 – Northern section of Field 3, facing south**





**Plate 13.4 – Northern section of Field 4, facing south**



**Plate 13.5 – Field 4, facing northeast**





Plate 13.6 - Field 5, facing east-northeast



Plate 13.7 – Scarp between Field 5 and 3, facing west-northwest





**Plate 13.8 – Field 8, facing south**



**Plate 13.9 – Former pond location within Field 6, facing south**





**Plate 13.10 – Track way accessing site of post medieval farm stead, facing southeast**



**Plate 13.11 – Buildings at the site of the post medieval farmstead, facing northwest**





**Plate 13.12 – Hollow track way running between the two post medieval farms, facing southwest**



**Plate 13.13 – Site of northern most post medieval farm stead, facing west**

### 13.3.10 Conclusions

The proposed development area is located within the townland of Ballinrooaun c. 2km north of Curracloe Village and 9km northeast of Wexford Town (Figure 13.1). It is located within the Parish of Ballyvaloo and Barony of Ballaghkeen. The topography of the site is characterised by a southerly slope within undulating pasture.

There are only four Recorded Monuments located within a 1km radius of the proposed development area, none of which are situated within a 500m radius (Figure 13.1). They





comprise a cluster of sub-records including a church, graveyard, font and holy well (WX033-008001-4) located c. 920m to the west.

No stray finds were recorded in the NMI Topographical Files within the vicinity of the proposed development area.

A review of the Excavations Bulletin (1970–2014) and the available resource has shown that no programmes of intrusive archaeological investigation have been carried out within the proposed development area.

The first edition OS map (Figure 13.3) and later 25-inch OS map (Figure 13.4) show the proposed development areas as comprising undeveloped fields, with farmyards located within the northwest and southwest limits of site. A probable small quarry pit is shown in the centre of site on the latter mapping.

No Recorded Structures or buildings included in the NIAH survey are located within the proposed development area; the nearest of which are located in Skreen village 920m west.

Inspection of the aerial photographic coverage of the proposed development area failed to reveal any definitive features of archaeological potential.

Townland and parish boundaries are located c. 170m south and 180m west of the proposed development site. A review of the townland names in the vicinity of the proposed development has revealed some common topographical terms and indicators of local flora and fauna.

A field inspection of the proposed development area identified no specific features or areas of archaeological potential within the development area. In addition, no buildings of architectural merit were recorded during the field inspection. The two post medieval farm steads have been removed from the landscape and replaced with modern building.

## 13.4 Likely Significant Impacts

### 13.4.1 Construction Phase Impact

It is possible that ground disturbance associated with the proposed development may have a direct negative impact on archaeological features that have the potential to survive beneath the current ground level with no surface expression.

### 13.4.2 Operational Phase Impact

No adverse impact are anticipated upon the cultural heritage resource during the operational phase of the proposed development.

### 13.4.3 'Do Nothing' Impact

If the proposed development were not to proceed there would be no negative impact on the archaeological or cultural heritage resource.





### 13.5. Mitigation Measures

Extraction from the quarry will only occur in relatively small quantities on an annual basis. As such only a relatively small area will be stripped of topsoil prior to quarrying being carried out. It is therefore recommended that all ground disturbances, such as topsoil stripping, be monitored by a suitably qualified archaeologist. Full provision should be made for the resolution of any archaeological features/deposits that may be identified, should this been deemed the most appropriate manner in which to proceed.

### 13.6 Residual Impacts

Once all mitigation measures have been carried out there will be no residual impact by the proposed development on the archaeological or cultural heritage resource.

**Please note that all recommendations are subject to approval by the National Monuments Service of the Heritage and Planning Division, Department of Arts, Heritage and the Gaeltacht.**

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APPENDIX 13.1 SMR/RMP SITES WITHIN THE SURROUNDING AREA

SMR NO.	WX033-008001
RMP	Yes
TOWNLAND	Ballymore
PARISH	Screen
BARONY	Ballaghkeen
I.T.M.	708214, 630172
CLASSIFICATION	Church
DIST. TO DEVELOPMENT	920m west
DESCRIPTION	Located at the west edge of a slight north–south ridge. This is the site of the parish church of Screen – Irish: scrín meaning a shrine - within a raised rectangular graveyard (dims. 39m east–west; 27m north–south). According to a Visitation by Thomas Ram, the Protestant bishop of Ferns, in 1615 this church was impropriate to Henry Wallop and the name of the priest, if any, is not recorded. Nor is the condition of the church building recorded (Hore 1900-11, vol. 6, 268). John O’Donovan writing c. 1840 (O’Flanagan 1933a, vol. 1, 354) records the former existence of a church, no trace of which is visible at ground level. An oval stone (dims. 0.52m x 0.35m; H 0.35m) with an oval socket, which is almost buried in the northeast part of the graveyard, is regarded as a font but may be a cross-base. There is a natural spring c. 100m to the west, where patterns were held on 27 <sup>th</sup> September until c. 1820. (ibid.).
REFERENCE	<a href="http://www.archaeology.ie">www.archaeology.ie</a>

SMR NO.	WX033-008002
RMP	Yes
TOWNLAND	Ballymore
PARISH	Screen
BARONY	Ballaghkeen
I.T.M.	708214, 630172
CLASSIFICATION	Graveyard
DIST. TO DEVELOPMENT	920m west
DESCRIPTION	Located at the west edge of a slight north–south ridge. The site of the parish church of Screen (WX033-008001) is within a raised rectangular graveyard (dims. 39m east–west; 27m north–south). The possible font (WX033-008003) is in the northeast part of the graveyard.
REFERENCE	<a href="http://www.archaeology.ie">www.archaeology.ie</a>

SMR NO.	WX033-008003
RMP	Yes
TOWNLAND	Ballymore
PARISH	Screen
BARONY	Ballaghkeen
I.T.M.	708214, 630172
CLASSIFICATION	Font





DIST. DEVELOPMENT	TO 920m west
DESCRIPTION	Located at the west edge of a slight north–south ridge. The site of the parish church of Screen (WX033-008001) is within a raised rectangular graveyard (WX032-008002). An oval stone (dims. 0.52m x 0.35m; H 0.35m) with an oval socket, which is almost buried in the graveyard, is regarded as a font but may be a cross-base.
REFERENCE	<a href="http://www.archaeology.ie">www.archaeology.ie</a>

SMR NO.	WX033-008004
RMP	Yes
TOWNLAND	Ballymore
PARISH	Screen
BARONY	Ballaghkeen
I.T.M.	708113, 630194
CLASSIFICATION	Ritual site - holy well
DIST. DEVELOPMENT	TO 1km west
DESCRIPTION	Located at the west edge of a slight north–south ridge. There is a natural spring c. 100m west of the site of the parish church of Screen (WX033-008001) and its graveyard (WX033-008002). According to John O'Donovan, writing c. 1840, patterns were held at the well on 27 September until c. 1820 (O'Flanagan 1933a, vol. 1, 354).
REFERENCE	<a href="http://www.archaeology.ie">www.archaeology.ie</a>

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## APPENDIX 13.2 STRAY FINDS WITHIN THE SURROUNDING AREA

Information on artefact finds from the study area in County Wexford has been recorded by the National Museum of Ireland since the late 18th century. Location information relating to these finds is important in establishing prehistoric and historic activity in the study area.

The following townlands were researched for stray finds: Ballaghblake, Ballinra, Ballinrooaun, Ballyhowbeg, Ballylemin, Ballymore, Ballyvalloo Upper, Glebe, Glenbough and Kilmacoe.

No stray finds were recorded in the vicinity of the proposed development area.

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### APPENDIX 13.3 RPS AND NIAH STRUCTURES WITHIN THE SURROUNDING AREA

RPS NO	N/A
NIAH NO.	15703318
TOWNLAND	Ballylemin
PARISH	Screen
BARONY	Ballaghkeen
ITM	708732, 629973
CLASSIFICATION	Parochial House or Presbytery
DIST. FROM DEVELOPMENT	750m west
DESCRIPTION	A parochial house or presbytery of the middle size, sometimes misleadingly titled "Glebe House" recognised as an interesting component of the early twentieth-century domestic architectural legacy of Screen having been erected under the aegis of Reverend James Furlong CC, and to a design prepared by George Luke O'Connor of Great Brunswick Street, Dublin.
CATEGORIES OF SPECIAL INTEREST	Architectural Artistic Historical Social
RATING	Regional
REFERENCE	<a href="http://www.buildingsofireland.ie">www.buildingsofireland.ie</a>

RMP NO	WX033-008002
NIAH NO.	15703315
TOWNLAND	Ballymore
PARISH	Screen
BARONY	Ballaghkeen
ITM	920m west
CLASSIFICATION	
DIST. FROM DEVELOPMENT	708214, 630172
DESCRIPTION	A picturesque graveyard featuring a collection of markers of artistic interest demonstrating expert craftsmanship with a number signed by noted local engravers, including Miles Brien (alias O'Brien) (fl. 1764-1808) of Rathduff, and James (fl. 1775-1819) and Patrick Byrne (fl. 1795-1848) of Clone, exemplifying the late eighteenth- or nineteenth-century Irish Churchyard Sculpture tradition in County Wexford.
CATEGORIES OF SPECIAL INTEREST	Artistic Historical Social
RATING	Regional
REFERENCE	<a href="http://www.buildingsofireland.ie">www.buildingsofireland.ie</a>

RPS NO	WCC1178
NIAH NO.	15703317
TOWNLAND	Ballymore
PARISH	Screen
BARONY	Ballaghkeen
ITM	708238, 630073





CLASSIFICATION	St. Cyprian's Church
DIST. FROM DEVELOPMENT	920m west
DESCRIPTION	Detached seven-bay double-height single-cell Catholic church, reconstructed 1901, retaining basis of existing chapel, extant 1840.
CATEGORIES OF SPECIAL INTEREST	Architectural Artistic Historical Social
RATING	Regional
REFERENCE	<a href="http://www.buildingsofireland.ie">www.buildingsofireland.ie</a>

RPS NO	WCC0826
NIAH NO.	15703311
TOWNLAND	Ballyheige
PARISH	Ballymore
BARONY	Screen
ITM	708238, 630271
CLASSIFICATION	Kelly's Thatch Cottage
DIST. FROM DEVELOPMENT	920m west
DESCRIPTION	A house of modest size recognised as an important component of the nineteenth-century vernacular legacy of Screen or Skreen by such attributes as the compact rectilinear lobby entry plan form focused on a characteristic windbreak, the construction in unrefined local materials with substantial sections of "daub" or mud defined by a pronounced battered profile, the somewhat disproportionate bias of solid to void in the massing, and the high pitched roof retaining a traditional oat thatch finish. However, while the elementary composition prevails together with a quantity of the historic or original fabric, the introduction of replacement fittings to most of the openings has not had a beneficial impact on the external expression or integrity of a house making a picturesque visual statement in a rural village setting.
CATEGORIES OF SPECIAL INTEREST	Architectural Social
RATING	Regional
REFERENCE	<a href="http://www.buildingsofireland.ie">www.buildingsofireland.ie</a>

RPS NO	n/a
NIAH NO.	15703312
TOWNLAND	Ballyheige
PARISH	Ballymore
BARONY	Screen
ITM	708233, 630232
CLASSIFICATION	House
DIST. FROM DEVELOPMENT	920m west
DESCRIPTION	Detached four-bay two-storey house. A house of modest size identified as an integral component of the late eighteenth- or nineteenth-century built heritage of Screen with the architectural value of the composition indicated by such traits as the compact rectilinear plan form, the somewhat disproportionate bias of solid





	to void in the massing compounded by the uniform or near-uniform proportions of the openings on each floor, and the high pitched roofline: meanwhile, later appendages illustrate an aspect of the continued development of the composition in the early twentieth century. Although having begun to deteriorate following a prolonged period of deliberate neglect, the elementary form and massing prevail together with substantial quantities of the early or historic fabric, both to the exterior and allegedly to the interior, thus upholding the character or integrity of the composition. Furthermore, an adjacent coach house (extant 1905) continues to contribute positively to the group and setting values of a neat self-contained ensemble making a pleasing visual statement in a rural village street scene.
CATEGORIES OF SPECIAL INTEREST	Architectural
RATING	Regional
REFERENCE	<a href="http://www.buildingsofireland.ie">www.buildingsofireland.ie</a>

RPS NO	WCC0827
NIAH NO.	15703313
TOWNLAND	Ballyheige
PARISH	Ballymore
BARONY	Screen
ITM	708233, 630189
CLASSIFICATION	House
DIST. FROM DEVELOPMENT	920m west
DESCRIPTION	Detached five-bay single-storey lobby, possible entrance to house. A house of modest size representing an intriguing component of the domestic built heritage of Screen with the underlying vernacular basis of the composition suggested by such traits as the alignment perpendicular to the street, the rectilinear lobby entry[?] plan form focused on an expressed, albeit later porch, the disproportionate bias of solid to void in the massing, and the high pitched roofline: meanwhile, a later appendage illustrates as aspect of the continued development of the composition in the later 19th century. Although having deteriorated somewhat following a prolonged period of inactivity or neglect, the elementary form and massing prevail together with substantial quantities of the original fabric, both to the exterior and supposedly to the interior, including some crown or cylinder glazing panels, thereby upholding much of the character or integrity of a house making a pleasing visual statement in a rural village setting.
CATEGORIES OF SPECIAL INTEREST	Architectural
RATING	Regional
REFERENCE	<a href="http://www.buildingsofireland.ie">www.buildingsofireland.ie</a>

RPS NO	n/a
NIAH NO.	15703316
TOWNLAND	Ballyheige
PARISH	Ballymore
BARONY	Screen
ITM	708237, 630124





CLASSIFICATION	House
DIST. FROM DEVELOPMENT	920m west
DESCRIPTION	A house of modest size identified as an integral component of the vernacular legacy of Screen by such attributes as the alignment perpendicular to the street, the compact rectilinear lobby entry plan form centred on a characteristic windbreak, the construction in unrefined local materials demonstrating a pronounced battered silhouette, the somewhat disproportionate bias of solid to void in the massing compounded by the diminishing in scale of the openings on each floor, and the high pitched roof profile.
CATEGORIES OF SPECIAL INTEREST	Architectural Social
RATING	Regional
REFERENCE	<a href="http://www.buildingsofireland.ie">www.buildingsofireland.ie</a>

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## APPENDIX 13.4 LEGISLATION PROTECTING THE ARCHAEOLOGICAL RESOURCE

### PROTECTION OF CULTURAL HERITAGE

The cultural heritage in Ireland is safeguarded through national and international policy designed to secure the protection of the cultural heritage resource to the fullest possible extent (Department of Arts, Heritage, Gaeltacht and the Islands 1999, 35). This is undertaken in accordance with the provisions of the *European Convention on the Protection of the Archaeological Heritage* (Valletta Convention), ratified by Ireland in 1997.

### THE ARCHAEOLOGICAL RESOURCE

The *National Monuments Act 1930 to 2004* and relevant provisions of the *National Cultural Institutions Act 1997* are the primary means of ensuring the satisfactory protection of archaeological remains, which includes all man-made structures of whatever form or date except buildings habitually used for ecclesiastical purposes. A National Monument is described as 'a monument or the remains of a monument the preservation of which is a matter of national importance by reason of the historical, architectural, traditional, artistic or archaeological interest attaching thereto' (National Monuments Act 1930 Section 2).

A number of mechanisms under the National Monuments Act are applied to secure the protection of archaeological monuments. These include the Register of Historic Monuments, the Record of Monuments and Places, and the placing of Preservation Orders and Temporary Preservation Orders on endangered sites.

### OWNERSHIP AND GUARDIANSHIP OF NATIONAL MONUMENTS

The Minister may acquire national monuments by agreement or by compulsory order. The state or local authority may assume guardianship of any national monument (other than dwellings). The owners of national monuments (other than dwellings) may also appoint the Minister or the local authority as guardian of that monument if the state or local authority agrees. Once the site is in ownership or guardianship of the state, it may not be interfered with without the written consent of the Minister.

### REGISTER OF HISTORIC MONUMENTS

Section 5 of the 1987 Act requires the Minister to establish and maintain a Register of Historic Monuments. Historic monuments and archaeological areas present on the register are afforded statutory protection under the 1987 Act. Any interference with sites recorded on the register is illegal without the permission of the Minister. Two months notice in writing is required prior to any work being undertaken on or in the vicinity of a registered monument. The register also includes sites under Preservation Orders and Temporary Preservation Orders. All registered monuments are included in the Record of Monuments and Places.

### PRESERVATION ORDERS AND TEMPORARY PRESERVATION ORDERS

Sites deemed to be in danger of injury or destruction can be allocated Preservation Orders under the 1930 Act. Preservation Orders make any interference with the site illegal. Temporary Preservation Orders can be attached under the 1954 Act. These perform the same function as a Preservation Order but have a time limit of six months, after which the situation must be reviewed. Work may only be undertaken on or in the vicinity of sites under Preservation Orders with the written consent, and at the discretion, of the Minister.

### RECORD OF MONUMENTS AND PLACES





Section 12(1) of the 1994 Act requires the Minister for Arts, Heritage, Gaeltacht and the Islands (now the Minister for the Environment, Heritage and Local Government) to establish and maintain a record of monuments and places where the Minister believes that such monuments exist. The record comprises a list of monuments and relevant places and a map/s showing each monument and relevant place in respect of each county in the state. All sites recorded on the Record of Monuments and Places receive statutory protection under the National Monuments Act 1994. All recorded monuments on the proposed development site are represented on the accompanying maps.

Section 12(3) of the 1994 Act provides that 'where the owner or occupier (other than the Minister for Arts, Heritage, Gaeltacht and the Islands) of a monument or place included in the Record, or any other person, proposes to carry out, or to cause or permit the carrying out of, any work at or in relation to such a monument or place, he or she shall give notice in writing to the Minister of Arts, Heritage, Gaeltacht and the Islands to carry out work and shall not, except in the case of urgent necessity and with the consent of the Minister, commence the work until two months after the giving of notice'.

Under the National Monuments (Amendment) Act 2004, anyone who demolishes or in any way interferes with a recorded site is liable to a fine not exceeding €3,000 or imprisonment for up to 6 months. On summary conviction and on conviction of indictment, a fine not exceeding €10,000 or imprisonment for up to 5 years is the penalty. In addition they are liable for costs for the repair of the damage caused.

In addition to this, under the *European Communities (Environmental Impact Assessment) Regulations 1989*, Environmental Impact Statements (EIS) are required for various classes and sizes of development project to assess the impact the proposed development will have on the existing environment, which includes the cultural, archaeological and built heritage resources. These document's recommendations are typically incorporated into the conditions under which the proposed development must proceed, and thus offer an additional layer of protection for monuments which have not been listed on the RMP.

#### **THE PLANNING AND DEVELOPMENT ACT 2000**

Under planning legislation, each local authority is obliged to draw up a Development Plan setting out their aims and policies with regard to the growth of the area over a five-year period. They cover a range of issues including archaeology and built heritage, setting out their policies and objectives with regard to the protection and enhancement of both. These policies can vary from county to county. The Planning and Development Act 2000 recognises that proper planning and sustainable development includes the protection of the archaeological heritage. Conditions relating to archaeology may be attached to individual planning permissions.

#### **WEXFORD COUNTY DEVELOPMENT PLAN 2013–2019**

**Objective AH01:** To conserve and protect archaeological sites, monuments (including their settings), underwater archaeology and objects within the jurisdiction of Wexford County Council including those listed on the Record of Monuments and Places, the Register of Historic Monuments or newly discovered sub-surface archaeological remains.

**Objective AH03:** To fully consider the protection of archaeological heritage when undertaking, approving or authorising development. In considering such protection the Council will have regard to the advice and recommendations of the National Monuments





Service and the principles set out in Framework and Principles for the Protection of the Archaeological Heritage (Department of Arts, Heritage, Gaeltacht and the Islands, 1999).

**Objective AH04:** To require an archaeological assessment for development that may, due to its size, location or nature, have a significant effect upon archaeological heritage and to take appropriate measures to safeguard this archaeological heritage. In all such cases the Planning Authority shall consult with the National Monuments Service in the Department of Arts, Heritage and the Gaeltacht.

**Objective AH05:** To promote a presumption in favour of preservation in-situ of archaeological remains and settings when dealing with proposals for development that would impact upon archaeological sites and/or features. Where preservation in-situ is not possible the Council will consider preservation by record in appropriate circumstances.

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## APPENDIX 13.5 IMPACT ASSESSMENT AND THE CULTURAL HERITAGE RESOURCE

### POTENTIAL IMPACTS ON ARCHAEOLOGICAL AND HISTORICAL REMAINS

Impacts are defined as ‘the degree of change in an environment resulting from a development’ (Environmental Protection Agency 2003: 31). They are described as profound, significant or slight impacts on archaeological remains. They may be negative, positive or neutral, direct, indirect or cumulative, temporary or permanent.

Impacts can be identified from detailed information about a project, the nature of the area affected and the range of archaeological and historical resources potentially affected. Development can affect the archaeological and historical resource of a given landscape in a number of ways.

- Permanent and temporary land-take, associated structures, landscape mounding, and their construction may result in damage to or loss of archaeological remains and deposits, or physical loss to the setting of historic monuments and to the physical coherence of the landscape.
- Archaeological sites can be affected adversely in a number of ways: disturbance by excavation, topsoil stripping and the passage of heavy machinery; disturbance by vehicles working in unsuitable conditions; or burial of sites, limiting accessibility for future archaeological investigation.
- Hydrological changes in groundwater or surface water levels can result from construction activities such as de-watering and spoil disposal, or longer-term changes in drainage patterns. These may desiccate archaeological remains and associated deposits.
- Visual impacts on the historic landscape sometimes arise from construction traffic and facilities, built earthworks and structures, landscape mounding and planting, noise, fences and associated works. These features can impinge directly on historic monuments and historic landscape elements as well as their visual amenity value.
- Landscape measures such as tree planting can damage sub-surface archaeological features, due to topsoil stripping and through the root action of trees and shrubs as they grow.
- Ground consolidation by construction activities or the weight of permanent embankments can cause damage to buried archaeological remains, especially in colluviums or peat deposits.
- Disruption due to construction also offers in general the potential for adversely affecting archaeological remains. This can include machinery, site offices, and service trenches.

*Although not widely appreciated, positive impacts can accrue from developments. These can include positive resource management policies, improved maintenance and access to archaeological monuments, and the increased level of knowledge of a site or historic landscape as a result of archaeological assessment and fieldwork.*

### PREDICTED IMPACTS

- The severity of a given level of land-take or visual intrusion varies with the type of monument, site or landscape features and its existing environment. Severity of impact can be judged taking the following into account –
- The proportion of the feature affected and how far physical characteristics fundamental to the understanding of the feature would be lost;





- Consideration of the type, date, survival/condition, fragility/vulnerability, rarity, potential and amenity value of the feature affected;
- Assessment of the levels of noise, visual and hydrological impacts, either in general or site specific terms, as may be provided by other specialists.

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## APPENDIX 13.6 MITIGATION MEASURES AND THE CULTURAL HERITAGE RESOURCE

### POTENTIAL MITIGATION STRATEGIES FOR CULTURAL HERITAGE REMAINS

Mitigation is defined as features of the design or other measures of the proposed development that can be adopted to avoid, prevent, reduce or offset negative effects.

The best opportunities for avoiding damage to archaeological remains or intrusion on their setting and amenity arise when the site options for the development are being considered. Damage to the archaeological resource immediately adjacent to developments may be prevented by the selection of appropriate construction methods. Reducing adverse effects can be achieved by good design, for example by screening historic buildings or upstanding archaeological monuments or by burying archaeological sites undisturbed rather than destroying them. Offsetting adverse effects is probably best illustrated by the full investigation and recording of archaeological sites that cannot be preserved *in situ*.

### DEFINITION OF MITIGATION STRATEGIES

#### ARCHAEOLOGICAL RESOURCE

The ideal mitigation for all archaeological sites is preservation *in situ*. This is not always a practical solution, however. Therefore a series of recommendations are offered to provide ameliorative measures where avoidance and preservation *in situ* are not possible.

*Full Archaeological Excavation* can be defined as 'a programme of controlled, intrusive fieldwork with defined research objectives which examines, records and interprets archaeological deposits, features and structures and, as appropriate, retrieves artefacts, ecofacts and other remains within a specified area or site on land, inter-tidal zone or underwater. The records made and objects gathered during fieldwork are studied and the results of that study published in detail appropriate to the project design' (IFA 2008).

*Archaeological Test Trenching* can be defined as 'a limited programme of intrusive fieldwork which determines the presence or absence of archaeological features, structures, deposits, artefacts or ecofacts within a specified area or site on land, inter-tidal zone or underwater. If such archaeological remains are present field evaluation defines their character, extent, quality and preservation, and enables an assessment of their worth in a local, regional, national or international context as appropriate' (IFA 2009).

*Archaeological Monitoring* can be defined as 'a formal programme of observation and investigation conducted during any operation carried out for non-archaeological reasons. This will be within a specified area or site on land, inter-tidal zone or underwater, where there is a possibility that archaeological deposits may be disturbed or destroyed. The programme will result in the preparation of a report and ordered archive (IFA 2008).

#### ARCHITECTURAL RESOURCE

The architectural resource is generally subject to a greater degree of change than archaeological sites, as structures may survive for many years but their usage may change continually. This can be reflected in the fabric of the building, with the addition and removal of doors, windows and extensions. Due to their often more visible presence within the landscape than archaeological sites, the removal of such structures can sometimes leave a discernable 'gap' with the cultural identity of a population. However, a number of mitigation measures are available to ensure a record is made of any structure that is deemed to be of special interest, which may be removed or altered as part of a proposed development.





*Conservation Assessment* consists of a detailed study of the history of a building and can include the surveying of elevations to define the exact condition of the structure. These assessments are carried out by Conservation Architects and would commonly be carried out in association with proposed alterations or renovations on a Recorded Structure.

*Building Survey* may involve making an accurate record of elevations (internal and external), internal floor plans and external sections. This is carried out using a EDM (Electronic Distance Measurer) and GPS technology to create scaled drawings that provide a full record of the appearance of a building at the time of the survey.

*Historic Building Assessment* is generally specific to one building, which may have historic significance, but is not a Protected Structure or listed within the NIAH. A full historical background for the structure is researched and the site is visited to assess the standing remains and make a record of any architectural features of special interest. These assessments can also be carried out in conjunction with a building survey.

*Written and Photographic* record provides a basic record of features such as stone walls, which may have a small amount of cultural heritage importance and are recorded for prosperity. Dimensions of the feature are recorded with a written description and photographs as well as some cartographic reference, which may help to date a feature.

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#1 IAC Field No.

**IAC** Irish Archaeological  
Consultancy

<b>Title</b>	Plan of existing and proposed development (Ground Floor)	<b>Scale</b>	N.T.S.	<b>Drawn by</b>	MT
<b>Project</b>	Ballinroaun Quarry, Co. Wexford	<b>Date</b>	7.01.16	<b>Checked by</b>	FB
<b>Client</b>	MSK Silversands	<b>Job no.</b>	J2979	<b>Fig.</b>	13.1
				<b>Rev.</b>	2





- WX033-008001-4
- 1- Church
- 2- Graveyard \*
- 3- Font
- 4- Holy Well



WCC0826/ 15703311  
Thatch Cottage

15703312-13, 16  
Houses

15703315  
Graveyard

WCC1178/ 15703317  
St. Cyprian's Church

15703318  
Parochial House



Recorded Monument  
& Place

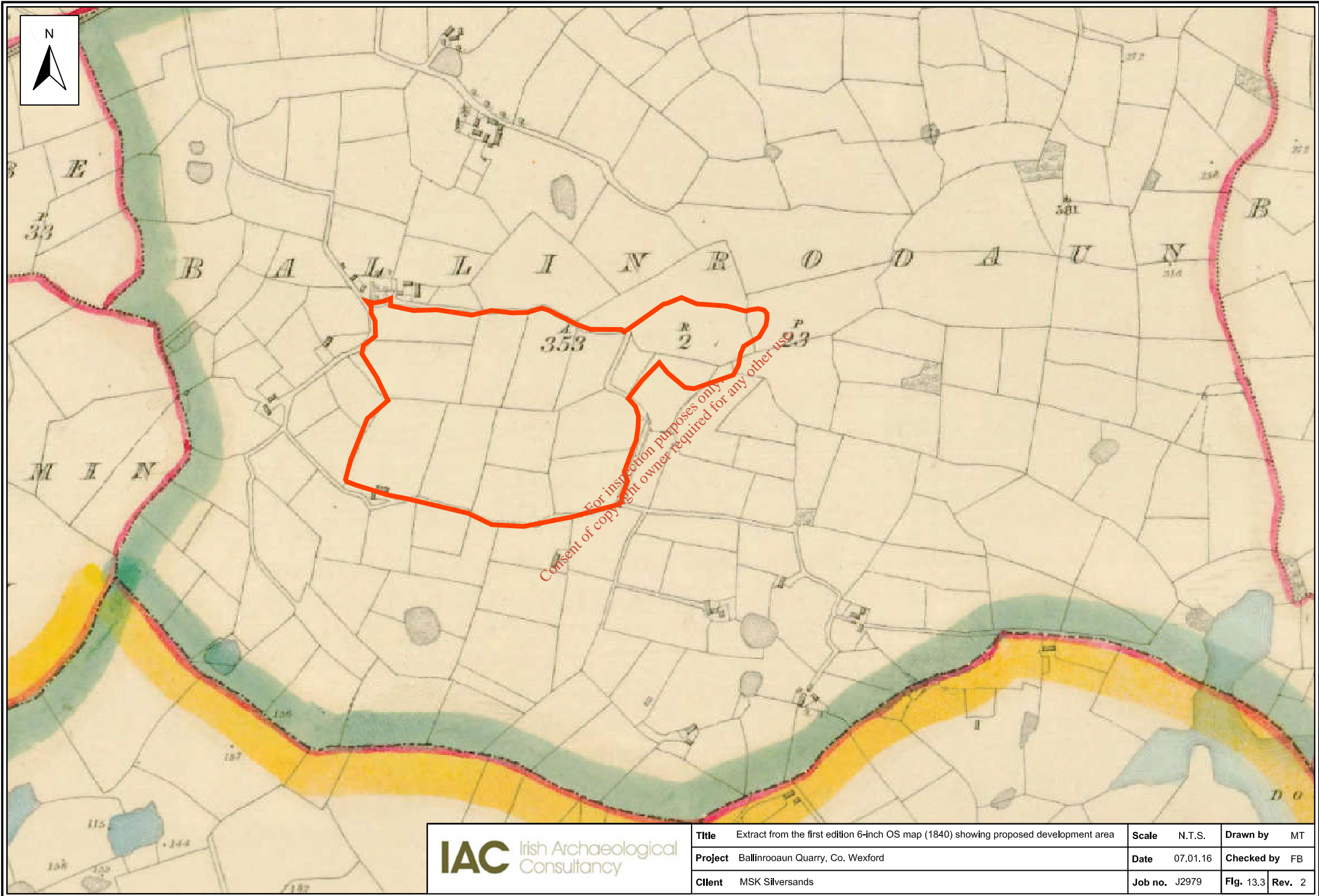
Built Heritage

**IAC** Irish Archaeological  
Consultancy

<b>Title</b>	Extract from RMP map showing proposed development area and cultural heritage sites	<b>Scale</b>	N.T.S.	<b>Drawn by</b>	MT
<b>Project</b>	Ballinroaun Quarry, Co. Wexford	<b>Date</b>	07.01.16	<b>Checked by</b>	FB
<b>Client</b>	MSK Silversands	<b>Job no.</b>	J2979	<b>Fig.</b>	13.2
				<b>Rev.</b>	2

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**IAC** Irish Archaeological Consultancy

<b>Title</b>	Extract from the first edition 6-inch OS map (1840) showing proposed development area	<b>Scale</b>	N.T.S.	<b>Drawn by</b>	MT
<b>Project</b>	Ballinroaun Quarry, Co. Wexford	<b>Date</b>	07.01.16	<b>Checked by</b>	FB
<b>Client</b>	MSK Silversands	<b>Job no.</b>	J2979	<b>Fig.</b>	13.3
				<b>Rev.</b>	2









## 14.0 WASTE MANAGEMENT

### 14.1 Introduction

Both the construction and operational phases of the proposed development have the potential to result in the generation of small quantities of waste. This section of the Environmental Impact Assessment Report assesses the impact the proposed development is likely to have on waste management for the site and the area.

An assessment is made of the likely impact of the waste produced and mitigating measures in terms of appropriate waste management are put forward to minimise the levels of waste generated in the first place and also to reduce the impact of the waste generated by the proposed development.

### 14.2 The Receiving Environment

#### 14.2.1 Introduction

The proposed development is located within the townland of Ballinrooan, Screen, Co. Wexford. The site is bound by agricultural fields and is accessed via a private haul route from the L-7003-1 County road. The site comprises an existing sand and gravel quarry and agricultural fields. The existing quarry has a permitted output rate of 125,000 tonnes per annum.

The proposed development seeks to extend the existing quarry onto the adjoining lands to the west and the proposed output rate of the extended area is 100,000 tonnes per annum. It is also proposed to restore the existing landform through the importation of inert soils at the site. All works will be carried out above the existing water table. These proposals are detailed in Chapter 3 *Description of the Proposed Development*.

#### 14.2.2 Relevant Legislation

##### ***National Waste Policy***

The Department of the Environment, Community and Local Government (DoECLG) has primary responsibility for waste policy and legislation at national level in Ireland. A significant proportion of national policy is governed by European Union (EU) initiatives. Such initiatives are usually enacted through European Directives which are then transposed into Irish law through our own legislation.

National waste management policy in Ireland is contained in the following DoECLG policy statements;

- "Waste Management Changing our Ways" – published in 1998,
- "Preventing and Recycling Waste: Delivering Change" published in 2002
- "Taking Stock and Moving Forward" published in 2004.
- "A Resource Opportunity-Waste Management Policy in Ireland" – published in 2012

These statements are grounded on the EU concept of a waste management hierarchy. The





European Union's waste management hierarchy is a series of waste management options, presented in decreasing order of environmental and economic desirability. The hierarchy states that the preferred option is prevention and minimisation, followed by re-use, recycling, energy recovery, with the least desirable option being landfill. The overall intent of these policy statements is to move Irish waste management away from disposal and towards the more favoured options higher up the hierarchy.

The most recent waste policy document 'A Resource Opportunity-Waste Management Policy in Ireland' was published in July 2012. It highlights the measures through which Ireland will make the further progress necessary to become a recycling society, with a clear focus on resource efficiency and the virtual elimination of the landfilling of municipal waste. This policy document encompasses measures covering the full spectrum of waste management planning, compliance and enforcement and charts a path towards a more modern, innovative and sustainable approach to the management of our waste. The policy document outlines three main guiding principles:

- Prevention and minimisation must be placed as the forefront of waste policy through ensuring better design, smarter 'green' purchasing and through an improved awareness of locally produced goods which improve employment and the local economy;
- Where waste is generated, the maximum value must be extracted from it ensuring that it is reused, recycled or recovered;
- Disposal of municipal waste to landfill must be a last resort, in line with the 2011 EU Roadmap to a Resource Efficient Europe.

The Waste Management Act 1996 and the European Communities (waste Directive) Regulations 2011 are the main vehicle by which Ireland's waste policy framework is enacted, through the provisions on waste collection, waste planning and via the detailed regulatory package. This Act was amended in 2001 by the Waste Management (Amendment) Act 2001 which contained new provisions to set up levies on landfill and plastic bags, as well as providing for a streamlined adoption process for waste management plans. The Environment (Miscellaneous Provisions) Act 2011 provides for a number of further revisions to the Waste Management Act 1996 and in particular, provides greater flexibility in the setting of the levy on plastic bags and the landfill levy. The changes to the landfill levy are driven by the challenging targets set for Ireland in the EU Landfill Directive (1999/31/EC) with regard to the diversion of biodegradable municipal waste from landfill. Significant increases in the maximum landfill levy and in the annual maximum amount by which it can be increased are warranted in order to maintain the dissuasive impact of the levy and to drive recycling and diversion from landfill.

The Waste Management Act divides the responsibility for the regulation of waste in Ireland between the Environmental Protection Agency (EPA) and the Local Authorities, who also have the main responsibility for the collection and disposal of household waste, as well as currently providing much of the landfill facilities.

### ***Southern Region Waste Management Plan 2015-2021***

The Southern Region serves a population of 1,541,439 persons and includes 6 administrative areas including Wexford County Council. The Region has had substantial progress during the lifetime of previous plans but challenges remain. The purpose of this regional plan is to set out a framework for the prevention and management of wastes for the defined area. With





regard to quarrying and mining the Plan outlines that wastes from these sources increased from 2,610 tonnes to 5,138 tonnes from 2010-2012

### ***Wexford County Council Waste Policies***

The Applicant operates an existing quarry at the site in Ballinrooaun which is within the jurisdiction of Wexford County Council (WCC). The WCC Development Plan 2013-2019 outlines that waste management is a fundamental infrastructural requirement essential for sustainable development and the protection of public health and the environment. WCC reference the *Joint Waste Management Plan for the South-East Region 2006-2011* which aims to reduce the overall levels of waste in order to comply with European and national legislation.

### ***Voluntary Construction Industry Initiative to Prevent, Minimise and Recycle C&D Waste (2002).***

Following extensive work between the Department of Environment, Heritage and Local Government and the National Construction and Demolition Waste Council (NCDWC), a Voluntary Industry Initiative was launched in 2002 which requires C & D Waste Management Plans to be drawn up at the planning stage for significant developments and subsequently implemented during construction. Construction industries must employ best practice at the design, planning and construction stages to ensure waste prevention and recycling opportunities are identified and implemented. These guidelines specify the size and type of developments that are required to have a Waste Management Plan (WMP) prepared and for significant developments that do not come under the guidelines the relevant Local Authority may request that a WMP be prepared for the development. It is now considered best practice where significant volumes of C&D waste are being handled that a WMP is prepared and followed for the duration of the development works.

Draft thresholds for the application of a Waste Management Plan proposed are as follows:

- New residential development of 10 houses or more.
- New developments, other than above, with an aggregate floor-area in excess of 1,250m<sup>2</sup>.
- Demolition projects generating in excess of 500 tonnes of C&D waste.
- Civil Engineering projects producing in excess of 500m<sup>3</sup> of waste (equivalent to 1,000 tonnes), excluding waste materials used for development works on the site.

### **14.2.3 Waste Management Data for Ireland**

The most recent waste management data available for Ireland is presented in the *National Waste Report (2012)* which was published by the EPA in August 2014 and states that Ireland achieved all its EU obligations across a broad range of waste legislation in relation to recycling, recovery and diversion targets. Municipal waste generation continues to decrease from a peak in 2007, with municipal waste generation 21% lower in 2012. 2012 was the first year that the percentage of municipal waste recovered (59%) exceeded the percentage disposed (41%).





#### 14.2.4 Waste Management at the Existing Site

Waste at the existing quarry site is considered to be an important material asset. When examining waste in relation to this site, it is necessary to consider both waste presently generated at the site, and future wastes generation. In examining the issue of waste at the site, the following areas were considered:

1. Waste prevention
2. Waste minimisation
3. Waste recycling
4. Waste disposal

The overburden (consisting of the topsoil and subsoil up to a depth of 3 - 3.3m and extracted materials not transported off site) are used as materials for restoration of the quarry void. These materials are stockpiled at appropriate locations on site and are used in reinstatement works when required.

The operator does not consider the stockpiled topsoil, and subsoil materials as 'waste', as the topsoil and subsoil constitute a valuable material when considering the reinstatement of the site following the cessation of works at the site. The topsoil and subsoil are crucial materials for restoring the site successfully. It is essential that these materials are carefully stored and handled, in order to retain the productivity of the soil.

No maintenance of site vehicles is undertaken onsite and this reduces the risk of waste generation and potential pollutants significantly. There are no staff facilities on site and when required staff avail of facilities off site at the Applicants premises (opposite the entrance to the haul road accessing the site). The existing protocols used at the existing permitted site (as detailed in the Environmental Management System Plan and Waste Management Plan prepared by Environmental Efficiency Consulting Engineers and submitted to Wexford County Council on 16<sup>th</sup> September 2009) will also be enforced within the extended quarry area.

### 14.3 Characteristics of the Proposed Development

#### 14.3.1 Introduction

The proposed development seeks the extension of the existing sand and gravel quarry into the adjoining lands to the west and the progressive restoration of the extracted area which includes the importation of inert soils.

This proposal is designed to improve both the viability and sustainability of the quarry operation through the continued use of locally available raw materials. There will be no change to the operation of the existing quarry process as a result of this proposal and extraction rates will remain at current permitted levels.

#### 14.3.2 Construction Phase

There is very little construction associated with the development as the proposal in the main is the extension of existing quarrying activities and extension onto adjoining lands. The extracted material taken from the ground which is not transported off site in the form of



sand/gravel will remain and be stockpiled for restoration works or used to create screens or berms.

#### 14.3.3 Extraction Phase

The existing quarry will be continued within the current quarry footprint to extract the remaining reserves and then will be extended to the west. All materials produced will be used as restoration materials for the quarry void or product transported from the site. Raw material extraction rates will remain at current levels and consequently there are no changes predicted to the current levels of waste arising from the process. The existing and proposed quarry works are located above the groundwater table and therefore there will be no additional water generation at the site.

#### 14.3.4 Restoration Phase

As part of the operation of the extended quarry it is intended to restore the extracted sand and gravel quarry void which includes the importation of inert soil. Inert soil is most likely to be sourced from greenfield development sites. No peat, topsoil, contaminated soils or non-hazardous waste will be accepted.

Restoration will be carried out progressively as the quarry void becomes available for filling. Filling will commence at the quarry floor and will proceed upwards in suitable benches until the imported inert fill surface level is within about 3.3m of the original ground surface. Once the filling has reached this level, the sandy subsoil stored on site will be placed over the inert fill to form a 3m thick capping layer. The topsoil, also stored on site, will then be placed over the sandy-soil to a thickness of about 0.3m. It is proposed that restoration will result in the restored landform as currently exists on site and this will then return to agricultural use.

For the importation of inert soils for restoration on the site it will be requirement to obtain a Waste Licence from the Environmental Protection Agency. Detail on the importation of soils and how they will be handled on site are illustrated in Chapter 7.4.4 of the EIAR.

### 14.4 The Predicted Impact of the Proposed Development

#### 14.4.1 Construction Phase

There is no construction required for the proposed quarry extension as it is merely an extension of existing quarrying activities and consequently there will no associated waste management impacts. Similarly, any waste generated during the private road realignment will be managed through the existing waste management facilities.

#### 14.4.2 Operational Phase

The proposed quarry extension will not result in any changes from the current position with regard to waste management at the facility. The waste management system currently in place at the facility will continue to accommodate any residual waste that may arise as a result of the proposed works and it will also continue to address any wastes generated in the production process at the site.

There is a reduced rate of extraction proposed and therefore there will be less than the





current levels of waste arising. The waste arising from the proposed development when fully operational will not have an adverse impact on the environment.

## 14.5 Remedial and Mitigation Measures

### 14.5.1 Construction Phase

There are no construction activities required for the proposed development that will result in the generation of significant quantities of waste, and consequently there are no mitigation measures proposed.

However, appropriate security and signage should be erected around the entrance to and along the boundaries of the area in order to deter and prevent illegal fly-tipping of waste materials by third parties and any illegal dumping of any nature on the site.

### 14.5.2 Operational Phase

As discussed above there will be overburden generated as a result of the proposed development which will be reused on site in the restoration period. However, there is no increase in overall waste generation levels at the quarry.

It is recommended that all waste arisings be handled according to the existing waste management procedures at the facility. These procedures outline the methodologies for the handling, segregation, storage and disposal of all wastes that will arise during the proposed development. The procedures should as a minimum ensure that activities at the proposed site are carried out in such a manner so that

- 1 Minimal waste will be generated
- 2 Maximum recycling/reuse of waste will be ensured
- 3 All waste will be handled and contained in a safe manner
- 4 All disposal of waste will be carried out by a licensed contractor and will present no risk to the environment.

It is recommended that the following classes of materials continue to be segregated into individual storage containers at the site;

- 1 Waste oils / greases / paints (to be contained within an impermeable structure)
- 2 Wood
- 3 Plastics
- 4 Glass
- 5 Cardboard / Paper
- 6 Domestic refuse
- 7 Metal
- 8 Contaminated soil (generated by oil spills etc)
- 9 Waste aggregate materials segregated into different size categories

It is recommended that all segregated wastes should be reused on site where possible or be sent for reuse or recycling by a suitable contractor. It is recommended that waste contractors for the site are employed to ensure that waste materials which cannot be reused or recycled at the site are collected and correctly recovered or disposed of to a waste



licensed facility.

#### 14.6 Conclusions

Due to the nature and minor quantities of the waste generated and the use of the company's existing waste management procedures, there will be no adverse or unacceptable impact on the receiving environment as a result of either the construction phase or the operational phase of the proposed development.

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## 15.0 INTER-RELATIONSHIP BETWEEN FACTORS

### 15.1 Introduction

This section of the Environmental Impact Assessment Report has been prepared by Tom Phillips + Associates and deals with likely interactions between effects predicted as a result of the proposed development.

As a requirement of the *Planning and Development Regulations 2001-2017*, not only are the impacts on the individual elements of the environment considered, but so too are the interactions between those elements. The interactions between human beings, flora and fauna, soil and geology, hydrogeology, air and climatic factors, noise and vibration, landscape, material assets, archaeological and cultural heritage have been assessed below.

Those interactions have been considered in detail in the relevant Chapters preceding. This Chapter outlines the areas both where interactions occur, and where they are considered to be of a scale, which may be potentially significant.

### 15.2 Inter-Relationships

The inter-relationships between factors arising from the proposed development are set out in the matrix provided as Table 15.1 below.

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	Human Beings	Flora & Fauna	Soils & Geology	Water	Air/ Climate	Noise	Landscape	Traffic	Cultural Heritage
Human Beings				✓	✓	✓	✓	✓	
Flora & Fauna				✓			✓		
Soils & Geology				✓			✓		✓
Water									
Air/ Climate								✓	
Noise								✓	
Landscape									✓
Traffic									
Cultural Heritage									



### 15.2.1 Inter-Relationship between Human Beings and Water

The interaction between human beings and water has been discussed in Chapter 5 and 8. The proposed extension of the quarry will not result in any new potential surface water quality impacts relative to those for the existing permitted quarry. There are no significant changes in the hydrogeology of the area and the water table across the site is at c. 29-38m OD. The quarrying activity is proposed at a maximum of 38m OD (c. 5m above the groundwater table at lowest point) which will ensure there is no impact on the water table.

### 15.2.2 Inter-Relationship between Human Beings and Air/ Climate

The interaction between human beings and air has been discussed in Chapter 5. There will be no change in the substances present in the emissions from the quarry operation. The main emissions to the atmosphere will be dust and, to a far lesser extent, fuel emissions from the plant and machinery operating in the quarry. Furthermore, there will be no change to the traffic movements as a result of the proposed development.

The mitigation measures that are currently employed at the existing facility, and as set out in Chapter 9 of this EIAR, will continue to be used in order to control emissions. In this regard, wet suppression techniques and screening berms will minimise dust emissions.

In summary, there will be no adverse impacts on ambient air quality in the vicinity of the facility, on local residences or on the local environment as a result of emissions from either the existing or the proposed activities at the site.

### 15.2.3 Inter-Relationship between Human Beings and Noise

The interaction between human beings and noise has been discussed in Chapter 5. There is no blasting or vibration associated with the extraction or restoration process at the subject site. There is no adverse noise impacts predicated at noise sensitive receptors in the vicinity of the site as a result of the proposed development.

Given the setback distances from the proposed quarry to local dwelling houses, noise from the quarry will not impact adversely on surrounding residential amenity. Nonetheless, details of mitigation measures are outlined in Chapter 10 of this EIAR.

### 15.2.4 Inter-Relationship between Human Beings and Landscape

The interaction between human beings and landscape has been discussed in Chapter 5 based on the Landscape Assessment in Chapter 11 of this EIAR. The assessment suggests that the topography in the area, coupled with the screening effect of existing trees, hedgerows and screen bunds, would limit significant adverse visual impacts to the close environs of the site. The existing landform is also to be reinstated on s





The proposed planting, earth grading and restoration proposals which will reinstate the existing landform will go a significant way towards reducing any adverse visual effects resulting as they mature, thus assisting in the visual integration and screening of the quarry and working areas. In the longer term, this will result in positive effects on landscape character and visual amenity.

#### 15.2.5 Inter-Relationship between Human Beings and Traffic

The inter-relationship between human beings and traffic is set out in Chapter 5 and Chapter 12. The proposed extension of the quarry will not lead to an intensification of operations on the subject site and there will be a reduction in traffic associated with the delivery or export of raw materials, or in employee-generated traffic to the site. The maximum output rate is proposed to be reduced to 100,000 tonnes per annum (from that permitted) and therefore the maximum trip rate will slightly reduce from that permitted (see Chapter 12 Traffic & Transportation).

The haulage routes as previously identified under the permitted application for the existing quarry and detailed in Chapter 12 will be maintained for the proposed development which will ensure there is no additional impact on the local road network.

#### 15.2.6 Inter-Relationship between Flora and Fauna and Water

A comprehensive Assessment of Ecology and Water is provided in Chapters 6 and 8 of this EIAR, respectively. (Potential impacts on nearby *Natura 2000* sites is also assessed in a separate *Appropriate Assessment Screening Report*.)

Given there will be no extraction within 5m of the groundwater table there are no significant impacts predicted as a result of the proposed development on hydrology and hydrogeology or on the water balance of the ground water body and is not expected to impact on flora or fauna or the Screen Hills SAC. The restoration proposals to import inert soils onto site will not adversely impact on this relationship.

#### 15.2.7 Inter-Relationship between Flora and Fauna and Landscape

The inter-relationship between flora and fauna and landscape include the construction of a screening berm, construction of hedgerows during extraction phase and restoration works. The impact on these habitats and species therein is expected to be minimal. The planting of native hedgerows in these areas will provide a measure of habitat enhancement on site and no invasive or non-indigenous species will be used.

The site will be restored to replicate the existing landform on a staged basis as a kame and kettle landscape with associated hedgerows demarcating fields within the site. The proposed landscaping, including screening berms and planting together with the proposed restoration plan ensure that there will be no significant impacts as a result of this interaction.



### 15.2.8 Inter-Relationship between Soils and Geology and Water

The interaction between Soils and Geology and Water is detailed in Chapters 6 and 7. There is no extraction proposed below the groundwater table under the proposed development. The extraction of materials or import of inert soil for restoration will not result in any change in the recharge pattern of the sand and gravel aquifer.

### 15.2.9 Inter-Relationship between Soils and Geology and Landscape

In summary, the extension of the existing permitted quarry works will remove any remaining soil overburden at the site. The proposed extension onto the adjoining lands to the west will remove the topsoil on a phased basis which will be stored in a screening berm to the south of the site and within the base of the existing quarry. The overburden and top soil restoration material will be stored and managed in such a way as to avoid any potential negative impact on the receiving environment. The infill inert soil will be placed directly into the extraction area and not stored on site.

The proposed use of soils for operational landscaping and for restoration works has a positive impact on landscaping and does not have a significant impact on soils and geology.

### 15.2.10 Inter-Relationship between Soils and Geology and Cultural Heritage

The interaction between soils and cultural heritage is discussed in Chapter 13. The topsoil will be removed which is required to quarry the sand and gravel and will be stored at identified locations throughout the quarry. In order to mitigate against such impacts, it is recommended that all ground disturbances, such as topsoil stripping, that are associated with the proposed development, be monitored by a suitably qualified archaeologist.

### 15.2.11 Inter-Relationship between Air and Traffic

The interaction between air and traffic is outlined in Chapter 9. In summary, the proposed development will slightly reduce the current levels of traffic accessing / exiting the site and therefore there is no increase in the current levels both from a traffic and air quality perspective. Frequent watering of the access roads, as is already standard practice, and the existing wheel wash along the haul road will continue to effectively mitigate against windblown dust particles.

### 15.2.12 Inter-Relationship between Noise and Traffic

The proposed development will not give rise to an intensification of operations on the site, thereby meaning that there will be no increase in traffic accessing or exiting the site. Consequently, there will be no change in traffic noise associated with the site.





### 15.2.13 Inter-Relationship between Landscape and Cultural Heritage

The inter-relationship between landscape and cultural heritage is detailed in Chapter 13. In summary, the stripping of topsoil and overburden required for the proposed quarry will alter the landscape and could potentially impact on sub surface archaeological features that have the potential to survive under ground level. A relatively small area of topsoil is stripped during each phase and it is recommended that this be monitored by a suitable qualified archaeologist.

### 15.4 'Do Nothing' Scenario

If the proposed development does not proceed, there will be no cumulative impacts arising.

### 15.5 Mitigation And Monitoring Measures

It is not proposed that any mitigation or monitoring will be undertaken specifically for cumulative impacts.

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## 16.0 DIFFICULTIES ENCOUNTERED IN COMPILING ANY SPECIFIED INFORMATION

In general, no significant difficulties, in terms of technical deficiencies or lack of sources of information, were encountered in compiling the specified information contained in the EIAR.

The proposed development site relates to an extension of an existing quarry in Ballinrooaun and adjoining lands. The assessment provided for the proposed development has had regard to the documentation compiled and submitted as part of previous applications at the site and the Planning Authority/An Bord Pleanála Reports which formed part of the analysis for that application. The previous applications at the subject site are WCC Reg. Ref. 20082323 and WCC Reg. Ref. 20160261; ABP Ref. PL26.246680.

References to published sources of information are acknowledged in the text. A list of all consultants involved in the compilation of information for this Assessment Report is provided in Chapter 1.

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