

## **10.7 MONITORING**

### **10.7.1 Construction Phase**

Measures will be taken in order to prevent contamination of groundwater

- Removal of topsoil
- Provision of bunded areas
- Routine checks

### **10.7.2 Operational phase**

The following monitoring will be undertaken during the lifetime of the facility:

- pH, conductivity and other water quality measurements in the site well on an annual basis

## 11 CLIMATE

### 11.1 INTRODUCTION

Climate can refer to both the long-term weather patterns in an area and also to the more localised atmospheric conditions, referred to as the microclimate. Climate has implications for many aspects of the environment from soils to biodiversity and landuse practices. In a global sense facilities such as Pat Kenny's poultry growing operations, the potential for increases in air pollutants, which may contribute to climate change. This impact assessment only deals with the proposed expansion to the poultry operation.

This section deals with the existing climate in the area and how the proposed scheme may impact on the microclimate.

### 11.2 METHODOLOGY

The climate of the Co, Limerick Region is characterised by the frequent passage of Atlantic low pressure weather systems and associated frontal rain belts from the west during much of the winter period. Over the summer months the influence of anticyclonic weather conditions will result in drier continental air, in particular when winds are from an easterly direction, interspersed by the continuing passage of Atlantic frontal systems. Occasionally, the establishment of a high pressure area over SW Ireland will result in calm, dry conditions and in the winter these periods are characterised by the formation of low-level temperature inversions at night-time. Fog can occur in low-lying areas in the Region under these conditions of slack winds and clear skies. Prolonged dry weather conditions are relatively infrequent but should easterly continental airflows extend over the West of Ireland, drought conditions may result in the region which may last for up to 2 or 3 weeks.

The nearest Met Eireann meteorological station is at Shannon Airport and long-term measurements of wind speed/direction and air temperature for this location would be representative of prevailing conditions experienced in the vicinity of Pat Kenny's poultry growing operation.

### 11.3 DESCRIPTION OF EXISTING ENVIRONMENT

Meteorological data from the Met Eireann station in Shannon Airport during the baseline survey has been compiled. The 2010 average monthly data has been compared to the 30-year averages for each month from Shannon Airport to determine the degree of representation of the actual meteorological conditions versus what is experienced on average at the site. This comparison is presented in **Table 11.1**.

A comparison of temperatures indicates that for each month of 2010, temperatures were on average lower than the corresponding 30-year averages by a factor of 0.7°C. For total rainfall values, the January 2004 total rainfall was below the 30-year average.

Table 11.1: 2010 and 30-year average meteorological conditions from Shannon Airport

	Total Monthly Rainfall (mm)	Average Temperature (°C)	Average Wind Speed (knots)
Year	2010	mean	2010
Jan	30.8	97.8	2.4
Feb	35.1	71.5	3.3
Mar	80.4	71.4	6.4
Apr	71.4	55.7	9.8
May	56.8	59.5	11.7
Jun	33.4	62.8	15.8
Jul	123.1	56.8	16
Aug	39.1	82.4	15
Sep	138.9	81.6	14.5
Oct	76.8	93.4	10.8
Nov	133.3	94.8	5.7
Dec	26	99	0.7
Annual	845.1	926.7	9.4
			10.1
			6.3
			1.4
			5.8
			10.8

## 11.4 IMPACTS

### 11.4.1 Do Nothing Impact

If the proposed extension does not go ahead, the capacity of the poultry growing operation remains the same. Should this happen, emissions from the poultry house including all aspects of the operation would remain the same.

### Do Something Impacts

If the proposed extension does go ahead there are no direct impacts predicted on microclimate as a result of the proposed extension. The extension will increase the capacity of the operation.

## SECTION C – MATERIAL ASSETS

This section of the Environmental Impact Statement deals with material assets that will potentially be affected by the proposed poultry growing operation expansion. These assets are grouped into:

Material Assets:    **Agricultural Properties** including all agricultural enterprises

Material Assets:    **Non-agricultural Properties** including residential, commercial, recreational and non-agricultural land

Material Assets:    **Natural or other resources** including mineral resources, land and energy

Material Assets are generally considered to be the physical resources in the environment which may be either of human or natural origin. The object of the assessment of these resources is to identify the impact of the development on material assets and to ensure that natural resources are used in a sustainable manner in order to ensure availability for future generations.

Agricultural enterprises interact, to a large extent, with the natural environment in terms of climate, air quality, soil, hydrology and hydrogeology. Some domestic animals, such as horses and milking cows, may be impacted by traffic-generated noise.

Resources required for the proposed development includes existing land, fill material which will have to be sourced from quarries, and electricity required for the purpose of powering the water, feeding, lighting and heating systems water.

## **12 MATERIAL ASSETS - AGRICULTURE**

### **12.1 INTRODUCTION**

The potential agricultural impact from the proposed expansion of the poultry growing operation was assessed. The location for the proposed extension is currently a Greenfield site and is completely within Pat Kenny owned lands. The proposed extension will occupy an area of approximately 0.8 hectares of which are entirely agricultural lands bounded by hedgerows.

No additional holdings will be directly impacted through loss of land by the proposed scheme as all lands proposed for the extension are within the ownership of Pat Kenny.

### **12.2 METHODOLOGY**

A desktop survey and a field survey were carried out to assess the potential impact on agriculture in the area. The first was a walkover of the site, which was conducted in December 2011. This walkover observed a number of factors including;

- The current agricultural practice taking place on the lands,
- The quality and drainage of the soils, and
- Level of management currently practiced.

The second method was a desk top survey that included statistical information from the CSO (Central Statistic Office) and mapping data both from the 50,000 Discovery Series, 2,500 Ordnance Survey mapping and Corrine landuse mapping.

### **12.3 DESCRIPTION OF EXISTING ENVIRONMENT**

#### **12.3.1 Limerick**

There are approximately 269,133 hectares of agricultural land in Limerick of which 228,074 hectares or 84% is pasture. According to the Census of Agriculture (2000) the average farm size for Limerick is approximately 23.6 hectares, approximately 1.2 hectares bigger than the national average. There are 6,194 farms in Limerick and 37% of them are involved in specialist dairying and 52% of them involved in specialist beef farming.

#### **12.3.2 Coolanoran**

The site for the proposed development is situated South West of Newcastle West. The lands are relatively flat and all are under grass. The site is predominated by improved agricultural grassland. The soils are poorly draining in the area, which is evident by the presence of rushes.

The lands relating to the proposed extension are owned by the developer and are currently used for silage cutting twice per year. The lands are well managed with good grass swards in evidence.

## **12.4 IMPACTS**

### **12.4.1 Do-nothing**

Should the proposed extension not be built, the practice of cutting silage will continue twice per year on the site.

### **12.4.2 Do-something**

A potential impacted on agriculture in the area are land loss as a result of the footprint of the development is the loss of land.

**Land loss:** Should the proposed development receive planning permission there will be loss of lands to facilitate the extension. The lands proposed for the extension are wholly within the ownership of Pat Kenny. However, Pat Kenny currently cuts silage on the land.

## **12.5 MITIGATION MEASURES**

No mitigation required as the land is of low ecological value

## **12.6 CONSTRUCTION IMPACTS AND MITIGATION**

### **12.6.1 Construction Impacts**

There are a number of specific issues that may impact on agriculture during the construction phase of the proposed development. These include:-

**Noise:** Increased noise from construction machinery has the potential to be an issue with certain sensitive livestock such as dairy cows and horses.

**Traffic:** There will be an increase in traffic during the construction phase of the proposed development.

**Dust:** The generation of dust during construction has a nuisance value and livestock are at risk to eye irritations from high levels of wind blown dust particles.

### **12.6.2 Mitigation**

**Noise:** No mitigation is required, if a complaint an investigation will be commenced

**Traffic:** Discussions will take place with local landowners to ensure that construction traffic causes minimum interference with movements of stock and does not hinder farm operations such as silage/hay making.

**Dust:** Mitigation measures for construction dust are outlined in section 5.6.2. These measures will be followed.

## **12.7 RESIDUAL IMPACTS**

No residual impacts on Agriculture are predicted.

## **13 MATERIAL ASSETS – NATURAL AND OTHER RESOURCES**

### **13.1 INTRODUCTION**

This section of the Environmental Impact Statement considers the existence of and the impact on natural and other resources in the vicinity of the proposed expansion to the poultry operation. It also considers any impact on natural resources due to increased capacity.

### **13.2 DESCRIPTION OF EXISTING RESOURCES**

#### **13.2.1 Landuse and Soil**

The proposed additional poultry houses will occupy an area of approximately 0.8 hectares, which is currently a Greenfield site.

The soil types occurring within the footprint of the proposed extension are mostly made up of glacial till. A detailed description of the existing soil environment is provided in **Chapter 10 Soils, Geology and Hydrogeology**.

It is estimated that approximately 400m<sup>3</sup> of topsoil will be removed from the footprint of the proposed poultry house. This material will either be placed immediately and removed off site or stockpiled appropriately for later use.

#### **13.2.2 Transport Network**

The transportation of all the bulk of raw materials transported to the poultry growing operation is brought in by road. The site is close to the National Primary route the N21. The Local road access to the site is in good poor to reasonable condition.

#### **13.2.3 Utilities**

The area in the immediate vicinity of the poultry operation is rural in nature, with much of the land in agricultural use. However, a network of utilities associated with house and commercial operations present including the following:

- Fuel supplies,
- Plumbing supplies
- Other Poultry growing operations

#### **13.2.4 ESB**

The site has good electrical network with 38kV and 10Kv lines in the area

### **13.3 IMPACTS AND MITIGATION**

Overall, the proposed expansion of the poultry operation will have a minor negative impact on natural and other resources. Any disruption to services and existing transport networks will be of a temporary nature during the construction phase of the development.

### **13.3.1 Land and Soil**

In total the expansion to the poultry operation will occupy approximately 0.8 hectares of land for the main footprint, all of which are completely within Pat Kenny owned lands. As such, it is considered that there will be no significant impact on land or soils. Impacts on the agricultural use of land are discussed in **Chapter 12 Material Assets – Agriculture**.

### **13.3.2 Transport Network**

The increase in the use of raw materials associated with the increase in poultry growing operation will not lead to a significant increase in traffic movements. Therefore, there will be no impact on the existing road network.

### **13.3.3 Economic Minerals**

It is considered that the proposed expansion of the poultry growing operation will have *no significant impact* on mineral resources in the vicinity of the area.

### **13.3.4 Raw Materials Required**

#### **13.3.4.1 Construction of the Poultry House**

Construction material such as aggregates and concrete, when needed will be brought in from nearby sources such as local Quarry's.

#### **13.3.4.2 Raw material inputs for increased poultry production capacity**

There will be a minor increase on natural resources from the increase in use of raw materials. The usage of raw water in the operation will also increase.

## **13.4 RESIDUAL IMPACTS**

No residual impacts are predicted



## **SECTION D – ARCHITECTURAL, ARCHAEOLOGICAL AND CULTURAL HERITAGE**

This Section of the Environmental Impact Statement examines impacts of the development under the headings;

- Architecture
- Archaeology
- Cultural Heritage

Archaeological sites, buildings of historic, artistic or architectural interest and sites of cultural heritage form part of the landscape of Counties Clare and Limerick. As part of the constraint and route selection phases of this development, every effort has been made to avoid known Architectural, Archaeological and Cultural Heritage sites. This section of the Environmental Impact Statement examines the impacts of the development on known sites which (could not be avoided) or potential sites which have come to light during the field survey of the proposed route.

## **ARCHITECTURAL, ARCHAEOLOGICAL AND CULTURAL HERITAGE LEGISLATION AFFECTING THIS PROJECT**

### **National Monuments Legislation (Principal Act 1930 (as Amended))**

All archaeological sites have the full protection of the national monuments legislation (Principal Act 1930; Amendments 1954, 1987, 1994 and 2004). In the 1987 Amendment of Section 2 of the Principal Act (1930), the definition of a national monument is specified as:

- any artificial or partly artificial building, structure or erection or group of such buildings, structures or erections,
- any artificial cave, stone or natural product, whether forming part of the ground, that has been artificially carved, sculptured or worked upon or which (where it does not form part of the place where it is) appears to have been purposely put or arranged in position,
- any, or any part of any, prehistoric or ancient
  - (i) tomb, grave or burial deposit, or
  - (ii) ritual, industrial or habitation site, and
- any place comprising the remains or traces of any such building, structure or erection, any cave, stone or natural product or any such tomb, grave, burial deposit or ritual, industrial or habitation site...

Under Section 14 of the Principal Act (1930):

It shall be unlawful...

- to demolish or remove wholly or in part or to disfigure, deface, alter, or in any manner injure or interfere with any such national monument without or otherwise than in accordance with the consent hereinafter mentioned (a licence issued by the Office of Public Works National Monuments Branch),
- or
- to excavate, dig, plough or otherwise disturb the ground within, around, or in the proximity to any such national monument without or otherwise than in accordance...

Under Amendment to Section 23 of the Principal Act (1930),

A person who finds an archaeological object shall, within four days after the finding, make a report of it to a member of the Garda Síochána...or the Director of the National Museum...

The latter is of relevance to any finds made during a watching brief.

In the 1994 Amendment of Section 12 of the Principal Act (1930), all of the sites and 'places' recorded by the Sites and Monuments Record of the Office of Public Works are provided with a new status in law. This new status provides a level of protection to the listed sites that is equivalent to that accorded to 'registered' sites [Section 8(1), National Monuments Amendment Act 1954] as follows:

The Commissioners shall establish and maintain a record of monuments and places where they believe there are monuments and the record shall be comprised of a list of monuments and such places and a map or maps showing each monument and such place in respect of each county in the State.

The Commissioners shall cause to be exhibited in a prescribed manner in each county the list and map or maps of the county drawn up and publish in a prescribed manner information about when and where the lists and maps may be consulted.

*In addition, when the owner or occupier (not being the Commissioners) of a monument or place which has been recorded, or any person proposes to carry out, or to cause or permit the carrying out of, any work at or in relation to such monument or place, he shall give notice in writing of his proposal to carry out the work to the Commissioners and shall not, except in the case of urgent necessity and with the consent of the Commissioners, commence the work for a period of two months after having given the notice.*

### **Local Government Planning and Development Act**

Structures of architectural, cultural, scientific, historical or archaeological interest can also be protected under the Planning and Development Act, 2000, where the conditions relating to the protection of architectural heritage are set out in Part IV of the act. This act superseded the Local Government (Planning and Development) Act, 1999, which came into force in January 2000.

The act provides for the inclusion of protected structures into the planning authorities' development plans and sets out statutory regulations regarding works affecting such structures. Under the new legislation, no distinction is made between buildings formerly classified under development plans as List 1 and List 2. Such buildings are now all regarded as 'protected structures' and enjoy equal statutory protection. Under the act the entire structure is protected, including a structures interior, exterior, attendant grounds and also the structures within the attendant grounds.

The act defines a 'protected structure' as follows:

- (a) a structure, or
- (b) a specified part of a structure,

Which is included in a record of protected structures, and, where that record so indicates, includes any specified feature which is within the attendant grounds of the structure and which would not otherwise be included in this definition.

'Protection', in relation to a structure or part of a structure, includes conservation, preservation, and improvement compatible with maintaining the character and interest of the structure or part;

Part IV of the act deals with architectural heritage, and Section 57 deals specifically with works affecting the character of protected structures or proposed protected structures.

...the carrying out of works to a protected structure, or a proposed protected structure, shall be exempted development only if those works would not materially affect the character of—

- (a) the structure, or
- (b) any element of the structure which contributes to its special architectural, historical, archaeological, artistic, cultural, scientific, social or technical interest.

Section 58, subsection 4 states that:

Any person who, without lawful authority, causes damage to a protected structure or a proposed protected structure shall be guilty of an offence.

## 14 ARCHITECTURAL, ARCHAEOLOGICAL & CULTURAL HERITAGE

### 14.1 INTRODUCTION

#### 14.1.1 General

This section of the EIS outlines the archaeological heritage, architectural heritage and cultural heritage issues with respect to the land proposed for the development of two industrial scale poultry houses at Coolanaron, Newcastle West, Co. Limerick (Fig.1). Shanarc Archaeological Consultancy was retained by Montgomery EHS to fulfil the Archaeological, Architectural and Cultural Heritage component of the EIS.

The remit of the architectural, archaeological and cultural heritage chapter of the environmental impact statement (EIS) is to assess the importance and sensitivity of the receiving archaeology and historical environment, to identify the impact of the proposed development on this environment and to propose measures to ameliorate any perceived impacts.

#### 14.1.2 Details of Proposed Development

The proposed development is located in the southern half of the Coolanoran Townland, in the parish of Kilscannell, in the barony of Connello Lower. The client intends extending the existing poultry business by constructing two large scale poultry sheds to the immediate southwest of the existing buildings. The proposed structures will measure 17m by 75m in length in a northeast by southwest orientation and both will be constructed parallel to each other with a 10m spacing in-between (PI 1). The entrance to both buildings will be situated at the north-eastern end which will open onto two square concrete yards, measuring 19m x 19m. Two bird feed storage silos will also be situated either side of the concrete slabs (Fig.2).

#### 14.1.3 Topography

The land in the proposed development area (PDA) is situated 4.8km northeast of Newcastle West and approx 1.5 km west of the river Deel, in west County Limerick. The surrounding land and the site of the PDA are located in relatively flat, poorly drained agricultural land (PL 2,3,4 &5). The underlying soils are classified as Podzolic Gleys overlying limestone parent rock. The land is presently used for harvesting silage.

### 14.2 METHODOLOGY

The desk study component of the assessment involved documentary and cartographic research. Preliminary desk top research was carried prior to the field inspection with a more comprehensive programme of research conducted thereafter. A variety of diverse sources of information were consulted including:

- Record of Monuments and Places (RMP) and Sites and Monuments Record (SMR);
- The topographical files of the National Museum of Ireland;
- Draft Limerick County Development Plan 2010-2016;
- Documentary and cartographic sources;
- Excavations Bulletins and Excavations Database;
- National Inventory of Architectural Heritage (NIAH) (Survey of the Architectural Heritage of county Limerick 2011);
- Irish Architectural Archive;
- Aerial photographs;
- Field inspection

### 14.3 LEGISLATION, STANDARDS, GUIDELINES

The following legislation, standards and guidelines were consulted:

- National Monuments Acts, 1930-2004
- The Planning and Development (Strategic Infrastructure) Bill, 2006
- Heritage Act, 1995
- Guidelines on the information to be contained in Environmental Impact Statements, 2002, EPA
- Advice Notes on Current Practice (in preparation of Environmental Impact Statements), 2003, EPA
- Frameworks and Principles for the Protection of the Archaeological Heritage, 1999, (formerly) Department of Arts, Heritage, Gaeltacht and Islands
- Architectural Heritage (National Inventory) and Historic Monuments (Miscellaneous Provisions) Act, 2000 and the Local Government (Planning and Development) Act 2000
- Code of Practice between the NRA and the Minister for the Environment, Heritage and Local Government (formerly Arts, Heritage, Gaeltacht and Islands), June 2002
- Guidelines for the Assessment of Architectural Heritage Impact of National Road Schemes, 2006, NRA
- Guidelines for the Assessment of Archaeological Heritage Impact of National Road Schemes, 2006, NRA

### 14.4 SIGNIFICANCE CRITERIA

#### 14.4.1 Archaeological and Cultural Heritage

In keeping with current best practice, the structure of this section of the document is written in accordance with the most up-to-date guidelines relating to the production of an Environmental Impact Statement. In particular, this section of the EIS document has been compiled using both the Environmental Protection Agency (EPA) guidelines and the National Roads Authority (NRA) „Guidelines for the Assessment of Archaeological Heritage Impact of National Road Schemes“ (2006), the significance criteria used to evaluate an archaeological site, monument or complex are as follows: existing status (level of protection), condition or preservation, documentation or historical significance, group value, rarity, visibility in the landscape, fragility or vulnerability, and amenity value.

Any impact on a recorded archaeological monument or site is regarded as a significant negative impact. A glossary of impacts as defined by the EPA are as follows;

Impacts are generally categorised as either being a direct impact, an indirect impact or as having no predicted impact:

- A **direct impact** occurs when an item of archaeological heritage is located within the proposed development area and entails the removal of part, or the entire monument.
- **Indirect impacts** may be caused due to the close proximity of a development to an archaeological feature. Mitigation strategies and knowledge of detail design can often ameliorate any adverse indirect impact.
- **No predicted impact** occurs when the proposed development does not adversely or positively affect an archaeological site.

The impacts of the proposed development on the archaeological environment are first assessed in terms of their quality i.e. positive, negative, neutral (or direct and indirect):

- **Negative Impact:** A change that will detract from or permanently remove an archaeological monument from the landscape.
- **Neutral Impact:** A change that does not affect the archaeological heritage.
- **Positive Impact:** A change that improves or enhances the setting of an archaeological monument.



A significance rating for these impacts is then given i.e. slight, moderate, significant or profound:

- **Profound:** Applies where mitigation would be unlikely to remove adverse effects. Reserved for adverse, negative effects only. These effects arise where an archaeological site is completely and irreversibly destroyed by a proposed development.
- **Significant:** An impact which, by its magnitude, duration or intensity alters an important aspect of the environment. An impact like this would be where the part of a site would be permanently impacted upon leading to a loss of character, integrity and data about the archaeological feature/site.
- **Moderate:** A moderate direct impact arises where a change to the site is proposed which though noticeable, is not such that the archaeological integrity of the site is compromised and which is reversible. This arises where an archaeological feature can be incorporated into a modern day development without damage and that all procedures used to facilitate this are reversible.
- **Slight:** An impact which causes changes in the character of the environment which are not significant or profound and do not directly impact or affect an archaeological feature or monument.
- **Imperceptible:** An impact capable of measurement but without noticeable consequences.

#### 14.4.2 Architectural Heritage

The report seeks to identify any properties/structures of architectural heritage merit that may be impacted by the proposed development. The mitigation recommendations made with respect to the structures or buildings identified relate to those that are directly impacted only; buildings impacted owing to their proximity to the proposals are dealt with in the Landscape and Visual Assessment chapter of the EIS, which deals with screening. Recommendations are based on the architectural heritage merit of a structure or building, and whether this necessitates its preservation, either by avoidance, or by carrying out a record of the past prior to demolition.

A number of categories of special interest are taken into consideration when assessing the significance of a property/structure. These include architectural, historical, archaeological, artistic, cultural, scientific, technical or social.

### 14.5 DESCRIPTION OF EXISTING ENVIRONMENT -ARCHAEOLOGICAL HERITAGE

#### 14.5.1 Archaeological and Historical Background

##### Early medieval period

Improvements in agriculture from the fifth century AD resulted in a wave of settlement expansion and population increase in rural Ireland, leading to the construction of the modern landscape's most common archaeological site: the ringfort, or its Irish equivalent, the rath. Ringfort sites functioned as semi-fortified farmsteads in a society where wealth was calculated in livestock and cattle raids were common place. They may be defined as large (24m-60m diameter) circular enclosures bounded by one or more ditches and banks. It has been suggested that the structure and location of these ringforts were in themselves reflections of the hierarchical nature of Irish society during the Early Christian period, with multi-vallate, elevated ringfort sites displaying the high status of the occupant (Edward, 8). Additionally, a relatively high concentration of this particular monument in a landscape may have functioned in a mutually defensive manner. Through his studies in Briad Valley in Co. Antrim, Stout explored the manner in which many ringforts were positioned so as to provide a line of sight to their neighbouring farmsteads, thus acting as a safe retreat and source of help during turbulent times.

This aspect of ringfort construction is particularly relevant in the immediate environment of the study area. Twelve such monuments are found in a 1km radius of the proposed development.

Five of these enclosure sites form a V-shaped pattern with the PDA situated in the centre of the V near the bottom. The sites in question are, LI028:140, situated in Coolacokery Townland and located

northwest of the proposed development, LI028:141 (**Fig 6**) situated in Coolanoran Townland and located west of the proposed development, LI028:142 situated in Ballyfraley Townland and located south of the proposed development, LI028:143 situated in Coolanoran Townland and located northeast of the proposed development and LI028:144 situated in Coolanoran Townland and located north, northeast of the proposed development. It is possible that a number, if not all of the monuments classified as enclosures, such as the sites in Coolanoran (LI028:141; LI028:143; LI028:144) are also likely to have been ringforts or the sites of ringforts, although it is also likely that some may have been barrows, an earlier monument type associated with burial practice during the Bronze Age.

#### **14.5.2 Recorded Archaeological Sites within or in the vicinity of the proposed development area**

There are no recorded archaeological sites located within or in close proximity to the proposed development area. Recorded archaeological sites in the wider area are discussed in the archaeological and historical background above (Section 14.5.1) and those within c.1km radius are listed in the Appendix (Table 1).

It should be noted that the RMP LI028:143 which is situated to the north east of the proposed development was levelled during land reclamation work in the early 1980's. The current land owner recalled his father and uncle removing trees from the site and levelling the raised embankment at some stage in the early 1980's. He also reported ploughing and re-seeding the area in early 2000. The remains of the archaeological site today are still evident as a crop mark on the site where the embankment stood. The crop mark is visible as a large circular band measuring c.3m in width by c.25m in diameter. The crop mark would seem to represent approximately 90% of previous enclosure site while the remaining 10% would seem to have been destroyed by a modern shallow field drain associated and the existing Poultry house development. There is no trace evidence of the monument above ground (**Fig 7, 8, 9, 10 & 11**).

#### **14.5.3 Previous Archaeological Investigations**

According to the excavations bulletin, the most recent archaeological investigation conducted in the Townland of Coolanoran was in 2005. The work was undertaken by Frank Coyne of Aegis Archaeology Ltd. Nothing of archaeological significance was discovered in the course of the excavation.

#### **14.5.4 Cartographic Evidence**

##### **1837 Ordnance Survey Map (**Figure 4**)**

The first edition 6" Ordnance Survey map of the proposed development area contains a considerable amount of detail (**Fig 4**). When it is compared with the 25" Revised Ordnance survey map there is little difference between the two documents in terms of layout. The field boundaries have not changed in the period of time since the first map was produced. The most striking features on this first edition map are the two enclosures which lie in close proximity to the proposed development area. The enclosure site, LI028:143 appears as a clearly defined raised circular embankment to the immediate northeast of the PDA. To the west of the PDA, LI028:141 an Enclosure is represented as a raised mound with a linear feature (possibly a linear ditch or hedge) extending from the northeast quadrant where it abuts a linear field boundary extending in a northwest by southeast direction.

##### **1908 Revised Ordnance Survey Map (**Figure 5**)**

The 25" Ordnance survey map of the study area did not reveal any change in the features recorded in the earlier first edition Ordnance survey map. The position and arrangement of the field boundaries and archaeological monuments have not changed however, the enclosure LI028:143 is represented as a raised circular platform. This contrasts with the earlier depiction of a raised circular embankment which in the map legend indicates the presence of a fort (**Fig 5**).

### 14.5.5 Field Report

A non-invasive field inspection of the PDA was carried out on 14<sup>TH</sup> February 2012. The weather was overcast but dry for the duration of the inspection. The purpose of a field survey was to assess the present topography and land use within the proposed development area, to identify any potential low-visibility archaeological and/or historical features that might be subject to direct or indirect impacts as a result of the proposed development and also to assess the archaeological potential of the landscape.

The study area is situated on the eastern side of a rectangular field system enclosed by high mature hedgerow which is interspersed with mature ash, whitethorn and blackthorn trees. A drainage ditch runs along the boundary of the field except at the field's entrance, situated in the north east corner. Another entrance to the field is found directly opposite the north east entrance which leads into another larger field to the south.

The general topography slopes gradually, but noticeably downward in a north easterly direction across the study area towards the entrance to the PDA. The land is almost level throughout the study area but for the occasional undulation. The ground underfoot was heavily saturated with clumps of rushes interspersed throughout the site. The proposed development area did not contain any surface anomalies however; the field may have been ploughed and re-seeding as was the case at the site of the levelled enclosure LI028:143 as detailed in section 14.5.2.

Approximately 300m west of the PDA, in an adjoining field system, the enclosure LI028:141 is situated. This site is completely overgrown with mature trees and dense scrub. It is only possible to see the tops of the trees from the PDA. The mature hedgerow of the surrounding field system impedes the view towards the PDA from the site.

The enclosure LI028:142 is situated approximately 500m to the south of the PDA. The monument cannot be seen from the PDA and similar to LI028:L141 this site is covered in mature trees and dense scrub.

The enclosure LI028:143 is situated approx 300m northeast of the PDA. The site was levelled during land reclamation works in the 1980's and only a crop mark indicates the location of the site. The existing poultry house development completely impedes the line of sight between the remains of the enclosure and the PDA.

### 14.5.6 Inventory of archaeological constraints identified within the proposed development area

The assessment of the terrain potential and the examination of the type, density and distribution of archaeological sites within that landscape give rise to the identification of the archaeological potential within the proposed development area. These areas may be included given their:

- Close proximity to recorded archaeological monuments
- Association with either topographic features or wetland terrain
- Placename evidence
- Find spots of stray finds



## **14.6 DESCRIPTION OF EXISTING ENVIRONMENT -ARCHITECTURAL HERITAGE**

### **14.6.1 Introduction**

There are many rural buildings in Limerick, as throughout the country, that has served varied purposes—domestic, agricultural, educational, religious and industrial. In particular, the expansions of agriculture and population in the late eighteenth and early nineteenth centuries led to the construction of the familiar „cottage“ in farmyards and along roadsides throughout the countryside (McCullough & Mulvin 1987)—what is now commonly referred to as vernacular architecture. There are two main forms of vernacular house plan in Ireland, the direct entry and the lobby entry. Direct entry, where the main doorway of the house enters directly into the main room where the fireplace is, is characteristic of the western half of Ireland, and is often associated with a gabled roof. The gabled roof is a robust design, allowing thatch to be secured to the gable walls. Direct entry houses are derived from the simplest house forms, and in some areas, manifested themselves as byre-dwellings, where the human inhabitants of the house shared with the milk cows, a drain running across the floor dividing the two halves. Lobby entry houses are entered opposite a small wall, often with a window, which juts out between the fireplace and the front door. This form is often associated with the hipped roof, a more elaborate roof form, less susceptible to rain, but more easily damaged by high winds.

Originally thatched, remaining vernacular houses are now largely roofed with corrugated iron, slates or tiles. The visual impact of these buildings, or their associated outhouses in many cases, is often reinforced by the custom of whitewashing the walls (Aalen et al 1997). The more substantial two storey houses visible in the country are often simply elaborations of basic vernacular patterns; the majority developed in the nineteenth century as the dwellings of strong farmers or successful traders.

The rural countryside is also full of secondary buildings or structures that would have been necessary and important for the daily workings of rural life. They include bridges, mills, schoolhouses, dispensaries, railway stations, creameries and forges or smithy's, typically of eighteenth- and nineteenth-century date. Perhaps more alluring, however, is the legacy of the stone manor house, or what became known in Ireland as the „big house.“ Big houses were constructed by planter families in Kildare, as elsewhere in the country, roughly between the years 1670 and 1850, and they are often found near to or on the sites of older ruined castles or tower houses, churches or defunct administrative centres, as in the case of Beaufort House to the east of the proposed development area. Big Houses were also often situated within embellished and ornamented demesne land ringed by high walls (McCullough & Mulvin 1987). Many are now in ruins; in many other cases, demesne woodland remains as a vestigial element in landscapes where all trace of the original house, its gate lodges and follies have vanished.

### **14.6.2 Record of Protected Structures**

There are no protected structures recorded within the proposed development area or in close proximity to it.

## **14.7 DESCRIPTION OF EXISTING ENVIRONMENT -CULTURAL HERITAGE**

### **14.7.1 Townland Name**

Townland names were taken down and recorded in the nineteenth century by the Ordnance Survey, at which time some were anglicised, some were translated, while others had been given entirely different names by new landowners or settlers. At this time surviving placenames connected with fields, hills and hollows, rivers and streams, settlement clusters, valleys and headlands and islands and bays were also recorded. The townland names are an invaluable source of information not only on the topography, land ownership, and land use within the landscape, but also on its history, the archaeological monuments and the folklore. Where a monument has been forgotten or destroyed, a placename may still refer to it, and may therefore indicate the possibility that remains may survive below the ground surface.

The names of the townlands in the surrounding area reflect the varied heritage of County Limerick. The strong Anglo-Norman and later English presence in the area is reflected in the placenames, with both English and native Irish names occurring. Many of the latter refer to topographical aspects of the landscape, while also incorporating information on land ownership or references to structures or archaeological sites no longer present. The townland associated with the proposed development is called Coolanoran. It derives from *Cúil an Fhuaráin* meaning “the corner of the spring” ([www.logainm.ie](http://www.logainm.ie))

Several of the townland names derive from personal names, some from English landowners. This may be the case with Riddlestown. Similarly, place names take on names of Irish land owners such as Glenville which translates as *Ráth Rónáin* or the Rath of Rónáin. While certain geographical features also lend themselves to townland names in the area such as Crean, which derives from *An Crián* meaning the clayey place. (*ibid*)

#### **14.7.2 Features of cultural heritage interest within or in the vicinity of the proposed development area.**

No further features of cultural heritage interest were identified within the proposed development area. Examination of the Topographical files in the National Museum of Ireland did not reveal any stray finds within the townland of the PDA.

### **14.8 IMPACTS ON EXISTING ENVIRONMENT**

#### **14.8.1 Introduction**

The nature of the following impacts is assessed with reference to the Glossary of Impacts provided in the Advice notes on Current Practices in the preparation of Environmental Impact Statements, EPA, 2003, Guidelines for the Assessment of Architectural Heritage Impact of National Road Schemes, NRA, 2006 and Guidelines for the Assessment of Archaeological Heritage Impact of National Road Schemes, NRA, 2006. The predicted impacts detailed below are based on engineering details provided at this time. Once final site boundaries and detailed designs have been provided, the impacts and mitigation may be subject to change.

#### **14.8.2 Archaeological Heritage**

##### **Recorded Archaeological Sites**

There are no recorded archaeological sites located within the proposed development area; however several enclosure sites are within a 1km radius of the PDA. In particular, two enclosure sites LI028:143 and LI028:141 are located within 300m of the PDA.

##### **Areas of archaeological potential**

Given the high density of settlement sites in the immediate vicinity of the proposed development area it would be prudent to include the proposed site as an area of high archaeological potential. A programme of further investigation should therefore be undertaken to rule out the possibility of the presence of archaeological sites or items of cultural heritage interest.

### **14.8.3 Architectural Heritage**

#### **Record Protected Structures**

There are no protected structures recorded within or in close proximity to the proposed development area.

#### **Structures of Architectural Heritage Merit**

No structures of architectural heritage merit were identified during the field inspection.

### **14.8.4 Cultural Heritage**

#### **Features of cultural heritage interest**

There are no features of cultural heritage interest that will be impacted by the proposed development. The closest section of Townland boundary is situated approx 200m to the south and west of the PDA.

## **14.9 MITIGATION MEASURES**

### **14.9.1 Introduction**

The mitigation strategy outlined details the techniques that should be adopted at the preconstruction stage to ameliorate the predicted impacts. The recommendations are those of the archaeologist. It should be noted that it is the prerogative of the heritage authorities to alter any or all of the recommendations contained in this EIS.

### **14.9.2 Archaeological Heritage**

#### **Recorded Archaeological Sites**

No recorded archaeological sites will be impacted by the proposed development. Potential archaeological sites & Areas of archaeological potential may be present within the proposed development area. Given the potential for discovery of previously unknown sites or features in the proposed development area, it is recommended that a programme of archaeological test excavation be undertaken within the foot print of the proposed development area. The purpose of a programme of archaeological testing is to determine the location, date, nature and extent of any previously unknown archaeological sites and to resolve, where possible, all archaeological and cultural heritage issues prior to the main construction phase of the development. A programme of geophysical prospection may also be considered however, given the waterlogged conditions of the site certain techniques such as resistivity survey may not yield accurate results.

### **14.9.3 Architectural Heritage**

#### **Record of Protected Structures**

No protected structures recorded in the Limerick County Development Plan (2005-2011) will be impacted by the proposed development.

#### **Structures of Architectural Heritage Merit**

No structures of architectural heritage merit will be directly impacted by the proposed development.

#### **14.9.4 Cultural Heritage**

##### **Features of cultural heritage interest**

There are no features of a cultural heritage interest within or in the vicinity of the proposed development.

#### **14.10 RESIDUAL IMPACTS**

No residual impacts are envisaged, as all archaeological, architectural and cultural heritage issues will be resolved at the pre-construction and construction stages of the development.

#### **14.11 CONSTRUCTION IMPACTS AND MITIGATION MEASURES**

All archaeological, architectural and cultural heritage issues should be resolved at the preconstruction stage of the development.

The onus of responsibility lies with the contractor and or sub-contractors employed on this project to comply with the relevant planning legislation and also the National Monuments legislation while adhering to the national policy guidelines and statutory provisions for the protection of the archaeological, architectural and cultural heritage.

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## 14.13 FIGURES

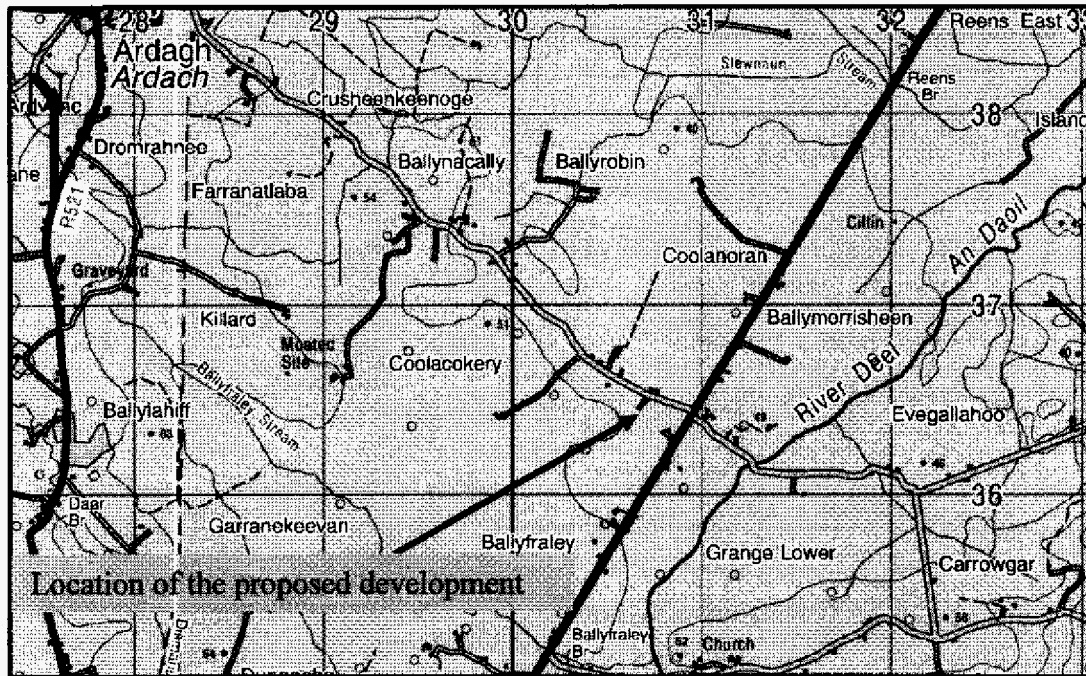


Fig 1. Extract from O.S map indicating the location of the proposed development

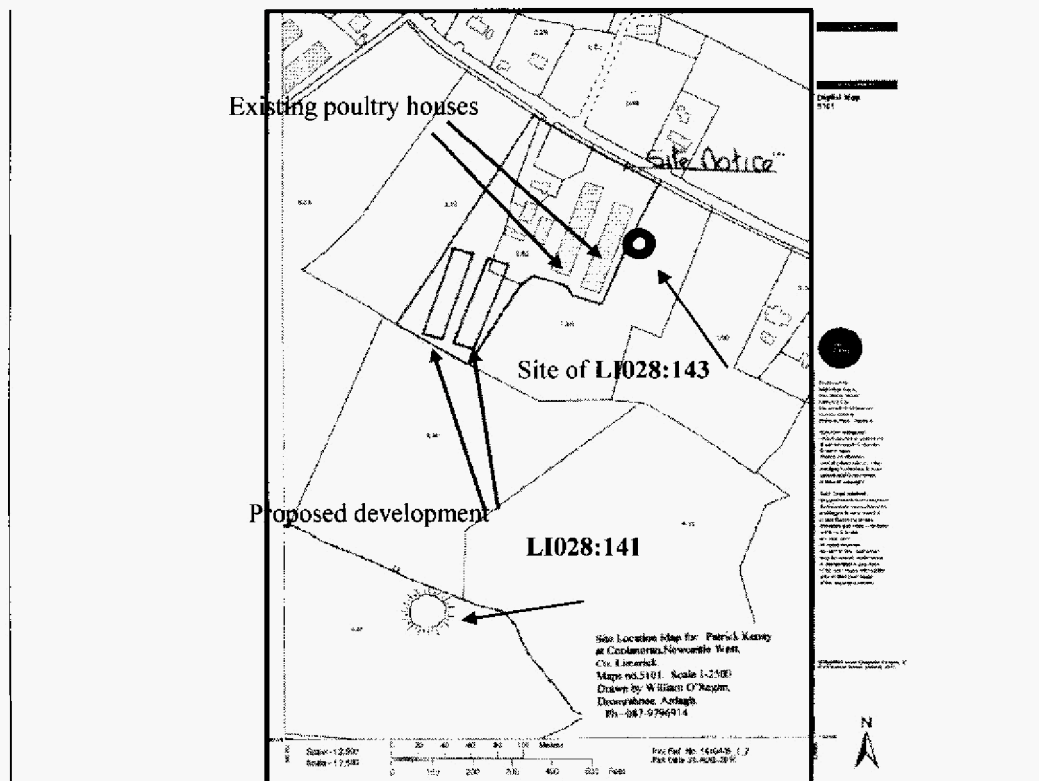


Fig 2. Location map indicating the scale and proximity of the proposed development to the existing poultry houses