

ENVIRONMENTAL IMPACT STATEMENT

for

PIGGERY EXTENSION

at

JORRISTOWN UPPER , KILLUCAN, CO. WESTMEATH

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1. INTRODUCTION

1.1 Legislative Framework and Background

EEC Directive 337 of 1985 established a mechanism whereby a standard procedure to assess and appraise the environmental impacts of a particular development was set in place. In addition to establishing this evaluation procedure, a list of development types and development size thresholds requiring mandatory Environmental Impact Assessments were listed in the schedules to the document.

The Directive was transposed into Irish Law by Statutory Instrument 349 of 1989. This Directive was amended in 1998 by Directive 11 of 1997. Its implementation in Irish law is carried out by European Communities (Environmental Impact Assessment) (Amendment) Regulations 1999. It is further enshrined in national legislation in the 2000 Planning and Development Act and the 2001 Planning and Development Regulations.

The document generated by the Environmental Impact Assessment process is called an Environmental Impact Statement. The Environmental Protection Agency has produced guidelines on the information to be contained within any EIS and this document follows generally the format set out in those guidelines. Under this format the project is described, the existing environment is presented, the likely significant impacts are noted and mitigation measures, where appropriate, are detailed.

This proposed development is to extend an existing piggery unit to accommodate 3,318 production pigs. As the scale of the proposed development exceeds the threshold set out in the Regulations, an EIS is required. Pre planning consultation with the planning authority has confirmed this and has also flagged the need to carryout appropriate assessment in relation to Natura 2000 sites. The appropriate assessment will be carried out within this document.

It is in this context that an EIS is prepared and submitted.

2. DESCRIPTION OF PROJECT

2.1 Background and Need

Agriculture and food production is clearly identified in national and local development policies as an important priority in the national recovery plan. Indeed the present economic climate has refocused attention on the importance and potential of agriculture to the national economy.

The Department of Agriculture and Food's Food Harvest 2020 report targets a 42% increase in food exports above 2007-2009 levels. The full document is available at <http://www.agriculture.gov.ie/>. The achievement of such growth will require considerable investment in and expansion of all elements of primary agriculture and secondary processing while at the same time protecting and enhancing the natural environment.

The pig meat sector in Ireland has proven to be resilient, efficient and capable of generating an acceptable return on invested capital at intensive scales of production. The view of the Food Harvest 2020 document is that growth opportunities exist in the sector in the period to 2020 and that these are contingent on economies of scale, the application of new technology and the minimization of adverse environmental effects.

At local level the 2008 Westmeath County Development Plan (<http://www.westmeathcoco.ie/en/ourservices/planning>) sets out a strong supportive policy on agriculture within the county stating in Section 2.6 that "it is the policy of Council to support development in agriculture."

Clearly the national and local policy framework is appropriate for further development in the agriculture sector and in the pig meat industry in particular.

2.2 The Project and its Developer

The developer of this project is Mary Murphy of Gillardstown House, Castlepollard, Co. Westmeath. Ms Murphy is from a local farming family and has been involved in the pig industry for many years.

The existing pig unit at Joristown Upper townland is a breeding unit which houses about 500 sows. It is in existence for more than 30 years and has been previously extended. The progeny of the 500 sows are kept at this site until they reach weaner stage. At this point in the pig production cycle, the accommodation capacity of the Joristown unit is reached and the animals are of necessity transported off site to various other pig units where they are finished.

The movement of animals at the weaner stage is stressful and expensive. The proposal is to extend the Joristown unit to accommodate all animals to finish. To this end additional pig fattening accommodation is proposed to be constructed in a farmyard area adjoining existing pig housing. This unit will house 3,318 fattening pigs and will incorporate underground tanks for collection and storage of pig slurry generated.

There are several factors fundamental to the decision to extend the Joristown pig unit at this time:

- Pig farming is an intensive agricultural enterprise and integrated units such as is proposed are efficient from an economic, environmental and animal health and welfare perspective.
- The piggery here is long established, adequately serviced by existing public and private roads and the particular site is well separated from neighbouring houses and is generally hidden from view.
- There are market opportunities in the pig meat sector.

2.3 Description of Project

The proposed development will consist of the construction of four pig fattening houses set out in a unified structure.

The two proposed pig houses on the west will measure 79.4m x 13.9m and will have an internal floor area of 2,207.3m². The two proposed houses on the eastern side of site will be smaller with dimensions of 59.3m x 13.9m giving an internal floor area of 1,648.5 m². The four pig houses will be separated by 3 no. 1.5m wide passageways which will also be covered giving the appearance of a single building. The total footprint of the buildings including the passageways will be 4,153 m².

Slurry storage tanks will be constructed directly underneath the new housing and the storage capacity excluding a 200mm freeboard will be approximately 5,752m³. Rainwater directed from the rooves will be stored in tanks underneath the 3 passage ways.

Eight cylindrical shaped steel feed storage silos will be erected in association with the proposed unit – four at each end. Livestock loading ramps will be placed one on each side of the unit. A service road of gravel construction will be placed around the proposed new and adjoining existing structures.

Aerial imagery and drawings showing the location of the site, a proposed layout and detailed drawings are enclosed in appendix one and two. The drawings outline existing and proposed structures, structural components and finishes.

All works will be carried out by competent contractors and standards and materials used will comply with the Department of Agriculture's specifications for farm buildings. The principal specification is S101 and it is available in the farm buildings section of the Department of Agriculture website noted above.

The proposed structures will be sited in a yard adjoining existing pig housing. A hayshed in poor repair will be removed and a derelict dwelling house will be demolished. A small portion of a grass field adjoining the farmyard will also be utilized for the extension.

The proposed location is c.440m from the nearest public road – the R156 Killucan to Raharney road. Access to the site from this road is by means of an existing private paved farm road.

The nearest occupied dwelling house is situated approximately 240m north east of the proposed development.

The construction period for the project is estimated to be 3-4 months. Local labour will be involved in most elements of this work and materials, where possible, will be obtained locally. The budgeted cost of constructing the extension is €1,300,000. This is significant local expenditure.

It is estimated that there will be 80 HGV movements onto the site during the construction phase of the project. When operational there will be no significant increase (less than one per day) in HGV volumes in the area arising from the development. Other traffic movements (cars and light commercial vehicles) generated will be of the order of 2 or 3 per day and will relate mainly to additional employees at the site.



Plate 1: Location of proposed development at Joristown Upper

3. IMPACTS & MITIGATION MEASURES

It is set out in the EIA legislation that the impact of the proposed development on a scheduled set of parameters be assessed. Furthermore, where adverse impacts are likely, proposed mitigation measures should be outlined. This section of the EIS addresses these issues. The interaction of these impacts is also evaluated.

3.1 Impact on Water

The site at Joristown Upper on which this development is proposed is drained by small man made drainage channels which flow generally south and east to the River Deel located about 1.2 km away. The River Deel is a tributary of the River Boyne and is located in surface water area HA07.

Environmental Protection Agency (<http://maps.epa.ie>) water quality data are available from 4 sampling points on the River Deel and its tributary to the south of the development site.

The most recent data (2011) indicate that surface water quality at all four sampling points is of 'moderate status'.

There are no new surface drainage features associated with the proposed development. All roof water will be collected, stored and used for drinking and washing within the unit. Surplus roof water will be drained to a nearby pond and will not adversely affect the quality of the receiving water.

Soiled water generated within the unit will be collected in the underground slurry tanks and its disposal will be addressed below.

The term groundwater refers to all water held in soil and rock material underneath the earth's surface. Water located in this place is dynamic and is moving through the overall water cycle. Subsurface materials which hold significant amounts of groundwater are called aquifers. Aquifers provide significant water supplies in Ireland and like all water stores are vulnerable to contamination from human activity.

Ground water in Co. Westmeath is a valuable societal resource. It is accessed and used by individual householders, Group Water Schemes and the County Council to

provide drinking water supplies. The proposed development has to be assessed in this context

The construction of the pig unit extension at this site will involve the opening of pits and trenches for tanks and foundations in an existing farmyard area. The maximum excavation depth will be 2.2m. This work will have no significant impact on the ground water resources of the locality.

The operational phase of the pig unit extension is of more interest from a groundwater perspective. The housing of large numbers of pigs here will create considerable volumes of slurry. As noted above, this slurry will be collected in concrete tanks constructed underneath the animals housing pens. The tanks will be constructed in accordance with Department of Agriculture specifications and will be sealed.

The method used to dispose of the slurry will be landspreading to agricultural lands. This, if poorly managed, has potentially adverse impacts on both surface and groundwater quality. These adverse impacts include the possible introduction of harmful agents (infectious bacteria) into the drinking water supply, the changing of the chemical composition of drinking water to an extent that human health is placed at risk and the eutrophication of water bodies by the enrichment effect of pig slurry in water.

In order to protect the local ground and surface water resources the principles of nutrient management planning will be used in land spreading of pig slurry generated here. Nutrient management planning is an established and safe methodology of recycling animal and other waste to farmland. The process disposes of the waste material and optimizes the fertilizer value of the spread material for the crop growth. A site specific nutrient management plan, incorporated in an agri-environmental report, to guide disposal to certain agricultural lands is included in appendix two. The principles of nutrient management planning employed here are that:

- Pig slurry is used as a soil conditioner and plant nutrient provider – fertilizer
- Pig slurry is used only on lands whose existing nutrient levels require are sub optimal and require supplementation
- Pig slurry is landspread only at times when it can be readily used by growing plants – in effect this means a non spread period of approximately six months
- Pig slurry is spread in weather conditions and land types which do not effect overland flow to watercourses

- Pig slurry is applied to lands that have sufficient overburden cover to treat slurry applied and thereby protect groundwater, and
- Pig slurry application is prohibited in the buffer zones around wells, watercourses, rivers, lakes and private residences and public buildings.

The use of these principles and the site specific nutrient management plan will ensure that the disposal of the pig slurry produced in this extension will provide an agronomic benefit in reduced chemical fertilizer costs while at the same time not compromising the local water resources.



Plate 2: Existing sheds and old hayshed from west

3.2 Impact on Soils and Geology

The solid geology in this part of Co. Westmeath is composed of carboniferous limestone laid down in shallow tropical seas about 200 million years ago.

The limestone is overlain by varying depths of glacial drift material deposited by successive glacial episodes the most recent of which ended about 10,000 years ago. The nature of this drift material is primarily limestone derived.

The post glacial development of soil is strongly influenced by the nature of the underlying rock, the glacial till and particularly the prevailing climatic conditions. Here, a combination of nutrient rich bed rock and a moderate climate has led to the formation of fertile soils. High percentages of clay sized particles in some places have resulted in podzolisation with the development of heavier soils more suited to grazing than tillage. The accumulation of water in post glacial depressions has also favoured the development of fens and subsequently raised bogs.

In the immediate area of the proposed development the lands have been long enclosed and improved for agriculture. A well developed grassland farming with a significant tillage component is evident.

The proposed pig unit extension poses no threat to the solid geology of the area. Landspreading of slurry, carried out in accordance with the nutrient management plan, will not adversely impact on the soil resources and will contribute to a more efficient and sustainable local agriculture.

3.3 Impact on Air Quality

No air quality data are available from the immediate vicinity of this piggery site. Nevertheless the location of the site in a rural area at a distance from large urban areas and the absence of indicative local information such as tree decline indicates that air quality is excellent and virtually free from pollutants.

An issue which sometimes arises with pig farming is that of odour. Pig farming has an associated and characteristic smell which can be problematic. The odour associated with pig farming is caused by a combination of gases but the main component is a phenol called p-cresol. This compound is also found in human sweat and is not considered in any way injurious to human health.

The reality is that anywhere there are pigs there is an associated odour. While extensive research is ongoing on methods of abatement, the practical mitigation measures are:

- Air ventilation points on the building are placed as high as possible so that exhaust air and gases enter the air column as high as possible
- The separation distance of the piggery from nearby dwelling houses is such that the exhaust air and gases is well dispersed and diluted in the air mass
- The use of downward facing splash plates or slurry tanks and/or the application of slurry by injection into the soil reduces odour nuisance.

It is noted that there is an existing intensive pig farming unit on the site and that it has been in existence for a long number of years. The local community is familiar with pig farming and logically could be considered to be tolerant and accepting of it.

The construction and operation of the proposed piggery extension on this site will have no significant adverse impact on local air quality.

3.4 Impact on Noise

A particular aspect of pig farming in the past gave rise to concerns about noise levels and those concerns merit some attention here.

Traditionally pigs were fed twice each day. The duration between feeds coupled with the Pavlovian response to the appearance of a feed cart and operative triggered much excitement in the pigs. This excitement manifested itself in much noise from the animals. Naturally this noise could be a source of nuisance in circumstances where there was poor insulation and nearby neighbours.

Feeding practice in this unit will be the provision of ad lib food i.e. food will be available at all times to the stock. In addition the proposed buildings will be of solid construction and will in effect largely contain any noise generated.

The proposed piggery extension will not cause a noise nuisance in the locality.

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3.5 Impact on Flora & Fauna

The statutory agency with responsibility for protection of flora and fauna and the implementation of national and EU wildlife legislation is the National Parks and Wildlife Service. NPWS falls within the remit of the Department of Environment, Heritage and Local Government.

In recent years NPWS (formerly Duchas) has designated important wildlife areas as Natural Heritage Areas (NHAs). These areas, arising from the amendment of the 1976 Wildlife Act, are now afforded statutory protection.

Two EU Directives, the Habitats Directive (92/43/EEC) and the Birds Directive (79/409/EEC), require the mandatory designation of certain Irish sites as Special Areas of Conservation (SACs) and Special Protection Areas (SPAs). Scheduled lists of actions prohibited, allowed and permitted with the Ministers consent are made available for the various site types.

The proposed development site at Joristown Upper is not within the boundary of any designated wildlife area. The nearest designated site is the SAC on the River Deel (Site Code: 2299 River Boyne and River Blackwater). This is shown on the site map in appendix 3 and is located approx. 1.1 km east of the proposed site at its closest distance. The Royal Canal NHA (Site Code 2103) and Mount Hevey Bog SAC (Site Code 1584) are 3.1 km and 4.2 km to the south respectively.

The legislation requires that the impact of the proposed development be assessed under what is known as Appropriate Assessment.

The construction of the proposed pig unit extension will have no impact on the designated sites mentioned above by virtue of the separation distances involved.

Two of the sites, the River Deel and the Royal Canal are surface water bodies and the operation of the proposed development could potentially have adverse impacts. Of the two sites, the River Deel is nearest and water quality is central to its environmental value. Uncontrolled landspreading of pig slurry from the proposed development could have a detrimental impact on water quality.

The main mitigation measure proposed in this respect is to landspread the slurry produced in the proposed unit on foot of a site specific nutrient management plan. This is considered an acceptable method of protecting water quality and the integrity of the designated sites.

The proposed site for the piggery extension is an existing farmyard area which has been utilised for agricultural purposes for more than 100 years. The yard contains a hardcore area, a hayshed in poor repair, a length of wall and a disused dwelling house. A small area of adjoining agricultural grassland will also be used in the development. The existing structures will be removed and the grassland area will be incorporated in the extension site.

Nothing of local ecological significance was noted on the site during a walkover survey.

A small freshwater pond occurs close to the yard. The pond is eutrophic in nature and is accessed by grazing cattle for water. The pond will not be impacted by the construction of the extension. Because of its proximity it should however be clearly identified to contractors involved in the construction phase and fenced off on a temporary basis to prevent accidental damage.

The construction drawings indicate that surplus roof water will be directed to the pond. No other material of any nature should be placed in the pond.

It is anticipated that the proposed pig unit extension will have no significant impact on the flora and fauna of the area.

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3.6 Impact on Cultural Heritage

All known archaeological sites and monuments are listed in the Sites and Monument Record (SMR) for each county. Brief details of the archaeological feature are noted in the Record and the site is marked on associated 6-inch Ordnance Survey map. Similar detail is provided on the website www.archaeology.ie/.

The SMR mapping for this part of Co. Westmeath indicates that there are no known archaeological features at or close to the proposed development site. However the general locality holds a number of recorded archaeological monuments.

The nearest recorded feature is a ringfort or rath denoted WM 020-102 which is situated about 300m to the south east. There are four other ringforts or raths, WM 020-101, WM 020-100, WM 020-98 and WM 020-130, in the vicinity. The nearest of these is about 430m to the north east. Each of these five features is identified on the mapping in appendix 3.

There will be no soil disturbance or indeed any other interference at or in any way close to any of the archaeological sites noted above arising from the propose development.

The proposed pig unit extension will take place in a farmyard and field area which has been utilized for commercial agriculture for many years. There is no recorded archaeology at or close to the site. However in the event of any archaeological material being unearthed during construction operations all works will cease immediately and the relevant authorities will be notified.

3.7 Impacts on Material Assets

There are a number of possible impacts in this category.

3.7.1 Public Roads

The existing pig unit and the proposed extension are linked to the public road network by an existing metalled surfaced private road of good quality.

The entrance onto the public road – the R156 - is wide and hedges are low affording good sight lines in both directions.

Traffic movements during the construction phase will increase somewhat but at maximum will not exceed anymore than 2 per hour on average.

When operational the extension will at most increase traffic movements by no more than 3 per day. This is not significant and will not cause any road usage issues.

3.7.2 Property Values

There has been a working pig unit at this location for many years and the local community is familiar with it. The existing and proposed buildings are well located in that views afforded to the public are few and in all cases distant. Furthermore separation distance from existing dwelling houses is good with the closest being 240m to the north. This particular house is quite well protected by a bank of mature trees and a high wall along its western boundary.

The next closest house is 400m to the southeast. Ground contours and hedges will effectively hide views of the proposed development from this dwelling.

There is no argument to sustain a case that the proposal will devalue property in the locality



Plate 3: Wall and trees at nearest dwelling house to proposed development

3.7.3 Economic Worth

The setting of the development in the national and local policy context has been outlined at the beginning of this document. In short, national economic growth is looking to indigenous production to restore stability to the country and to give a tangible and sustainable foundation to that growth. Pigmear production is clearly identified as a sector where this type of growth is achievable.

Some context on pigmeat production in Ireland is merited. Pig farming in Ireland is an intensive and technologically sharp business. Animal production methods are efficient and stock welfare is at the same time paramount. Pigmear processing obtains very high percentage of carcass utilization and processors market pigmeat product globally.

Considerable value added (Irish pigmeat exports were worth €317m in 2010 - <http://www.agriculture.gov.ie/>), which essentially equates to income and employment, is obtained in this processing. The proposed development fits readily with this economic recovery strategy.

At a local level the build cost of this extension is about €1.3m. All the construction labour and the vast majority of the construction material will be sourced locally or regionally and this spend will be important.

The operation of the extension will create two new full time jobs and will secure the existing three full time operatives. Additionally the spin off servicing of the extension (feed, veterinary, animal transport, building maintenance, slurry spreading and so on) will deliver new income sources to contractors and suppliers locally.

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3.8 The Visual Impact

Any new development will have a visual impact in the locality. However the visual impact of any proposed development is a subjective judgment based on the viewers perceptions and opinions. An objective and empirical assessment of visual impact can only be established on foot of a brief description of the existing landscape in this part of County Westmeath.

3.8.1 The Existing Landscape

The development site is located in and adjacent to an existing farmyard in the townland of Joristown Upper 1.3 km west of the village of Raharney. Killucan lies about 2.2 km to the south west.

The surrounding landscape is gently undulating and is intensively farmed with the dominant landuse being grassland. There is a notable tillage component in the immediate vicinity of the proposed development. Field sizes are large and regular shaped and field boundaries are generally mature hedgerows with a strong broadleaved tree component. A complex of raised bogs lies some distance to the east and south of the development site.

Settlement patterns in the area have tended to be farm related but there is linear development on roads close to urban areas and occasional further out from these centres.

In the Westmeath County Development 2008 the area is described as the River Deel Lowlands and is characterized as rural with strongly growing villages. No particular restrictions on developments such as is proposed is noted.

3.8.2 Visual Impact Assessment

The proposal is to construct four pig houses in a uniform group which effectively will appear as a single structure.

The pig houses will be constructed in a natural depression and will be sited in and adjacent to an existing farmyard.

The surrounding landscape contains abundant high hedgerows and trees which afford considerable natural screening.

The buildings will be of a steel framework with concrete block wall and a smooth plaster external finish. The height to the eaves will be 3.24m and the height to the apex of the rooves will be 5.07m. The roof cladding plastic coated metal sheeting of a dark green or grey colouration.

The general location, the siting of the buildings, the finishes proposed and the scale of the development all serve to minimize the impact of the proposed development in the landscape. Views of the proposal from the public road are very limited with only fleeting glimpses of the extension from the county road at Simonstown townland some 980 m to the west.



Plate 4: View of the site from road at Simonstown

3.9 The Interaction of Impacts

It is a requirement of environmental impact legislation that possible impacts arising from the interaction of factors be assessed. It is also important that the aggregate impact be evaluated.

No amplification effect is anticipated when the interaction of impacts arising from the construction and operation of the proposed pig unit extension is considered. Likewise, there is little negative effect on the human and natural environment when the totality of impacts is quantified.

Negative perceptions in relation to impacts of the proposal are low and in reality are only associated with poor slurry management and the odour nuisance.

Mitigation measures in respect of slurry management and odour nuisance have been outlined earlier. Good management will ensure that slurry produced is handled and landspread appropriately. Any possible negative impact from odour is strongly counterbalanced by the sustainable economic benefit to the locality and the region.

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4.0 THE ALTERNATIVES

Previous sections of this EIS have set out the need for and the justification for the proposed extension to the pig unit at Joristown.

The legislation requires that alternatives to the proposal be considered.

The 'do-nothing' or 'do the same' alternatives preclude any further development of pig farming at the site and undermine primary agriculture production in this locality. The developers are keen to grow their business and the market prospects and policy framework are encouraging.

The selection of a different site was given some thought but the particular attributes of the location, the existing and established infrastructure here and the economy which this affords make this location the best option to the developer at present.

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Appendix 1

Mapping and Drawings

(Note: To scale only where stated)

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NOTES

1 - THIS DRAWING IS FOR DISCUSSION PURPOSES ONLY.

North



Scale	North	East	South	West
1:1000				
1:2000				
1:5000				
1:10000				

M. MURPHY

JORISTOWN PIGGERY
EXTENSION

LOCATION MAP

Scale	North	East	South	West
1:1000				
1:2000				
1:5000				
1:10000				

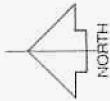
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JORISTOWN UPPER TOWNLAND

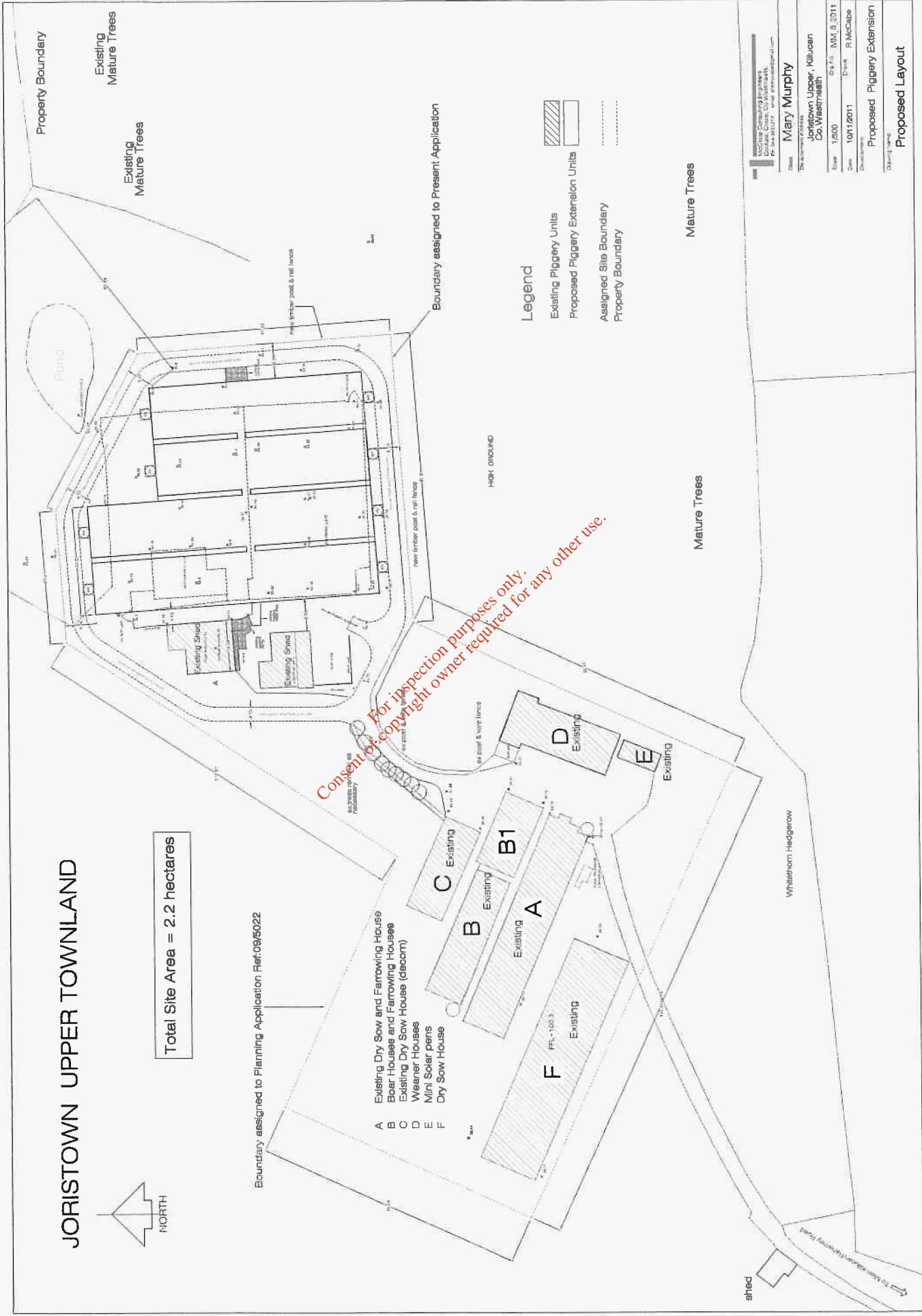


Total Site Area = 2.2 hectares

Boundary assigned to Planning Application Ref:09/5022

- A Existing Dry Sow and Farrowing House
- B Boar Houses and Farrowing Houses
- C Existing Dry Sow House (decom)
- D Weaner Houses
- E Mini Solar pens
- F Dry Sow House

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Legend

- Existing Piggery Units
- Proposed Piggery Extension Units
- Assigned Site Boundary
- Property Boundary

Mature Trees

Mature Trees

MURPHY CONSULTING SERVICES CONSULTING ENGINEERS 17, 18 & 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000		Client: Mary Murphy The Farmhouse, 1000 Joristown Upper, Killybeg Co. Westmeath
Scale: 1:200	Date: 10/11/2011	
Drawn: R. McCabe	Checked: R. McCabe	
Drawing Title: Proposed Piggery Extension Drawing No: Proposed Layout		

Appendix 2

Agri-environmental Report and Nutrient Management Plan

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Appendix 3

Sensitive Sites – Flora/Fauna & Archaeology

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NOTES
 1 - THIS DRAWING IS FOR DISCUSSION PURPOSES ONLY

North



Drawn	Checked	Date	Scale
			1:500

W. MURPHY

JORISTOWN PIGGERY EXTENSION

LOCATION MAP

Author	AD	Revision	TH
DATE		11/06/2013	
BY			27/02/17

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