

19 ARCHITECTURAL, ARCHAEOLOGICAL AND CULTURAL HERITAGE

19.1 INTRODUCTION

An assessment of the impact of the Phase 2 extension to the existing Bauxite Residue Disposal on architectural, archaeological and cultural heritage was undertaken by Margaret Gowen Ltd. This chapter outlines issues with respect to the proposed development on the receiving archaeological, architectural heritage and cultural heritage environment and proposes ameliorative measures to safeguard any monuments, features or finds of antiquity.

The proposed Phase 2 BRDA extension is located on a green field site to the south of the existing disposal area, and incorporates the townlands of Aughinish West, Glenbane West and Island Mac Teige. The site is bound to the west by the Robertstown River and to the south by the Foynes–Limerick Railway line. The development will also involve the borrowing of soil from areas within the proposed disposal area and to the south outside the disposal area. Stockpile areas for topsoil and borrow areas are also proposed to the south and east of the proposed development.

19.2 METHODOLOGY

A combination of desk and field based studies were undertaken in order to assess the potential impact resulting from the proposed extension to the BRDA. The complete Architecture, Archaeology and Cultural Heritage report is located in **Appendix H of Volume 3** of this EIS.

19.2.1 Desk Studies

The following sources of information were consulted as part of the desk based study for this EIS.

Source	Description
Record of Monuments and Places (RMP)	The Record of Monuments and Places (RMP) of the Department of the Environment, Heritage and Local Government, records known upstanding archaeological monuments, their original location and the position of possible sites.
The Topographical Files of the National Museum of Ireland (NMI)	The topographical files identify recorded stray finds held in the NMI. The archive was studied for possible finds occurring in townlands associated with the proposed route.
Documentary and Cartographic Sources	Documentary and literary references, including excavation bulletins and historic maps, were also consulted to predict likely archaeological remains surviving on site and to elucidate the development of the immediate environs of the study area. The maps consulted include, the Down Survey Map of 1656, the First Edition Map of the OS six-inch series for Limerick (surveyed in 1840-1 and published in 1844) and revisions to the OS maps for Limerick which were made in 1914.
Wreck Inventory of the National Maritime Archaeological Survey	127 shipwrecks have been recorded in the Shannon Estuary from the sixteenth to the early twentieth century (O'Sullivan, 2001). The Wreck Inventory of the National Maritime Archaeological Survey of the Department of the Environment, Heritage & Local Government was consulted for any wrecks that have occurred in the Shannon in the vicinity of Aughinish Island.
Previous Archaeological Excavations	Excavations', an annual bulletin and web-based database (www.excavations.ie), was consulted to establish whether excavations had been carried out in the vicinity of the proposed development.
Development Plans	The Limerick County Development Plan (1999) and 2005–2011 Plan was consulted for a list of Protected Structures if any in the vicinity of the proposed development. This document list 'sites, items and structures of archaeological, historic, artistic and scientific interest' according to the townland in which they occur, all items listed in the document are now considered as Protected Structures, they have been given increased protection under the Local Government (Planning and Development) Act 1999.

19.2.2 Field inspection

A field inspection of the site at Aughinish was carried out on in March and September 2004 to determine the existing nature of the site. It also sought to identify any low-visibility archaeological features that might have little surface expression or areas in the study area that could have some archaeological potential or architectural merit.

19.3 DESCRIPTION OF EXISTING ENVIRONMENT

It should be noted that the information provided above is a very brief synopsis of the architectural heritage of the environs of the site. The assessment of the area is based on extensive desk and field based investigations, the full extent of which are included in the full Architecture, Archaeology and Cultural Heritage report. This is included in **Volume 3** of this EIS. The reader is encouraged to refer to the full report for additional detail.

19.3.1 Section A – Architectural Heritage

Prior to the industrialisation of Aughinish Island there were a number of ruined vernacular dwellings that originally belonged to the Mangan, Dorman, Wall, Coll, Bridgeman and Dundon families, who occupied the area at various stages (Culhane 2003).

There are no protected structures scheduled in the Limerick County Development plan of 1999 within the proposed development area and no buildings of architectural heritage merit were noted as a result of the field inspection. However, several features of architectural heritage interest within and in the vicinity of the proposed development were identified through field inspection and documentary research. For the purposes of the report they are classified under *Former Dwellings* and *Industrial Heritage* and are marked on **Figure 19.1** and listed in **Table 19.1**.

Former dwellings

The grandest residence on Aughinish Island is said to have belonged to the Mangan family and was known locally and indicated on cartographic sources as the 'White House' (CH3 in **Fig. 19.1**). This dwelling was located at the eastern boundary of the proposed BRDA, in the townland of Aughinish East. Only the northern and western elevation of an associated outbuilding survives at the site of the house. The rubble remains of a second structure are located within the proposed BRDA in the townland of Island Mac Teige (CH6 on **Fig. 19.1**). According to a local author the structure on Island Mac Teige was abandoned as it was said to be haunted (Culhane 2003). An access pathway to this property ran from the main road through the townlands of Glenbane West and Island Mac Teige. In Island Mac Teige the pathway is raised by rubble stone and earth as it crosses a wetland area that is liable to flood.

There is a modern bungalow adjacent to the borrow area in Glenbane West with earlier farm buildings to the rear. These buildings are within the ownership of AAL.

Industrial Heritage

The western side of the proposed BRDA is defined by the Robertstown River. The land along the eastern shore of this river is reinforced by a river wall (CH1). The wall is approximately 1m in height and consists of roughly cut dry stone that has been constructed with a slight batter. To the east of the wall there is an embankment running alongside it.

There are three sluices along the Poulaweala Creek that drain water from the land into the river channel (CH2, CH4 and CH5). The Limerick–Foynes single gauge railway forms the southern boundary of the proposed BRDA area and the northern boundary of the borrow area in Island Mac Teige.

Features in the Vicinity of the Proposed Development

Immediately outside the proposed BRDA in Glenbane West, in the townland of Dysert, there are two two-storey dwellings and associated outbuildings. These structures will not be physically impacted by the proposed development. The structures do not appear on the first edition Ordnance Survey Map (1841).

Outside the proposed development and to the west is an iron bridge locally known as The Metal Bridge (CH8), which spans the Robertstown River and carries the Foynes–Limerick railway line. To the east of the proposed BRDA area in Glenbane West is the old access route onto Aughinish Island that was locally known as Clochan Garbh meaning stone causeway. The causeway consists of a single carriage winding road defined on either side with stonewalls c.1.20m high. On the downstream side the causeway wall is c.3m high a metal pipe drains the water from Poulaweala Creek, which has recently been dammed. The causeway is located at the narrowest point between the mainland and the island; it is therefore quite likely that other fords/crossing points were located here. The proposed development will not impact the causeway. A modern road constructed to the immediate west of the earlier causeway now provides access onto the island.

Table 19.1: Architectural Heritage Sites in the Vicinity of the Proposed Development

Site ID Number and RMP No. (if any)	CH1
Field Location	Field 2
Site Description	A river wall, approximately 1m in height, of roughly cut dry stone construction with a slight batter. On the eastern side of the wall, there is an embankment, shown on the first edition Ordnance Survey Map of 1841.
Proximity to Development	Directly adjacent to and partly impacted by western boundary of the development.
Site ID Number and RMP No. (if any)	CH2
Field Location	Field 2
Site Description	To the south of the field there is a sluice for field drainage which is directed into Poulaweala Creek. A steel sluice gate with decayed wooden panels survives to control water flow. The sluice is not depicted on the first edition OS map but does appear on the revised 1941 map before which the extensive drainage works had taken place.
Proximity to Development	Located within the proposed BRDA footprint
Site ID Number and RMP No. (if any)	CH3
Field Location	Field 4
Site Description	The grandest residence on Aughinish Island is said to have belonged to the Mangan family and was known locally and indicated on cartographic sources as the 'White House'. Only the northern and western elevation of an associated outbuilding survives at the site of the house. A range of buildings at this location are shown on the first edition OS map of 1841 and additional buildings are present on the revised 1941 edition.
Proximity to Development	This dwelling is located at the north eastern boundary of the proposed BRDA in the townland of Aughinish East.
Site ID Number and RMP No. (if any)	CH4
Field Location	Field 5
Site Description	A sluice gate to the north of field 5 is built within the floodwall. It has a square channel opening and only the steel hinges from the gate survive. It is partly rendered in cement
Proximity to Development	Located within the proposed BRDA footprint

Table 19.1 Cont'd: Architectural Heritage Sites in the Vicinity of the Proposed Development

Site ID Number and RMP No. (if any)	CH5
Field Location	Field 11
Site Description	A third sluice gate, located in field 11. Could not be viewed due to the overgrowth of scrub.
Proximity to Development	Located within the proposed BRDA footprint
Site ID Number and RMP No. (if any)	CH6
Field Location	Field 6-7
Site Description	According to a local author this structure was abandoned as it was said to be haunted (Culhane 2003). An access pathway to this property ran from the main road through the townlands of Glenbane West, in Island Mac Teige the pathway is raised by rubble stone and earth as it crosses a wetland area that is liable to flood
Proximity to Development	Located beyond the southern boundary of the proposed BRDA footprint but may be impacted as part of the borrow area.
Site ID Number and RMP No. (if any)	CH7
Field Location	Field 9
Site Description	A trackway leads from the ruined dwelling in Field 7 and continues across this field as a raised pathway constructed of rubble stone and earth
Proximity to Development	Located within the proposed BRDA footprint
Site ID Number and RMP No. (if any)	CH8
Field Location	Fields 5-12 Limerick Foynes Railway line
Site Description	Outside the proposed footprint and to the east, a bridge carries the broad gauge, single-track railway over the Robertstown River. The bridge is locally known as the Metal Bridge. It consists of Iron latticed girders that form the superstructure and two sets of fixed piers supported by cross girders which supports the bridge structure.
Proximity to Development	Just beyond the southwest corner of development
Site ID Number and RMP No. (if any)	CH9
Field Location	Field 17-20
Site Description	There is a field drain and a corresponding earthen embankment and a battered stone wall to the east of F17
Proximity to Development	To the west of the proposed borrow area, south of the railway line. May be impacted by proposals to create salt marsh habitat.
Site ID Number and RMP No. (if any)	CH10
Field Location	Field 14
Site Description	In the southeastern corner of the field there is a culvert with a rubble wall and causeway that channels a stream beneath the Aughinish Road
Proximity to Development	To the east of the proposed BRDA footprint, north of the railway line.
Site ID Number and RMP No. (if any)	CH11
Field Location	Field 15
Site Description	In the southeast corner of the field there is a modern bungalow with earlier outhouses and farm structures to the rear. Access to the property is provided by an underpass beneath the railway line. There are structures in this plot on the first edition ordnance survey map (1841); they however are dissimilar in plan and in orientation to the present structures.
Proximity to Development	To the east of the proposed BRDA, north of the railway line. .

Table 19.1 Cont'd: Architectural Heritage Sites in the Vicinity of the Proposed Development

Site ID Number and RMP No. (if any)	CH12
Field Location	Field 15
Site Description	The western boundary of Field 15 is a stone wall c 1m high with rough cement render capping, a stile provides access into Field 12
Proximity to Development	To the east of the proposed BRDA, north of the railway line.
Site ID Number and RMP No. (if any)	CH13
Field Location	Field 16
Site Description	At the eastern boundary of the field is the roadbridge that carries the Aughinish Road over the Limerick-Foynes railway
Proximity to Development	To the east of the proposed BRDA.
Site ID Number and RMP No. (if any)	CH14
Field Location	N/A
Site Description	On the first edition ordnance survey map of 1841 in the western section of the field there was a small farmstead with two structures and adjacent delineated plots of land. By the 1923 edition only the outline of the plots are marked. These plots are no longer present on the ground and the site of this feature is completely disturbed. Only a series of hollows survive in this area. The southern boundary of this field is the townland boundary that divides Glenbane West from Dysert.
Proximity to Development	To the east of the proposed BRDA, south of the railway line.

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19.3.2 Section B – Archaeology

It should be noted that the information provided below is a very brief synopsis of the archaeology of the environs of the site. The assessment of the area is based on extensive desk and field based investigations, the full extent of which are included in the full Architecture, Archaeology and Cultural Heritage report. This is included in **Volume 3** of this EIS. The reader is encouraged to refer to the full report for additional detail.

19.3.2.1 Brief Archaeological and Historical Background of the Immediate Environs of the Study Area

Aughinish West and Aughinish Island are both located in County Limerick in the Barony of Shanid in the Parish of Robertstown. The proposed site is bisected by Poulaweala Creek. This creek separates Aughinish from the mainland and hence its island status. There is however, a causeway linking the island to the mainland at Fawnamore townland. This causeway survives and a modern road runs along side it.

Prehistoric Aughinish

The Discovery Programme's North Munster Project included a detailed study of the intertidal zones of the upper Shannon Estuary. Evidence for early wetland occupation in the estuary at Carrigdirty Rock (c.20km upstream of Aughinish) date to at least the Late Mesolithic (7000–4000BC) and Neolithic (4000–2500BC). The earliest evidence for archaeological activity in the environs of the study dates to the Late Bronze Age (c.1200BC–600BC). Three excavated stone enclosures (RMP references LI010:017, LI010:018 and LI010:019) at Aughinish East, to the north of the Island, have produced Late Bronze Age evidence including circular houses with metal working areas and pits. Saddle querns, coarseware pottery and bronze artefacts including a heavily corroded iron bridle bit, a bronze chisel and pin were also found. It is likely that two of these small stone enclosures were the farmsteads of the well-off, the third site being used to house animals. Rock-cut pits had been filled with seashells, obviously the refuse from food gathering in the nearby intertidal zone (Kelly 1974, RMP files).

Early Medieval/Christian Landscape

Ringforts are the classic Early Christian settlement type. No sites in vicinity of the proposed development area could be classified as ringforts, however there are several classified as enclosures. A number of those monuments are likely to have been ringforts or the sites of ploughed out ringforts, although the smaller examples may be prehistoric sites. The main concentration of ringforts in West Limerick is found along the eastern boundaries of Shanid and Glenquin baronies (Stout 1997). The range and variety of Early Christian monuments in the vicinity of the study area attest to quite extensive settlement in the area during this period (e.g. LI010:076, LI010:075 in Dysert, LI010:022, LI010:021, LI010:023, LI010:024, LI010:025 in Fawnmore, LI010:072 in Oolra)

Late Medieval/ Anglo Norman Period

When the Anglo-Normans invaded Ireland in the late 1160s, their first efforts were devoted to the conquest of Leinster, but they soon turned their attentions to Munster. Perhaps the first of the Anglo-Normans to make an impression in the barony of Shanid was William de Burgh, ancestor of the powerful Burke family in Ireland. He founded a small Benedictine monastery at Ardaneer near Foynes, making it a daughter-house of the famous religious centre of Glastonbury in England, and granted it lands in the neighbourhood that included the island of Foynes and perhaps also Aughinish (Brooks 1954, 287).

There is a rectangular enclosure (LI010:108) on Aughinish Island (East) c. 550m north of the proposed development area. In some county surveys these monuments are simply designated as rectangular enclosures but may represent moated sites. Moated sites are defended settlements of the thirteenth and fourteenth centuries, they are usually square or rectangular areas defined by banks and external ditches and were often built in damp areas where the ditch became naturally waterlogged. This site may represent early Anglo-Norman settlement in the area.

The castles of the Anglo Norman periods were predominantly tower houses and there are two examples of such sites in the environs of the study area. Dysert Castle (LI010:077 **Plate 19.1**),

located c.450m southeast of the proposed development area and the tower house of Aughinish (LI010:020) located within the existing Alumina Plant c. 1.4km to the north of the proposed development. The bawn (enclosing feature) of the site of the castle was excavated in 1974 uncovering 31 skeletons that consisted mostly of children and babies. Other finds included animal bone; sherds of late and post-medieval pottery; a wide range of iron objects; clay-pipe fragments; a blue glass bead; a bronze disc-headed pin, and an Irish halfpenny dating to the reign of Charles 11(1683). It has been suggested that these burials may have been victims of the famine or victims of the siege at the castle in the 17th century by confederate forces. Another theory is that these burials are the site of a previously unrecorded *cillín*, or more properly known as a children's burial ground.

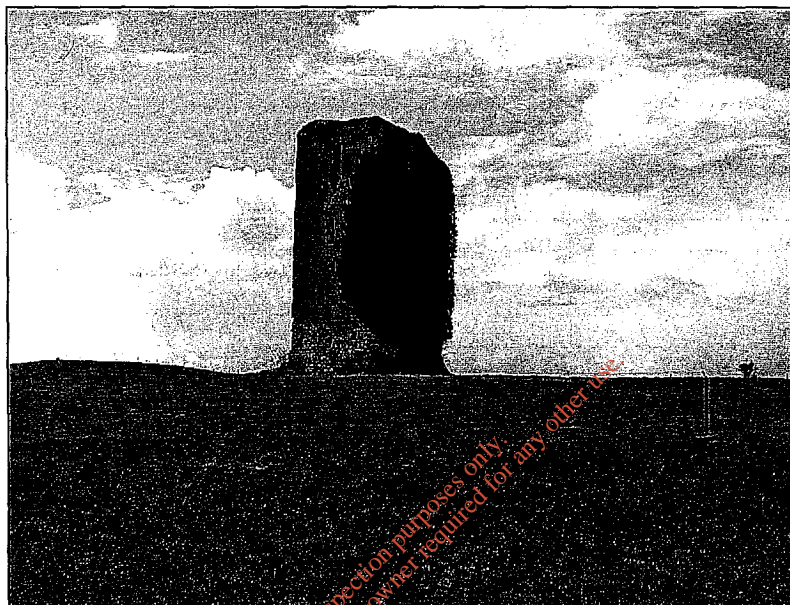


Plate 19.1: Dysert Castle

19.3.2.2 Desk Survey

The RMP constraints map relevant to the proposed development is sheet 010 of the Ordnance Survey six-inch series for County Limerick. The sites are numbered according to the Ordnance Survey six-inch sheet on which they are located, so that site 020 on six-inch sheet 010, is listed as LI010:020. A county code, LI for Limerick, is included. The national grid reference (NGR) is provided for each site, as is the townland in which it is located.

There are no recorded archaeological sites within the proposed BRDA footprint however there are five sites listed in the Record of Monuments and Places (RMP) of the Department of the Environment Heritage & Local Government which occur within 500m of the proposed development and these are outlined in **Table 19.2**. Recorded RMP sites are shown on the accompanying site location map (**Figure 19.1**).

Table 19.2: Sites within 500m of the proposed development

Site ID Number and RMP No. (if any)	LI010:076
Townland	Dysart
NGR or chainage	12847/15074
Site Type	Enclosure
Site Description	Indicated as a hachured enclosure on the first (1841) edition OS map it is not subsequently marked on the second and third edition OS maps
Proximity to Route	This site is located c.230m from the southeast boundary of the site
Site ID Number and RMP No. (if any)	LI010:022
Townland	Fawnamore
NGR or chainage	12872/15129
Site Type	Enclosure
Site Description	Marked as a bivallate enclosure on the first edition OS map; marked on the second edition; shown as a hachured enclosure on the 1923 edition.
Proximity to Route	Located c.300m east of the proposed development
Site ID Number and RMP No. (if any)	LI010:077
Townland	Dysart
NGR or chainage	12858/15054
Site Type	Tower House, Bawn
Site Description	It is marked on the first and second edition OS map; it is named 'Dysart Castle (in ruins)' on the 1923 edition map. At the time of the field inspection the site is well preserved with several internal floors surviving, access can be gained via the intramural staircase.
Proximity to Route	The site is located c.450m southeast
Site ID Number and RMP No. (if any)	LI010:075
Townland	Dysart
NGR or chainage	Enclosure
Site Type	12840/15055
Site Description	No further details in file, the site is indicated as a circular enclosure on the first edition OS map.
Proximity to Route	The site is located c.310m south of the southern boundary
Site ID Number and RMP No. (if any)	LI010:021
Townland	Fawnamore
NGR or chainage	12862/15167
Site Type	Enclosure
Site Description	Indicated as a hachured enclosure on the first (1841) edition OS map; it is not subsequently marked on the second and third editions.
Proximity to Route	Located 230m northeast of the proposed development area

19.3.2.3 Stray Finds

The topographical files from the National Museum of Ireland was searched for artefacts found in the townlands of Aughinish West, Aughinish East, Island Mac Teige, Glenbane West and Fawnmore. Stray finds were recorded, relating to the excavation of Aughinish castle site (LI 010:020) which was carried out in 1974.

Table 19.3: Stray Finds

Artefact Registration No.	E138:001 to E138: 390
NMI Reference	D8: 5-7 1A/135/74
Description	176 Pottery sherds, a bronze strap, 75 clay pipe fragments, bronze pin shaft, 75 nails (iron), glass, misc. iron, bronze disc-headed pin, tunic button, green-enamelled strap-end, green-enamelled buckle, Charles II halfpenny, polished bone handle, metal candle snuffer, statuette base and one perforated stone fragment. 31 human burials were recovered from inside the bawn wall. The discovery of the human burial remains was an unexpected occurrence as there is no evidence of a church on Aughinish Island. Apparently Westropp (1905 327-480) did record a church on the island in the 15 and 16 th centuries. The dating evidence from the burials revealed at the castle site suggests that they post date the tower house and may date to the post-medieval period.

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19.3.3 Section C – Cultural Heritage

It should be noted that the information provided in the following sections is a very brief synopsis of the cultural heritage of the environs of the site. The assessment of the area is based on extensive desk and field based investigations, the full extent of which are included in the full Architecture, Archaeology and Cultural Heritage report. This is included in **Volume 3** of this EIS. The reader is encouraged to refer to the full report for additional detail.

19.3.3.1 Townland boundaries

Townlands are a unique feature in the Irish landscape. They are one of the oldest land divisions in the country, and their origins are undoubtedly of great antiquity, most certainly pre-Norman. The townland boundaries within the study area include:

- **Aughinish West/Aughinish East** boundary which takes the form of a drainage ditch
- the **Aughinish West/Island Mac Teige** townland boundary which is defined by Poulaweala Creek which has been dammed and is now dried up
- the **Island Mac Teige /Glenbane** townland boundary by a stream
- the **Glenbane West/Fawnamore** townland boundary is formed by a drystone wall c.1m in height

19.3.3.2 Townland Names and Place Names

The main townland names and place names are described below. The place names of the area have been researched in detail and recorded in the book *'The Barony of Shanid'* by local historian Thomas Culhane (2003).

Table 19.4: Townland Names

Aughinish	From the Irish <i>Each Inis</i> meaning horse island suggesting perhaps a former economic activity (Sullivan 2001, 15).
Island Mac Teige	Despite its name it is not an island although it does border Poulaweala Creek and is surrounded by damp waterlogged land, the townland once belonged successively to the Mulcair, Casey and the O'Connor families. The name is Irish translates to <i>Oileán Mhic Thaidhg</i> , meaning the island of Mac Thaidhg-the island of the son of Mac Thaidhg. It once contained a dwelling but this is now derelict. There was a structure on Island Mac Teige that was abandoned as it was said to be haunted (Culhane). The dwelling has since been demolished and only rubble remains at the site today
Glenbane West	Derives from the Irish <i>Glenbaun</i> , meaning the white glen.
Fawnamore	From the Irish <i>Fána Mhór</i> , which translates to big slope lies immediately to the east of the proposed development, this hilly topography attracted much settlement on the upper slopes of the hills in the Early Christian Period.
Poulaweala Creek	Believed to be an anglicised word from the Irish <i>Poll na baoile</i> meaning danger hole or pool or alternatively <i>Poll Uí Mháille</i> named after the O'Malley family. Other explanations such as <i>Poll na Maoile</i> meaning the pool of the hornless cow or <i>Poull-an datuille</i> meaning the pool of the two floods have also been put forward.
File	On the eastern shore of Aughinish and skirting Poulaweala Creek derives from the Irish <i>Faill</i> or <i>Aill</i> meaning a cliff.
Clochan Garbh	The causeway that connected Aughinish with the main land over Poulaweala Creek was known as, Clochan Garbh meaning the rough stone causeway, it is also commonly referred to as 'Clochan' or the 'Cloughaun'.
Leath na Sceach	Translates to <i>leath-inse nv sceach</i> meaning the peninsula of the bushes, probably referring to the numerous whitethorn and blackthorn bushes on the Island.
Cill Abard	The reclaimed lands of Aughinish were enclosed with embankments, the largest embankment was know locally as Cill Abard. To the east of the proposed development in the townland of Fawnamore, there is a prominent hill called <i>Kit's Hill</i> after a woman who once lived on its summit apparently the remains of the house are still visible.

19.4 IMPACTS

19.4.1 Architectural Heritage Impacts

Neither the Limerick County Development Plan (1999) or the Development Plan 2005–2011 list any protected structures within the proposed BRDA area.

The proposed development will however have a *direct impact* on the ruins of a structure, CH3 and the site of another, CH6.

The site of a second structure CH6 is located within areas proposed as borrow pit on Island MacTeige. The structure does not appear on the first edition Ordnance Survey Map and therefore was constructed after 1841. All that remains of the structure is a mound of rubble.

19.4.2 Archaeological Heritage Impacts

There are no recorded archaeological sites within the proposed development area or in the areas proposed for borrow pits or stockpiling and therefore no upstanding archaeological remains will be affected by the proposed development.

No features of archaeological potential were noted along the banks of the Poulaweala Creek. Its banks have been previously disturbed by the construction of the flood walls and the drainage system put in place for the reclamation of the surrounding fields. The river has been dammed in recent times.

The BRDA will be confined to the east of the existing flood embankment of the Robertstown River, except at one location on the western boundary of the BRDA where there will be an impact on the mudflat/saltmarsh. The mudflat/saltmarsh is an area that is considered to be of significant archaeological potential. It is also proposed to breach part of the river embankment south of the railway line to allow the area to develop as a saltmarsh in compensation for impacts on saltmarsh elsewhere.

The proposed development area is characterised by a range of topography. It incorporates the low-lying reclaimed flood-plain on the shores of the Robertstown River which rises eastwards to gently undulating glacial drift, with occasional exposed rock outcrop. This area also overlies deep estuarine alluvium deposits where the preservation of organic remains (such as wooden structures and biological evidence), if any should exist, would be excellent. Due to the nature of the land and the type and density of monuments in the general area this landscape is considered to be of archaeological potential. It is considered likely that subsurface archaeological features, finds and/or soils may be discovered during the construction phase of the development even in deep alluvium deposits.

19.4.3 Cultural Heritage Impacts

There are several features of cultural heritage interest within the proposed development area and in its surrounding townlands. The proposed development will have a *direct impact* on the three sluice gates and walls which drain water into the Poulaweala Creek (CH2, CH4 and CH5). The gates are not indicated on the first edition map and are in varying condition.

Along the Robertstown River at the western edge of the proposed development is a dry stone river wall (CH1) with a corresponding embankment and drain on the eastern (land) side, this flood wall and its embankment will not be impacted by the proposed development.

The remains of a pathway (CH7) runs along the southern boundary of the site. It is recorded on the revised Ordnance Survey map and is associated with the now demolished structure on Island MacTeige post dating 1841.

The proposed development will see the removal of sections of the townland boundary between:

- Aughinish West/Aughinish East
- Island Mac Teige /Glenbane
- Glenbane West/Fawnamore
- Aughinish West/Island Mac Teige

19.5 MITIGATION MEASURES

19.5.1 General

The developers attention is drawn to the National Monuments Legislation (1937-2004), which states in the event of the discovery of archaeological finds or remains, the Department of the Environment, Heritage and Local Government should be notified immediately. The developer will make provision to allow for and to fund the archaeological works that may be needed on the site if any remains are noted during the site preparation phase of development.

All recommendations regarding the site are subject to discussion with and approval from the Planning Authority and the Department of the Environment, Heritage and Local Government

19.5.2 Architectural Heritage

Prior to demolition the area around the White House will be removed of vegetation and the exact extent of the boundary of the property will be defined. A photographic survey and written description of the standing structures will also be carried out. During the survey, additional recording of architectural features that may be currently hidden by vegetation will take place as required.

19.5.3 Archaeological Heritage

Considering the constraints of the varied landscape and the construction methodology which will involve the comprehensive excavation of the landscape, archaeological monitoring during the construction stage of the development may not be a feasible mitigation strategy.

Therefore a comprehensive pre-construction assessment of the site will be carried out. This assessment will take the form of a non invasive geophysical survey carried out across the fields within in the proposed BRDA area and in the proposed borrow pit areas. The geophysical survey will identify areas where further invasive pre-construction archaeological investigations in the form of test excavation can be carried out. The test excavation will determine the nature and extent of any anomalies recorded during the survey. In areas within the above fields that are unsuitable for geophysical survey (i.e. extensively waterlogged/overgrown areas) archaeological testing will be carried out.

On the bases of the testing results, further mitigation will be sought by the Department of the Environment, Heritage and Local Government (DoEHLG) in the form of monitoring during construction (if it is deemed appropriate for the construction technique for such a comprehensive development involving considerable excavation), preservation *in situ* or full hand excavation if anything of possible archaeological derivation is noted during the testing of the site.

Further investigation of the deep alluvium deposits (which will be beyond the range of the geophysical survey and testing) may also be required. The methodology for this will be decided by the National Monuments section who may seek a sedimentological assessment of the alluvium deposits and the additional monitoring during construction.

This exercise should be conducted at the earliest possible phase of the development programme; it will limit the archaeological requirements at construction stage and therefore will cause no unforeseen delays to the construction programme.

Archaeological excavation in an environment of deep alluvium deposits has proven to be time consuming and costly. Adequate financial provision will be made available for related post-excavation work, conservation of artefacts and the publication of archaeological testing and excavation results.

In all areas where there will be an impact on the intertidal mudflats (i.e. at the mouth of Poulaweala Creek in Robertstown River) it is recommended that an intertidal survey be carried out well in advance of development in order to identify submerged sites or features that may be exposed at low tide (such as fish traps, early structures, submerged forests). If archaeological features are identified further mitigation measures will be sought by the Underwater Archaeological Section of the Department of the Environment, Heritage and Local Government (DoEHLG).

Fields F4 & F3

Fields F3 and F4 (**Figure 19.1**) are overgrown with gorse and are generally inaccessible. Where visible it would appear that the ground surface consists of mainly rock outcrop with little soil cover. Once vegetation has been cleared this area will be visited by an archaeologist who will agree with the DoEHLG whether any further mitigation strategy is required such as archaeological monitoring during site preparation works. Similarly field F1 comprises of a forest plantation, archaeological features if they do exist here, are likely to have been severely disturbed by the dense plantation of trees in this area. Once the trees have been removed a suitable mitigation strategy will be discussed with the DoEHLG.

19.5.4 Cultural Heritage

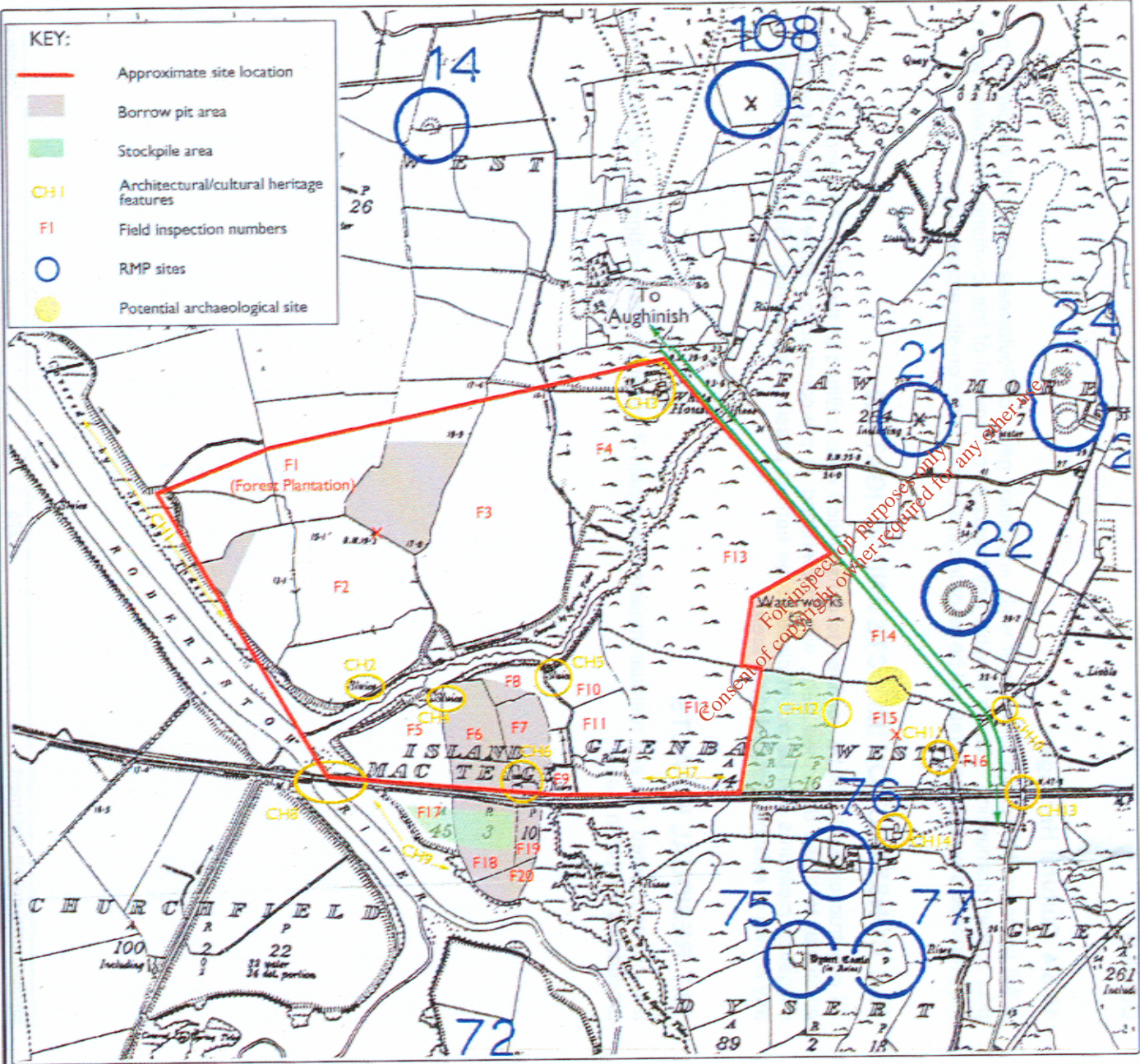
A full photographic record of the river walls and sluice gates of Poulaweala Creek will be carried out prior to their dismantling. Where feasible any breaches or removal of the townland boundaries within the proposed development area will be recorded in section by the on-site archaeologist.

19.6 CONSTRUCTION IMPACTS AND MITIGATION

All construction work will be confined to construction area outlined in the EIS. Any ancillary works, additional to those described here, will be identified at pre-construction stage so that appropriate mitigation measures can be put in place at the earliest possible opportunity. Such sites shall avoid any known or existing archaeological areas.

19.7 RESIDUAL IMPACTS

It is not anticipated that any residual impacts will remain if the appropriate mitigation measures and procedures are put in place.



KEY:

- Approximate site location
- Borrow pit area
- Stockpile area
- CH1 Architectural/cultural heritage features
- FI Field inspection numbers
- RMP sites
- Potential archaeological site

Legend



Aughinish Alumina Ltd.

Project: EIS for AAL

RMP Site Location Map

Figure 19.1



Margaret Gowen & Co Ltd
Archaeological Consultants & Project Managers

Job Aughinish Alumina, Co. Limerick
Ref. 03317
Date 28.09.04
Client RPS-MCOS
Scale Not applicable

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Issue Details	
Drawn: SK	Project No. MDES198
Checked: AGMC	File Ref.
Approved: MDE0198M0222AC2	
Scale: NTS	Drawing No. Rev.
Date: 17/06/2005	M00222 A02

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