The Monastic City of Clonmacnoise and its Cultural Landscape Candidate World Heritage Site

World Heritage Site Draft Management Plan 2009 - 2014

Comhshaol, Oidhreacht agus Rialtas Áitiúil
Environment, Heritage and Local Government

OPW
The Office of Public Works
Oifig na nOibreacha Poiblí

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Management Plan 2009-2014

May 2009

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Our Vision:

To protect, conserve and promote an appreciation of the outstanding universal value of the Monastic City of Clonmacnoise and its Cultural Landscape by putting in place a management framework that promotes sustainable economic regeneration and social inclusion for present and future generations.

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Foreword

World Heritage Sites have been identified by the United Nations Educational, Scientific and Cultural Organisation (UNESCO) as being of international importance for the conservation of cultural and natural heritage. In 2007, the Government decided to put the Monastic City of Clonmacnoise and its Cultural Landscape forward as a UNESCO World Heritage Site.

A vital part of the nomination process is the preparation of a Management Plan. This will guide the conservation of the rich architectural, archaeological and natural heritage, and the management of the candidate World Heritage Site. One of the main objectives of the Plan is to improve visitor and educational facilities. The Management Plan seeks to provide an agreed vision and objectives to guide the sustainable management and evolution of the Site, now and in the future.

The preparation of the World Heritage Site (WHS) Nomination Document and the Management Plan is being undertaken by the Department of the Environment, Heritage and Local Government (DEHLG), in conjunction with the Office of Public Works (OPW) and with the assistance of consultants, ERA-Maptec Ltd. A draft Nomination Document for the Monastic City of Clonmacnoise and the surrounding Cultural Landscape was submitted to the UNESCO World Heritage Centre in September 2008 for technical review.

Members of the general public, and a wide range of organisations and individuals, including local interest groups and residents, are being consulted on the draft Management Plan. Following the incorporation of feedback from the World Heritage Centre and from the public consultation process, the nomination document and final Management Plan will be formally lodged with UNESCO. A decision from UNESCO on Clonmacnoise's bid for World Heritage Site status would be expected 18 months approximately after the formal lodging of the documentation with UNESCO. It is important that the views of as many stakeholders as possible are reflected in the preparation of the Management Plan and we look forward to receiving your comments on this consultative document. Your views will help to shape the final plan.

HOW TO CONTRIBUTE YOUR VIEWS ON THE DRAFT PLAN

The draft Management Plan is available for public consultation between 18th May 2009 and 14th Augsut 2009.

The draft plan can be viewed and downloaded from the Department of Environment, Heritage and Local Government website

http://www.environ.ie/en/Heritage/WorldHeritage/LatestNewsonWorldHeritage/

Copies of the draft plan and an information desk facility can also be consulted at:

Clonmacnoise Visitor Centre
Offaly County Council, Tullamore (Planning Counter)
Roscommon County Council, Roscommon, (Planning Counter)
Westmeath County Council, Mullingar
Athlone Civic Centre (Church Street) and the Athlone Engineering Area Office
Roscommon County Council (Monksland, Co. Roscommon).

It can also be downloaded from the Department's website www.environ.ie and may also be obtained by contacting the Heritage Policy Unit, Department of the Environment, Heritage and Local Government, Ardcavan Business Park, Wexford, County Wexford, telephone number 01-8883042 & 01-8883035.

Comments should be sent in writing or email by 16th August 2009 to:

ERA-Maptec Ltd.
Clonmacoise WHS bid,
40 Lower O'Connell Street
Dublin 1

or

Email: **clonmacnoise@era.ie**

Executive Summary

The Monastic City of Clonmacnoise and its Cultural Landscape Management Plan 2009–2014 has been prepared by the Department of the Environment, Heritage and Local Government (DEHLG), in conjunction with the Office of Public Works (OPW) and with assistance of ERA-Maptec Ltd. The aim of the plan is to protect and preserve this candidate World Heritage Site (WHS). The plan provides information on the various aspects of the management policy for the Monastic City of Clonmacnoise and its Cultural Landscape, including conservation and presentation, visitor management, the legislative protections it enjoys and the development considerations necessary to protect the Site into the future.

The plan sets out the key objectives and long-term vision for the management of the Monastic City of Clonmacnoise and its Cultural Landscape, provides a brief history of the Site and describes its key cultural and natural heritage features. It defines the outstanding universal value of the Site and the justification for inscription of the Site on the UNESCO World Heritage List. It proposes a policy framework for the effective management, preservation and protection of the Site and that also promotes sustainable economic regeneration and social inclusion for present and future generations.

Chapter 1 provides an introduction to the plan, its purpose and preparation. A brief description of the Monastic City of Clonmacnoise and its Cultural Landscape together with the historical background and key natural features of the Site are provided in Chapter 2. The significance and values, cultural heritage, natural heritage and intangible heritage of the Monastic City of Clonmacnoise and its Cultural Landscape are set out in Chapter 3. The Site is described as the outstanding example of an early medieval Insular city set within a sacral landscape shaped by geological, glacial, fluvial and climatic events and maintained by human agency.

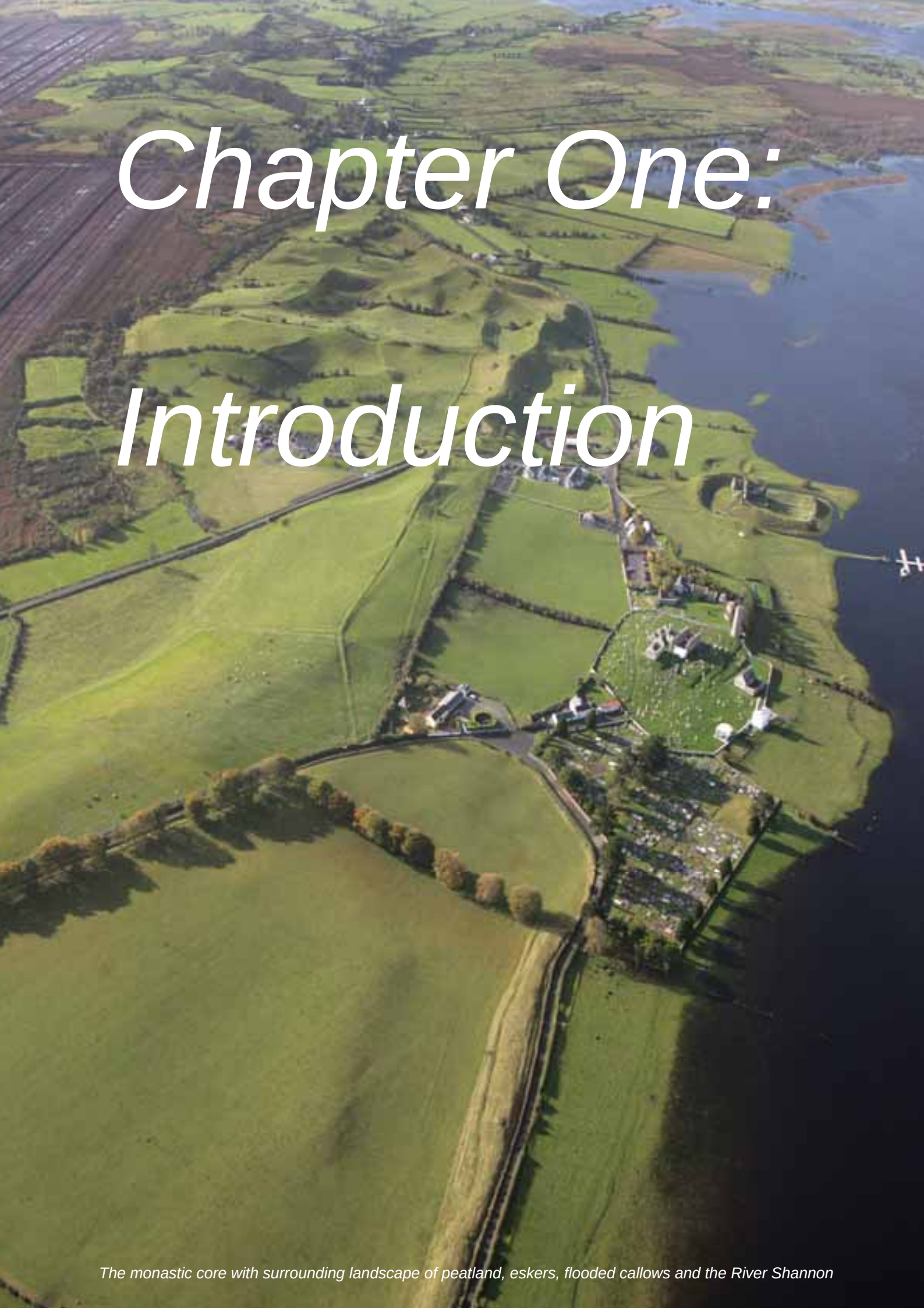
Archaeological excavation at the monastic core has revealed evidence of craft and metal working, nucleation, and planned urban or semi-urban development of eighth/ninth century date on a larger scale than is apparent today in any other non-Viking Irish context. Its archaeological and architectural importance is matched by an exemplary documentary record and no other locality can provide such an understanding of the development of urbanism generally in Atlantic Europe, as well as clarifying non-Viking urbanisation in an Irish context. The landscape of the candidate World Heritage Site is hugely diverse, including active raised bog, fenland, eskers, callows, and raised limestone pavement contained within a remarkably small area, unique on a world scale. The superlative sacral landscape of monastic ruins, and holy wells crisscrossed by pilgrim's routes, includes many of the most important yet fragile and vulnerable habitats for the preservation of biodiversity in situ and harbours rare and endangered flora and fauna.

The current management framework for the candidate World Heritage Site is dealt with in Chapter 4. The DEHLG is the State body responsible for heritage policy matters under the World Heritage Convention. This chapter sets out the range of protections for the Site: national legislation, local mechanisms, international guidelines, statutory and non-statutory guidance. A number of management issues are identified that must be addressed under the plan. The Management Plan implementation strategy is covered in Chapter 5. The plan is described as a tool for the effective implementation and co-ordination of all the various policies and objectives for the preservation of the candidate World Heritage Site. A statement of

intent is provided, setting out the key objectives of the plan and the actions necessary to achieve those objectives.

Chapter One:

Introduction



The monastic core with surrounding landscape of peatland, eskers, flooded callows and the River Shannon

1.1 Introduction to the Management Plan

This Management Plan has been developed to protect and preserve the Clonmacnoise Cultural Landscape in line with UNESCO requirements for nominated sites. The plan addresses cultural and natural heritage issues in an integrated manner and has been produced by the Department of the Environment, Heritage and Local Government (DEHLG), in conjunction with the Office of Public Works (OPW) and with the assistance of consultants, ERA-Maptec Ltd. The plan has been developed in consultation with key stakeholders on the World Heritage Site Officer Steering Group (comprised of the relevant sections of the DEHLG, OPW). It is now being made available for consultation to local and interested stakeholders.

It is a recommendation of the UNESCO Operational Guidelines for the implementation of the World Heritage Convention that all States Parties have adequate management frameworks, a documented management system and appropriate legislation in place to protect the World Heritage status of inscribed sites. This plan provides a framework for the proactive management of the site, helping to ensure that its outstanding universal value (OUV) is sustained and preserved for future generations.

Pl. 1 The River Shannon and its callows (right), an esker ridge (centre) and Mongan Bog (left) form part of an outstandingly diverse landscape that occurs over a relatively small area

1.2 Purpose of the Management Plan

Management Plans provide the means for establishing an appropriate balance between the needs of conservation, access, sustainable economic development and the interests of the local community. It is important that they are developed through consultation among all those able to affect the candidate World Heritage Site or who may be affected by policies applied to the Site. An underlying principle is that of 'sustainability' which strikes a balance between maximising enjoyment and use of the WHS while preserving the authenticity and integrity of the Site and its setting. This is to ensure that its universal significance is understood in order to conserve and safeguard its inherited cultural, historical and natural assets.

This principle must be balanced against the needs of the local community, for the candidate World Heritage Site is a complex, living landscape. Sustainable physical access to the Site and equality of access to all are important considerations and need pro-active management. Tourism in the Irish Midlands, in which the candidate World Heritage Site is located, looks set to become a major driver in future regeneration strategies as traditional industries such as commercial peat extraction (largely but not wholly through Bord na Mona, a state-owned company) and peat based electricity generation, are in decline. As a cultural landscape, the candidate World Heritage Site, which currently receives in excess of 150,000 visitors each year, has the potential to contribute to significant economic growth through the improved management of visitors. This includes changing the pattern of visiting, currently strongly focussed on coach parties of foreign tourists in the summer months and mainly of short duration. Such tourism has limited economic impact in the immediate locality. This Management Plan sets out how this might be addressed and follows consultation with the three local authorities. The Plan also has regard for the Midlands Regional Authority Planning Guidelines and the tourism strategy of Fáilte Ireland.

The Clonmacnoise Cultural Landscape World Heritage Site Plan 2009–2014 developed from the Clonmacnoise Draft Management Plan (2003), does not itself have a statutory status and does not supplant the responsibilities of partner organisations or the national legislative framework. Its purpose is to provide a clear strategy to ensure, to international standards, the long-term conservation, preservation and presentation of this unique Site. It seeks to put in place a management framework that will protect its outstanding universal value and to gather together into one document the following:

- A description of the history and significance of the Site and its outstanding universal value as an Early Medieval Christian Insular Monastic City with its surrounding semi-natural and sacred landscape maintained by human agency.

- Strategies to develop and increase access to, and understanding of, the existing vast knowledge resource associated with Clonmacnoise.

- Recognition that this is a distinctive living landscape that can continue to evolve by putting in place plans to promote a sustainable approach to development. This approach must seek to integrate the conservation of the heritage assets of the Site with an appropriate level of socio-economic regeneration that will benefit the local community and wider environs.

- Guidance to aid the protection and enhanced management of the monastic city and its natural setting through promoting equality of opportunity to access and enjoyment of the Site while balancing the needs of visitors with the local community.

- An outline of existing relevant frameworks that will maintain, preserve and enhance the Site's rich natural landscape, architectural legacy and religious heritage for the future in a sustainable manner.

- A strong Partnership Forum with the community, local, regional, national and international organisations that will address the management issues of the Site on an on-going basis.

The plan will inform the day-to-day and long-term management of the Monastic City Clonmacnoise and its Cultural Landscape. It will be a working document that will be open to periodic review, with additions or amendments being made as conditions change.

In summary, the principal aims of the Plan are:

- The establishment of a consensual framework for future decision-making on sustaining and conserving the Site and its immediate environs by the bodies and individuals responsible for the implementation of the Plan and the monitoring of such decisions.

- The development of a sustainable approach to the long-term management and socio-economic development of the Site that balances the needs of the local community with the conservation of its physical fabric and the need to preserve its historical, natural, religious and educational relevance for future generations.

- To sketch out a prioritised action plan for the implementation of projects, policies and programmes that are achievable and that will promote equality of opportunity to access and enjoyment and contribute to the conservation, understanding, and sustainable evolution of the Site.

1.3 Preparation of the Management Plan

The Clonmacnoise WHS Steering Group was established by the Department of the Environment, Heritage and Local Government in July 2008 to oversee the preparation of the Nomination Document and Management Plan, in accordance with Ireland's obligations under the World Heritage Convention. The group is comprised of technical experts from the National Parks and Wildlife Service (NPWS), the National Monuments Service, Department of the Environment, Heritage and Local Government and the Office of Public Works. Administrative support and project management is provided by the Heritage Policy and Architectural Protection Section of the DEHLG. Responsibility for overseeing the implementation of the Management Plan lies jointly with the DEHLG and the OPW.

In the course of preparing the Management Plan the WHS Steering Group met regularly to develop a consensus on the key priorities. Local and interested stakeholders were consulted by the Department of the Environment, Heritage and Local Government, assisted by ERA-Maptec, from early September 2008 onwards. A Draft Management Plan for the Monastic City of Clonmacnoise and its Cultural Landscape was launched in May 2009, for public consultation. The consultation period runs from the middle of May 2009 through to mid-August 2009.

1.4 Key Issues for the Management Plan

The Monastic City of Clonmacnoise and its Cultural Landscape is a complex living landscape with high biodiversity and built heritage values. It is a significant religious site for both Roman Catholics and Protestants. The Management Plan aims to respect the needs of all these roles and assets and ensure that the significance of the Site and its outstanding universal value are conserved. Analyses of the Monastic City and its Cultural Landscape have highlighted the following key issues for the Management Plan:

- The development of socio-economic regeneration policies that are both sympathetic to maintaining the OUV of the candidate World Heritage Site and will benefit the local community and environs.
- Access to the Site and visitor management.
- The promotion of sustainable tourism.
- Respecting the natural setting of the Site.
- Continuing archaeological, conservation, architectural, historical, hydrological and hydrogeological and ecological research programmes to aid an understanding of the Site.
- Educational outreach programmes.

The analysis of these key issues enabled the development of a vision for the future of the Site which will:

- Reinforce cultural distinctiveness and become a significant driver for the socio-economic regeneration of the local community and environs.

- Protect, conserve and promote an appreciation of the candidate World Heritage Site by putting in place a management framework that respects the landscape setting and religious significance of the Site and ensures its outstanding universal value is preserved for present and future generations.

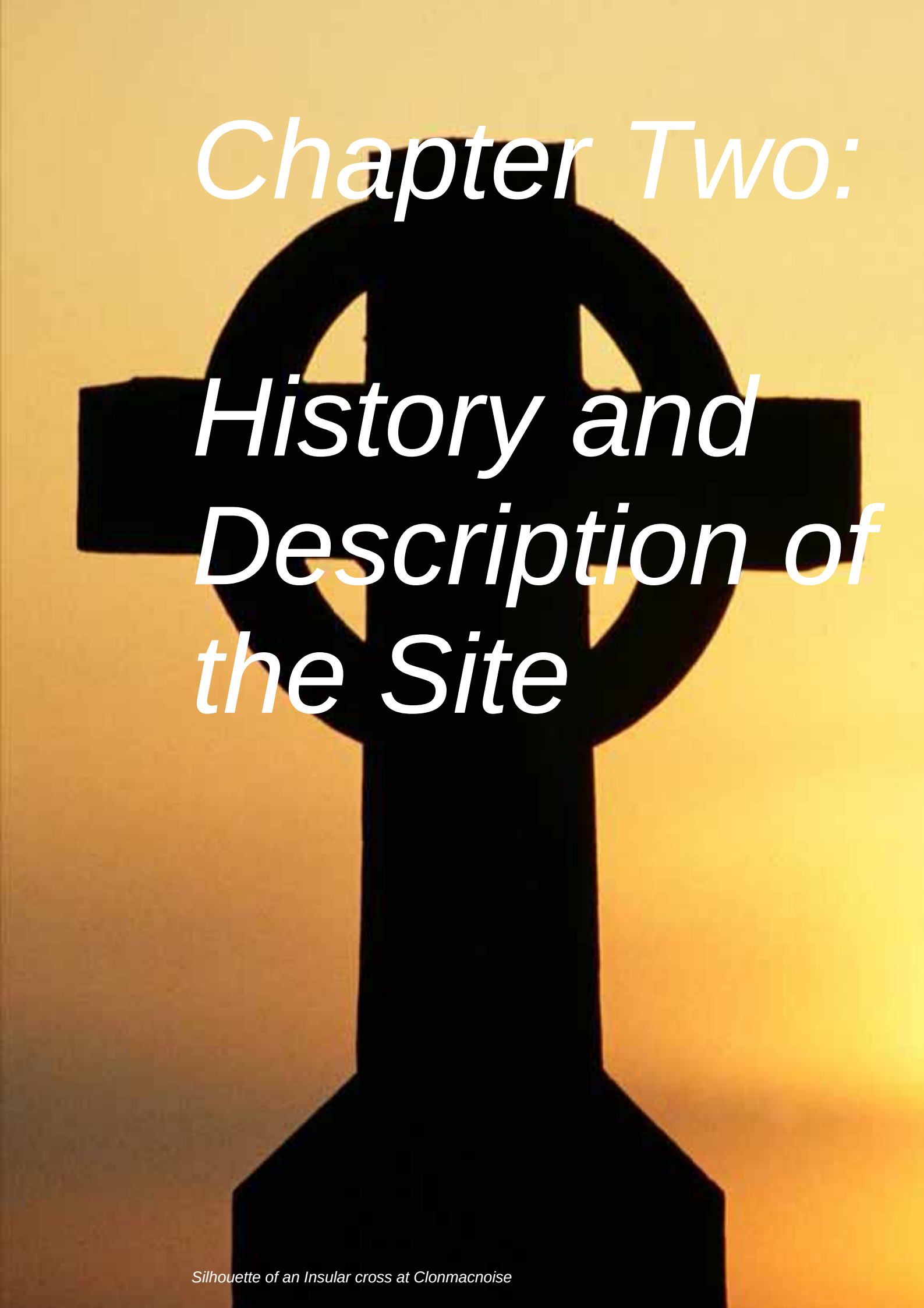
- Enhance the visitor experience and achieve new standards of excellence in visitor management by promoting sustainable tourism that engenders equal access and enjoyment but which also preserves the authenticity and integrity of the Site.

- Promote historical, archaeological, architectural, geological and ecological research programmes to aid a greater understanding of the Site and potential threats to it.

- Enhance the opportunities for public engagement and intellectual access of the natural and cultural history and heritage of the Site by promoting innovative public education programmes to a diverse audience.

Chapter Two:

History and Description of the Site



Silhouette of an Insular cross at Clonmacnoise

2.1 Introduction

The ecclesiastical remains at Clonmacnoise were built in the midst of extensive raised boglands at the point where the Slí Mhór (Great Road) esker crosses the River Shannon. Together, they are an outstanding example of an Early Christian Insular Monastic City and are representative of a significant stage in the development of Early Medieval Christianity in the North Atlantic world. This relict monastic city displayed an outstanding response to the constraints and opportunities of a remarkably diverse environment that was shaped by glacial, fluvial and climatic actions and which is now vulnerable to changing land-uses. The relative remoteness of the relict monastic city and the lack of significant urban development in the surrounding landscape contribute to the integrity and authenticity of the Site and it is the interactions of the Monastic City of Clonmacnoise with its cultural landscape which makes this Site of such immense and immeasurable importance.

Pl. 2 The strategically sited relict monastic city of Clonmacnoise was built on an esker ridge above the River Shannon

2.2 Location and Extent

Country	Ireland
State Province or Region	Counties Offaly, Roscommon and Westmeath
Name of Property	The Monastic City of Clonmacnoise and its Cultural Landscape
Co-ordinates:	The centre of the site is Lat 53 deg 19 min 40 sec N / Long 7 deg 58 min 43 sec W

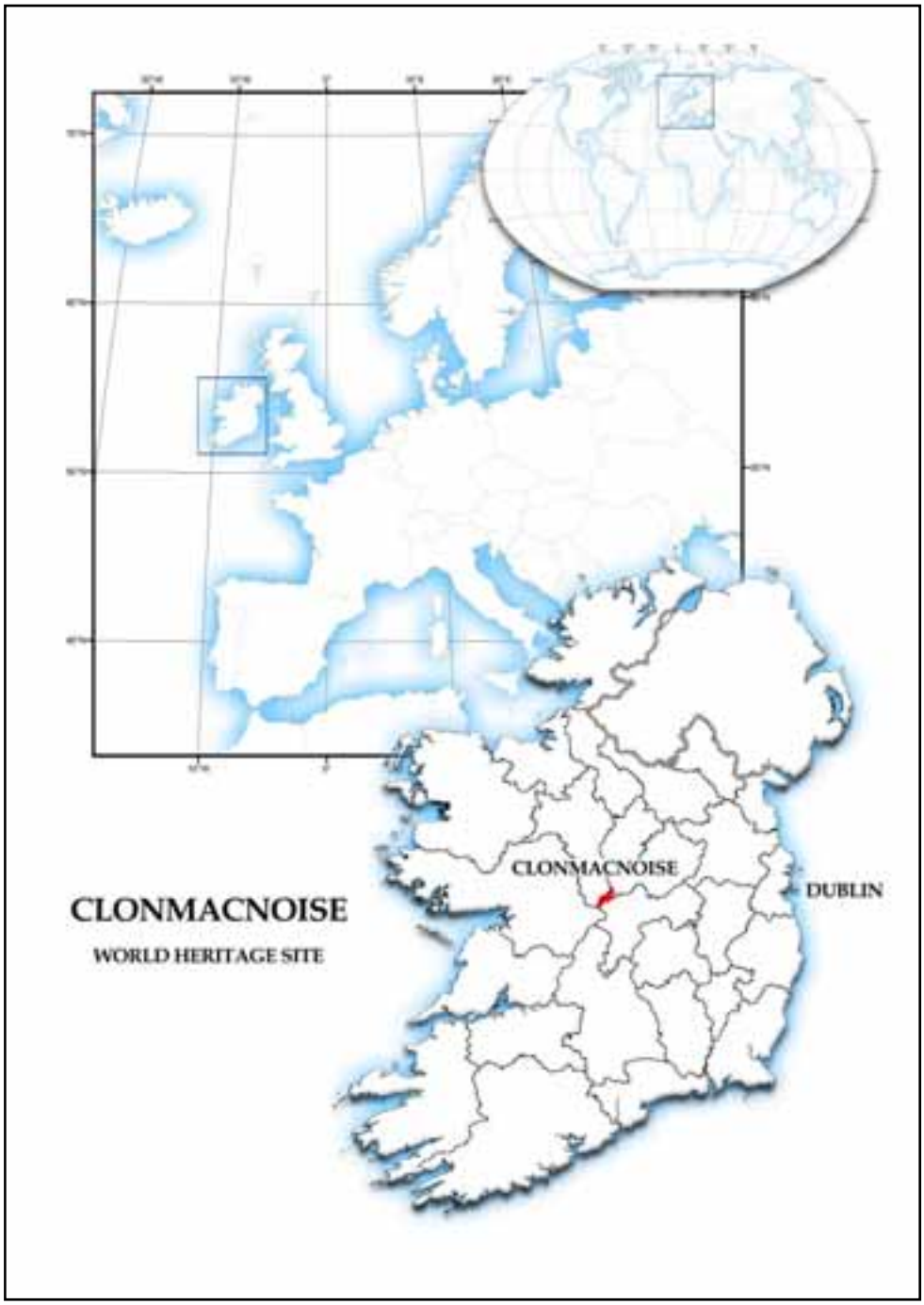


Fig. 1. Site Location

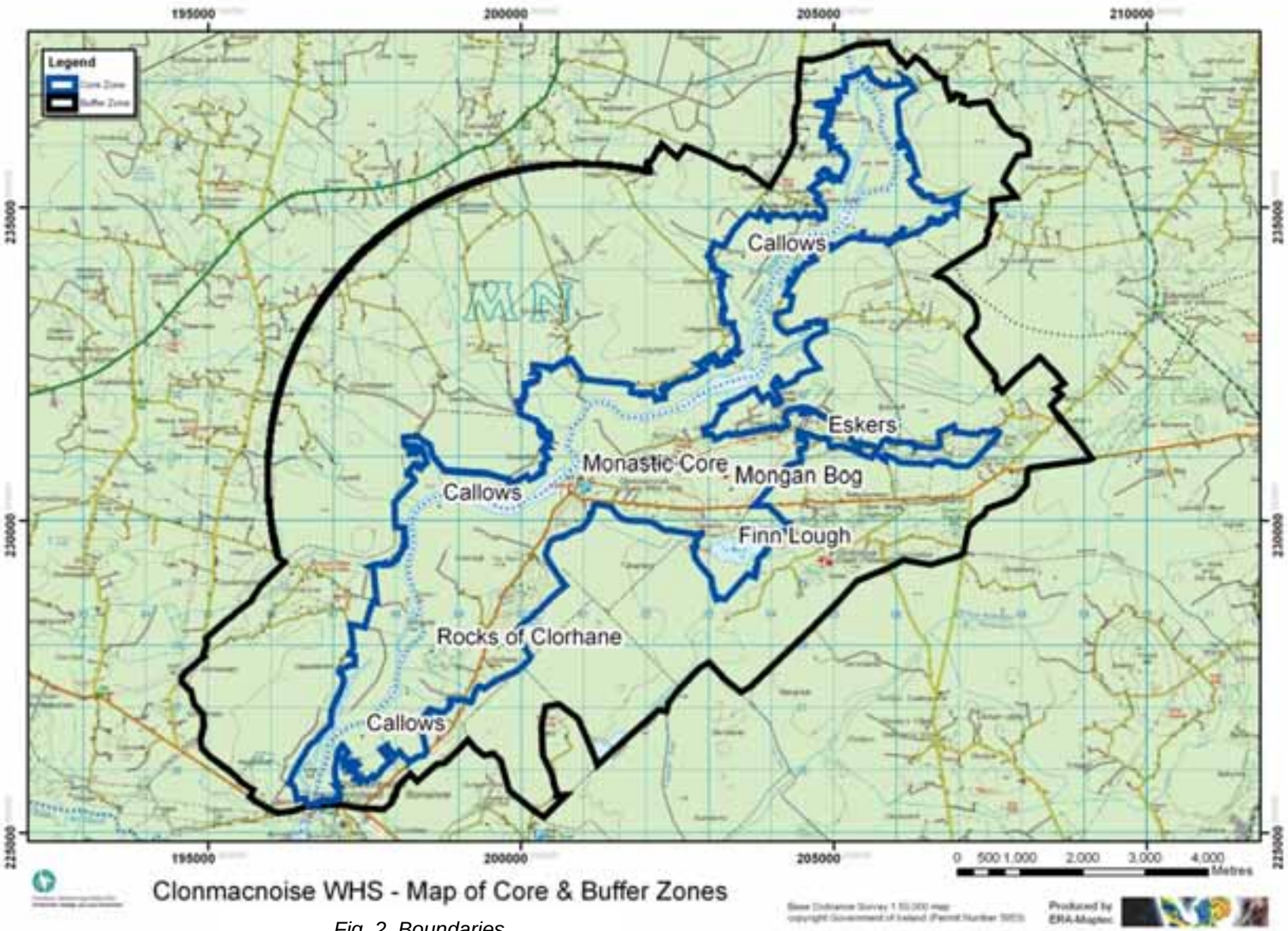


Fig. 2. Boundaries

2.3 Boundaries of the World Heritage Site

The boundaries of the Site have been drawn to take account of the landscape setting of the relict monastic city. The Site's boundaries need to accommodate the natural processes of landscape evolution, and will therefore be kept under review.

The proposed core and buffer zone is shown on Figure 2. Existing designations have been consulted when drawing the proposed core zone. These include the Archaeological Registered Area (around the monastic site), SAC, NHA and SPA designations, along with the data on eskers (including the esker study undertaken by Offaly County Council). However, in some cases (especially the eskers) the existing designations do not fully cover the proposed core zone and the proposed zone covers areas which do not currently have protected designations. In addition, the cultural landscape of Clonmacnoise is not just confined to County Offaly but naturally extends into parts of Counties Roscommon and Westmeath.

The Clonmacnoise buffer zone has been defined on two main criteria; visual sensitivity of the core zone (mainly to the NW) and hydrological sensitivity (mainly to the SE). The proposed buffer zone has been developed to ensure that any future development respects the authenticity and integrity of the candidate World Heritage Site.

The site area is 2,903ha while the buffer zone has an area of 7,443ha.

2.4 Description of Key Features

The nominated Site, which is located close to the centre of Ireland, straddles the banks of the River Shannon in Counties Offaly, Roscommon and Westmeath and is comprised of a monastic core (a designated archaeological area that extends from St Ciarán's Well on the west, to Bunthalla on the east) and its surrounding semi-natural landscape. The relict monastic city is located on an esker ridge on the east bank of the River Shannon, the longest river in Ireland. It is located 12 km from the town of Athlone (14.5km downstream by boat) and 6.5 km north of the town of Shannonbridge, the two nearest crossing points over the River Shannon.

The location of Clonmacnoise was much more strategic than it appears today. It is situated where the Eiscir Riada (Great Road), the main east-east route across Ireland in pre and early Christian times, meets the navigable Shannon, running north to south. Many of the great Midland monasteries lie on, or close to, the Eiscir Riada. The dry, well drained eskers associated with Eiscir Riada have been exploited by man, both as track ways which crisscrossed the Irish landscape spawning sites of archaeological interest such as ring forts and fullacht fiadhs (stone lined cooking pits), for tillage farming, grazing and for gravel extraction.

The heritage inventory below begins with the extant buildings within the monastic core and the designated archaeological area, and then describes the cultural landscape and its natural heritage features in the core and buffer zones.

2.5 The cultural heritage of Clonmacnoise

Summary of cultural heritage features

Ecclesiastical Enclosures

In Ireland early ecclesiastical sites are usually delimited by a curvilinear enclosure, while in the case of important ones there can be two, and in a few cases three, widely-spaced concentric enclosures. The symbolic significance of this layout is explained in the early eighth-century *Collectio Canonum Hibernensis*:

'There ought to be two or three *termini* around a holy place: the first in which we allow no one at all to enter except priests, because laymen do not come near it, nor women unless they are clerics; the second, into the streets the crowds of common people, not much given to wickedness, we allow to enter; the third, in which men who have been guilty of homicide, adulterers and prostitutes, with permission and according to custom, we do not prevent form going within. Whence they are called, the first *sanctissimus,* the second *sanctior,* the third *sanctus,* bearing honour according to their differences' (quoted in Doherty 1985, 59).

This idea of a hierarchy of sanctity with the holy of holies (*santissimus*) within the inner enclosure at the centre is derived from biblical descriptions of settlements in the Holy Land such as Jerusalem. This model was particularly apt in the case of Clonmacnoise which, as noted below, was conceived as Ireland's equivalent of Jerusalem. The presence of at least one enclosure is confirmed in Adomnán's *Life of Columba* of c.697 (Book 1, Chapter 3).

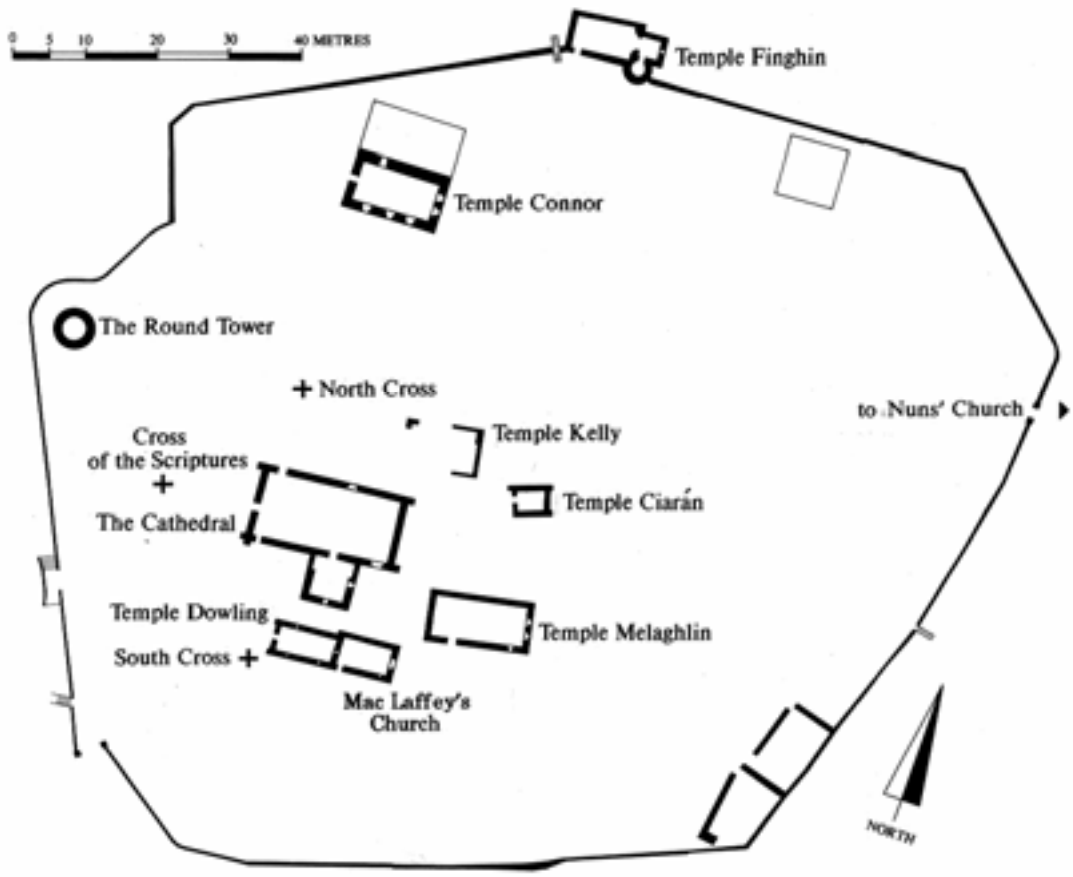


Fig. 3. Main features of the Monastic site

However, before 1999 the position or even the presence of concentric enclosures at Clonmacnoise was uncertain. In that year an excavation south west of the Old Graveyard

revealed a ditch 6m wide and almost 4m deep (Murphy 2003, 13). By projecting the line of the excavated section it was possible to conclude that Old Graveyard is at the centre of a semi-circular enclosure, c.500m in diameter, fronting onto the River Shannon. Further aerial photography and survey west of the Anglo-Norman case and in the vicinity of the Nun's Church revealed traces of earthworks representing an outer semi-circular enclosure, concentric with the excavated one and c.750m in diameter. In its current form the mortared stone wall of the Old Graveyard is post medieval in date, but it is likely to preserve the approximate extent of an inner enclosure surrounding most of the ritual foci including churches, round towers and high crosses: the *sanctissimus* as described in the *Hibernensis.*

Pl. 3 The relict monastic core or 'sanctissimus' with its collection of churches and iconic round tower

To date most of the evidence for nucleated settlement at the site is between the inner and middle enclosures (in the *sanctior*). It is also interesting to note that the nunnery (the Nun's church and related features) is in a marginal position immediately outside the outer enclosure, half a kilometre from the Old Graveyard. Thus we now know the positions of three concentric enclosures and we can see how they served to organise space within the site and allowed it to develop into a large nucleated settlement with a substantial lay population, while maintaining the integrity of its sacred core.

Points of Significance:

- These three concentric enclosures embody the idea of a hierarchy of sanctity derived from biblical descriptions of Jerusalem.
- They allowed the site to develop into a town with a substantial lay population, while maintaining the integrity of its sacred core.

Wooden Bridge

Between 1994 and 1998 the remains of a wooden bridge was surveyed and sampled a short distance downstream of the Old Graveyard (O'Sullivan et al 2000). It was dated by dendrochronology to c.804 making it the oldest known bridge in Ireland and one of the largest known from early medieval Europe. It was a monumental structure with a span of at least 120m and a probable height of 10-13m. Though Clonmacnoise was technically located in the territory of Mide, when this bridge was built the site was under the patronage of the kings of Connacht which lay on the opposite side of the Shannon to the west. The bridge embodied this link at both a symbolic level and at a practical, economic level by facilitating trade between this burgeoning trading centre and its Connacht hinterland. It may well have been constructed in collaboration with the king of Connacht.

The structure also embodies the role of Clonmacnoise as a Central Place strategically located at the junction of the two most important routeways in early medieval Ireland: the north-south routeway of the Shannon, the largest river in Ireland or Britain, and the Eiscir Riada, a gravel ridge traversing the raised bogs of the Irish midlands and facilitating communication across the country from east to west. Bridges across the Shannon were very rare at this time. Documentary sources indicate that later in the early medieval period bridges were built at Athlone and Killaloe, but all traces of these were probably removed during the construction of more recent bridges. By contrast, significant remains of the Clonmacnoisie bridge are still *in situ* including the bases of 17 of the original 25 pairs of vertical oak posts. Finds from the bridge site include nine wooden dugout boats, four iron woodworking axes, an iron dish, quantities of iron slag, and a large decorated copper-alloy basin of eighth or ninth century date.

Points of Significance:

- Ireland's oldest bridge.
- A monumental structure built in collaboration with the king of Connacht.
- Embodies the role of Clonmacnoise as a Central Place at the junction of the two most important routeways in early medieval Ireland.

Buried Settlement Archaeology

Over the past three decades there have been a number of excavations in an around the site. Most of these were carried out in advance of small-scale developments such as an extension to St Ciarán's primary school, or in tandem with conservation measures such as the removal of the high crosses to the Visitor Centre (King 1993; 1994; King 1991-98; Ó Floinn and King 1998). Collectively, these excavations have revealed a great deal about the extent and character of the early medieval settlement.

Excavations around St Ciarán's School at the south-west periphery of the complex suggest that in this area occupation was quite limited: the only early medieval features of note were a bowl furnace, evidence for a limited amount of antler working and an eleventh-century hoard of Hiberno-Norse coins which had been concealed in the area (Ó Floinn and King 1998). These trenches were located in the area between the middle and outer enclosures, though at least some of the activity revealed post-dates the infilling of the middle enclosure (above). They indicate that by no means all of the area within the ecclesiastical enclosures was intensively occupied; significant areas seem to have been used for agriculture, as also suggested by contemporary accounts of Irish ecclesiastical sites (Swift 1998).

An area southeast of the main New Graveyard excavations is currently being used as a burial ground, and careful archaeological monitoring of new graves in the area has identified remains from 330BC to the 13th/14th centuries. Like this area just described, this area is relatively peripheral and sited between the middle and outer enclosure. It may nonetheless have had an imporant function, for it is designated *Fair Green* on the early OS maps, and it

may be the area where the great fairs of Clonmacnoise were held (King 2009). According to early medieval sources, Clonmacnoise was renowned as a centre of trade and exchange; one early medieval poem states that it had 'the noblest fair in Ireland' (Bradley 1998, 47). Interestingly, the market areas of other major *civitates* such as Armagh and Kells also seem to be have been located near the eastern edge of the settlement. Coinage is a further indicator of trading: while there are no known examples of the coins which, according to the annals, were minted at Clonmacnoise in the 12th century, several complete and deliberately cut Hiberno-Norse coins have been found at the site, in addition to the eleventh-century hoard mentioned above (Kenny 1998). Thus, even areas that have not produced evidence for dense occupation contribute to a picture of Clonmacnoise as a thriving trading settlement.

Pl. 4 To be inserted replacement for artist's impression

Excavation under the high crosses in the Old Graveyard revealed a good deal of occupation at the heart of the site, including post and wattle structures and hearths together with evidence for iron and bone working (King 2009). However in the seventh century this area was redesignated a burial ground and in around 700 monumental wooden crosses were erected, underscoring the fact that this was now sacred space. It may be at this time that the inner enclosure now represented by the Old Graveyard was laid out. From then most if not all habitation was outside this enclosure. Geophysical prospection carried out in most of the fields surrounding the Old Graveyard in the mid-1990s indicate that 'settlement at Clonmacnoise was extensive (perhaps covering c10ha) and in some places intensive' and that the 'strength of the evidence suggests a major concentration of population' (Mytum 2003, 56). In particular, a large area of intense activity immediately west, north and east of the Old Graveyard was identified. This has been confirmed by excavation in three areas all sited between the inner and middle enclosure:

1. The New Graveyard immediately northeast of the Old Graveyard which was excavated in advance of grave-digging (King 1991-1998).
2. The Steeple Garden immediately west of the Old Graveyard which was excavated in advance of the construction of a Visitor Centre (Manning 1990).

3. The sloping ground to the northwest extending from the Visitor Centre to the bank of the Shannon which was partially excavated in advance of the installation of a new waste water treatment system (King 2004; 2006).

In each of these areas three principal phases of occupation were identified (King forthcoming 2009). The uppermost strata, largely disturbed by post-medieval agriculture, are of the late 11th and 12th centuries and are characterised by flagged and cobbled areas, pits, well-shafts and postholes. Below this level is the main occupation phase, dating to the 9th/10th century, with a series of houses and other structures. There is also an earlier phase dating to the 7th/8th century with stake-holes and spreads of burnt soil which indicate quite extensive occupation across the site by the late 8th century. Post-excavation work in ongoing, but it is clear that a period of great expansion occurred in the 7th/8th century with a further re-organisation and new features suggestive of urbanisation appearing in the 9th century.

The largest area opened and that which produced the best evidence for layout and buildings, was in the New Graveyard. The area excavated measured c.45m east-west by 30m north-south. It was traversed by a NNE-SSW oriented metalled street more than 18.5m long and about 3m wide, which extended from the low-lying callows adjacent to the Shannon and probably joined to the Pilgrim's Way, a raised road which is still evident between the Nun's Church and the Old Graveyard. A stone-delimited pathway ran parallel to it, indicating that the overall layout of this quarter of the *civitas* was carefully planned. At the southeast of the excavation was a docking area with upright posts surviving *in situ*. Initially the houses were substantial circular buildings on raised clay platforms but some of these were later replaced by rectilinear buildings. Associated with the houses were sheds, sub-rectangular structures, hearths for cooking, kilns and storage pits. Compared to the Hiberno-Norse towns evidence for plot boundaries between the holdings of individual residents was limited, but in some cases continuity of plot extents is suggested by the fact that some houses were built directly over earlier ones.

This rich archaeological evidence confirms what was already hinted at in the documentary record: that Clonmacnoise developed into an urban centre during the early medieval period. The documentary evidence for urbanism at the site and the archaeological evidence for industrial and craft activity is discussed further in section 3 and detailed reports of the excavations are presented in Appendix 3. To date only a relatively small proportion of the area which the geophysics suggests was intensively occupied has been excavated. The remaining buried archaeology, especially in the area north of the Old Graveyard, represents a vital cultural resource, for it is probably the only substantial area where a significant amount of early medieval urban archaeology of non-Viking origin survives in Ireland. As discussed below, the archaeology of the handful of other likely non-Viking urban centres has been obliterated by later developments.

Points of Significance:

- By far the best evidence for early medieval urbanism of non-Viking origin in Ireland and therefore an important part of the story of the development of urbanism in post-Roman Europe.
- Evidence for international trade and craft production on a large scale.
- Evidence for the organisation of the site into zones with particular functions.

Temple Ciarán 9th-10th century

NGR 201000 230660

At the very heart of the Old Graveyard stands Temple Ciarán, both physically, and in the medieval hagiographic record. This is one of only six extant examples of the unique architectural type of the early Irish shrine chapel, probably the earliest mortared stone

structures in Ireland, and of which Temple Ciarán is the only one to have a true-arched doorway. Radiocarbon dating of the mortar suggests it may date to the eighth or ninth century, making it among the very earliest mortared stone churches in Ireland (Berger 1995). This shrine chapel, which works as a complementary space to the cathedral or damliag, is an example of the deliberate separation of reliquary and liturgical space practised by early Irish clerics of the eighth and ninth centuries (Ó Carragáin, 2003, 130).

Pl. 5 Temple Ciarán, one of only six extant examples of the unique architectural type of the early Irish shrine chapel and probably the earliest mortared stone structures in Ireland

Showing a quite distinct development of the cult of relics in Ireland from that of contemporary Francia or England, Temple Ciarán derives rather from a deliberate spatial reinterpretation of the aedicule in Jerusalem. Indeed, it is explicitly compared to the tomb of Christ in a middle-Irish (c. twelfth-century) life of Ciarán. On a different axis from the cathedral, it may also reflect the orientation of the earliest burials on the site, and the first congregational church, as it was built over what was later believed to be the burial place of St Ciarán.

Subsidence necessitated the rebuilding of the north wall in the nineteenth century, but should not be seen as prejudicing its authenticity. It is in fact an indicator of its continuing significance to the local populace as the burial place and shrine of St Ciarán, which results in the removal of clay from within the church to protect crops against pests (Manning, 2003, 71). This clay is periodically replaced by the site management team.

Points of Significance:

- There is a deliberate reference to the Holy Sepulchre in Jerusalem
- The building is indicative of distinctive the early medieval Irish attitude towards death, burial, relics and resurrection.
- The building provides a living association with miraculous intervention of St Ciarán, the founding saint.

The Cathedral (damliag) 909 (also referred to as Temple Mac Dermot)

NGR 200978 230654

The largest building in the monastic complex, and situated at its centre, the building of this church by Flann mac Maeleachlainn, (high king of Ireland 879-916) and Colmán (abbot of Clonmacnoise, d.926) is recorded in the annals in 909. This was one year after Flann's defeat of King Cormac Mac Cuilennáin of Munster, in the battle of Belach Mugna. With Cormac's defeat, Flann's claims to high kingship were transformed into political reality. Flann's erection of the cathedral and high cross at Clonmacnoise immediately thereafter should be seen as an act of thanksgiving to God, a renewal of a covenant between the families of saint and patron, as well as a symbol of royal power and patronage (Manning, 1998, 71-4; Ó Carragáin, 2007, 105). Not only is the church the largest extant pre-Romanesque church in Ireland, but, despite some alterations in the twelfth, thirteenth, and fifteenth centuries, the core of the church and its unicameral appearance have been carefully and deliberately maintained, throughout both the medieval and modern period.

Pl. 6 The Cathedral is the largest extant pre-Romanesque church in Ireland. The careful preservation of most of its fabric throughout the Middle Ages is representative of the Irish attitude towards earlier structures as relics of the founding saints

Although simple in appearance, the use of stone masonry at this date was highly charged, alluding to the Romanitas of the Irish church, as well as acknowledging the symbolic reading of the individual stones of which it was composed as the Christian congregation, which was a commonplace of Patristic exegesis (Ó Carragáin, 2005, 100-101). The unusual proportions of the first phase (4:7) are probably due to the significance of such numbers in Christian numerology (Manning, 1998, 77). The length of the church, at just over sixty feet, may probably deliberately reference that of King Solomon's Temple, a model of which was donated to the church in the eleventh century (Ó Carragáin, forthcoming).

Alterations in the twelfth century included a new west door and east window, and a sacristy added to the south, also associated with royal patronage, although, in these instances, by kings of Connacht. In the thirteenth/fourteenth century the south wall was demolished and moved northward by two metres, probably due to structural problems, leaving the west doorway off-centre. Finally, in the fifteenth century, the eastern end of the cathedral was vaulted and a spectacular north doorway was added which has fine limestone carving in the perpendicular gothic style, with deep and complex mouldings around the ogee opening. The doorway is surmounted with high reliefs of three saints: Dominic, Patrick and Francis (although Francis' head is missing) each identified by inscription. This is indicative of the spread of the Franciscans and Dominicans to Ireland, and increasing devotion to their cult by this time, although neither order was in fact present at Clonmacnoise itself. A further inscription reads: 'DNS ODO DECANUS CLUAN ME FIERI FECIT' indicating that a dean named Odo, who died in 1461, commissioned the work.

The cathedral is the resting place of Toirdelbach Ua Conchobair, King of Connacht (buried in 1156) and his son, Ruaidhri Ua Conchobair, the last High King of Ireland (interred in 1198). The latter abdicated and spent his final years in retirement in the Augustinian abbey of Cong, but the symbolic significance of burial at Clonmacnoise led to his disinterment and reburial in the cathedral in . This may have been the occasion when the transitional west doorway and sacristy were added to the building.

Pl. 7 Detail of a beautifully carved head of one of three saints over the north doorway of the Cathedral

Points (

- This is the largest extant pre-Romanesque church in Ireland, unique in having a firm documentary date and patron. It is representative of now-destroyed churches such as that at Armagh, which was probably the only pre-Romanesque Irish church to

surpass it in size. It influenced other churches built shortly afterwards, such as Agha, Co. Carlow.

- It is the most spectacular example of royal patronage at a major ecclesiastical site through stone architecture.
- The careful preservation of most of its fabric throughout the Middle Ages is representative of the Irish attitude towards earlier structures as relics of the founding saints. As at Glendalough, Co. Wicklow, (Manning, 2002) or Scattery, Co. Clare (Ní Ghrádaigh, 2006), the earlier stone church was preserved and rebuilt despite knowledge of new and innovative styles present elsewhere on the site in less important buildings (Ó Carragáin, 2007, 100-101).
- It is a representative example of the late Irish Gothic style (in terms of architectural sculpture).

The Cross of the Scriptures (909) and the other High Crosses

High crosses are the primary surviving monumental works of Insular art and exist from the 8th century in Ireland. The origins of free-standing monumental crosses may probably be traced back to the crosses that were erected in the Holy Land to mark the site of Christ's baptism and crucifixion. Descriptions of these – such as that given to Adomnán at Iona by the shipwrecked pilgrim, Arculf, in the 680s – and pilgrim tokens, may then have informed the Insular tradition. Adomnán himself, in his *Life of Columba*, and Bede, in his *Ecclesiastical History*, document free-standing wooden crosses as early as the first half of the 7th century. Reasonably dramatic scale is implied by the sources: Oswald, king of Northumbria erected a cross at Heavenfield in 633, which only a miraculous advent of strength allowed him to hold physically in the place until his soldiers should have heaped up the earth around it (Edwards, 1985, 399). By the 8th-9th centuries, stone was rapidly becoming the favourite medium for such crosses, but the morphology reveals clearly the wooden prototypes, using specific carpentry techniques, on which they were based (Kelly, 1991).

It seems likely that the first crosses in stone may have been erected in Northumbria, with Scotland and Ireland rapidly adapting the tradition, acquiring the necessary technological skills through the movement of masons across the sea, often perhaps, through royal patronage (Edwards, 1990, 163). The distinctive ringed shape of the Clonmacnoise crosses is typical of Irish work, and has both structural and symbolic significance. Functionally, it supports the stability of the arms, while deriving iconographically from the wreath of victory depicted around the chi-rho, a common early Christian encapsulation of Christ's victory on the cross. Also typical of Ireland is the introduction of multiple panels with biblical scenes, and indeed the term 'scripture cross' sometimes applied to such crosses, derives from its use in the *Chronicon Scottorum* in 1081 to denote the west cross at Clonmacnoise. High Crosses are, along with illuminated manuscripts like the *Book of Kells* and the *Book of Durrow*, Ireland's greatest contribution to Western European art of the middle ages, forming 'the largest treasury of figures sculpture with biblical iconography anywhere in Europe during the last quarter of the first Christian millennium' (Harbison, 2005, 220).

Pl. 8 The exquisitely wrought Cross of the Scriptures, one of the masterpieces of its time

The function of high crosses remains to an extent ambiguous – symbols of God's power and protection, they demarcated the sacred ground of the monastery, sometimes proclaimed, through inscription, a votive purpose, as well as having a liturgical role. The interpretation of 'scripture crosses' suggests, furthermore, a devotional and meditative role. The frequent inclusion of images relating to King David and to the psalms, coupled with the evidence of inscriptions, further suggests that they may often have been commissioned by kings as part of the complex spiritual and material relationship between sacral and secular power in medieval Ireland.

At Clonmacnoise, documentary sources mention various crosses no longer extant or identifiable: the Cairn of the Three Crosses in the tenth century, and the crosses of Bishop Etchen and Congal in the eleventh century (King, 1997, 127). Several free-standing crosses, or fragments thereof do however remain, although it is interesting to note that a fragmentary stone shaft, found in secondary position in the north jamb of Temple Ciarán,

bears witness to antiquity of stone carving, and masonry recycling and reuse even as early as the late ninth century (Manning, 2003, 66-7). The three high crosses now on display in the visitor centre originally stood at Clonmacnoise in a semi-circle to the west, south and north of the cathedral. The fragments of two other crosses are among the cross-slab collection in the cross-slab building at the site and a further cross fragment is in the National Museum in Dublin. Due to deteriorating environmental conditions that were damaging the stonework and because of their importance as examples of Insular art, the three upstanding crosses were moved into the nearby New Visitor Centre in 1992 to protect them for posterity. High quality replicas cast from resin were placed on their original sites to maintain the spiritual and architectural integrity of the Site.

Pl. 9 The South Cross is richly ornamented with geometric, interlace and spiral patterns

The North Cross is likely to have been the earliest free-standing high cross at Clonmacnoise. It is, indeed, incomplete, and consists now only of a shaft with a projecting tenon joint, which probably supported a cross head without a ring. Excavations carried out in 1990 determined that it was not in its original position, nevertheless the base, which consisted of a large, circular reworked sandstone millstone indicates that it was always free-standing. Intriguingly, the re-used millstone base recalls Adomnán's description of a similar monument at Iona in the late seventh century, and St John's Cross Iona is indeed set in a millstone base (Manning, 1992, 8-9). Although it was free-standing, only three sides of the shaft are decorated, and the east face is uncarved. The repertoire of ornament includes interlaced human figures, animals and panels with interlacing designs, and Nancy Edwards (1998, 108) has pointed to their close resemblance to manuscript decoration. The North Cross, with two related fragments from the site, along with the shaft from Banagher, Co. Offaly and the cross from Bealin, Co. Westmeath (which bears an inscription commemorating Tuathgal, possibly identifiable with the abbot of Clonmacnoise of that name who died in 811) are the products of one workshop, and have been dated to the early ninth century. The art work is typically Insular with interlaced human figures, animals and spiral motifs: the animals are redolent of those appearing on Pictish carved slabs in Scotland, while other aspects of the decoration, including the human figures, have parallels in the Book of Kells. The experimentation in terms of form seen in this group of monuments, (i.e. the use of a ringless head, the relief inscription at Bealin), the manuscript parallels, as well as the Pictish connection, all support this early dating.

Slightly later, probably dating to the mid-late-ninth century is the South Cross. It originally stood at the south-west corner of Temple Dowling, and, like the later Cross of the Scriptures, is more typical than the North Cross in having a ringed cross head. Its decoration, which is clearly a skeumorphic representation of a wooden cross with attached metalwork panels, is immediately reminiscent of the jewelled-cross which stood at Golgotha, a parallel further enforced by the triple-stepped form of its base. The inclusion of a figural panel of the Crucifixion, amongst otherwise geometric, interlace and spiral ornament, is often interpreted as indicating the chronological beginnings of the group of so-called 'scripture crosses'. The form of the Crucifixion itself, in its similarities to the bronze Crucifixion plaques found at Clonmacnoise and elsewhere in the Midlands, equally suggests that this cross is a key example of the transition not merely from ornamental to scriptural carving, but also from wood to stone. The posthole beneath it, (and that beneath the Cross of the Scriptures), is unique archaeological evidence for wooden antecedents of high crosses, a phenomenon otherwise only inferred from skueomorphic features of stone crosses themselves, and from textual sources like Adomnán's *Life of Columba* noted above. A very fragmentary inscription suggests that the South Cross may have been commissioned by the father of King Flann, Maelsechnaill Mac Maelruanaid, High King of Ireland from 846-862, who also erected an inscribed cross at nearby Kinnitty, Co. Offaly.

The best documented of the Clonmacnoise high crosses is the West Cross, the Cross of the Scriptures, which is located directly in line with the west door of the cathedral. The Cross was mentioned twice in the Annals of the Four Masters: first in 957 and later in 1060. Standing at 13ft (4m) high, the shaft and head of the cross are carved from one piece of sandstone and this is slotted into the sandstone base which takes the form of a truncated pyramid, decorated with figure sculpture on all four sides. A ring surrounds the junction of the arms and shaft, as is usually the case with Irish 'high crosses' but in this instance the arms have a unique upward tilt which lends lightness and vibrancy to the form. The capstone forms the shape of a small church. As with the other monuments at Clonmacnoise, the form of the cross itself makes intentional allusion to key monuments in the Holy Land – the pyramidal base representing the mount of Golgotha, while the capstone represents, as indeed does Temple Ciarán, the Holy Sepulchre. Thus the overall morphology of this cross, and indeed, of the south cross, encapsulates in a microcosm the

death, triumph, and resurrection of Christ, even before an examination of the iconography of its sculptural panels is undertaken.

Pl. 10 The Cross of the Scriptures has been specially re-housed in a chamber of the new Visitor Interpretation Centre

These panels, however, further enforce a message of Christian redemption through Christ's passion. The west face depicts soldiers guarding the tomb of Christ, the arrest of Christ, the flagellation and in the centre of the ring, the crucifixion. At the centre of the east face is the Last Judgement, and at the top of the east shaft is a panel showing Christ with Peter and Paul. Uniquely, however, the cross also represents a scene from the life of St Ciarán, the patron saint of Clonmacnoise. This is the bottom scene on the east face, which may be interpreted as St Ciarán and Diarmuid, High King of Ireland, setting the first stake of the church, but also may be read as King Flann and Abbot Colman erecting the corner post of the new church (this image from the cross has been adopted as a logo by the Offaly Vocational Education Committee). This duality and fluidity of meaning is surely intentional, especially given the hugely significant archaeological context revealing the presence of a previous wooden cross here (King, 1997, 130), which indicates that Flann and Colman were replacing in stone, monuments which had already been present in wood for perhaps some hundreds of years – thus both building and rebuilding are intended to be understood. The base is ornamented with hunting scenes showing three riders facing left and two chariots facing right, and allusion to the psalms and sacral kingship may probably be intended. At the bottom of the shaft is an inscription, damaged in the past, which indicates that a prayer be said for King Flann (d.916) and Abbot Colmán, who jointly sponsored the work.

The layout of the three crosses is deliberate for they literally inscribe the whole monastic core with the sign of the cross and this (effectively) undisturbed scheme is unique amongst Insular high crosses. Particularly significant is the fact that here at Clonmacnoise alone, the documentary, archaeological and art-historical evidence come together to reveal the key process of the transformation of an existing early medieval wooden monumental core into stone, during the late ninth and early tenth centuries. Uniquely, the postholes which King's excavations revealed beneath the Cross of the Scriptures and the South Cross, demonstrate the wooden antecedents of these stone monuments. The implication is that the cathedral and the Cross of the Scriptures were the last elements of an older monumental scheme to be translated into stone in 909, a scheme which envisaged the whole complex of the monastic core as cross-shaped in terms of plan. Thus, the Cross of the Scriptures is aligned perfectly on the original axis of the cathedral – this forms the shaft and upper arm of the cross – while the North and South crosses mark the ends of its horizontal arms equidistant from the cathedral – the cross is literally inscribed across the site.

More than any other group of monuments this illustrates the symbolic sophistication and complexity of Irish ecclesiastical sites. Although for very important reasons (a veneration for the past, and the symbolic vibrancy of the four-square structure) the churches themselves remained single-celled rather than cruciform, Irish clerics and patrons used freestanding monuments (in this case high crosses) to realise complex monumental schemes. There are hints that similar schemes existed at a handful of other important sites: for example at Kells, Co. Meath, where there are two high crosses near the main church, or from annalistic references to Armagh. However insufficient evidence survives to reconstruct them. The remains of multiple crosses at sites in Northumbria and in Scotland, indicate that crosses were probably used to articulate space in and around sites in this way elsewhere, but no other coherent scheme of this sort survives – thus Clonmacnoise is unique in this respect.

The worldwide importance of the Cross of the Scriptures was exemplified when Irish sculptor, Brendan McGloin, was commissioned by the Ancient Order of Hibernians, Portland USA, to handcraft a full size replica of the Clonmacnoise Cross of the Scriptures. The 13 foot, 5 tonne sandstone cross was completed in 2007 and shipped from Donegal to Portland, Oregon, where it will stand as a Famine memorial.

Points of Significance:

- In conjunction with the cathedral, the Cross of the Scriptures is a unique claim to high kingship validated by the community of St Ciarán, and implicitly by Ciarán himself. The representation of Flann and Colmán, or their ancestors Diarmait mac Cerbaill and Ciarán, driving in the corner post of the church, is a unique representation on an Irish scriptural cross of either a contemporary scene, or one from the founding saint's life.
- The Cross of the Scriptures is a representative example of the tenth-century Irish high crosses ornamented with multi-figural panels, considered to be the finest expression of monumental stone carving from the decline of the Roman Empire to the revival of sculpture in eleventh-century Europe with the beginnings of the Romanesque style.
- Artistically the Cross of the Scriptures it is one of c– a uniquely accomplished piece of stone sculpture in a tenth-century European context. It combines complexity of scriptural iconography, with lively inventiveness of detail and overall beauty of composition. It is unusual although not unique in that we know that it was referred to as *cros na screaptra*, or 'the cross of the scriptures' as early as the eleventh century (*Chronicon Scottorum*, 1081).
- High crosses are a unique Insular contribution to European art, but only at Clonmacnoise does enough of their original context survive for us to appreciate them not just as artefacts but as nodal points and components of sophisticated

monumental schemes. Not only this, but the evidence of the postholes revealed by King's excavations suggest that this may be pre-Viking in origin, and that it was perpetuated for several generations.

The Round Tower, 1124 (also known as O'Rourke's Tower)

NGR 200937 230669

The round tower at Clonmacnoise was built on high ground in the north-west corner of the monastic complex. It is a twelfth-century tower, dated by annalistic evidence to 1124, when it was finished by Gillachrist Ua Maoileóin, successor of Ciarán (i.e. abbot of Clonmacnoise), and Toirdelbach Ua Conchobar, king of Connacht, and aspirant to the high kingship of Ireland. Indeed, it is the only round tower whose construction, as opposed to destruction, is recorded in the annals (Manning, 2003, 86, 90).

The round tower is a building type which is almost unique to Ireland, and the few examples found elsewhere (at Brechin and Abernethy in eastern Scotland) can be regarded as belonging to the same tradition. Around 120 examples are thought once to have existed in Ireland, and while most towers are now damaged or incomplete, eighteen to twenty are considered to be in a good state of preservation. The purpose and function of the round tower have been much disputed, but it is now thought they were principally bell towers as their Irish name, cloigthech, or bell-house, confirms (Stalley, 2001, 30). Bell ringing was not only an important part of the liturgical cycle, but also was crucial in medieval Ireland in defining limits of sanctuary, and proclaiming the protection, and at times vengeance, of the patron saint (Stalley, 2001, 40-42; Ní Ghrádaigh, 2008, 90-92). While it has proved impossible to trace the formal and stylistic origins of the round tower, the Irish reluctance to compromise the symbolically significant four-square shape of the church, prevented the appeal of attached towers which were common elsewhere, and necessitated an alternative solution – parallel developments, if formally distinct and of a slightly different chronological spread may be found across Continental Europe (Ó Carragáin, 2007, 107-8).

The round tower of Clonmacnoise is a particularly well-built example, and was originally of unusually large size – it is 5.6 metres in diameter at the base and tapers evenly towards the present top which is just over 19 metres high, but is missing about one third of its original height and its conical cap. It was struck by lightning in 1135 and the reconstructed upper three metres may date to either *c.*1200, or to the later medieval period. It is composed of well-shaped rectangular grey limestone blocks (which were quarried at the nearby Rocks of Clorhane) to the level of the bell-storey windows where the later work uses smaller and more irregular stone. Con Manning (2003, 91-2) has argued that the missing upper levels of masonry were reused shortly after its 1135 destruction, to build the attached round tower of Temple Finghin. This would explain the otherwise inexplicable lack of reuse of the distinctive, curved stones of the twelfth-century build.

As is common with the majority of such towers, the doorway is well above ground level (in this case 3.3 metres) and faces southeast. The raised doorways of round towers have presented a conundrum to architectural historians, but it seems likely that the reason for their height may be due to structural reasons, especially given the very shallow foundations of most round towers, Clonmacnoise not excepted. Postholes found at other sites would indicate that a fixed set of wooden steps would have allowed easy access to the doorway on a permanent basis. This finely cut arched doorway, with its sloping jambs, is typical of the restrained and traditional aesthetic of early medieval building in Ireland, a tradition which was to change with the introduction of the ornamental Romanesque at Cormac's Chapel in Cashel just three years after the completion of this tower. All stones carry through the entire depth of the wall. The lintelled windows of the original build continue the general conservatism of the architecture. The other eight reconstructed windows, lintelled also, are

at the bell-storey level facing the cardinal compass points and opposing points between. The tower was re-roofed in the 1980s and fixed ladders were inserted between the floors.

Pl. 11 The Round Tower: an Insular Christian architectural form that has become synonymous with Ireland

Points of Significance:

- The Round Tower is a representative example of the round tower, an Insular Christian architectural form that has become synonymous with Ireland.
- It is demonstrative of the continuing importance to any contender for the high kingship of Ireland, of the acknowledgement of the community of Clonmacnoise.

Nuns' Church, 1167

NGR 201502 230888

The Nuns' Church is found to the east of the main monastic enclosure. The path leading to the Nuns' Church marks the start of the Pilgrim's Road, an ancient route that traverses the lee of an esker passing through the New Cemetery, which archaeological excavations have shown was a populous area in the medieval period. As such, we should regard the community of nuns, not as living in rural isolation, but as being integrated not merely into the larger religious life of the community, but also living at times perhaps uncomfortably close to the populous sprawl which surrounded the monastic core. It was a place of retreat for several royal widows and daughters and of burial also, as is attested by the slabs brought to light here during the nineteenth-century clearance and restoration. The church itself is found within its own enclosure, which until its rebuilding in the 1860s, was largely medieval. Two pre-Romanesque churches are preserved within the same enclosure: one as a solitary remaining wall, forming a part of the south wall of the site and the other visible as foundations in the grass to the north east of the standing church. Either of these may be the stone church in the Cemetery of the Nuns which, according to the annals, was burned in 1082.

The standing Romanesque church was completed by Derbforgaill (1109-93) in 1167. The daughter of the King of Mide (Meath), and wife of Tigernán Ua Ruairc of Bréifne, Derbforgaill's abduction by the King of Leinster, Diarmait Mac Murchada, during a raid in 1152 has, since the twelfth century, been seen as one of the key reasons for the arrival of the Anglo-Normans in Ireland. According to the Annals of Clonmacnoise, Diarmait Mac Murchada 'kept her for a long space to satisfy his insatiable, carnall (sic) and adulterous lust'. She was returned to her husband the following year but he never forgave the insult, and, when the opportunity arose in 1166, Ua Ruairc and his allies drove Mac Murchada out of his kingdom into exile. Mac Murchada then enlisted the aid of Henry II of England to regain his kingdom, and this precipitated the Anglo-Norman invasion in 1169.

Pl. 12 The Nun's Church, a key representative example of the Hiberno-Romanesque style

Although recent scholarship has demonstrated that Derbforgaill's role in this affair was both more complex, and less melodramatic than has been depicted, she remains, in the popular imagination, one of the key figures responsible for Ireland's so-called 800 years of oppression. Overby (2008) has demonstrated that this is partially responsible for the very paltry amount of scholarship on the Nuns' Church.

The Nuns' Church itself is significant as one of only three Hiberno-Romanesque churches in Ireland to have a documentary dating, and is therefore very important in elucidating the chronology of the style. It is also the only complete extant Hiberno-Romanesque church to show female regal patronage. Furthermore, it demonstrates the continuing relation between the royal family of Mide (the Uí Maeleachlainn) and Clonmacnoise. Significantly, it is also the site of the introduction of the first non-Irish order to Clonmacnoise, the Arroasian canonesses.

The conservation and reconstruction work carried out at the Nuns' Church in 1865 by the Revd. James Graves is considered a key early example of best practice in architectural reconstruction, especially in the deliberate distinction between replacement stone and original architectural sculpture (Ní Ghrádaigh, 2003).

Pl. 13. Ornate carvings on the voussoir of the chancel arch include animal heads and an exhibitionist female figure

Points of Significance:

- The Nun's Church is a unique Irish example of female regal architectural patronage that is known elsewhere (e.g. Freshford, Co. Kilkenny – doorway only remaining; Derry, Co. Derry) but through documentary evidence only.
- It is a key representative example of the Hiberno-Romanesque style.
- It has a close connection with significant events in Irish history (the movement of peoples).
- It is significant for the history of architectural conservation in Ireland and Britain.
- It is a unique remaining representative example of a subsidiary female enclosure and group of churches in an early Christian monastic landscape in Ireland. At Armagh such subsidiary enclosures are known from the historical record but are no longer extant.

Temple Finghin, c.1167 (also known as McCarthy's Church)

NGR 200995 230730

Temple Finghin demarcates the extreme edge of the monastic core towards the river, and the marshy and waterlogged nature of its immediate surroundings must have been similar in the early medieval period, when there are references to a 'Tiprait Finghin' or well, which may have been very near this church. The church itself is one of the two examples of the Hiberno-Romanesque style at Clonmacnoise, and is unusual in showing the integration of a round tower, thought to date from around 1160-70, into the plan of what would otherwise have been a reasonably standard bicameral building. Unusual too is the south doorway rather than the almost universal west doorway. The integration of the tower, and the decision to build a doorway in the lateral rather than end wall, shows a deliberate reference to Cormac's Chapel at Cashel 1127-34, (usually considered as the key building in the introduction of the Romanesque style to Ireland), but filtered through a second generation of extremely conservative Irish patrons and builders.

The Romanesque chancel arch appears to have been damaged by fire at some stage and its present inner order is a later limestone replacement. The attached round tower, sometimes called the second round tower of Clonmacnoise, is 16.7 metres high with a diameter of almost 4 meters at the base. The conical cap, with its unusual herringbone pattern, was taken down and reset by the Office of Public Works in 1879-80. The tower has a door at ground level entered through the chancel, clearly the usual raised doorway would have been unsuitable here given its integration with the church. Also unusual is the lack of the traditional four bell-storey windows, as there are just the two at this level - to the north and south - and they are noticeably lower than the usual bell-storey windows of other towers. Manning has suggested that most of the stonework may be from the upper sections of the Round Tower which had been struck and damaged by lightening in 1135, and such reuse of masonry seems plausible. The five windows in the drum are all situated in the south side of the tower. Most of these windows are either arched or in a recessed arched surround, and unlike the masonry are probably contemporary with the chancel arch, showing the more refined taste of the later twelfth century. The window built into the west façade belonged originally to the late twelfth /early thirteenth-century alterations to the cathedral/damliag.

It was the vandalism of Temple Finghin chancel arch, and the crosses at Clonmacnoise, described at the time as 'irreparable' which led the Kilkenny Archaeological Society to instigate an investigation into the identity of the perpetrator, and subsequently to support a case in the courts against the him. In 1864, the Royal Society of Antiquaries of Ireland raised funds to help with the prosecution of John Glennon, for wanton vandalism of this church. The case fell through but it was a key test case for legislation for the protection of public monuments in the United Kingdom, which had previously not been applied outside of a museum context.

Points of Significance:

- This is a unique example of native architectural innovation in Ireland in a pre-Norman context: combining the quintessentially Irish form of the round tower with a church ornamented in the Hiberno-Romanesque style.
- It played a key role in the application of protective State legislation to standing buildings.

Pl. 14 Temple Fingin: a unique example of native architectural innovation in Ireland in a pre-Norman context

The Cross-slabs: 8th -12th Century

Clonmacnoise has the largest and most remarkable collection of pre-Norman cross-slabs in Europe. Over 600 have been catalogued ranging in date from the 8th-12th century, which is a quite stunningly large quantity (by contrast at Iona there are approximately 100 carved stones). The slabs are almost all made of sandstone (sourced in all likelihood from nearby Bloomhill, although some may have been brought upriver from as far afield as County Clare (Lionard, 1961, 145; King, forthcoming, 10)) and are elaborately carved with crosses demonstrating that there was a school of craftsmen at Clonmacnoise carving these slabs over a number of centuries. Generally the stone is not shaped or dressed but is carved on a natural and sometimes uneven surface. Almost a third of the Clonmacnoise cross-slabs have an inscription asking for a prayer for the person commemorated; some individuals can therefore be identified in Irish chronicles, thus giving dates to the slabs. The inscriptions are in Irish in Insular script, requesting a prayer to be said for a named individual.

Pl. 15 The Clonmacnoise slabs are unique in their sheer quantity. Clonmacnoise has the largest collection of cross slabs in Atlantic Europe

The earliest slabs, some possibly as early as the 7th century, have either small outline crosses or a simple cross at the beginning of the inscription (known as an initial cross). A fine example of this group and one demonstrating 'scholastic Ogham' of the type found in

manuscripts, has the name Colmán after an initial cross, followed by the word bocht (poor), written in the Ogham script on a line inscribed on the face of the stone. This is likely the burial slab of a member of the Meic Cuinn na mBocht family, a hereditary ecclesiastical dynasty, who provided a number of ecclesiastical officials for the monastery from the eighth century. Crosses in square or rectangular frames are common and date mainly from the 8th and 9th centuries. Another distinctive group are the ringed crosses that also date from the 9th century. In the 10th and 11th centuries, crosses with expanded terminals became common and some of the finest slabs in the Clonmacnoise collection are of this type. A small and representative number of cross-slabs are on permanent display in the visitor centre while the remainder are stored in a purpose built unit on site. While the slabs at Clonmacnoise are ex situ, King (forthcoming, 10) has noted that comparable slabs at the monastic site of High Island, Co. Galway, are recumbent, on top of slab-lined graves.

Pl. 16 The majority of slabs are likely to been the burial slabs of ecclesiastics but some reveal the role of Clonmacnoise as a royal necropolis

Despite the huge interest which nineteenth-century antiquarians displayed in the slabs – and some are known only through these publications – these have long remained an under-utilised archaeological resource. However, in recent times, attention has focused on them again (Ó Floinn, 1995; Swift, 2003), as evidence for royal burial practice at ecclesiastical settlements, as an indicator of the material culture of commemoration of ecclesiastics, and further as explicating the movement of craft activity between major monasteries and their dependencies from the tenth century. Swift (2003) has demonstrated that the majority of slabs are likely to been the burial slabs of ecclesiastics, lacking, as they do, the patronymics typical of secular names, and often including the words 'gille' (servant of – followed by the name of a saint e.g. Gilla-Giarain, 'Servant of Ciarán') and 'mael' (meaning 'tonsured one' – again usually followed by a saint's name, e.g. four instances of Máel Ciaráin occur, and two of Máel Muire). Specific examples include the unadorned slab dedicated to Cairpre Crom, a bishop recorded in the documentary record as dying in 904, whose slab asks *ór do Chorbriu Chrumm*. The learned class of clerics is also represented here, in the slab commemorating Suibne mac Maelae-hUmai, (*Annals of Ulster*, 891), the 'most learned doctor', and the scribe Odrán Ua Eolais (*Annals of the Four Masters*, 994). Many of the slabs, however, in recording a single name without patronymic and without further identifier are impossible to associate with annalistic obits. A few exceptions do however reveal the role of Clonmacnoise as a royal necropolis – a role well attested in the literary evidence. These include the slab which reads *Ailill aue Dunchatho*, which Ó Floinn (1998, 89) has identified with the king of Connacht of that name who died in 764.

As noted above, some of the slabs – those with Latin crosses with central circular expansion and semi-circular terminals, probably 9th/10th century in date – are found not merely at Clonmacnoise but also at other sites within a 25 km radius, at Inisbofin, Inchcleraun, Gallen and Seir Kieran, Co. Offaly (Ó Floinn, 1998). Swift (2003, 117) has further identified Clonmacnoise-type slabs at Lemanaghan and Inis Aingin (Hare Island), both of which were estates of Clonmacnoise, and has suggested that the high proportion of Clonmacnoise slabs found here and at the sites identified by Ó Floinn, is indicative of their status as dependencies of Clonmacnoise. In return for agricultural render, clerics at these sites had access to the craft expertise of the mother church.

Pl. 17 The cross slabs are the material representation of Clonmacnoise's role as the royal necropolis of Ireland in the early medieval period

The Clonmacnoise grave slabs are most unique in their sheer quantity. However, this should not surprise us given the site's role as the burial place of kings, a tradition commemorated in prose and verse from the early medieval period, but which continued into the thirteenth and fourteenth centuries, when the poet Enóg Ó Gilláin described the very slabs which now alone remain: 'The nobles of Clann Chuinn (i.e. the Ua Maeleachlainn dynasty of Mide) are under the brown-sloped cemetery with flagstones; a knot or branch over every body and a fair just name in written form.'

Points of Significance:

- This is the largest collection of early Christian/medieval cross-slabs in Atlantic Europe.
- They are indicative of large-scale ongoing craft activity over several centuries.
- They are the material representation of Clonmacnoise's role as the royal necropolis of Ireland in the early medieval period.

Temple Melaghlin/Temple Rí, c.1200

NGR 201000 230640

Located to the east of the cathedral, this building is interesting in showing the continuing association of the Ua Maeleachlainn Kings of Mide, with Clonmacnoise, even after their aspirations to power were much diminished. It is of two periods: the earliest being Transitional in style and dating to the early thirteenth century with modifications in the later medieval period. It has fine late 12th/early 13th century east windows. The alternative name of the church means literally 'the church of the kings'. The late medieval source, the *Registry of Clonmacnoise*, which however goes back to an early thirteenth-century original (Kehnel, 1997) identifies each of the churches as the burial chapel of the different provincial kings. While the annalistic evidence suggests different periods of influence at the site, initially with burial of Connacht kings, then those of Mide, from the twelfth century onwards burial at Clonmacnoise became so crucial that individual churches became associated with each major dynasty. The site's role as national necropolis became more pronounced in the literature as its other functions declined with the arrival of the Anglo-Normans. This church, in being contemporaneous with the original composition of the Registry, is a testament to the changing perception of Clonmacnoise by its royal patrons, and their reaction to that.

Points of Significance:

- The very plain, but elaborately moulded east windows of this church are typical of the so-called 'School of the West'. They are representative of a key phase of late Romanesque/early Gothic Transitional style unique to Ireland.
- Its role as a royal burial chapel is indicative of the gradual decay of the vitality of the community life at Clonmacnoise, and its replacement with a more purely burial and commemorative function.

Temple Kelly, c.1167

NGR 200995 230667

Only part of the footprint of this church remains. Its possible importance lies in the fact that documentary evidence suggests that it replaced a wooden structure in 1167, indicative of much building activity in the later twelfth century at Clonmacnoise, and perhaps the end of the wooden tradition of ecclesiastical buildings here. This is possibly the church noted in the annals as having been patronised by Conchobhar Ua Ceallaigh in 1167.

Points of Significance:

- It is the possible site of an earlier, but substantial, wooden church, the 'dairthech'.

Temple Connor, c.1200

NGR 200973 230704

Situated on low ground, to the north of the cathedral, Temple Connor was the burial church of the O'Connors of Connaught, as recorded in the Registry of Clonmacnoise. Like Temple Melaghlin, it is a testament to the final period of extensive Irish royally sponsored building work as the decline of the site became inevitable. It is a plain and much-modified church, with Transitional features, dating to c.1200. It has been in use as a Church of Ireland place of worship since the mid-eighteenth century.

Pl. 18 Temple Conor: an active Church of Ireland place of worship

Points of Significance:

- It remains an active Church of Ireland place of worship, a reminder that although Clonmacnoise is a relict monastic landscape, it still holds considerable religious significance.
- A burial chapel of the kings of Connacht, again it is significant in showing the ongoing attachment to burial at Clonmacnoise at the time of the arrival of the Anglo-Normans and the decline of any true urbanism at the site.

Temple Dowling, 10th c., 1689 (formerly known as Temple Hurpan)

NGR 200980 230630

This church includes part of a pre-Romanesque build, extended in 1689 by Edmund Dowling of Clondalare. In his extension he included (non-functional) antae, the projecting side walls typical of the pre-Romanesque style in Ireland, in a conscious archaism to match those surviving at the east end of the church. Manning (2003, 80) has noted that this rebuilding 'is particularly interesting and is indicative of the optimism of a prosperous Catholic tenant that the rule of the Catholic King James II (deposed in England in 1688) would prevail at least in Ireland.'

The church was later further extended by the addition of a separate eastern chamber, probably largely for burial purposes, now denominated Mac Laffey's Church.

Points of Significance:

- It indicates continuity of tradition of the preservation of venerable structures through to the modern period.
- It demonstrates the continuity of the tradition of burial.
- It illustrates the historiographical tradition of interpreting Clonmacnoise as expressive of national aspirations.

The Old Burial Ground and New Graveyard

The graveyards are an integral part of the authenticity of the site. People believe that St Ciarán's burial at Clonmacnoise ensures that all those interred with him will avail of his intervention and thereby gain rapid entry from this world to that most wished-for otherworld, the Christian heaven. The Old Burial Ground dates from the mid-6th century. The graveyards are a part of the sacral landscape, for people from Clonmacnoise parish and places well beyond Co. Offaly desire to be interred at the sanctified location where the body of St Ciarán lies.

Pl. 19 The Old Burial Ground and New Churchyard: an integral part of the sacral landscape

In 1955 the core of the monastic enclosure, with the exception of Temple Connor, was transferred to the State by the Representative Body of the Church of Ireland. As the Old Burial ground was full after 1200 years, Offaly County Council declared the Old Burial Ground closed and agreed to provide a new burial ground. The land adjacent to and contiguous with the Old Burial Ground was purchased and laid out as the New Graveyard. Numerous large modern memorials were moved from the Old Burial Ground to the New Graveyard so as not to impair the visual integrity of the magnificent high crosses.

Since the 1950s a number of artefacts were recovered as a result of grave-digging in the New Graveyard; these are now in the National Museum of Ireland. A section in the north-west corner was reserved for people mainly from the community of the Church of Ireland. As they are a small congregation, they handed this area over to the Roman Catholic Church shortly after the Pope's visit in 1979, which had stimulated renewed spiritual interest in Clonmacnoise. The campaign of excavation in the New Graveyard was prompted by the discovery, in 1990, of an ogham stone in one of the graves: the oldest stone monument from the site. As described above, this excavation has transformed our understanding of the site, by providing unequivocal evidence that it became nucleated from the 8th century onwards.

Points of Significance

- The graveyards at Clonmacnoise link past and present through the ongoing belief in the sanctity of the site. They are an integral part of the sacral landscape.

Anglo-Norman Castle, 1214

NGR 200760 230550

The castle at Clonmacnoise situated to the west of the monastic site is the only extant example of a high medieval stone castle in County Offaly. It is a royal castle which was built in 1214 by the Justiciar of Ireland, Henry of London, to control the Midlands. Prior to its construction, this land appears to have belonged to the bishop of Clonmacnoise, as in 1216 the justiciar was ordered to pay compensation to him 'for his land occupied in fortifying the castle of Clonmacnoise, for his fruit trees cut down, his cows, horses, oxen and household utensils taken away' (O'Conor & Manning, 2003, 137). The masonry elements of the castle consist of a hall keep with an attached inner ward which has a gatehouse at its north-west corner. The massive earthen defences include an outer ward defined by a bank, an external fosse and a barbican to the west. The lack of any later architectural features suggests that it was destroyed during the Gaelic resurgence in the late thirteenth or early fourteenth century.

Pl. 20 The Anglo-Norman castle is representative of the point at which Clonmacnoise ceased to function as a city and began to fossilise into the relict landscape with purely spiritual/symbolic functions

Points of Significance:

- This is the only recorded secular residential (and military) building remaining at the monastic complex to date.
- It is historically significant as it represents the point at which Clonmacnoise ceased to function as a city and began to fossilise into the relict landscape we have today with purely spiritual/symbolic functions.

St Ciarán's Well

NGR 200445 230040

In the centuries after Clonmacnoise's decline as a monastic city, the monastery, and in particular the holy wells became a focus of worship that sustained the Catholic faith. Penitential pilgrims had been attracted to Clonmacnoise since the early seventh century; the *Annals of Tigernach* record the death of Aedh, an Irish chief, while on a pilgrimage to Clonmacnoise, thus establishing the monastic site as Ireland's oldest pilgrimage site. A thousand years later the practice had become fused with popular communal activities such as visiting a holy well on the feast day of a particular saint or patron saint. Although at odds with the beliefs of the official church, the practice gained in popularity during the Penal Laws (1691-1760) that attempted to banish the Catholic clergy from the country and to restrict the rights of the Catholic lay population. Pilgrimages to holy wells became the key symbol of Catholic devotion to a persecuted faith.

Pl. 21 St Ciarán's Well, the principal surviving holy well at Clonmacnoise

The principal surviving holy well at Clonmacnoise is dedicated to St Ciarán and is located on private lands approximately 800m to the south-west of the monastic core. According to a legend from The Tripartite Life of St Patrick, a leper passing near Clonmacnoise sat beneath an elm tree. He asked a man to pull up some rushes. When he did so, water broke from where the rushes had been torn up and the site became the Well of St Ciarán. An isolated whitethorn bush once marked the site of this spring well which is enclosed by a dry stone wall. The well has been restored and consolidated in recent years, fenced round and made

publicly accessible. Today there is an early medieval cross slab, a post-medieval slab with a crucifixion at the site, and one of two former stone heads that were routinely kissed and marked as pilgrims made their rounds or 'patterns' on the third Sunday of September to mark the Feast of St Ciarán (which is actually on the 9th September).

The well is the first stop on a pilgrimage route known as 'The Long Station'. Bare footed, the pilgrim circles the well, stopping to pray at the stone head and kneeling to kiss the face of the crucified Christ on the upright stone which is inscribed with the words: 'repent and do penance'. It was formerly a tradition to leave behind a votive offering in the well or on the whitethorn tree. From here the pilgrim continues to the monastic core to say prayers at the various churches and high crosses and to make three clockwise circuits around the graveyard. The route continues along the Pilgrim's Road, passing by the Cairn of the Three Crosses en route to the Nun's Church and finally to the last stop on the circuit: Fingin's Well.

Points of Significance:

- This holy well enforces the sense of the landscape surrounding the Monastic City as a sacral one.
- The well is a living landmark linking past and present as it is still in use as a Roman Catholic place of pilgrimage.

Pilgrim's Way

This ancient route running north from Clonmacnoise traverses a glacial ridge, known as an esker, which rises above the adjacent Mongan Bog and offered safe passage to medieval travellers. It leads from the monastic core eastwards through the old burial ground and dissects the New Graveyard where it heads towards the Nun's Church; a small platform of stones known as 'the Cairn of the Three Crosses' is visible on its route. It is a key part of the pilgrimage route at Clonmacnoise known as 'The Long Station' performed on the Pattern of St Ciarán.

The Pilgrim's Way from Ballycumber to Clonmacnoise was a part of the Pilgrim Paths Project, set up by the Heritage Council in 1997, in association with local communities, with the objective of developing a network of walking routes along medieval pilgrimage paths. The aim of the project was to raise the profile of the landscape and its heritage, built and natural that is encountered along the routes, while contributing to sustainable tourism and community development in each local area. Work on the Pilgrim's Way was completed in 2007.

Pl. 22 The Pilgrim's Route which traverses an esker ridge, forms a part of the Pilgrim's Paths Project to open up the cultural landscape to tourism

Points of Significance:

- The Pilgrim's Way demonstrates how the natural attributes of the landscape have been used to benefit the development of the monastic city.
- The Pilgrim's Way is a further reminder of the sacral nature of the landscape around Clonmacnoise.

Clonfinlough Stone

NGR 204280 229630

This limestone glacial erratic lies in a field near the Roman Catholic Church at Clonfinlough some 3km east of Clonmacnoise. On its surface are many unusual carvings. These were believed to have been made by Bronze Age man who modified patterns which had occurred through natural erosion, and excavations in the 1990s in Clonfinlough bog below the site of the stone revealed a large Bronze Age settlement site. However, recent scholarship has cast doubt on this. Similarities in the markings on the Clonfinlough stone and those to be found in the Iberian Peninsula, particularly in Galicia, have been noted which has led to speculation that the Clonfinlough carvings may belong to the medieval period. The proximity of the Clonfinlough stone to one of the ancient pilgrim routes to Clonmacnoise could be indicative of the carvings relating to the activities of pilgrims or other users of the road to Clonmacnoise (Twohig, 2002).

Points of Significance:

The Clonfinlough Stone is an example of how man has interacted with the natural features of the landscape around Clonmacnoise imbuing it with a sacral nature**.**

2.6 The Natural Heritage of Clonmacnoise

The relict monastic city is surrounded by a magnificent semi-natural landscape, parts of which have not changed to any great extent since the monastery's hey-day. This exceptional landscape contains many rare and vulnerable habitats, some of which are maintained by human agency. Much of the area within the candidate WHS has been designated for nature conservation under Irish and European legislation as Special Protection Areas (SPA), Candidate Special Areas of Conservation (cSAC), Natural Heritage Areas (NHAs) and proposed Natural Heritage Areas (pNHAs). See figure 3 and appendix 5 for further details.

The topography of the landscape is fairly flat providing exceptional vistas from the monastic core. The exception to the flat terrain are the eskers that rise above the raised bog and callows, and which have, since antiquity, linked various settlements and sites of religious importance including the great Midland monasteries like Clonmacnoise. The River Shannon, which runs roughly through the centre of the candidate WHS is one of the last great functioning river systems in Europe. The seasonal variations to the landscape caused by the rise and fall of its waters add greatly to the beauty and majesty of the landscape and are a vital part of the intangible cultural attributes of the candidate WHS.

To the east of the monastic core is Mongan Bog, which is of international significance as a superb example of a relatively intact Atlantic sub-type, actively growing raised bog. It represents a part of Europe's natural heritage that has almost disappeared and contains flora and fauna of some rarity and gives an impression of what the landscape would have looked like when the monastery was at its zenith and before commercial peat cutting occurred on the raised bogs such as Blackwater Bog to the south of the monastic core.

Fin Lough, an alkaline fen just beyond Mongan Bog, supports extensive invertebrate fauna and is of considerable conservation significance. However, it has become drier over the past 100 years, possibly due to drainage works on the nearby Blackwater Bog, which is being cut-over, and reedbeds have spread further into the lake. Lough Nanag, found along the western margin of Blackwater Bog has almost disappeared due to the drainage work involved with industrial peat cutting. The shrinkage of the lakes in both locations is due to man's industrial activities. The fragility of the landscape which is connected hydrologically is demonstrated with respect to both Fin Lough and Lough Nanag.

Pl. 23 The eskers are an important part of the hydrology of the candidate WHS. An esker ridge is seen here between Mongan Bog and the River Shannon

To the south west of the monastic core are the Rocks of Clorhane, an unusual limestone outcrop formerly owned by the Bishop of Meath and therefore part of the Monastic site, have long been exploited by man for building materials. Documentary evidence reveals that the stone was used in some of the buildings of the monastery, most notably the Round Tower. It was quarried up to the nineteenth century and a jetty could be seen on the Shannon River from whence stone from the quarries was transported by boat. The limestone from here is exceptional, being one of the few examples of crinoid fossil in Ireland and it is predominantly colonised by mature hazel woodland, with areas of open limestone and calcareous grassland interspersed.

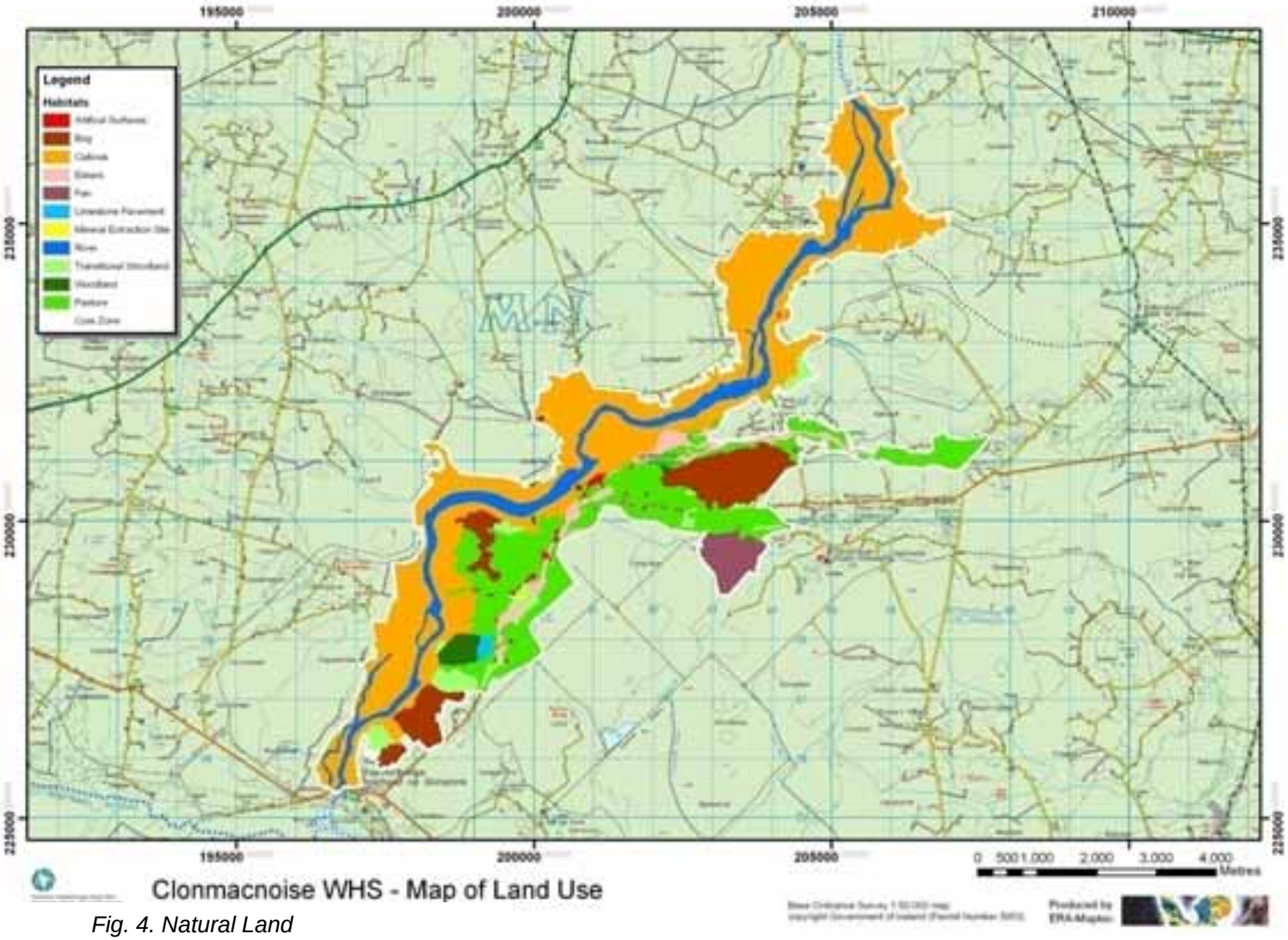


Fig. 4. Natural Land

Pl. 24 Blackwater Bog has been cutover by commercial peat extraction

Many of these areas are coming under increasing pressure as development intensifies, and it is important that measures are put in place to respond to these pressures and that any development shall not have a detrimental effect on the natural environment. The interaction of man with the environment over many centuries means that visitors to the relict monastic city can witness a largely unchanged stunning semi-natural landscape that harbours a large variety of biodiverse habitats over a relatively small area. Its visual integrity has been protected due to the lack of large development thus creating a sense of timelessness.

The River Shannon

The River Shannon (*Sionainn* or *Sionna* in Irish) is, at 386km (240 miles), the longest river in Ireland. The river, which began flowing along its present course after the end of the last Ice Age, represents a major physical barrier between east and west. It has been an important waterway since antiquity and was central to the development of Clonmacnoise, which developed at the point where the Eiscir Riada crosses it. The river was crossed by means of a wooden bridge dating to about AD 804. Dive survey and excavation in the Shannon to the north of the Norman castle revealed substantial remains of this wooden bridge together with eleven dugout canoes and various metalwork finds (see Appendix 3).

Important species present listed on various Annexes of the Habitats Directive include frogs, otters, and salmon. Some of the best coarse fishing in Europe is offered by the Shannon, and in addition to salmon, the species that can be caught in the vicinity of Clonmacnoise, many of which have been introduced to the waters by man, include: trout, pike, perch, bream, rudd, tench and eels.

The Shannon Callows

The Middle Shannon Callows consist of seasonally flooded, semi-natural, lowland wet grassland, along and beside the river between Athlone and Portumna extending about 50km, at an average width of about 0.75km reaching 1.5km wide in places, involving a total area of 5,788ha. Along most of the WHS, the callows are bordered by raised bogs, esker ridges and limestone bedrock hills and the soils grade from silty alluvial to peat. The main

habitats in the callows consist of lowland wet grassland with different plant communities depending on their elevation and their flooding patterns. Other habitats of smaller area but equal importance are lowland dry grasslands, drainage ditches, freshwater marshes and reedbeds.

Pl. 25 The flooded Shannon callows near the Rocks of Clorhane. The River Shannon is one of the last naturally functioning river systems in Europe

The flat expanse of land to the north and west of the monastic core may well have given Clonmacnoise its name, as *Cluain Mhic Nois*, from which it is derived, translates as 'meadow or clearing (cluain or callow) of the sons of Nós'. The flooding is caused by the very shallow gradient of the River Shannon at Clonmacnoise. When in flood, the river, usually about 100m wide, is swollen to ten times that size, dramatically altering the landscape.

The name, Clonmacnoise, indicates that man had settled in this area long before the monastery was built and had cleared the land of the swampy forest which took hold after the last Ice Age. This is further attested by the site of a crannog, discovered in 1965 in the callows close to Clonmacnoise, demonstrating that the marginal wetlands were occupied by Iron Age people.

The callow surrounding Clonmacnoise is divided into roughly 40 small strips owned by different farmers, all of whom manage their land in a similar way by taking one cut of hay each year. The vegetation on the steep slopes of the flood bank is still cut by hand; the remainder is harvested using a mowing machine. If agriculture ceased on the callows, the variety of plant and bird life would diminish. The breeding bird life would be the first to be affected. Although the callows have traditionally been managed at low intensity, recent trends in agriculture have seen a change to more intensive practises such as silage making. Apart from the damage posed by over-fertilising and over-stocking, the biggest threat to the wet meadows is drainage.

The Clonmacnoise callows are part of a larger area designated as a cSAC. The SAC is of international significance in containing four habitats listed in Annex I of the Habitats

Directive; Molinia meadows, lowland hay meadows, limestone pavement and alluvial forest – the latter two being of priority status. All of these habitats occur within the candidate WHS. A rare plant survey in 1998 revealed the presence of opposite-leaved pondweed (*Groenlandia densa*), summer snowflake (*Leucojum aestivum*); green-winged orchid (*Orchis morio*); meadow barley (*Hordeum secalinum*); and marsh pea (*Lathyrus palustris*). Some of these species are considered to be vulnerable and are listed the Irish Red Data Book. They are all species which reflect the unique habitat of the callows (see Appendix 5)

Pl. 26 Corncrake, Lapwing and Snipe are three of the protected bird species to nest in the Shannon callows

The callows area close to Clonmacnoise is also a SPA and is noted for the presence of snipe, lapwing, and curlew. The Shannon callows are of importance for breeding waders, particularly redshank (*Tringa totanus*). The total population of breeding waders (lapwing, redwing, snipe and curlew) in 1987 was one of three major concentrations in Ireland and Britain (total 1,551 pairs). Overall, there are 125 species of breeding birds, (27 species in the callows alone) and the Site is the only regular breeding location in Ireland for black-tailed godwit. Additional wintering species that occur in numbers of national importance include *Cygnus olor* (575 birds, 1995), *Anas penelope* (3,135 birds, 1996), *Anas crecca* (576 birds, 1995), *Aythya fuligula* (200 birds, 1995), *Vanellus vanellus* (15,400 birds, 1995) and *Calidris alpina* (1,250 birds, 1996).

The globally endangered corncrake (*Crex crex*), which is on the Irish Red List, is also known from the area but is declining in numbers. It has been surveyed continuously on the site since 1991. Numbers stabilised in the late 1990s due to the introduction of the Corncrake Grant Scheme. However, numbers have again continued to drop since then due, possibly, to several unusually high flooding events between 2005 and 2007. This increase in flooding is assumed to be the result of climate change. Only four calling males were recorded in 2008.

The Eskers

The word ‘esker’ comes from the Irish word *eiscir*. Eskers were created after the last glaciation when streams formed under the melting ice and carried debris for many kilometres. The transported gravels and till were deposited in long river-like lines and eventually when the ice melted, meandering hills were left rising above the landscape. They are therefore important in studying the pattern of deglaciation. Irish eskers are “original or

prototype" and "archeotype" eskers and are visited by people from all over the world (Tubridy 1987). The formation of the eskers after the glacial retreat partially determined the subsequent formation of bogs (Feehan and O'Donovan 1996) and to some extent, the callows as a functioning hydrosere and they contain significant reserves of water. They are classed as 'locally important' aquifers by the Geological Survey of Ireland. The collective hydrologies of the callows, fens, and raised bogs are therefore inextricably linked to the eskers. However, eskers are highly vulnerable to groundwater pollution as they are porous, so problems can arise from septic tank systems and disposal of farm wastes.

Pl. 27 An esker meandering between raised bog

The Pilgrim's Road esker, designated as a cSAC, is a narrow continuous esker running for 2km east from Clonmacnoise adjacent to the Shannon Callows to the north and Mongan raised bog to the south. It is the most scenically impressive esker in the Midlands and the one best known to the public, forming part of the Pilgrim's Way. The western area includes Bunthalla Hill (north of the road) and Hanging Hill (south of the road). The central portion runs along both sides of the summit ridge before widening out eastwards to include a substantial area of esker grassland.

It harbours orchid-rich calcareous grassland, rare in Ireland, and which is a Priority Annex I habitat under the EU Habitats Directive. The most species-rich grasslands occur on Hanging Hill, a small and very steep-sided hill of unstable calcareous soil. Plant species typical of this habitat occur in abundance, including carline thistle (*Carlina vulgaris*), common centaury (*Centaurium erythraea*) and yellow-wart (*Blackstonia perfoliata*) with a range of orchids including pyramidal orchid (*Anacamptis pyramidalis*), fragrant orchid (*Gymnadenia conopsea*) and common spotted orchid (*Dactylorhiza fuchsia*). The most species-rich

vegetation on Bunthalla Hill occurs on the south- and south-west facing slopes, where spring sedge (*Carex caryophyllea*) and autumn gentian (*Gentianella amarella*) are abundant among the closed sward. The remainder of Bunthalla Hill retains elements of the original flora despite having been semi-improved by means of fertiliser application.

Grassland in the centr ırea consists of similar orchid-rich swards, also with autumn gentian, a species that is locally frequent in the centre of Ireland and scarce elsewhere. Wild carrot (*Daucus carota*) also occurs here. The western extension of this central area contains a young, species-rich flora developing under recent clearance (post-1984) of hazel (*Corylus avellana*) woodland. Two small areas of hazel woodland occur on the northern side of the central area. The site supports a large population of the rare green-winged orchid (*Orchis morio*), which is a Red Data Book species and is apparently the largest in Ireland – over 1,000 individuals recorded in 1991, showing the full colour range of the species.

Mongan Bog

Mongan Bog is an excellent example of a raised, or ombrotrophic bog ecosystem. It is estimated to be about 9,000 years old and formed in a lake basin between two adjacent eskers after the last glaciation. It went through a fen-bog transition from fen or reedswamp, through to a dry bog-cotton (*Eriophorum*) dominated mire, indicative of low or unstable water tables. Mongan Bog is a source of palynological data which sheds light on the activities of man in the area. Maximum wetness occurred around the 6th century AD, when the monastery was established, which accounts for the fact that there was a dominance of pastoral farming during the 1st millennium with very little arable.

Pl. 28 Mongan Bog is a rare survivor of an Atlantic sub-type of raised bog and was saved by the Irish Peatland Conservation campaign

Mongan and other bogs in the area surrounding Clonmacnoise were still growing as the monastery developed. For people visiting Clonmacnoise, crossing the raised bogs would

have been precarious as they contain permanent pools on their surface which vary greatly in depth. For this reason the eskers were preferred routes across the landscape. However, man had been interacting with this seemingly inhospitable landscape for centuries. Archaeological excavations have revealed the presence of wooden *toghers* (track ways) and gravel pathways across the bogs around Clonmacnoise which in many cases predate the monastery and demonstrate that the bogs were not as impenetrable as first thought.

Boglands have become heavily depleted within Europe and many raised bogs around the world have been badly damaged or decimated by a variety of factors ranging from industrial turf cutting, drainage and land reclamation schemes, to agricultural development involving the planting of cranberry farms. Mongan Bog would have suffered the same fate had it not been acquired by An Taisce in 1979 from Bord na Mona and was among the first bogs to be saved by the Irish Peatland Conservation campaign. Although somewhat damaged by turbary, it had maintained its basic integrity and is a rare survivor of an Atlantic sub-type of raised bog. It encloses three distinct habitats: the intact dome of the raised bog, cutaway bog and a man-modified zone.

Mongan Bog is still growing (60% is active raised bog) and is composed of typical midlands raised bog vegetation, although some species more indicative of western raised bogs are also present. It contains plant and animal species of some rarity or restricted distribution in Ireland and is recognised, nationally and internationally, for its scientific importance as one of the last remaining relatively intact active midland raised bogs in Ireland. A wet, central vegetation community has many bog pools and a range of the bog moss species that cause bog growth, including *Sphagnum auriculatum*, *Sphagnum fuscum*, and *Sphagnum cuspidatum*. Cranberry grows on some hummocks. Cut-over bog, grasslands and scrub provide habitat diversity around the bog margins, and the relict of a bog-to-esker transition is found along the south side. The bog has a notable lichen community due to the absence of burning in the recent past. A number of notable invertebrate species have also been recorded in the site. These include three species that are new records for Ireland: a spider (*Gongyidiellum latebricola*, Order Arachnida) and two moths: (*Biselachista serricornis* and *Aristotelia ericinella*, Order Lepidoptera).

Mongan Bog is a Ramsar site, cSAC and a SPA. Active raised bog is listed as a priority habitat in Annex I of the Habitats Directive. The site is also designated a SPA for birds. It was formerly important for wintering Greenland White-fronted Goose (*Anser albifrons flavirostris*), although it is now only occasionally visited by this species. Over three quarters of total world population overwinter in Ireland. Other breeding species that are listed on Annex I of the Birds Directive are peregrine falcon (*Falco peregrinus*), merlin (*Falco columbarius*) and the hen harrier (*Circus cyaneus*). Corncrake (*Crex crex*), has also been recorded at the edge of the bog.

Fin Lough

Fin Lough is a shallow lake, bounded to the north and east by the Clonfinlough esker ridge and to the south and west by Blackwater Bog, which is now largely cut-over. It is spring fed and therefore succession to raised bog has not occurred. The lake and its surrounding wetland communities are arranged in distinct zones reflecting wetness and substrate. They include open water, reedswamp, tall sedge, alkaline fen, fen-bog transition, swamp woodland and bog, covering a total area of 78ha. The transition from calcium-rich lake to reedbed, to fen, to bog is relatively intact in some areas, which is exceptional for this part of Ireland.

The alkaline fen, which is a habitat listed on Annex I of the EU Habitats Directive, is species-rich with characteristic plants including Black bog-rush (*Schoenus nigricans)* and the sedge species *Carex flacca, Carex lepidocarpa and Carex panacea*. The total flora of the Fin

Lough wetland is remarkably rich: 210 species of vascular plants and 29 species of bryophytes have been identified to date. The presence of the rare snail, *Vertigo geyeri*, in Fin Lough, a species listed on Annex II of the EU Habitats Directive, is of considerable conservation significance.

Two main inlets existed corresponding to the principal streams mapped by the OPW in 1854, one draining east along the margin of Blackwater Bog and the other draining west. Drainage work by Bord na Mona in the mid 1950s associated with the development of Blackwater Bog, included inserting a deep drain to the south of the lake (3m) and deepening a lake outlet to connect with this outfall. This has probably contributed to the infilling of the lake over the past 50 years.

Pl. 29 At Fin Lough the transition from calcium-rich lake to reedbed, to fen, to bog is relatively intact in some areas, which is exceptional for this part of Ireland

Lough Nanag

Situated about 2km south-west of Clonmacnoise and between the River Shannon callows and a raised bog undergoing commercial peat extraction, the site comprises, for the most part, an esker ridge composed of glacial gravels. A small lake occurs in the south-eastern section of the site. The underlying rock is of Carboniferous limestone. It is a proposed NHA.

The site is much modified by grassland improvement and comprises a mosaic of improved grassland, dry calcareous grassland, wet grassland, scrub, woodland, dense bracken (*Pteridium aquilinum*), swamp and lake communities. Much of the site is on a calcareous substrate and Lough Nanag itself shows influence from the adjacent acidic raised bog.

Much of what would formerly have been good quality dry calcareous grassland has been lost through grassland improvement and only small areas of this habitat remain. Two such areas support small populations of the rare and legally protected green-winged orchid (*Orchis morio*). The diversity of the esker area is increased by scrub and hazel (*Corylus avellana*)

woodland, which has occasional sessile oak (*Quercus petraea*) and a mossy ground layer with much ivy (*Hedera helix*). A small disused gravel pit has been allowed to become re-colonised and now supports several species of open grassland that have declined elsewhere on the site.

In contrast to the lime-loving species of the esker, Lough Nanag is surrounded by typical peatland communities. Bottle sedge (*Carex rostrata*) swamps fringe the water and divides the lake up into pools; bogbean (*Menyanthes trifoliata*) colonises several of these. Around the shore in the wetter areas, mud-sedge (*Carex limosa*), a rare species in county Offaly, is to be found. A small number of wildfowl species use the wetland for roosting. There is an interesting transition from the relatively acid surroundings of the lake, typified by purple moor-grass (*Molinia caerulea*) and bog myrtle (*Myrica gale*), to the esker grassland. Although the floristic diversity of the esker grassland has declined, it still retains some interest. The juxtaposition of the esker and the acidic peatland lake and wetland, makes the site all the more interesting and unusual.

The Rocks of Clorhane

The Rocks of Clorhane are centred on an exposure of limestone which is rare in County Offaly and unusual in the Midlands. Limestone pavement is a priority habitat in Annex I of the Habitats Directive. Associated habitats here are hazel woodland, flooded quarry workings, callows, and calcareous grassland.

Pl. 30 The Rocks of Clorhane, an exposure of limestone which is unusual in the Midlands. Stone form here was used in the construction of the Round Tower of Clonmacnoise

While principally covered in hazel woodland, there are areas of species-rich calcareous grassland and the exposed outcropping limestone, which displays characteristic weathering features and typical limestone pavement flora. Comprising bare or moss covered rock with a very thin calcareous soil, it supports a short, grassy turf. The most notable plant in the grassy area is the rare green-winged orchid (*Orchis morio*), which is a Red Data Book

species and occurs with species such as sweet vernal-grass (*Anthoxanthum odoratum*), quaking grass (*Briza media*) sedges (*Carex flacca, Carex caryophyllea*), common birds-foot-trefoil (*Lotuscorniculatus*), common knapweed (*Centaurea nigra*) and narrow-leaved plantain (*Plantago lanceolata*). Ferns associated with the cracks in the pavement include *Asplenium trichomanes, Asplenium ruta-muraria, Asplenium adiantum-nigrum and Polypodium australe.*

The area once had a large stand of broadleaved woodland (66ha) as recorded in the Down Survey (1650) but this was felled before 1811. In the early 1960s, the area was planted with conifers by the Forest Service. The limestone has been quarried and has been used widely by the local people for all stone use and was a source of rock for the building of some of the monuments at the monastic city of Clonmacnoise. In the interest of historical continuity, stone for the new visitor centre, opened in 1993, was sourced from the Rocks of Clorhane.

Bloomhill

This hill to the north-east of the monastic city, is reputedly the source of sandstone for the cross-slabs and other monuments at the monastic city. It is therefore included in the buffer zone.

Blackwater Bog

This extensive cutaway bog to the south of the site is owned by Bord na Mona. Part of it is included in the buffer zone as it is an integral part of the hydrological system of the candidate WHS.

The interaction between the cultural and natural landscape aspects of this site makes it an exemplar cultural landscape and which is vital to protect the intangible heritage.

2.7 Brief History of Clonmacnoise

2.7.1 Early history

The landscape where the great monastic city of Clonmacnoise was to develop had been shaped by glacial and fluvial glacial actions and modified and sanctified by people for many centuries. Underlain by a bed of limestone laid down in a warm sea around 350 million years ago, an outcrop of which may be seen at the Rocks of Clorhane, the landscape was covered by a huge ice cap 20,000 years ago. As the ice retreated some 16,000 years ago it left a fairly flat terrain interrupted by a series of lakes and eskers - gravel ridges formed by rivers that ran under the melting ice. The eskers were colonised by mixed forest about 9,000 years ago and eventually became important track ways across Ireland as raised bogs later began to form in the shallow lakes and reed rich fens as the climate warmed up around 10,000 years ago. Through this landscape ran the River Shannon, the major north south route through Ireland, with its seasonally flooded callows.

The landscape that greeted the first humans to arrive in the area was one of dense untouched forests, Mongan Bog with Fin Lough in a similar condition, elm woods of the Rocks of Clorhane and swampy forest on the floodplain of the Shannon. Small hunting and fishing parties of Mesolithic or Stone Age man made the occasional foray into the Clonmacnoise area, and probably used the Shannon for navigation into the sylvan landscape (Bradshaw 1987).

Around 6,000 years ago the climate became warmer and wetter and the forest became completely deciduous and over the next 3,000 years man began to shape the environment. A more developed culture (Neolithic Man) had arrived in Ireland bringing more sophisticated

tools and weapons and which had established permanent settlements in many areas based on livestock and tillage farming (Bradshaw 1987). Man began to change the terrain around Clonmacnoise between 5,000 and 4,000 years ago. Forests were cleared for grazing for cattle, sheep and pigs, and grain crops were sown in areas with light soils. The forests were also felled for timber and fuel and the elm forests began to give way to ash and hazel which favoured man's activities (Bradshaw 1987).

Just as more sophisticated Bronze Age people began to replace the first farmers, important changes in climate, vegetation, and environment occurred. Around 3,500 years ago the climate turned cooler and damper and this favoured the growth of sphagnum moss which changed the fenland into raised bog. Peatlands began to overwhelm trees, engulfing them and invading land on the border of the fen that had been cleared for agriculture. This change of vegetation occurred in almost all of the fens in the vicinity except Fin Lough, where springs of alkaline water rich in dissolved nutrients kept flooding the fen (Bradshaw 1987). Today, Mongan Bog is a relict of this once extensive bogland and Fin Lough is a relict of the fenland. Well trodden trackways across the bog became impassable and the first wooden track-ways or *toghers* were constructed across the bogs which later, with the esker roads, became pilgrims' trails between the great monastic settlements of the Irish Midlands.

Despite the climatic changes, Bronze Age people were better able to exploit the landscape with their heavier ploughs and tools and developed field systems on heavier soils. Around 3,000 years ago the first substantial clearances took place on all the drier land: elm, ash, birch and oak were felled allowing grasses, bracken and species suited to pastureland to flourish. Cattle-rearing became the main activity. Agriculture declined somewhat around 2,500 years ago, and Mongan Bog experienced a growth spurt pointing perhaps to wetter, cooler conditions.

Agricultural activity revived again during the Iron Age. The remaining forests were attacked with even greater ferocity to create the landscape we largely see today and arable and pastoral farming were actively pursued. Only Mongan Bog, Fin Lough and the other major peatlands challenged the total supremacy of man over the landscape and natural setting (Bradshaw 1987).

2.7.2 The rise and decline of the monastic city

A rich and varied semi-natural landscape with many different habitats over a very small area had thus been shaped by the time Clonmacnoise was founded in c.549 AD on one of the esker ridges above the River Shannon.

This foundation is recorded in two different types of historical source: the monastic chronicles, and saints lives or hagiography. It is generally accepted by historians that these chronicles or annals, kept in monastic centres, are reliable from about the late sixth century, so the very specific date of Clonmacnoise's foundation is open to some dispute (AU 548; AI 548; CS 544; AFM 548; Bradley, 1998, 42, 51; Kehnel, 1997, 246). The alternative dates of 545 (Ryan, 1973, 27-8) or 556 (Macalister, 1921, 159) have been raised as possibilities in as much as September 9, Ciarán's death day and consequently his feastday, fell on a Saturday in these years, which would correspond to the account of his death in the Irish Life of Ciarán. In any case, the early death of the saint, aged thirty three, may have been caused by the Justinian plague, flaring up in Ireland again in 549 (Hughes, 1958, 253), which may explain why in the hagiographical record Ciarán n is recorded as adjuring his monks to abandon his remains and seek out secluded places (Bradley, 1998, 42). This might also confirm the earlier dates of either 545 or 549 for the monastery's foundation.

The annalistic references to the foundation are characteristically terse. The hagiographical literature provides far greater detail, but the contexts of later transcription and redaction

require that their interpretation be cautious. A Latin Life of Ciarán remains in the hagiographical collection known as the 'Dublin Collection' or *Codex Kilkenniensis*, and Richard Sharpe has suggested that although a thirteenth-century recension (c.1220-30), it is unlikely that the original composition postdates c.850 (Sharpe, *Medieval Irish Saints Lives*, pp. 347-67, p.22). Annette Kehnel has refined the dating further, and has argued from internal evidence, that this life dates to approximately the mid-seventh century (Kehnel, 1997, 17-18), and that it incorporates details of sixth-century events which were then still within living memory. As such, the details of the foundation warrant some exploration, and are worth quoting at length:

'Thereafter Kiaranus left that place [Ard Mantain], and came to a place which once was called Typrait, but now is called Cluain meic Nois. And coming to this place he said: 'Here will I live: for many souls shall go forth in this place to the kingdom of God, and in this place shall be my resurrection.' Then most blessed Kiaranus with his followers dwelt, and began to found a monastery there. And many from all sides used to come to him, and his parish was extended over a great circuit; and the name of Saint Kiaranus was much renowned over all Ireland. And a shining and holy settlement, the name of which is Cluain meic Nois, grew up in that place in honour of Saint Kieranus; it is in the western border of the land of Ui Neill, on the eastern bank of the river Synna, over against the province of the Connachta. Therein are the kings or the lords of Ui Neill and of the Connachta buried, along with Saint Kiaranus. For the river Synna, which is very rich in various fish, divides the regions of Niall, that is, of Midhe, and the province of the Connachta.' (Macalister, 1921, 34-5)

The emphasis here on location – at the boundaries of different provinces – and on burial, is important given the later material development of the site, which was spurred on by these very factors. Another point of interest in this account is the prior name of the site itself, of Typrait, the Irish word for a well, or spring, which in the Irish life (probably eleventh century, but based on an earlier source, including a version of this Latin life) is called *Ard Tiprat*. It is possible that this is a reference to sacred pagan well, and a curious incident in the *Vita Tripartita Patricii* in which Saint Patrick prophesies Ciarán's coming to Clonmacnoise perhaps may confirm this (Macalister, 1921, 100-101). This recounts the deposition of relics from Rome in a hollow of an elm tree at the site by St Patrick's nephew, prior to the foundation of the monastery. He had stopped there overnight, having recognised that a holy man (St Patrick's leper, in fact) had previously been buried on there, and placed the relics in the hollow of the tree trunk for safety. On the morrow, he found the hollow had closed over, and was obliged to depart without the relics, but was comforted by St Patrick, who revealed to him that Ciarán was destined to come to the spot, and would require them himself. There is considerable evidence that sites such as Armagh, and Kildare, were Christian foundations on important pagan cult sites (Hughes, 2005, 313), the combination of sacred tree and sacred well being a commonplace of such sanctuaries. In this case, it is possible that the tree itself is being Christianised or neutralised. Archaeological evidence (King, 1996) does confirm activity on the site in the Iron Age, which may lend some support to this theory.

Later hagiographic accounts suggest specifically that the monastic settlement was inspired by a vision which St. Ciarán shared with Enda of Aran, a contemporary Irish saint. This vision was of a great fruitful tree, beside a stream, in the middle of Ireland protecting the island. Its fruit went forth over the sea that surrounded the island, and the birds of the world came to carry off some of that fruit. Enda advised him that Ciarán was that tree: "for thou art great in the eyes of God and men, and all Ireland will be full of thy honour. This island will be protected under the shadow of thy favour, and multitudes will be satisfied with the grace of thy fasting and prayer. Go then, with God's word, to a bank of a stream, and there found a church".

This suggests later reinterpretation and conceptualisation of the geographical potency of the site and the power and spirituality of its cultural landscape, given its location at the centre of

Ireland, with the possibilities which this allowed to re-envision it as Ireland's Jerusalem. Indeed, in the pre-Viking period many of the greatest settlements in the country were inland; things started to change in the Viking period when the Hiberno-Norse ports were established – no site at the centre of Ireland could ever claim to be so important again. Conceptually, this axial siting at the crossing of the Shannon and the Slí Mhór, the result of angelic intervention, is clearly of more than practical import. The Irish *Life of Ciarán* goes on explicitly to connect Jerusalem and Clonmacnoise – and indeed Christ and Ciarán are already linked by their age at death (33) and both being the sons of carpenters:

'This man [Ciarán] arose after three days in his imdhaí in Cluain to converse with and to comfort Coemgen, as Christ arose after three days from the grave in Jerusalem, to comfort and strengthen His mother and His disciples. So for these good things, and for many others, is his soul among the folk of heaven. His remains and relics are here with honour and renown, with daily wonders and miracles.' (Macalister, 1921, 97).

This *imdhai* or bed, is identified elsewhere in the *Life* with Temple Ciarán – thus forming the parallel between the aedicule of Christ's Sepulchre at Jerusalem, and this shrine chapel. These references were further played upon in the building of the cathedral, which is 61 foot 6 inches long, and may be intended through its measurements to allude to the sixty cubit length of Solomon's Temple – a suggestion further corroborated by the donation of a model of Solomon's Temple to the Cathedral by Maelsechnaill mac Domhnall of Mide (d.1022). Laying aside the hagiographical and symbolic associations, in purely historical terms the monastery seems from the very earliest period to have been highly successful. It attracted the patronage of kings, and its position on the Shannon river, on the borders of the two kingdoms of Mide (Meath) and Connacht, was crucial to this. By the 690s, Tírechán regarded it as the main rival to Patrick's church of Armagh (Bradley, 1998, 42; Bieler, 1979, 142, 160), while Adomnán in his *Life of Columba*, c.697 records a prosperous and populous community:

> As soon as it was known that he was near, all flocked from their little grange farms near the monastery, and, along with those who were within it, ranged themselves, with enthusiasm, under the abbot Alither; then advancing beyond the enclosure of the monastery, they went out as one man to meet St Columba […] they conducted him with all honour to the Church. (*Life of Columba*, Ch.3)

As described above (also Appendix 6), remains of this thriving settlement with its vallum (ecclesiastical enclosure) and numerous inhabitants flocking to the centre of the monastery from outlying farms has been revealed through excavation over the past twenty years. Indeed, these excavations show that by the following century large numbers of people – lay as well as religious – were living at the site itself in what can only be described as an urban or semi-urban environment.

Pl. 31 The ornate metalworking skills of the people of Clonmacnoise were highly renowned

That the foundation was, within a very few years, attracting members of royal houses, and indeed officials of other monasteries, to retire and die in the odour of sanctity is demonstrated by chronicle entries for the early seventh century. The *Annals of Tigernach* (hereafter AT) record the death of Aed mac Colgan, king of Airgialla, of northern Connacht, on his pilgrimage there in 608. Documentary evidence in the chronicles continue to record the deaths of kings on pilgrimage there, such as the King of Connacht in 723, (AT), while deaths of scribes (e.g. 730, 773, 798), and anchorites (e.g. 756, 835, 847) as well as abbots, attest to the diversity and size of the community. Clonmacnoise became, in effect, the royal necropolis of Ireland and the patronage of kings, princes and wealthy families resulted in large grants of land to the monastery.

From the mid seventh-century onwards both the chronicle evidence and the archaeological evidence combine to suggest a settlement increasing rapidly in power, prestige and population, and one which is to all intents and purposes a city, albeit of monastic origin. Excavations to the northeast of the monastic centre, in the New Graveyard, have revealed stake holes and spreads of burnt soil indicating quite extensive occupation across the site (see Appendix 6). The wooden bridge, dating to 804, which bridges the Shannon just to the west of the monastic core, is no doubt an indication of the very comfortable relations which Clonmacnoise enjoyed with Connacht. This is not the only material witness to the Connacht connection; many of the earlier slabs at Clonmacnoise may be associated with the kings buried there during this period.

Pl. 32 The Crosier of the Abbots of Clonmacnoise (National Museum of Ireland)

Hand in hand with this development of ecclesiastical rights went increasing secularisation. This is attested by the violent settling of disputes with neighbouring monastic towns, such as Birr, which fought a battle with Clonmacnoise in the Bog of Coisse Bláí (AT, 760), and more infamously, at the Battle of Argaman, between the familia of Clonmacnoise and Durrow, in which two hundred of the men of Durrow were killed (AT, *Annals of Ulster* (AU), 764). Clonmacnoise itself was burned on several occasions, although as Ryan (1973, 9) has noted, until 833 these burnings were probably accidental. Attracting the attention of internal and external forces, the burning of Clonmacnoise in 833 was far from accidental, with the King of Munster, Feidlimid, burning the termon or enclosure of the monastery to the very door of the church (AU, 833). This was to be only the first of many such intentional burnings and plunderings, with further burnings in 834, 835 and 845 (AU), the last of these by the Vikings, who burned not just the settlement, but also its wooden churches or *dertaigibh.*

Nonetheless, this was the period of Clonmacnoise's most rapid growth. This may have been the period when Clonmacnoise began to hold its market, described as one of the chief fairs of Ireland, and the noblest, in the *Life of Colmán Ela* (Bradley, 1994, 47). Excavations with the Old Graveyard and to the northwest of the Old Graveyard and especially in the New Graveyard to the northeast of it have shown that Clonmacnoise was a carefully laid out, nucleated settlement by this time. They have also revealed that it was a centre of production on a large scale.

Considerable evidence for cereal production, processing and storage was found, including the likely site of a water mill (though this has not been excavated) demonstrating Clonmacnoise's inhabitants made use of the abundant natural resources provided by the callows and eskers that were conducive for farming. Analysis of the huge quantity of animal bone recovered has shown that slaughter patterns on the site are comparable in most respects to those found later in Hiberno-Norse ports like Dublin (Soderburg 2003, 313, 331, 368; King forthcoming). That its inhabitants conceived of Clonmacnoise as a city is not in doubt, but this analysis supports the view that it also conforms to modern definitions of urbanism or at least nucleation. Towards the end of the early medieval sequence there is evidence for mass production of commodities such as antler combs – another characteristic of urban archaeology – and at least one antler workshop was excavated in the New Graveyard.

The large number of artefacts recovered during the excavations – over 5,000 in all – also illustrates the extent of the settlement's expansion and the wide range of craft activities being carried out there (King 1991-98; forthcoming). Iron objects were the most common type but a significant number of bone, stone, lignite, bronze/copper-alloy, glass, silver and possibly gold objects were also being produced. All excavations at the site have produced evidence for iron working and it is clear that both smelting and smithing took place on a grand scale, possibly utilising local sources of bog iron. To the northwest of the Old Graveyard, between the Visitor Centre and the banks of the Shannon, an area at least 20m across is covered by a layer of iron-working waste up to 0.8m thick (King 2004; 2006; forthcoming).

The unparalleled number of cross-slabs produced at the site – with well over 700 recorded examples – can also be considered part of the culture of mass production that is evident in other materials. It is clear that lots of 'ready-made' cross-slabs were produced by stone masons with the names of the deceased added later as required. These slabs, along with the gravescot that the family of the deceased paid for the privilege of being buried at Clonmacnoise under the protection of St Ciarán, must have contributed considerably to the wealth of the site.

In the later ninth and early tenth centuries, the patronage of the Clann Cholmáin of Mide, first under Máel Sechnaill, and then under his son, Flann Sinna saw not just the renewal of the monastic core of monumental buildings in stone, with the erection of stone crosses, but also a burst of chronicling and learned activity in the scriptorium. Clonmacnoise had kept a chronicle possibly as early as the eighth century, and the surviving chronicles for which we are dependent on our account of the earlier period, were largely reworked in Clonmacnoise in the eleventh century. This reworking placed an enhanced emphasis on the kings of Ireland and the Irish provincial kings, amending, glossing, and adding entries in the earlier period to do this, as well as placing Irish history in a broader World History context, going back to Creation (Nicholas Evans, pers. comm.)

Pl. 33 Detail from the Crosier of Clonmacnoise

Pl. 34 Clonmacnoise's reputation as a centre for learning, coupled with its geographical location, ensured that its scholars gained national repute

As a result, some entries, such as that recording the communities' successful spiritual intervention on behalf of the king of Mide (AT 649), and a resulting significant land donation, is almost certainly an insertion to support the claims of one of his ruling descendants in the tenth century, king Congalach (Kehnel, 1997, 114-15). The manuscripts which survive, including the *Chronicon Scottorum* and the *Annals of Tigernach* are the most accurate and most authentic records of the period, and provide the fundamental basis of both later chronicles (such as the *Annals of the Four Masters*), and of modern historical accounts. The

output of the scriptorium was not, however, limited to chronicling, and the eleventh-century *Lebor na hUidre* (Book of the Dun Cow) supposedly written on the skin of Ciarán's beloved cow itself, contains a uniquely early compendium of vernacular material. While the idea that the learned classes and ecclesiastical dignitaries of Clonmacnoise were drawn from all over Ireland, without the interference of royal dynasts and local rivalries has now been shattered (Kehnel, 1997), its reputation as a centre for learning, coupled with its geographical location, ensured that its scholars gained national repute.

Clonmacnoise's incredible success in attracting patronage, initially from the kings of Connacht, later from the kings of Meath, is evident in all the Lives of the saint, where it is suggested, indeed, that the other saints of Ireland fasted against Ciarán to cause his death, as otherwise the whole of Ireland would have been given to him. It seems that from the very first, its fame was associated with the miracles of its founding saint, whose power is transposed through his relics, and through the very earth and buildings of the monastery itself. The *Annals of Tigernach*, record in the same year as Ciarán's death, the illness of a man who swore a false oath on his arm (AT 543.4). This same arm relic was kept in Temple Ciarán as late as 1684, when Anthony Dopping, Church of Ireland bishop of Meath, visited the site (Manning, 1994, 16), striking testimony to the continuity of pilgrimage, tradition and devotion at the site, a vital aspect of the synergy between people and this cultural landscape.

The twelfth century is sometimes portrayed as one of decline for Clonmacnoise, but although the arrival of the Anglo-Normans was to prove disastrous, the material evidence of flourishing Romanesque construction suggests, prior to the invasion, an optimistic, well-endowed foundation, benefiting from Connacht and Mide patronage. The round tower was built in 1124 from locally quarried limestone sourced from the Rocks of Clorhane, while in 1167 the Nuns' Church, a key example of the Hiberno-Romanesque style was completed. Excavations from the area to the north-east of the monumental core have revealed flagged and cobbled areas, pits, well-shafts and postholes, indicative of continuing urban settlement. Annalistic evidence presents a similar picture – the Anglo-Norman adventurers burned one hundred and five houses in a raid of 1179, and in c.1205, forty-seven houses near the abbot's fort, and the fort itself were destroyed, all of these references speaking of a still large and populous community (Bradley, 1994, 46).

However, Clonmacnoise was greatly disadvantaged by the arrival of the Anglo-Normans and by church reform. Clonmacnoise did emerge from the twelfth century as the see of a bishop – but of one of the smallest and poorest in Ireland, because the land and revenues which it controlled were incompatible with the principles of church reform (Kehnel, 1998, 244). Its role as a centre of settlement was lost, not through church reform, but through the failed Anglo-Norman attempt to control the settlement as a significant crossing point on the Shannon. Driven out of Clonmacnoise itself, secular settlement continued instead around the less historically difficult crossing point at Athlone. Although the site continued to possess symbolic importance through the ages, without continuing settlement the core of the monastic city at Clonmacnoise has been preserved almost as it was in the twelfth century. This allows a unique opportunity for research and understanding of one of the most important monastic cities in the Insular world and of the synergy between it and the surrounding semi-natural and sacral environment.

2.7.3 Recent developments

The lack of Clonmacnoise's development into a noisy, modern metropolis with all the building that this would have entailed coupled with the remarkable open vistas of the Site have preserved the intangible quality possessed by the candidate WHS, often referred to as 'spiritual' or 'timeless' by visitors. Yet this is to overlook the fact that this is a living landscape, one continuing to evolve, and one that is not immune to pressures that threaten its integrity and authenticity. In 1811 Bog Commissioners estimated that 25 per cent of

Mongan Bog had been subject to turbary and cut away by that time; other parts of the bog had been reclaimed during the early 1800s as bog gardens. This was a mere prelude to the industrial peat cutting of the mid-twentieth century, a process that is on-going. The scale and speed of the loss of raised bogland across Ireland raised alarm and resulted in a campaign to preserve representative examples of this vital part of the Irish landscape. Mongan Bog was one of the first to be preserved under the Peatlands Campaign of the late-1980s. Of world renown, it provides a superb example of the type of terrain that surrounded the monastic city in medieval times.

Likewise with the eskers that are recognised for their importance in antiquity as providing a natural network of routes along which great monasteries and other holy sites were built throughout the Irish Midlands. The eskers are now being promoted as a vital part of Irish heritage and utilised as modern routeways to facilitate the opening up of the cultural landscape to tourism. The eskers are offered statutory protection because of the rich flora they harbour, which is largely maintained by local farmers following a careful regime of grazing, emphasising the synergy between man and the semi-natural and sacral environment. The River Shannon and its callows which support a rich variety of flora and birdlife accorded the highest statutory protection, lend the candidate WHS a very special character with the seasonal waxing and waning of its waters. The largest area of semi-grassland and associated aquatic habitats in Ireland is created by one of Europe's last naturally functioning river systems, but it is also maintained by human agency through the centuries old practice of hay harvesting that enables flora and fauna to thrive. The lack of large-scale commercial farming, ploughing or drainage of the callows, means that the area looks largely as it would have done during the medieval period, lending the vista from the monastery across the Shannon a sense of timelessness and imbuing the candidate WHS with a serenity and spirituality.

Pl. 35 Victorians enjoying a picnic at the monastic core

The monastic core at Clonmacnoise became a national monument in 1877 and is managed by the Office of Public Works (OPW). On 30th October 1880 the Church Temporalities Commissioners vested the ruins of churches, two round towers and crosses in the State. The castle, also known as the Bishop's Palace, and the surrounding earthworks were transferred to the State in 1918 and the Nun's Church was transferred to the State in 1921. On 9th August 1955 the Church of Ireland Representative Church Body vested the old burial ground at Clonmacnoise in the State (with the exception of Temple Connor). See appendix 7. The remaining land in the care of the State was acquired under separate land transactions.

The archaeological area at Clonmacnoise was entered in the Register of Historic Monuments on 2 August 1996 under Section 5 of the National Monuments (Amendment) Act, 1987. The spiritual significance of the Site to western Christendom was recognised by the visit of Pope John Paul II, who conducted a short prayer service at Clonmacnoise in 1979. The outdoor ciborium which marks the spot illustrates the continuing tradition at the site of reifying events through material expression, and as such is a fitting modern contribution to the development of the sacred core. This event served to stimulate interest in the Site and visitor numbers soared from 10,000 in 1976 to 36,000 in 1986.

In 1993 a new purpose built visitor centre was opened to the public at Clonmacnoise. Comprising a reception, audio-visual area, exhibition on the monastery and natural heritage, tearoom and toilet facilities, it is located in a garden to the rear of a farmhouse which was retained and incorporated into the scheme. The design of the visitor centre was carefully considered and was constructed to blend in with the cultural landscape, reflecting the type of structures that would originally have surrounded the monastery and the traditional hillside farmsteads that can still be seen locally.

Of greatest importance was the re-siting of the three high crosses that a survey by best experts had determined were threatened by long-term exposure to the elements. The three circular chambers of the Visitor Centre were specially constructed to accommodate the high crosses. High quality resin replicas of the high crosses were installed in the place of the originals in order to maintain the religious and spiritual significance of their layout. A representative collection of the cross-slab collection also went on display inside the Centre while the remainder, some of which had been on display outside and were therefore subject to erosion, theft and vandalism, were placed into secure storage on site. Conservation works by the Office of Public Works were undertaken from 2002-2008 and included consolidation to the stone work of Temple Dowling and Temple Rí with a replica lime-based mortar. The walls of the Cathedral have been consolidated and the surviving sections of internal plasterwork conserved.

Pl. 36 Pope John Paul's visit to Clonmacnoise in 1979 served to stimulate interest in Clonmacnoise and visitor numbers soared

The relict monastic city is surrounded by a magnificent landscape, parts of which have not changed considerably since the monastery's hey-day. This landscape with its interconnecting pilgrim's routes, holy wells and tombs has assumed a sacral nature. This is evidenced most clearly by the continued use of Clonmacnoise as a site of pilgrimage and the desire for over 1,000 years by people from the locality and beyond to be interred there with St Ciarán and the High Kings of Ireland.

Pl. 37 Clonmacnoise has been a site of pilgrimage for over 1,000 years

Chapter Three: Significance of Clonmacnoise

3.1 Significance

Cultural landscapes are selected on the basis of both their OUV and of their representativeness in terms of a clearly defined geo-cultural region and also for their capacity to illustrate the essential and distinct cultural elements of such regions. Cultural landscapes embrace a diversity of manifestations of the interaction between humankind and the natural environment.

The landscape at Clonmacnoise falls into category (ii) of cultural landscapes: an organically evolved landscape which results from an initial social, economic, administrative, and/or religious imperative and has developed its present form by association with and in response to its natural environment. Such landscapes reflect that process of evolution in their form and component features. Clonmacnoise combines elements of a relict or fossil landscape in which the evolutionary process of urbanisation associated with an initial ceremonial complex came to an end, leaving significant distinguishing features visible in material form, and also a continuing landscape with significant evidence of evolution over time by human agency, as outlined below.

Pl. 38 Clonmacnoise is sited where the Slí Mhór, one of Ireland's most important ancient routes, crosses the equally important River Shannon

3.1.1 Clonmacnoise is an outstanding example of a traditional human settlement and land-use which is representative of a culture and of human interaction with the environment

Clonmacnoise is an unparalleled and outstanding example of a relict early medieval Insular monastic city unobscured by modern building development. It is set within a superlative semi-natural landscape that deepens it spiritual qualities, adding greatly to its authenticity and integrity. The interaction between man and the natural environment in Clonmacnoise is of unique universal value. Founded by St Ciarán in the mid-sixth century in the midst of extensive raised bogland at the meeting point of two important routes, the River Shannon and the Slí Mhór or Eiscir Riada one of the five great roads of ancient Ireland, the evolution of the monastic city of Clonmacnoise was dictated by the constraints and opportunities of natural geography.

Clonmacnoise is set in a landscape moulded by geological, glacial, fluvial and climatic forces. This remarkably diverse area includes the River Shannon and its callows, active raised bog, fen, eskers and limestone pavement, which in turn support numerous rare and endangered species of flora and fauna. This variety of habitats within a relatively small area is exceptional at an international level. For hundreds of years, many aspects of this landscape have been maintained by human management.

The landscape of the nominated Site with its uninterrupted views is a continuing one yet one that has preserved essential elements over the past 1000 years. The fact that a stunning variety of habitats, which are interconnected hydrologically, exist around the relict monastic city today is largely due to human agency: an essential reason for the survival of these habitats and species has been that this landscape has been managed sustainably for hundreds of years by suitable grazing regimes on the eskers, and pastoralism and hay-making in the Shannon callows. The River Shannon, largely undammed and not witness to significant land reclamation, is one of the last great natural functioning river systems in Europe which allows for seasonal flooding, which helps to maintain the hydrology and biodiversity of the nominated Site. The careful management of Mongan Bog, which is a rare survivor of an ombrotrophic (raised) bog ecosystem, make it an outstanding universal asset from the viewpoints of both scientific study and preservation. Clonmacnoise and its cultural landscape is an organically evolved landscape which permits and depends to a large extent on continuing, traditional land use.

The unique, flat and open landscape of Clonmacnoise with its small-scale variation of habitats, its unparalleled views, pilgrim's routes and holy wells, constitutes an exceptional environment that is perceived as sacral as well as earthly. Central in this remarkable landscape is Clonmacnoise, which is an outstanding example of a relict monastic city. The monastery is strategically sited and used the opportunities presented by the landscape's typography to great effect, being built at the intersection of the River Shannon and the Slí Mhór that traverses the ridge of an esker. It also used the constraints of the landscape in the form of the extensive boglands as a form of protection and relative isolation. The significance of the River Shannon, on the very banks of which Clonmacnoise stands, is constantly referred to and referenced in all of the hagiographical literature. This stresses the monastery's symbolic position in the centre of Ireland, on the River Shannon, with influences spreading out not just to the Irish coast, but far beyond also – a site chosen for Ciarán not by human hands but by divine power. The hagiographical literature, in revealing the mindset of seventh-eleventh century monastic writers, demonstrates that the landscape and natural life could literally embody living sanctity.

Clonmacnoise's position, in the centre of Ireland, was from an early period seen as crucially symbolic, and the river Shannon on which it lies features largely in the lives of the saint. Thus, Ciaran's reward in heaven, is, in his Irish life, equated with the size of the saint's

habitation on earth, which itself is measured by reference to the river. His companion saint, Brendan of Birr prophesies:

> 'We shall take two habitations on two streams between chief cities, and the difference that shall be between the two streams shall be the difference between the size of the cities.' (Macalister, 1921, 84)

Thus, Clonmacnoise's size mirrors its saint's heavenly position, while also mirroring the river on which it is located.

Other less symbolic and more practical implications of this riverside situation abound. Associations with other monasteries on the Shannon particularly stress connections with St Senan and Inis Cathaig, now Scattery Island, a central point for foreign trade, given its location in the estuary of the Shannon (Kehnel, 1998, 13). The River Shannon's importance as a routeway was further combined with the importance of the Slí Mhór and the benefits that Clonmacnoise could draw from such a key location for the crossing of the Shannon east-west, as well as travel north-south. Numerous annalistic entries attest to the importance of its location, exemplified by the account of the battle of Cárn Conaill (*CS* 649), perhaps a later addition of the tenth century, but certainly dating to the early Middle Ages. This mentions that Diarmaid mac Aeda Slaine, the victor of the battle, marched *through* Clonmacnoise on his way there. The resulting benefits to Clonmacnoise were great, as the clergy invoked Ciaran's help for him, which he had obviously petitioned for, and as a result he gave them the lands of Lemanaghan in gratitude.

The dramatic topography of the superlative semi-natural landscape with its unobscured views imbues the relict monastic city with a sense of timelessness, deepens its spiritual qualities, and reinforces the uniqueness of the nominated Site. The sacred nature of the candidate WHS is magnified by the fact that Clonmacnoise is the final resting place of St Ciarán and served as the royal necropolis of Ireland as many of Ireland's High Kings are interred here. Over 1,500 years after the saint's death, people still believe that burial at Clonmacnoise ensures that those interred with St Ciarán will avail of his intervention and thereby gain rapid entry from this world to the Christian heaven. Clonmacnoise has been venerated as a place of special pilgrimage by people from all over Ireland and well beyond for 15 centuries, most recently exemplified by the visit of Pope John Paul II in 1979.

3.1.2 Clonmacnoise as a sacred city

Clonmacnoise is the outstanding example of the Irish response to the concept of the ideal city which was encountered through interactions with other areas of Europe. It is therefore of outstanding universal value as the best instance of how a particular people living outside the bounds of the old Roman Empire gave material expression to Roman and Judeo-Christian ideas of how an important settlement should be organised.

The monastic city of Clonmacnoise is exemplary, for unlike comparable early medieval Insular monastic cities such as Derry or Armagh, which have had their archaeology destroyed or subsumed by later building developments, or the Insular monastic settlements of Iona (Scotland) and Lindisfarne, (England) which were rebuilt with Continental planning during the high medieval period, Clonmacnoise continued to evolve within the early medieval architectural tradition until the late twelfth century. Only after this did it begin to decline, halting its development into a modern metropolis like Armagh. It is not only the lack of later medieval urban development but the great reverence people had for the existing buildings that ensured the preservation of their early medieval form even when making alterations. Thus, the unicameral appearance of the Cathedral was kept in the high medieval period, with internal alterations rather than the addition of an external chancel, and its antae were carefully rebuilt when a wall collapsed. All of this reflects the importance of the site's early medieval past in the consciousness of later generations, a reverence which contributed greatly to the integrity of the complex as it stands today.

It is clear from the sources that Clonmacnoise was visualised by its creators as a sacred city: in Latin texts it is referred to as civitas while in Irish texts the term used is cathair. A clear distinction must be made between the concept of the civitas in the minds of medieval chroniclers and modern definitions of urbanism. As discussed below, Clonmacnoise did acquire urban functions during the early medieval period, but here we are concerned solely with the manner in which it was conceived as an ideal civitas. For medieval literati the use of this term was a way of mentally comparing Clonmacnoise to the celestial city, the cities of the Old Testament, and the cities of post-Roman Europe. These were defined by two elements. Firstly, their sacred role, which in medieval terms usually meant the role as diocesan centre and episcopal see, as Clonmacnoise clearly was (MacDonald 1982, 329-33). Secondly, their function as cities of refuge, which derives from the Biblical Levitical cities, was very important to the medieval Irish, especially given the lack of castles and fortifications, which led to a greater reliance on religious sanctuary here, than elsewhere in Europe. Settlement and trade, with its associated burgeoning population and variety of crafts, was not therefore intellectually what comprised or entailed the city in the mind of the early Irish cleric.

Pl. 39 Clonmacnoise was visualised by its creators as a sacred city and its three concentric enclosures embodied the idea of a hierarchy of sanctity derived from biblical descriptions of Jerusalem

The term ‘monastic town’ has become commonplace in discussions about the development of nucleated settlement around a handful of important ecclesiastical sites like Clonmacnoise (e.g. Doherty 1985; Bradley 1998). Here, however, we refer to Clonmacnoise as a monastic city because the resonances which the term civitas and cathair set up amongst medieval clerics, is entirely lost with the term ‘monastic town’, as we never in English refer to the ‘Celestial town’, but rather the ‘Celestial city’, similarly, the ‘City of God’. The word ‘town’ therefore is inadequate to contain the symbolism, both verbal and architectural, of a site like Clonmacnoise. The term ‘monastic city’ is one which is based on the self-perceptions of the medieval learned and ecclesiastical classes, as they documented their own society and

landscape. The vocabulary used in descriptions of such sites is very carefully chosen, as may particularly be noted in Cogitosus' seventh-century description of Kildare:

'And what words are capable of setting forth the...countless wonders of that monastery (monasterii) which we may call a city (civitatis). Since innumerable people come together within it and acquiring the name city because of its throngs this is a very great metropolitan city; in its suburbs, the clear boundaries of which holy Brigit marked out herself, no human foe or charge of enemies is feared. But it is a city of refuge, the safest among the external suburbs with all their fugitives in all the lands of the Irish.' (Life of Bridget: Doherty, 1985, 55-56).

Except for its round tower, nothing now survives of the early medieval civitas of Kildare. By contrast, the constellation of monuments at Clonmacnoise – including more than ten churches, several high crosses as well as a round tower – constitute by far the best surviving example of a civitas as it was concieved by Insular clerics. The only site with anything like as many early medieval monuments surviving in situ is Glendalough, Co. Wicklow, but in this case all of them were entirely rebuilt at the beginning of the twelfth century (Ó Carragáin forthcoming). Thus Clonmacnoise is unique in having extant mortared stone buildings dating as early as the eighth or ninth century when mortared stone was first introduced to Ireland (the shrine chapel of Temple Ciaráin), and examples dating to every subsequent century of the early medieval period and beyond.

Because of its location at the centre of Ireland Clonmacnoise was associated with one city in particular, namely Jerusalem. It is located where Leth Cuinn and Leth Mogha, the north and south halves of Ireland meet, and it is also on the former boundaries of Mide (Meath) and Connacht. These political boundaries were hugely important to the development of the monastery, and were fuelled by the sanctification of the spot through the burial of the body of its holy founder, Ciarán who died less than a year after the monastery's foundation. His burial ensured that all those interred with him would avail of his intervention and thereby gain rapid entry from this world to that most wished-for otherworld, the Christian heaven. Burial rights and miracles were what allowed the development of the sacred landscape, literally beneath the feet of the monastic city, but metaphorically referencing the celestial city above. Thus landscapes of earth and heaven are linked at the very heart of Ireland. By its very siting, at the axis of the river Shannon and the Slí Mhór, it denoted centrality, and this concept of the central place as Jerusalem was engrained in the medieval mind, and is indeed explicitly shown as such on medieval mappa mundi. Here, however, allusions to Jerusalem are deliberately reinforced, through the hagiographic interpretation of Ciarán's life as that of a second Christ, to the reading of Temple Ciarán as the aedicule of the Holy Sepulchre, and through the association of the *daimhliag* with Solomon's Temple, both through its internal furnishings and its actual length.

This building, which was built in 909 (a collaboration between the high king, Flann Sinna, and abbot of Clonmacnoise, Colmán), is the largest extant early medieval church in Ireland. It was part of a larger monumental scheme, which involved the carving of the stunning Cross of the Scriptures. The siting of the cathedral, Cross of the Scriptures, and the earlier south cross and the north cross, literally inscribe the whole monastic core with the sign of the cross; this (effectively) undisturbed scheme is unique amongst Insular monastic sites. Moreover, excavation under these high crosses produced by far the best material evidence found to date that Insular high crosses are successors to earlier monumental crosses of wood. The positions of these wooden crosses indicate that the tenth century monumental scheme at the heart of the site is a translation into stone of a scheme which originated in wood around 700 when the sacred core of the civitas was delimited properly for the first time. We know from documentary sources that at least some of the other early medieval churches were also stone replacements of wooden structures, and so we can conclude that

the constellation of monuments at the site preserves the essentials of a monumental complex of the eighth century and earlier.

Clonmacnoise is both representative of five hundred years of development of stone architecture in Ireland, and includes key examples of typical Insular churches, from the simple shrine chapel with its sacred associations, to the great damliag which would have functioned as a congregational church; the impressive round tower a lasting reminder of the importance of audibly as well as visually defining space; the crosses a reminder of sacred sanctuary but also of the central Christian redemption through Christ; and the whole an embodiment of regal-ecclesiastical relations from the eighth century onwards that demonstrate a creative response to liturgical and spiritual needs.

Not only is Clonmacnoise a microcosm of Irish and Insular architectural development from the 8th-15th centuries, it also demonstrates unique creative responses to European architectural models, from the aedicule of Jerusalem, to the very Irish reinterpretation of the Romanesque style. Its tradition as Ireland's chief royal necropolis was to continue up to the interment of the last high king of Ireland, Ruairi Ua Conchobair, in the cathedral in 1198 and led to craft expansion in the form of the cross-slab industry. Clonmacnoise consequently has the largest cross-slab collection in Europe. Its scriptorium was exceptionally active, with some of the surviving medieval Irish chronicles deriving from versions written at Clonmacnoise, including the *Lebor na hUídre* (Book of the Dun Cow), the oldest extant manuscript in the Irish language. Its output also stretched to compendiums of vernacular literature, attracting scholars from the British Isles and Continental Europe. Its metalworking was also famed, exemplified by the exquisitely wrought Crosier of Clonmacnoise. The extant remains of the monastic city of Clonmacnoise are a superb representative example of a centre of Christian art, learning and scholarship in the Irish language, which helped to revitalise learning and Insular art forms throughout Western Europe during the early medieval period.

Pl. 40 Clonmacnoise is both representative of five hundred years of development of stone architecture in Ireland, and includes key examples of typical Insular churches, from the simple shrine chapel with its sacred associations, to the great damliag

The agglomeration of single altar churches and other monuments of varying sizes and orientations encountered at Clonmacnoise do not conform to expectations of monastic architecture. Already by the final centuries of the early medieval period major monasteries on the Continent comprised large multi-altar churches, often cruciform in plan and with engaged belfries, adjoining which were rectilinear cloisters where an enclosed community of monks resided. One could conceptualise Clonmacnoise as equivalent to a monastery of this sort reduced to its constituent parts. However, it seems unlikely that this ever crossed the minds of clerics of Clonmacnoise, for as we have seen though it housed a community of monks, Clonmacnoise was conceived as a city first and foremost (Ryan 2007; Ó Carragáin forthcoming). Once we understand this, the layout of the site makes a lot more sense. It was a basic requirement of an important civitates to have a multiplicity of churches dedicated to different saints. The churches at Clonmacnoise are simple and more humble than most of those in and around the great civitates of post-Roman Europe, but in their varying orientations and scattered placement about the site they are reminiscent of the disposition of churches within the urban fabric of sites like Rome and Jerusalem. We have documentary evidence for processional liturgies between churches and other monuments at sites like Clonmacnoise which are clearly based on urban stational liturgies on the Continent (O'Sullivan and Ó Carragáin 2008, 327-29). Thus not only did the clerics of Clonmacnoise model their site on Continental cities but they used ritual practice to recreate as best as possible the experience of moving around these cities.

Clonmacnoise is the outstanding surviving example of this Irish experiment in urbanism, where the Christian city is not conceived of as a claustral monastery. As their own descriptors showed, the Irish civitas was not for the housing of a monolithic monastic community, and its religious functions had little to do with the exiguous and eremitical lifestyle so well presented at Skellig Michael in County Kerry. Although at its core this was a sacred site, it was not a monastery in the sense of the word made famous by the Benedictines or Cistercians. Its population was mainly a lay one; if the monumental core was replete with Christian symbolism and mirrored the celestial city, and if in its functions it mimicked those of the Levitical cities of refuge, in reality it was a city more reminiscent of the urban centres of Mediterranean Europe.

3.1.3 Clonmacnoise as an urban centre

Clonmacnoise was not unique in its status as a civitas. Several Irish ecclesiastical sites of regional importance were referred to as such in early medieval sources. Thus, though most of them did not use buildings and other monuments to recreate their Continental models to anything like the extent as Clonmacnoise, they were clearly conceived of as sacred cities. In most cases, however, there is nothing to suggest that they acquired urban functions or that they even became nucleated during the early medieval period. Most scholars would agree that at most this occurred at only a handful of Irish ecclesiastical sites. One likely example is Armagh where limited excavation suggests intensive craft activity and nucleation (Lynn 1990). In this case, however, we may never be able properly to assess the character of the settlement because most of the buried archaeology has either been destroyed or obscured by later urban development. The same is true of the other most likely candidates, Kildare and Derry.

In contrast the steep decline in the fortunes of Clonmacnoise after the arrival of the Anglo-Normans has made it possible to assess the extent of the settlement with geophysics (Mytum 2003). In addition, when excavation does take place, early medieval layers are found to be largely undisturbed, except in some cases by plough truncation. In the last twenty years, excavation both west and especially east of the Old Graveyard, which represents the Sacred Core of the site, have produced evidence for a carefully planned settlement that became urban or at least semi-urban during the eighth century. The area of most intense activity lay between the inner ecclesiastical enclosure (the Old Graveyard) and a semi-circular middle enclosure, c.500m in diameter, a section of which has been

excavated. Concentric with this was an even larger enclosure c.750m across. The importance of the settlement at this time is clearly indicated by the construction of a monument wooden bridge across the River Shannon in c.804.

The settlement archaeology excavated in the 1990s in the New Graveyard, east of the inner enclosure, was particularly rich. Several densely packed houses and ancillary buildings were uncovered. Evidence was also found for production on a large scale, especially in the media of antler, iron and stone. Though not everyone accepts that these remains are indicative of a fully-fledged urban centre (Valante 1998), most agree (Bradley 1998, Bradley 2008, Doherty 1985) that this was at least a semi-urban environment: it represents nucleation on a scale which to date has not been encountered elsewhere in the archaeological record for pre-Viking Ireland. These excavations show that urbanism had already begun to take root in Ireland before the establishment of the Hiberno-Norse ports in the ninth and tenth centuries.

Pl. 41 Animal headed artefact from excavations

It is important to remember that prior to the eighth century even the Continental civitates had shrunk greatly since the demise of the Roman Empire. For example, according to a recent assessment in sixth-century Tours 'a society with a minimal hierarchical structure sustained a town without urban life' (quoted in Bradley 2008, 356). Excavations at sites like Brescia, Milan, Naples, Pescara and Verona paint a similar picture. The eighth century saw the beginning of a Europe-wide resurgence in urbanism which led, for the first time, to towns being established beyond the northern and western bounds of the old Roman Empire. Evidence for this has been found at sites like Hedeby and Ribe in Denmark, Birka in Sweden and Kaupang in Norway (e.g. Jensen 1991; Hardh 2003; Skre 2007, 44-46), and arguably also at Whithorn in Scotland (Hill 1997). As the only excavated Irish example of this hugely important phenomenon, Clonmacnoise is highly significant to our understanding of the development of urbanism in Atlantic Europe, as well as clarifying non-Viking urbanisation in an Irish context.

Clonmacnoise's welfare was inextricably linked with the fate of the surrounding kingdoms. With the arrival of the Anglo-Normans in the late twelfth century, it suffered for its strategic significance as much as it had gained from it earlier. The ruins of an early thirteenth-century royal castle, the only one of its kind in County Offaly, mark the endeavour to subdue the surrounding territory, an endeavour which ultimately failed. Although it returned to Irish hands, and remained a diocesan see until the seventeenth century, the city itself, bereft of the royal patronage it had enjoyed for six centuries, failed to survive. From the late-16th century, Clonmacnoise, which lies at the centre of a network of pilgrim's paths and holy wells, became primarily a place of pilgrimage for lay persons of both Protestant and Catholic persuasion, which continues today. In 1979, the importance of Clonmacnoise to the Roman Catholic Church was recognised by the visit of Pope John Paul II.

3.1.4 Socio-economic value of Clonmacnoise

As well as being an iconic attraction for the Midlands region and a source of local pride, Clonmacnoise aids the economy of the Midlands region from the revenue derived from the provision of amenities and services to tourists in the area. The potential for improved revenue from tourism is considerable and the proposed future creation of a new visitor facility as outlined in this Management Plan will further aid and support tourism initiatives in the wider Midlands region.

3.2 Justification for Inscription

UNESCO will only consider a site for inscription if it has a natural and cultural heritage that are considered to be of 'Outstanding universal value' i.e. that have 'cultural and/or natural significance which is so exceptional as to transcend national boundaries and to be of common importance for present and future generations of all humanity.

The monastic city of Clonmacnoise is the finest and most outstanding example remaining of a conceptualisation of the Christian city unique to the Insular world which is unobscured by modern building development. Unlike Iona in Scotland, or Lindisfarne, in England, which were later rebuilt, replacing early medieval buildings with standard Benedictine-style abbey churches and cloisters, the later medieval developments at Clonmacnoise acknowledged the venerable, and indeed reliquary nature of the early monuments by careful preservation, and minimal ornamental and structural interventions. Equally crucial to its current state was, however, its thirteenth-century decline, when, due to its strategic position, the building of an Anglo-Norman castle effectively ended its growth into a modern metropolis, unlike its medieval rival, Armagh, where the street pattern, buried archaeology, and fragments of crosses and masonry now alone represent what once must have been an equally splendid monastic city. At Clonmacnoise, the fortuitous combination of urban decline, coupled with continuing significance as a royal burial site, has resulted in a superb example of a relict monastic city.

Archaeological excavation has revealed evidence of craft and metal working, nucleation, and planned urban or semi-urban development of eighth/ninth century date on a larger scale than is apparent today in any other non-Viking Irish context. The town of Clonmacnoise is relatively early in the chronology of urban development outside the boundaries of the Old Roman Empire. Like Hedeby in Denmark and Birka in Sweden, it provides us with important evidence for the nature of urban development in Atlantic Europe, as well as clarifying non-Viking urbanisation in an Irish context.

The relict monastic city of Clonmacnoise contains superlative examples of Insular art and architecture, exemplified by the stunning Cross of the Scriptures, the impressive damliag (stone church), and the symbolically charged Temple Ciarán. The round tower, and the Hiberno-Romanesque Nuns' Church and Temple Finghin mark the subtle reinterpretation of foreign architectural models to suit the deeply conservative Irish tradition, while adapting to liturgical change. The collection of cross slabs, numbering over 700, is significantly larger than any other in Atlantic Europe, and bears testimony to its importance as a centre of Christian burial from the seventh to the twelfth centuries; an importance carried through to the later period through the sponsorship of various churches, (Temple Connor, Temple Melaghlin) by the royal families of the surrounding kingdoms. This archaeological and architectural importance is matched by an exemplary documentary record.

Clonmacnoise is an outstanding example of a synergy between people and their natural environment. Sited in the midst of extensive raised boglands at the meeting point of two important ancient routes, the River Shannon and the Eiscir Riada which traverses the ridge of an esker, the evolution of the monastic city was dictated by the constraints and restraints of natural geography. The landscape is one shaped by geological, glacial, fluvial and climatic events that have created a hugely diverse environment including active raised bog, fenland, eskers, callows and raised limestone pavement over a remarkably small area. This unique landscape includes many of the most important yet fragile and vulnerable habitats for the preservation of biodiversity in situ. Rare and endangered flora and fauna exist here. One essential reason for the survival of these species has been that this landscape has been maintained by human agency for hundreds of years.

The unique, flat and open landscape of Clonmacnoise with its small-scale variation of habitats, its timeless and unparalleled views, pilgrim's routes and holy wells, constitutes an exceptional environment that is perceived of as sacral as well as earthly.

It is considered that the Monastic City of Clonmacnoise and its Cultural Landscape satisfies two of the ten criteria for outstanding universal value:

Criterion (iv.): ***The Site should be an outstanding example of a type of building, architectural or technological ensemble or landscape which illustrates (a) significant stage(s) in human history;***

The architectural ensemble at Clonmacnoise represents an outstanding example of an early medieval Irish monastic city. It represents a significant stage in the development of early medieval Christianity in the North Atlantic. Archaeological excavation coupled with exceptional documentary sources has demonstrated that Clonmacnoise was conceptualised as a civitas, but unlike many other Irish ecclesiastical sites, evidence of nucleation suggests that it may truly have been an urban settlement, as well as a reflection of the celestial city, a recreation of Jerusalem unique to the Insular world, and the seat of a bishop. Moreover, its dates are relatively early in the chronology of urban development outside the boundaries of the old Roman Empire. It is therefore highly significant to our understanding of the

development of urbanism generally in Atlantic Europe, as well as clarifying non-Viking urbanisation in an Irish context.

Criterion (v.): ***The Site should be an outstanding example of a traditional human settlement, land-use, or sea-use which is representative of a culture (or cultures), or human interaction with the environment especially when it has become vulnerable under the impact of irreversible change;***

Clonmacnoise developed in the midst of extensive peatlands at the point where the Slí Mhór, (Great Road) esker crosses the River Shannon. These two great route ways facilitated trade, commerce and pilgrimage in Medieval Ireland. The remains of the monastic city display an outstanding response to the constraints and opportunities of an environment shaped by glacial, fluvial and climatic actions. This extremely diverse semi-natural and sacral landscape is the product of human creativity and interaction over many centuries. Sustainable land-use has helped to maintain this diversity of habitats considered to be some of the most endangered worldwide. However, such landscapes are both fragile and vulnerable to the pressures of land reclamation, drainage schemes, climate change, quarrying, development and industrial peat cutting. Clonmacnoise is not immune to such threats and appropriate measures are being taken to afford its protection and conservation for the future.

3.3 Authenticity and Integrity

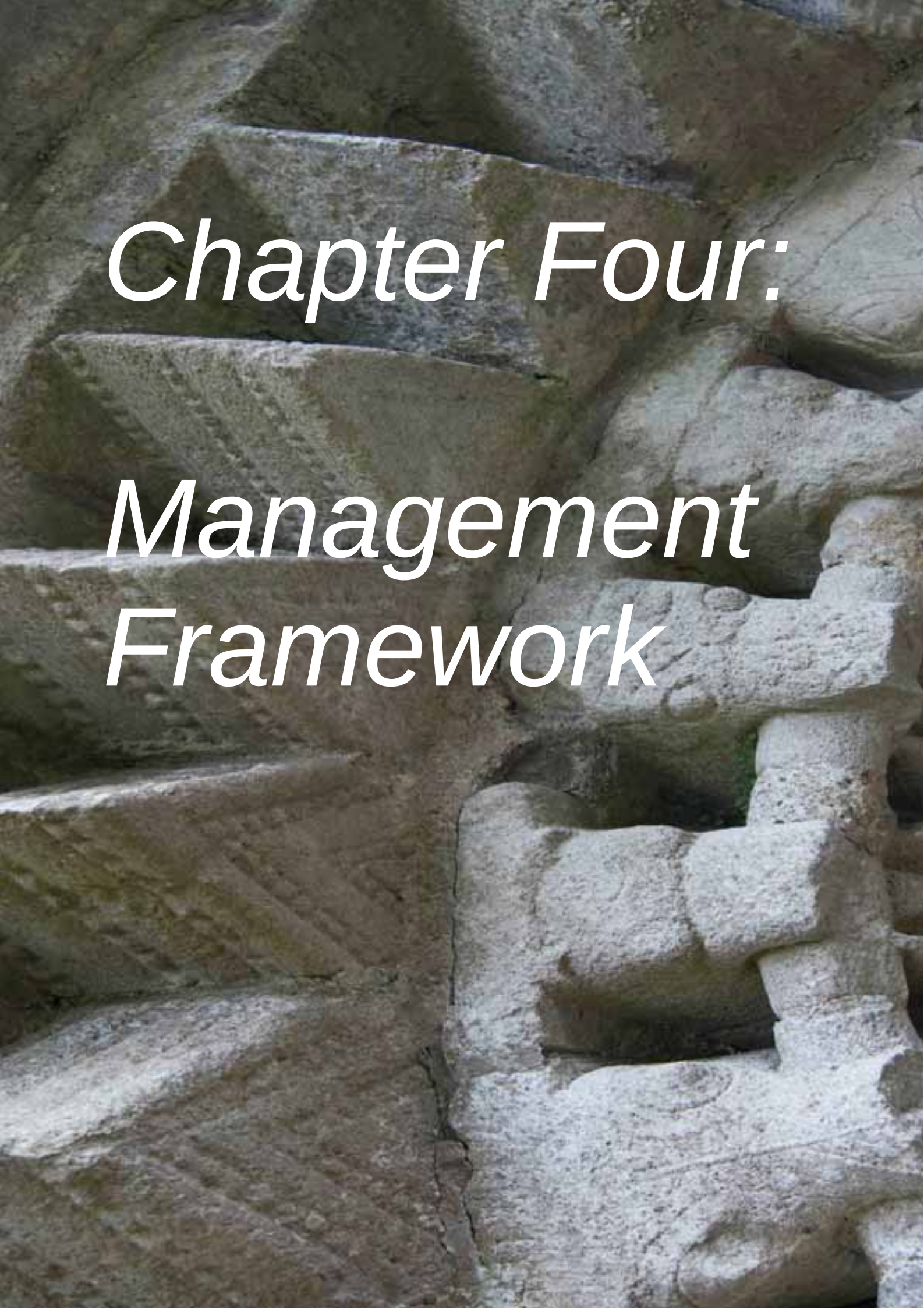
The nominated Site has a high level of integrity as a relict monastic landscape and a continuing cultural landscape. The archaeological components of the Site have a high degree of authenticity and are protected through a range of national designations and most fall within the Archaeological Registered Area. The wholeness and intactness of the natural and/or cultural heritage and attributes are a vital part of the integrity of a Site. Nineteenth century conservation works at Clonmacnoise are of international importance as they marked a defining episode in the development of conservation philosophy and are significant because they were amongst the earliest to set a standard of repair in buildings already in ruins (Emerick 2003).

The philosophy underpinning preservation/conservation works at the Site from the nineteenth century to the present day is that all original features are retained and conserved *in situ* and great efforts have been made to ensure that the programme of works in train since the early 1990s are in conformity with international standards of conservation practice. Recent conservation and reconstruction has been limited to the minimum required to achieve structural integrity and public safety. All modern works undertaken by the Office of Public Works require a consideration for the setting, spirit and feeling of the site coupled with a thorough knowledge of historic building methods and use of authentic building materials. These factors are underpinned by modern scientific understanding of decay mechanisms and non-harmful repair techniques. The Conservation Works Programme 2002-2008 are described in detail in Appendix 4.

Clonmacnoise was and still is an important place of pilgrimage attested by the medieval Pilgrim's Road that is still in use today. The religious use of the Site is continued by both Roman Catholics and Protestants for prayer and pilgrimage, particularly the feast of St Ciarán on the 9 September, and over 150,000 lay people visit Clonmacnoise annually. Its importance to the Roman Catholic community was exemplified by the visit of Pope John Paul II in 1979. The desire to be buried at Clonmacnoise is a part of the Site's authenticity, since it continues a Christian tradition which is deeply imbedded in St Ciarán's relict cemetery and the sacral landscape surrounding his monastery.

The flora and fauna of the remarkably diverse landscape that includes active raised bog, fenland, loughs, eskers, callows and the River Shannon, is protected by the highest national and international nature designations (including SPAs, SACs and NHAs). This rare environment shaped primarily by glacial, fluvial and climatic events, is however, semi-natural, and demonstrates how man has interacted with it for centuries, not just physically in the form of sustainable farming methods, but also spiritually to form a sacral landscape of Christian holy tombs, buildings and wells, criss-crossed by pilgrims' routes. The relict city of Clonmacnoise cannot be separated from its landscape context; indeed the landscape is a vital part of the visual-aesthetic integrity of the Site and adds greatly to its spiritual qualities.

Pl. 42 Over 150,000 people visit Clonmacnoise each year



Chapter Four:

Management Framework

4.1 Ownership

The Monastic City of Clonmacnoise and its Cultural Landscape is partly owned by the Minister for the Environment, Heritage and Local Government on behalf of the Irish people. The Department of the Environment, Heritage and Local Government is the State body responsible under the World Heritage Convention for policy relating to the built and natural heritage of the site. The Office of Public Works is responsible for the management of the monastic site. Other parts of the nominated Site fall within either ownership of state agencies or are in private ownership. Some land (mainly in the callows) is held by multiple 'shareholders'. Figure 5 shows the location of lands under State or non-private ownership.

4.2 Statutory Protections

The protection and conservation of the candidate World Heritage Site is controlled by a range of national legislation, local mechanisms, international guidelines, statutory and non-statutory guidance. Legislative provisions include, amongst others, the National Monuments Acts 1930–2004, the Wildlife Acts 1976 and 2000, Planning and Development Acts, various EU directives as well as international charters. Figure 6 shows protected lands within the core zone.

4.2.1. National Legislation

National Monuments Acts 1930–2004

The Monastic city of Clonmacnoise is a National Monument, as defined in the National Monuments Act 1930 (as amended). The National Monuments legislative code makes provision for the protection and preservation of National Monuments and for the preservation of archaeological objects in the State.

Clonmacnoise is afforded the highest level of statutory protection. It is a National Monument in State ownership, the preservation of which is a matter of national importance by reason of its historical, architectural, traditional, artistic or archaeological interest. Under the provisions of Section 14 of the National Monuments Act 1930 (as substituted by Section 5 of the National Monuments (Amendment) Act 2004) the prior, written consent of the Minister for the Environment, Heritage and Local Government is required for any works in respect of a national monument of which the Minister or a local authority are the owners or the guardians or in respect of which a preservation order is in force, that would:

- demolish, remove, disfigure, deface, alter, or in any manner injure or interfere with the National Monument or,
- involve excavating, digging, ploughing or otherwise disturbing the ground within, around or in proximity to the National Monument or,
- renovate or restore the National Monument or,
- involve selling the National Monument or any part of it for exportation or to export it or any part of it.

:

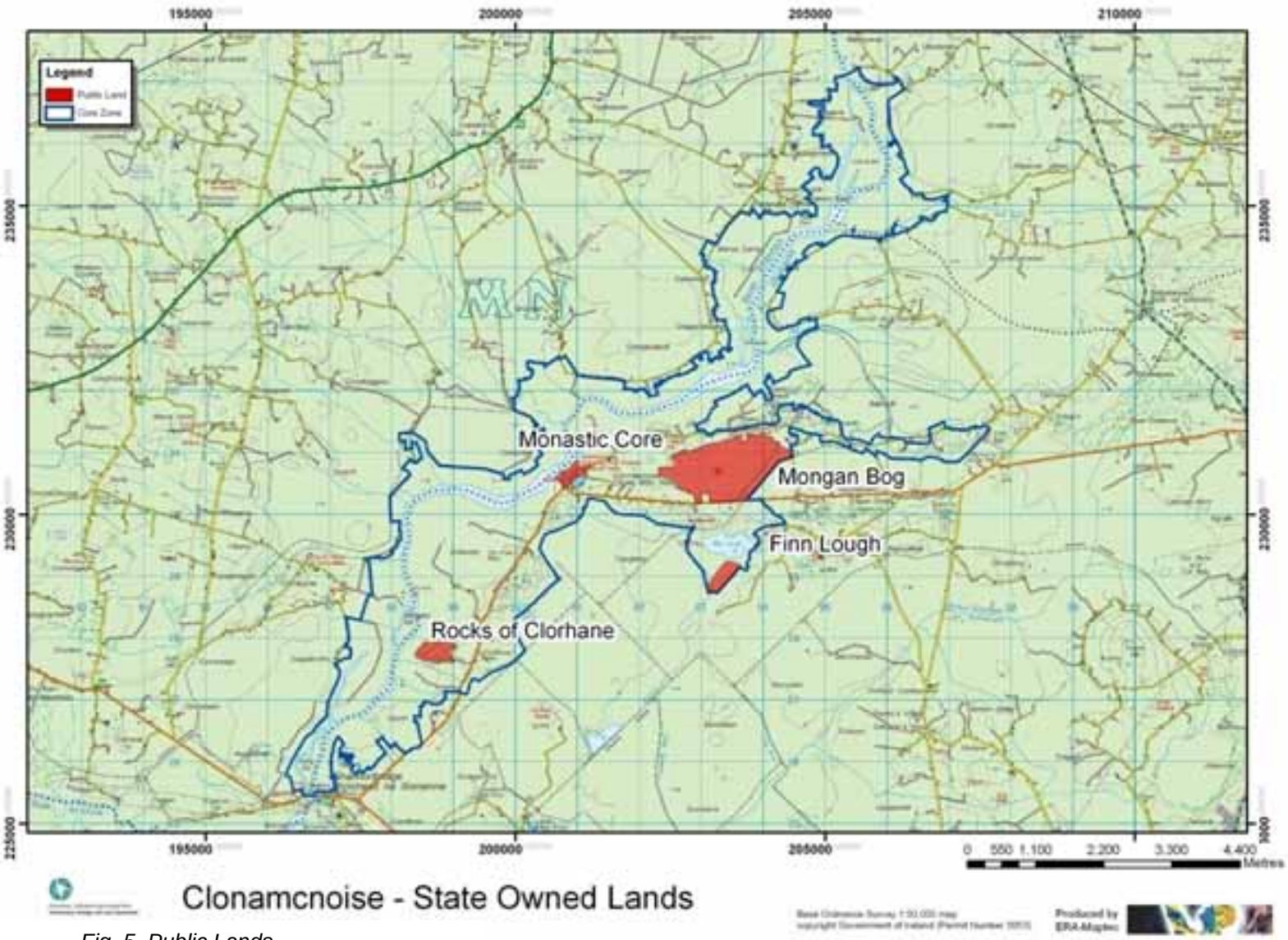


Fig. 5. Public Lands

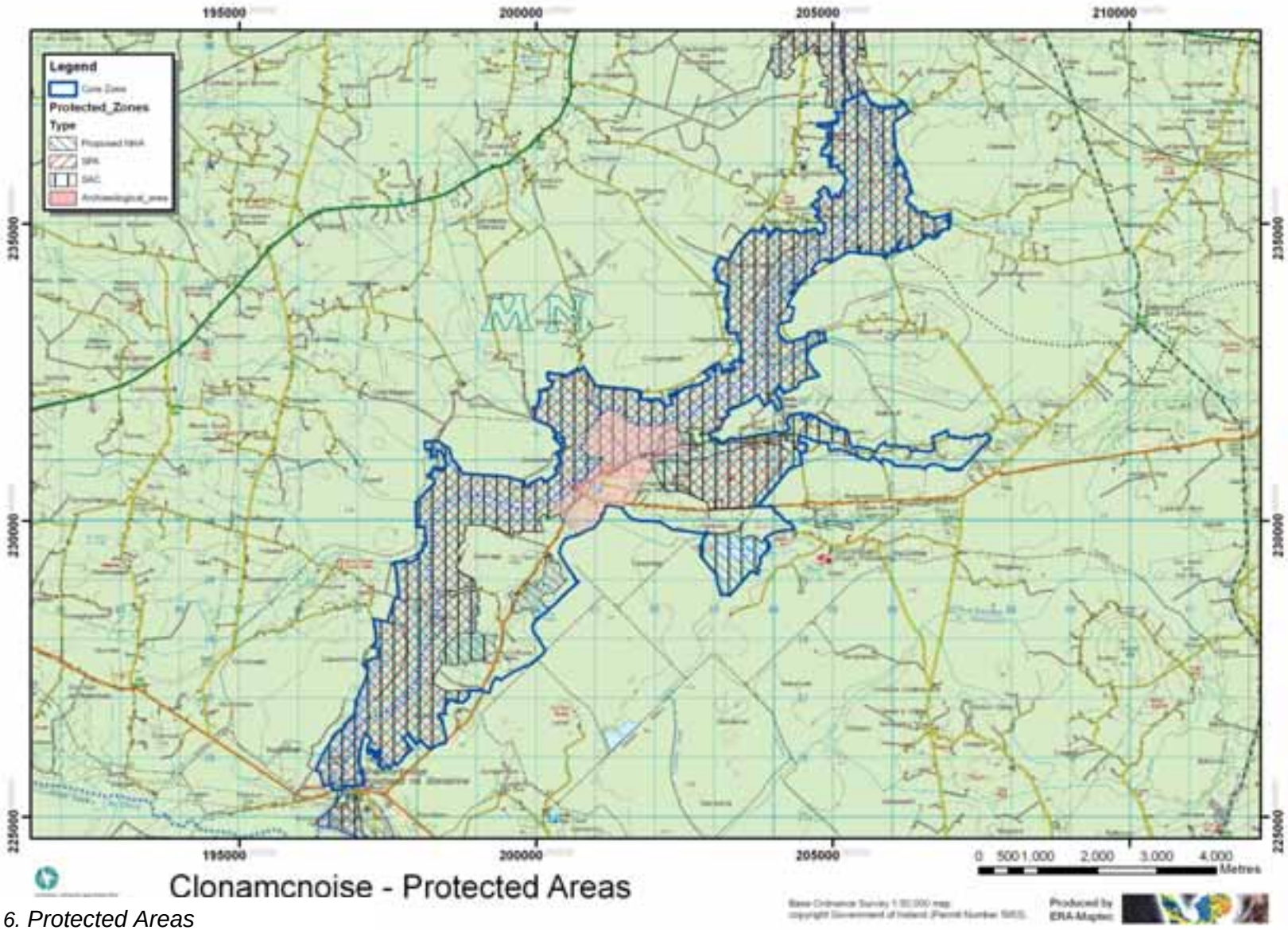


Fig. 6. Protected Areas

To ensure that the widest possible range of archaeological concerns are taken into account, the Minister is required to consult with the Director of the National Museum of Ireland before granting such consent. In considering whether or not to grant such consent, the Minister may have regard to a number of issues, including, but not limited to:

- the preservation, protection or maintenance of the archaeological, architectural, historical or other cultural heritage or amenities of, or associated with, the National Monument;
- any environmental, cultural, social, recreational or economic benefit that would accrue to the State or area in which the National Monument is situated;
- the need to collect or disseminate information on National Monuments or in respect of heritage generally.

The Wildlife Act 1976 and Wildlife Amendment Act 2000
The most important pieces of national legislation governing nature conservation are the Wildlife Act, 1976 and the Wildlife (Amendment) Act, 2000. Natural Heritage Areas are designated by the National Parks and Wildlife Service of the DEHLG under the provisions of the Wildlife (Amendment) Act 2000 in recognition of nationally important habitats, species and sites of geological interest. Natural Heritage Areas (NHAs) cover nationally important semi-natural and natural habitats, landforms or geomorphological features, wildlife plant and animal species or a diversity of these natural attributes.

Under these Acts, certain plant, animal and bird species are protected by law. This includes plant species listed in the Flora Protection Order, 1999 (or other such Orders) and animals and birds listed in the Wildlife Act, 1976 and subsequent statutory instruments. The aims of the Wildlife Act, 1976 and the Wildlife (Amendment) Act 2000 are as follows:

- to provide for the protection and conservation of wild fauna and flora,
- to conserve a representative sample of important ecosystems,
- to provide for the development and protection of game resources and to regulate their exploitation,
- to provide a mechanism to give statutory protection to Natural Heritage Areas (NHAs),
- to provide for statutory protection for important geological and geomorphological sites, including fossil sites by designation as NHAs, and
- to provide the services necessary to accomplish such aims (source: NPWS).
-

The County Offaly Draft Development Plan 2009-2015, the County Westmeath Development Plan (2008-2014) and the County Roscommon Development Plan (2008-2014) state commitments to further protect and enhance those species (currently protected by law) and their habitats. Under the provisions of the above Acts, the nominated Site is covered by two nature conservation designations:

1. Nature Reserve
Nature reserves on lands not owned by the Minister or by the State are designated by Establishment Order under Section 16 of the Wildlife Act 1976, as amended by the Wildlife

(Amendment) Act 2000. 119 ha of Mongan Bog is designated a National Nature Reserve (1987, S.I. No. 230/1987). Under the Wildlife Acts there is an obligation to manage land designated as a Nature Reserve in accordance with the objectives for which it is designated. The Establishment Order for Mongan Bog Nature Reserve states that it was recognised as a Nature Reserve:

> '*So that it can be managed in such a way as to ensure the conservation of the peatland ecosystem which it constitutes*'.

2. Natural Heritage Area (Proposed)
Protection is afforded to NHAs under several sections of the Wildlife (Amendment) Act 2000, including restrictions and prohibitions on carrying out certain works. NHAs are normally also listed in a County Development Plan and the ecological interest that underlies proposed NHAs is taken into account in decisions on planning applications. Proposed Natural Heritage Areas within the candidate World Heritage Site are given in the table below:

Table 1 Natural Heritage Areas

SiteCode	SiteName
000216	River Shannon Callows
000576	Fin Lough (Offaly)
000580	Mongan Bog
000892	Clonfinlough Esker
000910	Lough Nanag Esker
001776	Pilgrim's Road Esker

Planning and Development Acts 2000–2006
Ireland has a modern and effective legislative and regulatory framework for planning aimed at ensuring the proper planning and sustainable development of areas including the protection and conservation of environmental qualities.

The preparation of development plans every six years by each of the 34 planning authorities at the city and county council levels across the state is an essential element of the planning system. Development plans act both to support the implementation of higher level plans and national policies taking account of local conditions and set the policy framework for assessment of applications for permission to carry out development by those authorities.

In terms of higher level plans, at the regional level, Clonmacnoise is situated within the area of the Midlands Regional Authority (which covers Westmeath and Offaly) and close to the area of the West Regional Authority (which covers Roscommon and nearby Galway). The Midland Regional Planning Guidelines (MRPG) 2004 – 2010 establish an overall framework for co-ordination of development plans of the four county councils that make up the area of the Midlands Regional Authority. Clonmacnoise is specifically located within the Western Development Area as defined by the guidelines which recognises the key challenge of revitalising a rural area experiencing a falling population and declining traditional peat based industries such as extraction (Bord na Mona) and electricity generation (the Electricity Supply Board).

The Regional Planning Guidelines (RPG's) in tandem with the relevant county development plans recognise the potential to secure the diversification of the rural economy by protecting its intrinsic environmental and heritage assets as a basis for sustainable rural development in rural tourism, high quality micro-enterprises and agri-business.

The RPG's envisage the co-ordinated promotion and marketing of the inland waterways, cycling and walking trails and historical and environmental assets of the area as an essential part of its future prospects for diversification and sustainable development.

The core and buffer areas in Clonmacnoise straddle the administrative boundaries of three planning authorities, namely Offaly, Westmeath and Roscommon County Councils. Each of these three planning authorities are either in the process of finalising a new development plan (Offaly County Council finalised in early 2009)) or have relatively recently adopted development plans (Roscommon 2008), (Westmeath 2007).

All of the State, Semi-State and Non-Government Organisations having an interest in the built and natural heritage together with the public at large are invited to participate in both the County Development Plan process and the subsequent process of submitting and assessing planning application and there is an independent appeals process, open to applicants and any persons making formal submissions on planning applications and overseen by An Bord Pleanála – the planning appeals board.

The County Development Plan is drawn up after an extensive consultation process and local community input. The resultant Draft Development Plan is put on public display for a specified period of time. The local authority is required to consider the comments received in this open and transparent process. Any material changes made to draft plans on foot of the submissions received are put on public display for additional comments before the locally elected members make the final decision in relation to the making of the plan.

Planning is therefore a highly participative and open process and that in making policy is ultimately subject to the local democratic mandate.

The County Development Plans for Offaly, Roscommon and Westmeath are in general highly supportive of the various measures necessary to facilitating the Clonmacnoise proposed World Heritage Site as part of their overall strategies to secure the proper planning and sustainable development of the relevant counties while having slightly different emphases in their policy approach depending on the scale of the Clonmacnoise site and buffer areas covered by each plan area.

The Built Heritage and Natural Environment sections of the Offaly County Development Plan are the most detailed of the three plans relating to Clonmacnoise as the associated core and buffer areas are located substantively in County Offaly. The Offaly County Development Plan contains many provisions relevant to Clonmacnoise including

- the preservation of archaeological monuments and sites included in the Record of Monuments and Places;
- the identification of archaeological sites;
- the protection of settings of archaeological interest;
- the enhancing of public awareness and the provision of advisory guidance.
- a heritage zone around Clonmacnoise

These wide-ranging planning objectives incorporate arrangements for taking into account the advice and recommendations of the National Monuments Service, the National Museum of Ireland and other statutory agencies with regard to the identification and preservation of archaeological monuments and sites in County Offaly.

The archaeological structures, natural features, diverse habitat and vegetation of Clonmacnoise and its wider cultural landscape in Counties Offaly, Westmeath and Roscommon combine to produce some of the most spectacular scenery in Ireland. Accordingly, the three County Councils already recognise the importance to the overall landscape and natural environment of these features and strive to protect and enhance the landscape and natural heritage of the area. The plans include objectives for the protection of areas designated as sensitive habitats under the EU Habitats Directive and forming part of the EU wide Natura 2000 network of habitats and more generally to:

- Avoid development likely to have serious adverse effects on protected areas.
- Ensure that any development proposal in the vicinity of or affecting in any way a designated Special Area of Conservation (SAC), Special Protection Area (SPA) or Natural Heritage Area (NHA) provides sufficient information, showing how its proposals will impact on the habitat, and also indicating appropriate amelioration.
- Maintain the conservation value of those sites selected as SPAs, as well as any other sites that may be so identified during the lifetime of the plan.
- Maintain the conservation value of NHAs proposed for designation during the lifetime of their respective plans.

It is fair to say that existing planning designations of areas in and around the core and buffer areas offer good measures to ensure that the intrinsic value and character of Clonmacnoise is a leading consideration in the assessment of proposals for development in and around Clonmacnoise. Furthermore, existing development plans seek to conserve the heritage and environmental values of the assets described above while at the same time aiming to secure the sustainable development of their areas including the promotion of nearby towns and villages such as Shannonbridge.

Recognising the advantages of a co-ordinated approach to planning policies across county boundaries, the Department is working with the three local authorities in exploring the potential to develop a common policy statement on Clonmacnoise, which could be incorporated into the three county development plans at some point in the future.

4.2.2. International Legislation

EU Birds Directive

A Special Protection Area (SPA) is an area deemed to be of international significance for birds, as designated by the Minister for the Environment, Heritage and Local Government by Order. SPAs are areas of European importance, designated under the EU Birds Directive (79/409/EEC) by reason of the bird species and populations that they support. The Birds Directive addresses the conservation of all wild birds throughout the European Union, including marine areas, and covers their protection, management, control and exploitation. It places a broad requirement on countries to take necessary measures to maintain the populations of all wild birds at levels determined by ecological, scientific and cultural needs. Article 4.1 of the Birds Directive provides that Member States classify the most suitable territories as SPAs. This Article was implemented in Ireland in the first instance by the E.C. (Conservation of Wild Birds) Regulations 1985 (S.I. No. 291 of 1985). The enforcement provisions for SPAs were changed by the Habitats Directive. This is implemented in Ireland by the European Communities (Natural Habitats) Regulations 1997 (S.I. No. 94/1997) and its amendments in 1998 and 2005 (S.I. No. 233/1998 and No. 378/2005). Article 6 of the Habitats Directive requires an appropriate assessment of any works, plans or projects.

A network of protected sites is required to protect wild birds at their breeding, feeding, roosting and wintering areas. SPAs, along with Special Areas of Conservation (SACs), which are designated under the Habitats Directive (EU Directive No. 92/43/EEC), collectively form part of Natura 2000, a network of protected areas throughout the European Union. The Birds Directive requires designation of Special Protection Areas (SPAs) for the following:

- Listed rare and vulnerable species such as: Whooper swan, Greenland white-fronted Goose, Peregrine falcon, Corncrake and Terns.

- Regularly occurring migratory species such as: ducks, geese and waders

- Wetlands, especially those of international importance, which attract large numbers of migratory birds each year. (Internationally important means that 1% of the population of a species uses the site or more than 20,000 birds regularly use the site).

There are two SPAs in the nominated Site: Mongan Bog (004017) and the Middle Shannon Callows (004096) that have been selected because they support populations of birds of particular species that are rare or threatened in Europe and require particular measures, including the designation of protected areas, to conserve them (See Appendix 5 for data).

In order to protect ecologically important sites, certain activities may be restricted within designated areas. These activities (known as notifiable activities, damaging activities or operations requiring consent) have been identified as having the potential to destroy or significantly alter, damage or interfere with the ecology of a site. The list of such activities varies depending on the habitats and species present. The Conservation Plan for Mongan Bog contains the following management objective relating to the SPA designation:

- To maintain and increase where possible, populations of notable bird species, particularly those listed in Annex I of the E.U. Birds Directive - greenland white-fronted goose, hen harrier, merlin, peregrine falcon, corncrake and short-eared owl.

In order to achieve this, the Conservation Plan recommends the protection of roosting, feeding and breeding grounds of bird species.

4.2.3 Habitats Directive

The Habitats Directive was transposed into Irish law by The European Natural Habitats Regulations, 1997 to create a network of protected wildlife sites in Europe. The Directive stipulated that each member state must designate their most important natural areas as Special Areas of Conservation (SAC). The Directive specifies the scientific criteria on the basis of which SAC sites must be selected and very strictly restricts the grounds that can be used as justification for damaging a site. The network is referred to as NATURA 2000 and includes SACs and Special Protection Areas (SPAs) for birds. The regulations also require planning authorities when considering an application for a development that is likely to have a significant effect on the SAC, to ensure that an appropriate assessment of the implications of the development for the conservation status of the site is undertaken. Sites may contain priority or non-priority habitats and species.

While cSACs are fully protected under the EU Habitats Directive, the term ‘candidate’ refers to the fact that the sites are currently under consideration by the European Commission. Priority habitats in Ireland include sand dunes, machair, limestone pavement, raised bog, and turloughs. The following table lists the cSACs in the candidate World Heritage Site:

Table 2 Candidate Special Areas of Conservation

SiteCode	SiteName
000216	River Shannon Callows
000576	Fin Lough (Offaly)
000580	Mongan Bog
001776	Pilgrim's Road Esker

The Conservation Plan for Fin Lough contains the following management objectives related to the cSAC:

- To maintain the Annex I habitats for which the cSAC has been selected at favourable conservation status; alkaline fen and alkaline fen/calcareous springs mosaic (20% and 1% area of the site respectively).
- To maintain the Annex II species for which the cSAC has been selected at favourable conservation status; *Vertigo geyeri* and other notable fauna species.
- To maintain the extent, biodiversity and species richness of the site.

4.2.4 Statutory Nature Reserve

Statutory Nature Reserves have been given a priority designation in association with the EU Habitats Directive. These Reserves provide the strictest means in Ireland for the protection of wildlife sites. The Reserves comprise state-owned land, inland waters or foreshore areas which form the habitat of a species or community of flora or fauna of scientific interest or form part of an ecosystem of scientific interest, which would benefit from protection measures, established under the Wildlife Act, 1976 and the Wildlife (Amendment) Act, 2000. Nearly all damaging activities can be legally prevented in them. Mongan Bog (119 ha) was inscribed as a Statutory Nature Reserve in 1987.

4.2.5 Convention on Wetlands (Ramsar Sites)

The Convention of Wetlands of International Importance was established at Ramsar on 2nd February 1971, as amended by the Protocol at Paris on 3rd December 1982. Ireland ratified this convention on 15 November 1984. The main aim of the convention is to secure the designation by each contracting state of wetlands in its territory for inclusion in a list of wetlands of international importance for waterfowl. This entails the commitment of each contracting state to a policy of protection and management of the designated wetlands, and of formulating and implementing planning so as to promote the conservation of designated wetlands and, as far as possible, the wise use of wetlands in its territory. Ireland presently has 45 sites designated as Wetlands of International Importance, with surface areas of 66,994 hectares. Protection derives from other designations of the sites as SPAs or Nature Reserves. It obliges the State to recognise and conserve any internationally important wetlands. The Convention notes the presence of rare, vulnerable, endemic or endangered plants or animals as a factor in determining international importance. 127 ha of Mongan Bog (416) is a Ramsar Site.

4.2.6 Biogenetic Reserves

Biogenetic Reserves are designated by the Council of Europe and are natural habitats, which are especially valuable for nature conservation in Europe. There are currently 14 Biogenetic Reserves in Ireland, and one of these is within the candidate World Heritage Site: Mongan Bog. The Offaly County Development Plan has an objective to protect this habitat.

4.2.7 The UN Convention on Biological Diversity (CBD)

This resulted from the Earth Summit held in 1992 in Rio de Janeiro. Ireland signed the Convention in 1992 and ratified it in 1996. Subsequent agreements, EU Directives and

Ireland's National Biodiversity Plan have reinforced this message and the commitment to halt the loss of biodiversity. The County Development Plans of Offaly, Roscommon and Westmeath County Councils include a commitment to continue efforts to reduce the loss of biodiversity.

4.2.8 The Council of Europe European Landscape Convention (2000)
Signed and ratified by Ireland in March 2002. This is a visionary convention requiring national commitment and understanding to realise its aims.

4.2.9 The European Communities Environmental Impact Assessment EIA Directive No. 85/337/EEC as given effect by European Communities (Environmental Impact Assessment) (Amendment) Regulations 1989-1998. These were given effect in Ireland through Statutory Instrument No. 351 of 1998. This combined and updated the S.I.'s No's 349 (1989), 84 (1994) and 101 (1996). This directive required that an environmental impact assessment be prepared for larger projects and includes the assessment of landscape impacts.

4.2.10 Water Framework Directive
The Water Framework Directive (more formally the Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy) is a European Union directive that commits Member States to achieve good qualitative and quantitative status of all water bodies (including marine waters up to kilometre from shore) by 2015. It is a framework in the sense that it prescribes steps to reach the common goal rather than adopting the more traditional limit value approach. The directive defines 'surface water status' as the general expression of the status of a body of surface water, determined by the poorer of its ecological status and its chemical status. Thus, to achieve 'good surface water status' both the ecological status and the chemical status of a surface water body need to be at least 'good'. Ecological status refers to the quality of the structure and functioning of aquatic ecosystems of the surface waters. Good ecological status is defined locally as being lower than a theoretical reference point of pristine conditions, i.e. in the absence of anthropogenic influence. Article 14 of the directive requires member states "to encourage the active involvement of interested parties" in the implementation of the directive. The River Shannon is subject to the Water Framework Directive that is overseen by the Shannon International River Basin District (IRBD) Project.

4.2.11 Nitrates Directive
The Nitrates Directive (91/676/EEC) – Council Directive of 12 December 1991 concerning the protection of waters against pollution caused by nitrates from agricultural sources was adopted in 1991 and has the objective of reducing water pollution caused or induced by nitrates from agricultural sources. The Directive has been implemented in Ireland since 1991 by way of extensive monitoring of nitrate levels in waters, the assessment of the trophic status of waters, the development and dissemination in 1996 of a Code of Good Agricultural Practice to Protect Waters from Pollution by Nitrates and a range of other measures which operate to protect water quality from pollution by agricultural sources.

Ireland's National Nitrates Action Programme was given statutory effect by the European Communities (Good Agricultural Practice for Protection of Waters) Regulations 2006 which were made on 19 July 2006. These Regulations provide strengthened statutory support for the protection of waters against pollution from agricultural sources e.g. by phosphorus or nitrogen. The Regulations require the avoidance of careless practices by farmers, which create a risk of causing pollution and provide for inspections by local authorities. Implementation of the Action Programme is supported by an enhanced package of financial supports for farmers by the Department of Agriculture, Fisheries and Food (DAFF) and by the cross-compliance inspections carried out by that Department. There is cross reporting of breaches between local authorities and DAFF.

The Nitrates Directive requires application of a general land-spreading limit of 170kg per hectare for nitrogen from livestock manure [this is considered to be equivalent to the output from two dairy cows]. However Member States can apply for a derogation to allow higher amounts in appropriate cases i.e. where soil or climactic conditions are such that the higher amount will not cause water pollution. In keeping with a commitment in Sustaining Progress, an application for a derogation was made by Ireland for the benefit of some 6,000 dairy farmers operating at levels above 170 kg per hectare. Approval was sought for land spreading rates of up to 250kg N per hectare per annum. The directive also limits the application of fertiliser and the storage of manure within 5m of a watercourse.

The EU Commission granted Ireland a derogation on the 22 October 2007, which allowed land-spreading rates of up to 250kg of Nitrogen per hectare per annum for specific circumstances. Revised Good Agricultural Practice Regulations will be made shortly, following a consultation process, to give statutory effect to the operation of the derogation. These Regulations will also provide for better farmyard management and strengthened enforcement provisions in order to achieve compliance with a judgment of the European Court of Justice in relation to the Dangerous Substances Directive. The River Shannon is subject to the Nitrates Directive that is overseen by the Shannon International River Basin District (IRBD) Project which monitors run-off from farms.

4.3 International Guidance and Charters

The UNESCO Convention concerning the Protection of the World Cultural and Natural Heritage (1972) provides international guidance on conservation of World Heritage Sites. These guidelines provide directions that inform the management of the nominated Site and outline obligations for the State Party, such as the preparation of a Management Plan for the site and periodic reporting, under the World Heritage Convention.

International charters set out recognised standards for the built heritage community, working towards the conservation and protection of cultural heritage sites. The International Council on Monuments and Sites (ICOMOS), an association of professionals throughout the world, set out general principles for the preservation of historic monuments and heritage in 1964. This document is known as the Venice Charter.

Since then many additional charters have been formulated and ratified to cover other aspects of cultural heritage, such as authenticity, preservation, protection and management. The Council of Europe also plays a role in producing guidance documents for the preservation of cultural heritage. ICOMOS Ireland, the national body, promotes ICOMOS' international charters, supports the implementation of the World Heritage Convention and promotes responsible custodianship of World Heritage Sites. It is available for consultation by Government Departments on matters relating to cultural heritage, and the international charters and conventions. Relevant charters, listed in Appendix 6, have provided guidance in the approach to the preservation of the site and in the management policies as set out in this plan.

4.4 Site Management

4.4.1 Current Site Management Framework

Responsibility for the management of operational matters and works at the Clonmacnoise monastic site rests with the Office of Public Works. The Department of the Environment, Heritage and Local Government has been assigned responsibility for the legislative and policy framework for the built and natural heritage. The two organisations liaise to provide an

integrated approach to the management of the site. Both organisations meet on a regular basis to ensure that cross cutting issues are addressed in an effective and co-ordinated manner. The Management Plan strives to achieve a balance between conservation of the built and natural heritage, visitor management and increased public awareness.

4.4.2 Cultural Heritage Management (Additional input from OPW required for this section)

Cultural Heritage Management Structure
The management of the cultural heritage at Clonmacnoise is in the remit of the Office of Public Works. Archaeological input to the conservation and presentation of the Site is provided by the National Monuments Service of the DEHLG by means of a service level agreement with the OPW. District works meetings are held every few months to review projects of all works in the district in which Clonmacnoise lies. Regular meetings are held, as required, between the OPW, the DEHLG and the project team to discuss each year's programme of works and technical requirements.

Built Conservation Works
The Senior Conservation Architect and his District Manager agree conservation works that need to be carried out. These are agreed with the District Archaeologist and are subject to Ministerial Consent and when required, external consultants are commissioned.

Conservation Framework
All conservation works are undertaken with due regard to the various international charters and documents that provide a framework for the preservation of historic monuments and World Heritage Sites. These charters and documents act as guidelines and inform the work. In undertaking any work, however, cognisance must be had of actual site conditions and constraints.

Legislation in relation to national monuments and wildlife must be complied with when undertaking conservation works. All works are subject to consent from the Minister for the Environment, Heritage and Local Government and are reviewed on a regular basis.

Philosophy underpinning the Works Programme
Clonmacnoise has a long history of conservation stretching back to the nineteenth century when it set a new international standard in conservation practice. The philosophy underpinning preservation/conservation works at the Site from then to the present day is that all original features are retained and conserved in situ. Great efforts have been made to ensure that the programme of works in train since the early 1990s is in conformity with international standards of conservation practice.

A comprehensive works programme was commenced by the Office of Public Works (OPW) in January 2002 with funding provided under the National Development Plan 2000-2006. A rectified photographic survey of the structures at the Site was undertaken and deterioration of the fabric of each building was recorded. Loose stonework was observed constituting a considerable health and safety risk. A project management plan was prepared by the design team and consent for the proposed works was sought from the Minister of the Environment, Heritage and Local Government.

Linking the traditional skills of OPW's craftsmen with the laboratory based forensic expertise of the Engineering Department, Trinity College Dublin, has resulted in the application of appropriate repair materials and the introduction of a range of innovative site works practices. These initiatives include the development of specific lime burning and mortar production techniques in the OPW depot at Athenry together with the provision of a sheltered on-site working environment.

The works programme commenced with the consolidation of the stonework at Temple Dowling and Temple Rí. The original mortar and subsequent modern cement based repairs were analysed and the impact of the latter on the masonry was investigated. The cement based material and loose mortar were removed and the stonework was prepared for re-pointing with a replica lime based repair mortar.

At the Cathedral the surviving sections of internal plasterwork was conserved, in addition to the wall consolidation works. The OPW conservation engineer had established that the upper part of the northern outer wall of the monument was developing a lean and rebuilding a section of the western wall to act as a stabilising buttress was recommended. To ensure the integrity of this work it was necessary to extend the area of walling over the fragmentary remains of the West or main doorway of the Cathedral. Detailed survey work and historic research enabled the conservation team to proceed with the restoration of this feature of the site.

Pl. 43 The careful removal of the stone crosses to the new Visitor Centre was undertaken to protect them from the elements

Works Safety

Responsibility for overall safety at Clonmacnoise lies with the Office of Public Works. All staff working at Clonmacnoise operate in accordance with the Safety, Health and Welfare at Work Act 2005 and the relevant ancillary Health and Safety legislation. At a local level, the site manager has day-to-day on-site responsibility for the implementation of general safety procedures. Safety procedures are contained in a variety of documents and these

procedures are adhered to using the guidance of an external specialist contractor, with assistance from the Health and Safety Unit of the OPW.

Conservation Works
A summary of works undertaken to date, from the nineteenth century to 2008, is outlined in Appendix 4.

Survey and Recording
Measured surveys and photographic surveys are carried out before any works commence. Much of this work is carried out by the conservation team. Plans, sectional profiles and elevations are recorded at differing scales during excavation; instrument surveys have been used to record the features after excavation.

Archaeological Investigations
Archaeology has played a major role in the programme of conservation works at Clonmacnoise, particularly in the last two decades. The scope of archaeological work to date at Clonmacnoise has been determined, by and large, by rescue archaeology, conservation and preservation needs. This approach is in line with one of the fundamental principles of the DEHLG's strategy to protect our finite archaeological heritage: 'the gathering of archaeological information should never in any circumstances destroy any more of the archaeological heritage than is necessary'. Within these parameters, then, the aim of the archaeologist at Clonmacnoise has been to exploit fully the opportunities provided by the interventions required to conserve elements of the site, in order to provide new insights into this unique monastic settlement.

Over the years archaeological input has ranged from monitoring and supervising works to full archaeological excavation. Several archaeologists have been involved, including staff members of the National Monuments Service and private consultants (see Appendix 3, Table 3). A summary of archaeological investigations from 1979-2008 is given in Appendix 3.

Portable Objects
It is policy to retain heritage objects at Clonmacnoise insofar as possible. There have been some instances of theft in the past, particularly of the grave-slabs. This has been addressed by the construction of a secure on-site facility to house the entire collection with the exception of those on display in the Visitor Centre. Ongoing monitoring of the condition of heritage items is being carried out and if deemed to be at further risk, heritage objects will be removed and placed into a secure facility on-site for safe-keeping.

There are cases where a number of portable and damaged objects are too vulnerable to leave exposed at the site, exemplified by the High Crosses and cross slab collection. Due to deteriorating environmental conditions that were damaging the stonework and because of their importance as examples of Insular art, the three upstanding crosses and several examples from the cross-slab collection were moved into the nearby Visitor Centre in 1992 to protect them for posterity. The crosses were placed into direct view of their original setting. High quality replicas of the High Crosses cast from resin were placed on their original sites to maintain the spiritual and architectural integrity of the Site. The entire cross slab collection was catalogued and accommodated in a purpose built unit on site and are accessible during working hours, by prior appointment.

Numerous artefacts have been recovered during excavations at Clonmacnoise over the years. The archaeological artefacts and samples recovered during excavation are stored in the premises of the National Monuments Service (DEHLG) during the post-excavation reporting period. Following recording, conservation and publication, the artefacts will be transferred to the National Museum of Ireland for long-term storage.

Outstanding works to the Monastic Core
Future works that have been proposed include consolidation works to Temple Finghin and the Nun's Church where serious stone decay has been observed. It is proposed to survey and record both monuments and detail the vulnerable sandstone elements and to avail of the expertise of Trinity College, Dublin on stone consolidation. Plans to protect the monument from aggressive environmental conditions will be considered and environmental and condition monitoring systems will be implemented.

The shattered remains of the keep and the associated steep earthworks of the Norman castle continue to constitute a high risk hazard to the public. A detailed archaeological and architectural survey of the site is required and a comprehensive conservation management plan needs to be prepared.

4.4.3 Natural Heritage Management and Monitoring
Surveys carried out since 1987 by Birdwatch Ireland have enumerated the breeding wetland birds within the nominated Site (See Appendix 5 for full list of activities). National censuses provide population estimates of each species of wetland and migratory birds breeding in Ireland, against which the national and international importance of each individual colony can be assessed. These censuses also ensure that sites are protected under Article 4 of the EU Birds Directive. NPWS liaises with the local authorities regarding any development or environmental issues in relation to the Middle Shannon Callows and in relation to waste-management issues that may affect natural habitats at Clonmacnoise.

Botanical recording of all higher vascular plants takes place continuously in 10Km squares throughout the counties by County Recorders who are members of the Irish branch of the Botanical Society of the British Isles (BSBI). Results of the most recent surveys have been published in an Atlas of the British and Irish Flora (Preston et al. 2002). Revisions are at intervals of about 15 years.

Rare species surveys of the Counties are also carried out at various intervals to discover the occurrence of threatened species. Roscommon was surveyed in 2005 and Offaly was surveyed in 1998. Species presence is monitored under these two schemes and the Red Data Book for vascular plants (Curtis and Mc Gough 1988) is currently being updated.

Endangered plants in Ireland are also listed under the Flora Protection Order 1999 and an IUCN list of threatened species has been compiled. Relevant species to the site have been listed in Table 4, Appendix 5 (www.botanicgardens.ie).

Pl. 44 Left, Clinopodium acinos (Basil thyme) and right, Frangula alnus (Alder buckthorn)

Esker grasslands within the site have received particular attention with a recent study funded by the Heritage Council (Tubridy and Meehan 2006). A survey of semi-natural grasslands of Offaly and Roscommon, sponsored by NPWS, has just been completed and included several esker grassland sites and callows vegetation within the candidate World Heritage site (BEC 2007).

Bryophytes are being continuously recorded by NPWS. They have also carried out rare and threatened bryophyte surveys for Roscommon (Hodgetts 2002) and North Kerry/South Midlands (Holyoak 2005) which includes parts of the site. A new Red Data Book for bryophytes will be published in 2009.

Lichens are also being recorded continuously by local recorders. A Census Catalogue for the whole of Ireland was published in 1984 by Mark Seaward. A current lichen survey is being carried out nationwide (2005-2010), supported by NPWS.

4.4.4 Visitor Management and Sustainable Tourism

Access to Clonmacnoise

Within the candidate World Heritage Site, the focal point for visitors is the monastic core at Clonmacnoise and its visitor centre which is currently one of Ireland's most popular tourist attractions. It is Government policy to provide the greatest possible level of visitor access to all built heritage sites in the care of the OPW.

Clonmacnoise has been publicly accessible for 400 years and is therefore a long-established visitor attraction. In the early 1960s a large car park was provided, in 1973 a guide service was established for the busier summer months and a full-time caretaker was employed. These measures provided the public with information on the Site, helped to control access, reduced the risk of deliberate damage and provided structured opening hours. In 1986 in order to improve security and conservation, it was decided to build a new visitor centre to house some of the cross slab collection and the three High Crosses which were under threat from continued long-term exposure to the elements.

Pl. 45 The new Visitor Centre that opened in 1993 blends harmoniously with the monuments in the monastic core and the surrounding cultural landscape

The new visitor centre, which opened in 1993, is a single-storey stone built staggered rectangular development terminating in three circular chambers to accommodate the three high crosses and was built to blend in sensitively with the landscape. It houses a reception area, an audio-visual room, exhibition space, tea room and toilets. Access to the monastic site at Clonmacnoise is through the visitor centre and guided tours, but because Clonmacnoise is a living spiritual and religious site, people have access to the Old Burial Ground and New Graveyard at all times. Access to the Nun's Church and St Ciarán's Well is not restricted and it is intended that this arrangement will remain in place.

Guide Service

A year-round guide service was provided in 1980 to cope with increasing visitor numbers following the visit of Pope John Paul II in 1979 which stimulated considerable interest in Clonmacnoise. As of 2008, 18 educational guides are in place during the peak visitor season (Mid-May to Mid-September) and seven permanent guides and a site supervisor operate for the remainder of the year. The role of these guides is to protect the site, interpret the history and regulate the number of visitors to the site.

Visitor numbers

Visitor numbers to Clonmacnoise have been ever increasing, rising from 10,000 in 1976 to almost 170,000 in 2007. The Visitor Centre was designed for a maximum of 75,000 visitors per year. This undoubtedly diminishes the tourist experience, especially in the high season. The pattern of visiting is strongly focussed on the summer months and is accounted for in the main by coach parties of foreign tourists who stop off at Clonmacnoise en route from Dublin to Galway/West Ireland. Coaches in particular place considerable pressure on the road infrastructure which is not suitable for carrying such a high volume of traffic and

disturbs life for the local inhabitants. The anticipated trends in visiting Ireland are upward, pointing to the continued need for an active approach to visitor management.

Pl. 46 Schoolchildren visiting the Cross of the Scriptures

Attempts to control visitor access, particularly in the busier summer months, have taken the form of pre-booking all coach tours. This has seen partial success, but clearly a Visitor Impact Survey needs to be commissioned to report on the impact of tourism to the fabric of the monastic city, for risk assessment, and the wider socio-economic and environmental impacts that will inform a resultant Visitor Management Strategy for Clonmacnoise.

Sustainable tourism

The key factor of the Visitor Management Strategy will be to enhance the visitor experience and achieve new standards of excellence in visitor management by promoting sustainable tourism that engenders equal access and enjoyment but which preserves the authenticity and integrity of the Site while bringing socio-economic benefits to the local community and wider district.

One way to achieve this is through cultural tourism and the inscription onto the World Heritage List of the Monastic City of Clonmacnoise and its Cultural Landscape would undoubtedly provide a great boost to cultural tourism initiatives that are presently being promoted in the locality and wider district. Cultural tourism is an area of rapid growth worldwide, increasing by 15% per annum (World Tourist Organisation) and is estimated to be worth €5.1billion annually to the Irish economy. Cultural tourism embraces the full range of experiences visitors can undertake to learn what makes a destination distinctive – its lifestyle, its heritage, its arts, its people – and the business of providing and interpreting that culture to visitors. In order to harness the potential of this expanding sector, Fáilte Ireland has recently prepared Regional Tourism Strategies for the period 2008 to 2010. The purpose of the strategies is to ensure the success of the realignment of role, functions and structures

of regional tourism to ensure the potential of the tourism industry in each region is being maximised.

As mentioned in previous sections, The Regional Planning Guidelines (RPG's) for the Midlands Regional Authority, together with the development plans of all three planning authorities adjacent to Clonmacnoise recognise the potential to secure the diversification of the rural economy of the area by protecting its intrinsic environmental and heritage assets as a basis for sustainable rural development in rural tourism, high quality micro-enterprises and agri-business. The RPG's envisage the co-ordinated promotion and marketing of the inland waterways, cycling and walking trails and historical and environmental assets of the area as an essential part of its future prospects for diversification and sustainable development.

The area is thus considered to have high potential for dedicated amenity and leisure especially when combined with the range of heritage facilities and heritage towns. Reflecting the objectives of the Regional Planning Guidelines and local authority development plans, Fáilte Ireland is working in conjunction with Shannon Development and has launched the Mid Shannon Tourist Investment Scheme (MSTIS) which covers the counties of Offaly, Roscommon and Westmeath in which the candidate World Heritage Site lies. The MSTIS is a special initiative aimed at stimulating and encouraging sustainable investment along the River Shannon Corridor. The MSTIS, which is aimed predominantly at the micro, small and medium tourism sector, is a tax measure aimed at stimulating tourism investment by providing accelerated capital allowances. The central objective is the sustainable development of new tourism infrastructure, or the refurbishment of existing tourism infrastructure, with a view to increasing the inflow of tourist visitors to the area.

On a local level, Offaly County Council, in which the majority of the candidate WHS is located, recognises that Clonmacnoise is one of Ireland's foremost national monuments and is of international importance as a spiritual, historic, archaeological and cultural centre. In addition to the monastic site, the area surrounding Clonmacnoise, including Mongan Bog, Fin Lough and Clonmacnoise Callows, is of international importance for nature conservation. The unique atmosphere and attractiveness of Clonmacnoise derives not only from the monastic site itself but its relationship to its cultural landscape: the River Shannon and the callows together with the sense of enclosure provided by the eskers. The effect is heightened by the unfolding of the site as it is approached either from the river or any of the three approach roads. Offaly County Council is conscious of the fact that the interaction of all these elements contributes significantly to the impact of the area and that it is necessary to preserve and protect these fully in order to retain the unique and special character of Clonmacnoise.

Pl. 47 Pleasure boating on the River Shannon has become very popular

There are established pressures on the nominated Site and in particular on its surroundings, from increased visitation. Whilst the maintenance of existing facilities is important, the way in which these are promoted and the evaluation of the need for additional or improved facilities is one of the most critical areas for ensuring the sustainable use of the nominated Site by visitors. The main principle of visitor management is that visitor numbers should be matched to the carrying capacity of the nominated Site and should take account of the following elements:

- *Impacts on geological/geomorphologic features*: these are generally robust and unlikely to be damaged by visitors, but the possibility of such damage should always be considered.

- *Impacts on wildlife*: these may arise from direct erosion of vegetation or disturbance to sensitive species by walkers, anglers or pleasure boat cruisers.

- *Quality of visitor experience*: overall visitor numbers affect the experience of the nominated Site.

- *Impacts on traffic/local infrastructure*: the means by which visitors reach Clonmacnoise and the capacity of the transport network to get them there are increasingly important considerations.

- *Impacts on the actual ground caused by sheer footfall on the site*: including wear and tear on the ground at points where visitors congregate such as the crosses, the whispering arch, St Ciarán's church, excavation of soil from St Ciarán's Church to cure animal diseases /or heal fields.

The current pattern of visiting means that economic benefits to the local community and the wider region, is minimal. Visitors spend only a few hours at the monastic core before boarding a bus and continuing their overland journey. They seldom explore the natural landscape which is accessible on foot using the pilgrim's routes, or many other cultural sites located nearby. Although tourism does not currently seem to have had any adverse effects on the physical fabric of the monastic core, this situation needs close monitoring. It is apparent that a new visitor management framework is needed for the nominated Site.

This objective involves the OPW and the DEHLG working with local and regional authorities, Fáilte Ireland and Shannon Development to agree the siting and construction of an additional visitor centre located elsewhere in the district. It is envisaged that this will act as a hub from where visitors to Clonmacnoise can be conveyed either by road in small buses (a model that has worked exceptionally well at the Brú na Bóinne World Heritage Site) or by river via a 'park and float' scheme. These schemes would make it easier to manage visitors, would be more environmentally sustainable and therefore sensitive to the needs of local inhabitants and the cultural landscape. This will greatly enhance the visitor experience, improve the quality of life for local inhabitants by reducing traffic congestion and stimulate wider economic growth by advertising the numerous other attractions in the Midlands. Encouraging tourists to remain in the area for more than a few hours will increase visitor spending and boost the number of tourist nights which will benefit local accommodation establishments and nearby hotels.

4.5 Management Issues

Conservation of built and natural heritage, visitor management, sustainable tourism and other management issues are addressed in the draft Clonmacnoise Management Plan (2003). These issues form the basis of the objectives and action plan for Clonmacnoise for the next five to ten years and in the longer term.

4.5.1 Natural Heritage Issues

The main potential negative impacts are most likely to be caused by changes in management, for example, unsuitable grazing and mowing regimes; removal of gravel from eskers, nutrient input; and the abandonment of farming causing scrubbing over of grassland. There is some potential for inadvertent negative impacts caused by visitors to the nominated Site on flora and fauna. This is most likely to arise mainly from the physical disturbance caused by pleasure boat wakes on the River Shannon, discharge from on-board toilets and potential engine oil spillage, disturbance to wintering and nesting birds and trampling of habitats by anglers and walkers.

The operation of boat "pump-out" facilities to collect and treat the effluent from on-board toilets has been an-ongoing problem in the Shannon River Basin District. Waterways Ireland and the local authorities adjoining the navigation are working together to address these problems and ensure that there are enough facilities that are well maintained and easy to operate for boat users. Bye-laws have been implemented which apply speed restrictions on boats along the Shannon navigation and the Shannon-Erne Waterway.

Much of the natural heritage of Clonmacnoise is linked by a complex hydrological and hydrogeological regime. The role of water as a link between the different elements of the natural heritage requires that measures are in place to protect the surface and groundwaters, both in the core zone and the buffer zone.

4.5.2 Visitor Management and Sustainable Tourism Issues

World Heritage Sites may be impacted directly by the visitors themselves and by development of visitor services. The potential for visitor impact on the nominated Site is high, with visitors causing disturbance to the monuments or habitats and species, and overcrowding, which could be detrimental to the conservation of the Site. It is a constant challenge to balance the preservation of Clonmacnoise with the socio-economic benefits that tourism can bring to the wider region. A primary objective for managing heritage is to communicate its significance and the need for its conservation to its host community and to visitors.

4.5.3 Visual Impacts on Landscape Setting

As a cultural landscape, the relationship of the relict monastic city to its surrounding landscape is of vital importance. The landscape setting of the nominated Site is visually stunning. As with all World Heritage Sites, there is a need to balance the provision of facilities for visitors, guides and project teams with the possible impact on the setting of the Site of temporary structures, signage and toilets. In addition there is a visual sensitivity of views from the relict monastic city that needs to be managed both in the core zone of the World Heritage Site and the surrounding buffer zone.

4.5.4 Climate Change

The impact of climate change on World Heritage is an area of increasing concern amongst scientists and is recognised as one of the greatest threats to the conservation of heritage sites. Climate change can have physical effects on cultural heritage, such as rising sea levels, flooding, temperature changes and increased wind, all of which might compromise historic structures. Climate change also can impact socially and culturally. The natural heritage can be particularly affected by climate change with intense rainfall, changes in phenology (timing of events, such as flowering) and changes in the ecosystem configuration leading to, amongst others, disturbance in breeding patterns of species and growing seasons of plants.

The recent decline in the number of breeding Corncrake, a globally endangered migratory bird which is on the Irish Red List, might be indicative of climate change. Due to several flooding events between 2005 and 2007, only four calling males were recorded in 2008. This is despite conservation measures to maintain this population through the Corncrake Grant Scheme that rewards farmers for managing their meadows in a Corncrake friendly manner.

4.5.5 Research Strategy

Various strands of research have been ongoing since the 1980s for the monastic city and the wider landscape that culminated in a groundbreaking interdisciplinary book entitled *The Heritage of Clonmacnoise* (1987) edited by Mary Tubridy. Since then two volumes entitled *Clonmacnoise Studies Volumes 1 and 2* (1998 and 2003) edited by DEHLG archaeologist, Heather King, have been published with articles contributed by established academics and professionals from Ireland and beyond. These contain a variety of interdisciplinary and multidisciplinary articles that cover the history, archaeology and excavations, ecology, geology and heritage of the nominated Site. A further publication in the series is planned that will maintain the excellent research coverage of the candidate World Heritage Site.

4.5.6 Awareness and Promotion

The Department of the Environment, Heritage and Local Government co-operates and works in partnership with the Office of Public Works (which manages the monastic core and its Visitor Centre, the Nun's Church and St Ciarán's Well) and State-funded tourism agencies in their marketing activities. These agencies include Fáilte Ireland, Tourism Ireland Ltd., and the Midlands and East Coast Regional Tourism Authority, within whose functional area Clonmacnoise is located.

Educational activities concentrate on promoting awareness of the need for conservation of the natural and cultural heritage, while being relevant and enjoyable for the students that visit. School children are admitted free of charge to the Clonmacnoise Visitor Centre and in 2002 over 4,000 availed of this scheme.

The new Visitor Centre, opened in June 1993, provides a range of information by means of didactic panels, static displays and audio-visual material, about the natural heritage of the candidate World Heritage Site and the history of the monastic city. Guides are on hand to assist visitors in their understanding of the monastic site and the surrounding landscape. Books that have been published on the monastic city and its environs are on sale in the reception area of the Visitor Centre, including that produced by the Office of Public Works 1998 (reprinted in 2005).

Pl. 48 The Pilgrim's Road signpost pointing the way to Clonmacnoise

Further information panels are positioned within the monastic core, the Pilgrim's Route is signposted and an interpretation panel has been erected at the Rocks of Clorhane and on the callows explaining the habitats and the flora and fauna they support. The part of Mongan Bog, owned by An Taisce, is open by appointment for research.

A website has been set up to chart the progress of the World Heritage Site Bid for the nominated Site at: www.clonmacnoisewhsbid.org

Visitor information is available on the Heritage Ireland website, www.heritageireland.ie, maintained by OPW and in the OPW Heritage Sites of Ireland information booklet.

Information is also available through Fáilte Ireland's website at http://www.discoverireland.ie

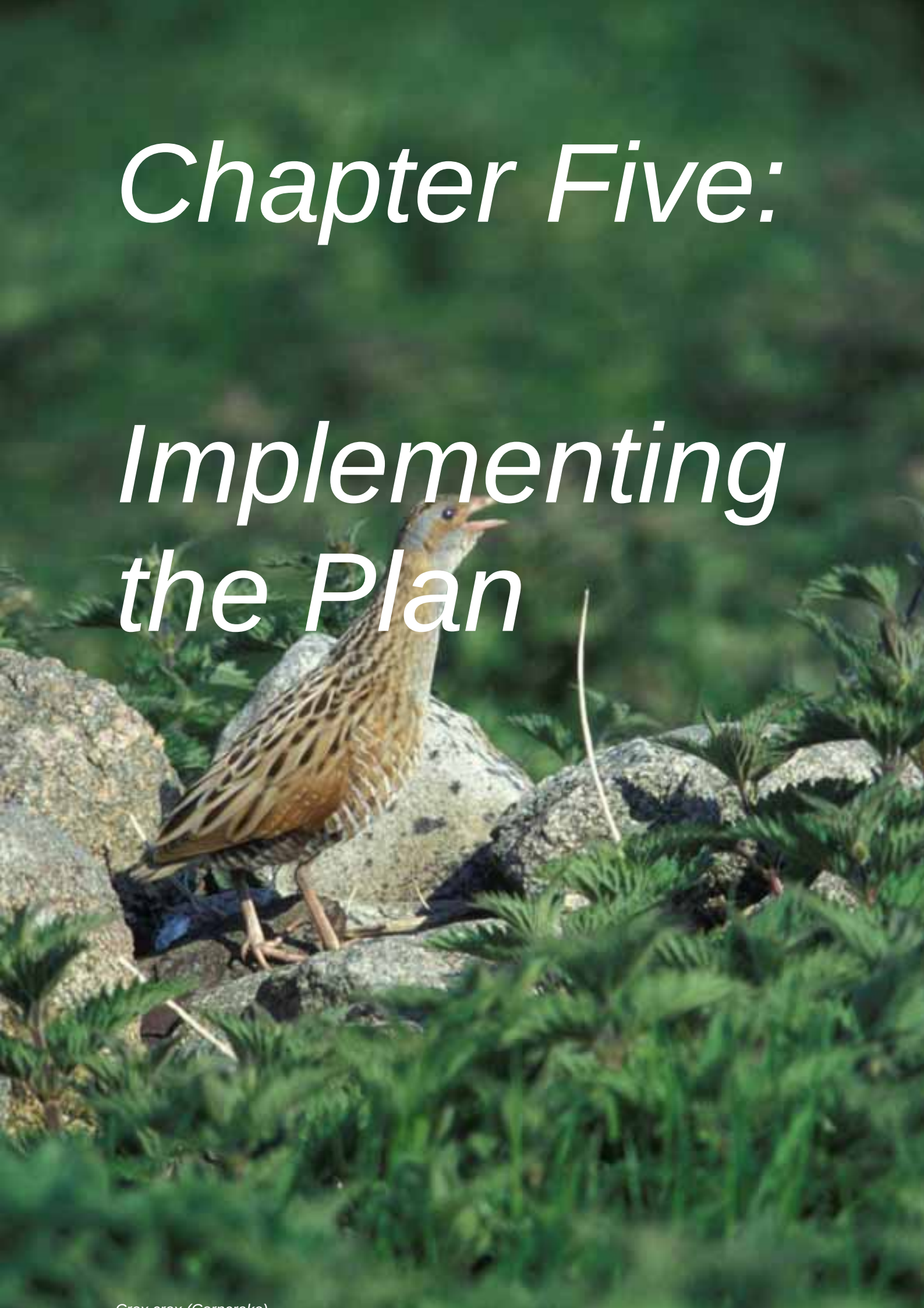
Further information on Ireland's World Heritage Sites is also available on the DEHLG website: http://www.environ.ie.

4.5.7 Management Structure Issues

The conservation programme at the monastic core is being carried out jointly by the OPW and the DEHLG, as previously described, with visitor management and access issues coming under the remit of OPW and natural heritage issues being monitored by NPWS. While this structure has proved effective to date, the appointment of a Site Management Team to efficiently co-ordinate the day-to-day management of Clonmacnoise and to liaise with interest groups will be beneficial.

Chapter Five:

Implementing the Plan



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5.1 Implementation Strategy

This Management Plan will be used as a tool for the effective implementation of various policies and objectives. Rather than being a finite plan, it will be a living document that will evolve over time and will require regular reviews and amendments, with the support of the relevant organisations and individuals.

5.2 Statement of Intent

The following outcomes are sought during the lifetime of the plan:

- The effective implementation of the actions set out in the plan.
- The allocation of the necessary resources, human and financial, to meet the needs identified in the plan.
- Effective monitoring and periodic reporting of the state of conservation of the Monastic City of Clonmacnoise and its Cultural Landscape.
- Greater dissemination of information and enhanced enjoyment of the Site for all.
- The provision of safe and efficient access to the Monastic City of Clonmacnoise and its Cultural Landscape.
- Improved liaison with community and local interest groups.
- The maintenance and improvement of the conservation and management of both the cultural and the natural heritage of the Site.
- Improved public awareness and appreciation of the Monastic City of Clonmacnoise and its Cultural Landscape through the maintenance of an informative website dedicated to the site.
- The establishment of a research framework strategy for both the cultural and natural heritage.
- Formal review of the Management Plan after five years.
- In order to achieve the outcomes in the Statement of Intent over the next five years, the various objectives and actions — outlined in Section 5.3 below — will need to be implemented.

5.2 Benefits of the Management Plan

The following benefits are expected from this management plan:

- Long term protection of Clonmacnoise and its surrounding cultural landscape.
- Continued access to Clonmacnoise for the local inhabitants and the general public
- Development of a framework for future academic research concerning Clonmacnoise
- A commitment to investigate the development of a new off-site visitors centre which could benefit the regeneration of the local economy and the pressures on roads adjacent to Clonmacnoise.

5.3 Objectives and Actions to achieve outcomes in Statement of Intent

The main objectives and key actions proposed in this plan for the Monastic City of Clonmacnoise and its Cultural Landscape reflect the Department's vision and priorities, taking into account comments and views expressed in the public consultation process. A programme of action for the implementation of these objectives is set out in Table 2 in Appendix 1.

Long Term Objective:

To protect, conserve and promote an appreciation of the Monastic City of Clonmacnoise and its Cultural Landscape.

Ireland will ensure the long-term conservation and preservation, to international best practice, of the Monastic City of Clonmacnoise and its Cultural Landscape with the appropriate guidance from the World Heritage Committee, the World Heritage Centre and Advisory Bodies such as ICOMOS and IUCN, in line with the following overarching objectives:

- To sustain the outstanding universal value of the World Heritage Site.
- To endorse the Management Plan's vision and objectives as the overarching framework for all plans, policies, and decisions relating to the Site.
- To ensure that all uses, activities and developments within the WHS are undertaken in a sustainable manner.
- To promote the need for a unified approach by central government, local authorities and other statutory bodies that have responsibilities for formulating and implementing policies and undertaking activities that impact on the WHS.
- To increase awareness of and access to the Site and its knowledge resources, educational opportunities and outstanding universal value.

Management Objectives

Objective 1: To put in place an effective management framework to protect the Outstanding universal value of Clonmacnoise

Rationale

To ensure compliance with the obligations of World Heritage Site national and international designations, it is essential that an effective management framework is put in place. In this context it is intended to appoint a Site Management Team, whose responsibility will be to ensure the efficient and effective day-to-day management of Clonmacnoise. The management team's role would also involve liaising with relevant local interests. The Site Management Team will act as a focal point for issues that may arise during the lifetime of the Management Plan and would attend meetings with the local community, the proposed Expert Advisory Committee and any other relevant meetings. In addition, adequate funding and resources will be provided to ensure continued works to the Site.

Actions
A1. Appointment of a Site Management Team with overall responsibility for day-to-day management issues arising in relation to Clonmacnoise.

A2. Provision of adequate funding, resources and logistical support to continue conservation works, as necessary, to effectively manage the Site, to protect the natural and built heritage and to promote appreciation of the Site.

A3. Establishment of the Clonmacnoise WHS Management Plan Implementation Group to oversee the implementation of the objectives and actions set out in the plan, to review and update the Management Plan and to oversee compliance of the site with World Heritage Convention requirements and periodic reporting.

A4. Production of an annual report on Clonmacnoise by the Implementation Group.

Objective 2: To improve liaison with local interest groups and other relevant parties

Rationale
It is accepted that regular communication between local communities and interests is essential. The Implementation Group and the Site Management Team will liaise with public agencies, local authorities, non-governmental organisations and interest groups, as required.

Actions
A5. Liaise with local government and public agencies, e.g. the Heritage Council and Fáilte Ireland, non-governmental organisations, local communities and interest groups, as required, to ensure the effective implementation of the Management Plan.

Conservation Objectives

Objective 3: To preserve the cultural heritage of Clonmacnoise and sustain its Outstanding universal value

Rationale
An ongoing programme of conservation works will be necessary to maintain stability of the buildings constituting the monastic core. The future works programme will focus on the Norman Castle, Temple Finghin, The Nun's Church and other features noted in the Clonmacnoise Draft Management Plan (2003), and will be carried out on a phased basis. A detailed specification for each phase of the works will be drafted in the context of the conservation programme, in consultation with an Expert Advisory Committee. The Committee will advise on the publication programme, on best practice for all works and natural heritage issues and also on research frameworks set out under Objective 12. The Expert Advisory Committee will comprise relevant experts from various fields, such as architectural conservation, art-history, medieval archaeology, ecology and natural heritage. It is envisaged that the term of the Advisory Committee would run for three to five years and that it would meet regularly with the Site Management Team and the Project Team.

Archaeological excavations have been in progress since the early 1990s, particularly in the area known as the New Graveyard of the monastic settlement. Future archaeological investigations will be primarily of a non-invasive nature. Particular attention will be paid to cataloguing and electronically recording the internationally important cross-slab collection with a view to making this more accessible to the public. Work will be progressed on the

production of further publications in the *Clonmacnoise Studies* series. These will incorporate the results of all works that have been undertaken and an evaluation of their results within a national and international context. This ambitious work programme of publications and works will be reviewed annually, in the light of available resources.

Actions

A6. Conserve the structure, character and fabric of the Site's historic landscape, and, where appropriate, restore threatened historic features to the highest standards of conservation.

A7. Prepare a formal, structured maintenance programme for all conserved structures and ensure that a programme of recording the condition and integrity of all the structures in State care is undertaken. To review the condition and vulnerability of all archaeological sites and monuments not in State care and prepare a Management Plan for each in consultation with individual landowners.

A8. Assess, and regularly review the function of all buildings on the Site to ensure that their architectural and historical significance is not compromised by their usage.

A9. Draft a full pre-works survey and a detailed specification for each phase of works, in advance of any work commencing on the Site.

A10. Identify the location of areas of known archaeological deposits and other areas of potential interest, and to restrict future archaeological investigation of Clonmacnoise for research purposes to non-invasive techniques.

A11. Continue the policy of only allowing a standard type grave-marker to be used in the old burial ground and to review any modern intrusion in the old burial ground that may detract from the visual amenity and integrity of the World Heritage Site.

A12. Increase public accessibility to the cross-slab collection for research purposes by computerising the catalogue, incorporating relevant conservation data on each slab where this is available, and, if funds permit, to consider high-definition digital scanning of the cross–slab collection, now being offered free by Foundations of Irish History, University College Galway.

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A13. Manage the cross-slab collection in a way that balances the requirements of its curation and conservation and its research importance and public accessibility, with the need to conserve the Site's historic assets that contribute to its outstanding universal value.

A14. Publish further material relevant to the archaeological excavations undertaken at the Site.

A15. Ensure that heritage objects from Clonmacnoise are cared for appropriately.

A16. Draft terms of reference for, and appoint an Expert Advisory Committee to advise on best practice for all works, the publication programme and future research.

Objective 4: To identify and conserve the natural heritage of Clonmacnoise

Rationale

Clonmacnoise has a rich natural heritage. It is an important wetland bird breeding and wintering area and encompasses habitats that are rare in Ireland and worldwide. It is important that suitable management activities continue, including grazing and mowing regimes. Activities that may negatively impact such as drainage, quarrying, nutrient

enrichment and disturbance need to be kept to a minimum. Monitoring of key species and habitats is also necessary.

Actions
A17. To Identify and monitor the nature conservation interest of the Site and develop policies, projects and management regimes that ensure the continued conservation of habitats vital to species of nature conservation interest.

A18. Conservation plans to be compiled for all necessary sites within the lifetime of this Management Plan.

A19. To ensure that areas of Special Areas of Conservation for designation under the European Habitats Directive are monitored through the National Monitoring Programme.

A20. Maintain close co-operation, including regular meetings, between the project teams and the NPWS.

A21. Apply, as necessary, for notifiable activity consent (see Appendix 5 for a list of notifiable activities).

A22. Ensure an appropriate assessment for any plan or project (either individually or in combination) likely to have a significant effect on the species and their habitats for which the SPA/cSAC has been designated.

A23. Continue on-going assessments by Birdwatch Ireland of all breeding wetland birds (except for nocturnal species).

A24. Carry out a vegetation survey every two years.

A25. Encourage the long-term rehabilitation of cut-over bog to wetlands.

A26. Additional potential NHAs within the candidate World Heritage Site to be assessed during the lifetime of this plan.

A27. Discourage future quarrying or the extraction of aggregates from the eskers within the candidate World Heritage Site and its buffer zone.

Statutory and Policy Objectives

Objective 5: To further promote the importance of the WHS to ensure that there continues to be a co-ordinated approach by government departments, agencies and other statutory bodies with responsibilities for making and implementing national policies and undertaking activities that may impact on Clonmacnoise and its environs

Rationale
The designation of Clonmacnoise as a World Heritage Site (WHS) would bring with it certain obligations in terms of planning and environmental policies. Local development plans can ensure that development and other relevant policies are compatible with the aims of designation of a WHS. It is vital that there is recognition of the importance of the WHS status. There must be a unified approach by government departments, agencies and statutory bodies.

Actions

A28. Achieve a high quality environment for the setting of Clonmacnoise by encouraging sensitive land management regimes that respect and preserve the unique status and character of the World Heritage Site and encouraging high-design standards for permitted development.

A29. Encourage state bodies to adopt this Management Plan as a framework for the policies, future plans and decisions regarding Clonmacnoise.

A30. Ensure compliance with all relevant statutory provisions for the protection of the Site.

A31. Encourage the local authorities to recognise the status of this Management Plan in their County Development Plans and adopt a co-ordinated approach to standards for development.

A32. Heighten awareness, via state agencies, local authorities and other statutory bodies, of the implications and responsibilities of World Heritage Site designation.

Sustainable Tourism and Visitor Management Objectives

Objective 6: The effective management of visitors to Clonmacnoise

Rationale
It is essential that a balance is maintained between tourism strategies that will engender socio-economic regeneration in the Midlands region and the preservation of the Monastic City of Clonmacnoise and its Cultural Landscape. It is important to recognise, promote and support cultural tourism insofar as it is compatible with the primary obligation of the conservation, maintenance, protection and perpetuity of the candidate World Heritage Site.

Actions

A33. In a spirit of co-operation liaise with the relevant local authorities, Fáilte Ireland, Shannon Development and local tourism bodies/networks in their development of a sustainable tourism strategy for the Irish Midlands and to ensure conservation obligations are communicated to tourism agencies.

A34. Commission a detailed visitor impact assessment report that will analyse visitor trends and physical impact on the Site.

A35. Continue to review the optimum number of visitors to the monastic site consistent with site protection.

A36. Consider opportunities for improving physical access to Clonmacnoise from the River Shannon and enhancing visual relationships between the monastery and the River. Any initiatives should avoid interference with the underwater archaeology adjacent to historic bridge over the River Shannon.

A37. To improve visitor access and traffic management within the Site by considerating the creation of a new visitor centre in the area and conveying visitors to the Site using sustainable and more environmentally friendly transport.

A38. To enter into discussions with Offaly County Council regarding the future upkeep and maintenance of the Pilgrim's Path that traverses the new graveyard and with the Church of Ireland Representative Church Body about including Temple Connor in the visitor experience.

Objective 7: The provision of an appropriate standard of visitor access and interpretation

Rationale
To ensure that visitors have a safe and informative experience when they visit the Site and that a quality service is provided for them. It is essential that visitor numbers are actively managed so that visitor numbers do not impact negatively on the Site.

Actions
A39. To enhance the visitor experience by the provision of improved orientation, signage, information, and high quality visitor facilities and services.

A40. To co-operate with the local authorities and the National Roads Authority to ensure that adequate road signage is in place to proper criteria.

A41. Maintain a quality guide service to enhance the visitor experience by ensuring that there are relevant training programmes in place for the guides.

A42. Maintain and improve the educational programmes and facilities on the Site.

A43. Collect visitor statistics for each season and analyse trends.

Promotion and Appreciation Objectives

Objective 8: To increase understanding of and appreciation for Clonmacnoise and its environs

Rationale
A prerequisite to protecting our heritage is a knowledge of its extent and its importance. Heritage is inextricably linked with our sense of identity and affirms our historic, cultural and natural inheritance. Access to this resource must be equally available to all.

Actions
A44. Promote, facilitate and encourage appropriate research to improve understanding of the historical and environmental values of the Site that would assist the implementation of the Management Plan, and ensure that all parties undertaking such research disseminate the results to the relevant bodies and individuals.

A45. Publish a series of multilingual information pamphlets for public distribution about the Monastic City of Clonmacnoise and its Cultural Landscape candidate World Heritage Site.

A46. Maintain a designated website for the Monastic City of Clonmacnoise and its Cultural Landscape candidate World Heritage Site to increase intellectual access to the Site, to provide relevant information on the significance of the Site and to give periodic updates on the implementation of the Management Plan.

A47. Enhance dissemination of information on Clonmacnoise by the provision of materials in diverse media relating to the Site.

A48. Establish an education outreach programme.

A49. Continue to support and give public lectures/case study seminars on the conservation works and the history of the Site.

A50. Promote public awareness of other archaeological sites and natural sites of importance in the area in order to broaden the experience of the visitors.

A51. Liaise with Fáilte Ireland to ensure high quality information and off-site interpretation for visitors.

Objective 9: The provision of a high level of public safety at the Site

Rationale
To meet statutory health and safety obligations and to provide for the safety of all visiting the Site.

Actions
A52. Commission a risk assessment strategy for the cultural landscape and access routes to the Site.

A53. OPW to maintain an up-to-date safety statement for the Site, in accordance with Health and Safety legislation, and as part of the risk assessment to be undertaken in the Site.

A54. To continue to monitor and identify potential threats to the Site and to ensure that appropriate plans and strategies are drawn up and implemented to mitigate for these threats.

Landscape and Setting Objectives

Objective 10: To maintain and enhance the landscape setting of Clonmacnoise

Rationale
To ensure that environmentally friendly and sustainable forms of management are in place for the Site so that it is not damaged in any way or in a manner that would threaten its integrity.

Actions
A55. Maintain current waste-management strategy, agreed with Offaly, Roscommon and Westmeath County Councils, of removal and recycling of waste.

A56. Continue regular liaisons with the local authority environmental and heritage officers.

A57. Promote and encourage the use of environmentally friendly and sustainable forms of transport for visitors to the Site that reduce the effects of traffic congestion and noise for local inhabitants.

A58. Protect the visual amenity of the monastic site and its cultural landscape by ensuring that sympathetic and appropriate development occurs within the zone of visual influence from the candidate World Heritage Site's core zone.

Monitoring Objectives

Objective 11: To monitor those factors with the potential to impact on the built and natural environment of Clonmacnoise

Rationale
The development of strategies of adaptability to world climate change will be key to the preservation and conservation of the Site into the future. Such strategies can only be developed on the basis of a programme of monitoring and observation.

Actions
A59. In conjunction with ICOMOS Ireland, develop a framework for monitoring climate change.

A60. Ensure that any possible impact of climate change on Clonmacnoise is monitored and taken into account in the development of the National Climate Change Strategy.

A61. Set up a monitoring regime for the hydrology of the Site.

A62. Regularly monitor the decay of structures.

A63. Monitor, on an ongoing basis, other factors that may impinge on the built and natural environment.

Research Objectives

Objective 12: To establish a research framework for Clonmacnoise

Rationale
The establishment of a research agenda and framework for Clonmacnoise, which will identify and prioritise research themes for the future, is a primary objective of the plan. Over the past twenty years extensive research has been carried out, in conjunction with archaeological investigations and conservation works. This has included research on the early history of the Site, the chronology of the Site, building history, analysis of human and faunal remains, palaeoenvironmental analysis, folklore, geology, and water management. Much natural heritage research has been conducted at many sites throughout the candidate WHS, particularly on Mongan Bog and more recently on grassland classification of the eskers and callows. The results of this research will inform the proposed research framework. The DEHLG and the OPW will jointly commission the development of the research framework.

Actions
A64. Enhance visitors' experience of the Site through increasing knowledge of it and by encouraging research and ensuring research results are disseminated.

A65. Consider supporting any relevant national research programmes.

A66. Establishment of a research framework that would invite involvement of universities and interested parties in research programmes.

A67. Complete recording of the cross-slab collection.

A68. Promote non-invasive archaeological research of the Site.

A69. Continue research on the hydrological regime and management of the Site.

Buffer Zone Objectives

Objective 13: To protect the World Heritage Site through complementary actions in the buffer zone

Rationale
The UNESCO Operational Guidelines for the implementation of the World Heritage Convention (2008) state that for effective protection of World Heritage Sites there should be complementary legal and/or customary restrictions which apply to a larger buffer area. The purpose of a buffer zone is to protect a heritage area from actions that emanate from outside the heritage area. The Clonmacnoise buffer zone has been defined on two main criteria: visual sensitivity of the core zone (mainly to the NW) and hydrological sensitivity (mainly to the SE).

In Ireland there is no legislation under which World Heritage Site buffer zones can be granted special legal status. National planning legislation does however provide a mechanism that can be used to protect World Heritage Sites in Ireland from activities within the buffer zone through the adoption of the Clonmacnoise Management Plan within the County Development Plans of the local authorities within the buffer zone..

Actions
A70. Protect the visual amenity of the monastic site and its cultural landscape by ensuring that sympathetic and appropriate development occurs within the zone of visual influence from the candidate World Heritage Site's core zone.

A71. Protect the existing hydrological and hydrogeological flows between the core and buffer zones by mapping the flows and putting in place policies to protect the flows.

A72. Discourage any development of new commercial peat extraction in the buffer zone.

A73. Consult with Bord na Mona on the long term reuse of the cut-over bog.

5.4 Monitoring and Reviewing the Effectiveness of the Management Plan

The Management Plan is a dynamic document that will change as the management priorities shift, conditions on-site evolve and other factors come into play. It is essential that there is regular monitoring to provide the most up-to-date information.

The Management Plan Implementation Group, consisting of representatives from the DEHLG, OPW, the three relevant local authorities and the Site Management Team, together with the objectives and actions identified in the plan and the annual reports on the plan, will ensure the sustainability of the candidate Site for present and future generations. Monitoring required by the plan will focus on indicators linked to the site's outstanding universal value, authenticity and integrity.

The DEHLG, as focal point, together with the OPW are responsible for periodic reporting on the implementation of the World Heritage Convention. This is a report that will be submitted to UNESCO and that will provide an assessment of the legislative and administrative provisions adopted by Ireland and actions undertaken for the application of the Convention regarding Clonmacnoise. State of Conservation or reactive monitoring provides information

to the World Heritage Centre when the state of conservation of a World Heritage property may be affected by projects, works, disasters or exceptional circumstances.

It is recognised that, with varying management priorities and other factors stemming from the complexity of the candidate Site, the relevance of the Management Plan may change over time. As such, the effectiveness of the implementation of the plan will be addressed by:

• extensive reassessment of the plan after five years;

• production of annual Clonmacnoise reports;

• periodic reporting;

• monitoring the progress of actions in Action Programme 2009–2014;

• assessment of the effectiveness of each action to achieve objectives;

• undertaking interim reviews, as required.

As these steps are taken, relevant sections of the plan may need to be updated accordingly and reissued in the plan. Public consultation may be undertaken to inform relevant stakeholders of new issues, if they arise. Through continued monitoring by the Implementation Group and participation by local interest groups, public agencies, non-governmental organisations and other relevant parties, the deterioration of the cultural and natural heritage of Clonmacnoise can be prevented and a sense of pride will continue to be instilled. This will ensure the preservation of the unique qualities of this remarkable Site.

Appendices

Rushes growing at Fin Lough

Appendix 1. Summary of Action Programme, 2009-2014

Table 3: Summary of Objectives and Actions

Management Plan Objectives	Action	Lead Agencies	Target for Implementation	Indicators
Objective 1: To put in place an effective management framework to protect the OUV of Clonmacnoise	A1. Appointment of a Site Management Team	DEHLG, OPW	Year 1	Management Team appointed
	A2. Provision of adequate funding, resources and logistical support	DEHLG, OPW	Ongoing	Funding and resources available
	A3. Establishment of the Clonmacnoise WHS Management Plan Implementation Group	DEHLG, OPW	Year 1	Group established
	A4. Production of an annual report on Clonmacnoise	WHS Management Plan Implementation Group	Annually	Report published
Objective 2. To improve liaison with local interest groups and other relevant parties	A5. Liaise with public agencies, NGOs, local authorities, local communities and interest groups to facilitate the effective implementation of the Management Plan	Relevant parties, DEHLG, OPW	Ongoing	Meetings and discussions take place and further actions identified
Objective 3. To preserve the cultural heritage of the Site and sustain its OUV	A6 To conserve the structure, character and fabric of the Site's historic landscape, restore historic features to the highest standards of conservation	OPW	Ongoing	Funding and resources available
	A7. Prepare a formal, structured maintenance programme for all conserved structures and ensure that a programme	OPW, DoHELG	Year Two	Management Plans and reports produced

	of recording the condition and integrity of all national monuments in State care is undertaken. Review the condition of all archaeological sites and monuments not in State care and prepare a Management Plan for each in consultation with individual landowners			
	A8. To access, and regularly review the function of all buildings on site to ensure that their architectural and historical significance is not compromised by their usage	OPW, DoHELG	Ongoing	Review in place
	A9. Draft a full pre-works survey and a detailed specification for each phase of future works in advance of any work commencing on site and submit for a Ministerial Consent from DEHLG as required under National Monuments Legislation 2004	OPW	Ongoing	Surveys produced
	A10. Identify areas of known archaeological deposits; restrict future archaeological investigation of Clonmacnoise for research purposes to non-invasive techniques	DEHLG	Year two	Report published

	A11. Continue the policy of allowing only a standard type of grave marker in the old burial ground; review any modern intrusion in the old burial ground that detracts from the visual amenity of the Site	Offaly County Council and OPW	Ongoing	Review in place
	A12. To increase public accessibility of the cross slab collection for research purposes by computerising the catalogue and high definition scanning	OPW, DEHLG	Year Two	Funding and resources available
	A13. To manage the cross-slab collection in a way that balances the requirements of the curation and conservation of it	OPW, DEHLG	Ongoing	Monitoring programme in place
	A14. Publication of further material relevant to the archaeological excavations at the Site	DEHLG and specialists	Phase 1, year 3	Works published and lodged in archive
	A15. Ensure that heritage objects from Clonmacnoise are cared for appropriately	OPW, DEHLG, and National Museum of Ireland	Ongoing	Artefacts forwarded to National Museum of Ireland, as appropriate
	A16. Draft terms of reference for, and appoint an Expert Advisory Committee to advise on best practice for all works, the publication programme and future research	OPW, DEHLG	Year 1	Expert Advisory Committee established
Objective 4: To identify and conserve the natural	A17. To identify and monitor the nature	DEHLG (NPWS), An Taisce, Bord na Mona,	Ongoing	Management plans and reports produced

heritage of the Site	conservation interest of the Site and develop policies and management regimes that ensure the continued conservation of habitats vital to nature conservation interest	Offaly, Roscommon and Westmeath County Councils, The Shannon International River Basin District (IRBD) Project		
	A18. Conservation plans to be compiled for all necessary sites within the lifetime of this Management Plan.	DEHLG (NPWS)	Years 1 to 5	Plans in place
	A19. To ensure that SACs for designation under the European Habitats Directive are monitored through the National Monitoring Programme	DEHLG (NPWS)	Ongoing	Monitoring programme in place
	A20. Maintain close co-operation, including regular meetings, between the project teams and the NPWS	DEHLG (NPWS), OPW	Ongoing	Meetings held
	A21. Apply for notifiable activity consent, as necessary	DEHLG (NPWS)	Ongoing	Consent granted
	A22. Ensure an appropriate assessment for any plan or project (either individually or in combination) likely to have a significant effect on the species and their habitats for which the SPA/cSAC has been designated.	DEHLG (NPWS)	Ongoing	Assessments carried out
	A23. Carry out a census count of all breeding wetland birds (except for	DEHLG (NPWS)	Year 1, 2	Count completed

	nocturnal species) every 2 years			
	A24. Carry out a vegetation survey every two years.	DEHLG (NPWS)	Year 2	Survey completed
	A25. Encourage the long-term rehabilitation of cut-over bog to wetlands	DEHLG (NPWS), Bord na Mona	Ongoing	Meetings held, monitoring programme in place
	A26. Undertake a study to recommend to the Minister for Environment the designation of appropriate parts of the eskers within the core Site as natural heritage areas.	DEHLG (NPWS)	Year 1	Study commenced
	A27. Discourage future quarrying or the extraction of aggregates from the eskers within the candidate World Heritage Site and its buffer zone.	DEHLG (NPWS), Local Authorities	Ongoing	Objectives of the WHS Management Plan referenced in each County Development Plan
Objective 5: To further promote the importance of the WHS to ensure that there continues to be a co-ordinated approach by government departments, agencies and other statutory bodies with responsibilities for making and implementing national policies and undertaking activities that may impact on Clonmacnoise and its environs	A28. To achieve a high quality environment for the setting of Clonmacnoise by encouraging sensitive land management regimes that respect and preserve the unique status and character of the World Heritage Site and encouraging high-design standards for permitted development.	DEHLG, (NPWS), Local Authorities	Ongoing	Monitoring programme in place

	A29. Adoption of the Management Plan as a framework for the policies, future plans and decisions regarding Clonmacnoise.	OPW, DEHLG, Local Authorities	Ongoing	Management framework in place
	A30. The State to ensure compliance with all relevant statutory provisions for the protection of the Site.	DEHLG, Local Authorities	Ongoing	Compliant legislative in place
	A31. Encourage the local authorities to recognise the status of this Management Plan in their County Development Plans and adopt a co-ordinated approach to standards for development.	DEHLG, Offaly, Roscommon and Westmeath County Councils	Ongoing	Plan referenced in each County Development Plan
	A32. Heighten awareness, via state agencies, local authorities and other statutory bodies, of the implications and responsibilities of World Heritage Site designation.	DEHLG, OPW, relevant bodies	Ongoing	Increased awareness by all bodies
Objective 6: The effective management of visitors to Clonmacnoise	A33. Liaise with Fáilte Ireland and local tourism networks in their development of sustainable tourism strategy for the Irish Midlands.	Site Management Team, Fáilte Ireland, Shannon Development, regional and local tourism networks	Ongoing	Tourism Development Plan in place
	A34.To ensure conservation obligations are communicated to tourism agencies, continue to liaise with Fáilte Ireland	Site Management Team, Fáilte Ireland, regional and local tourism networks	Ongoing	Review in place

	and local tourism bodies.			
	A35. Commission a detailed visitor impact assessment report that will analyse visitor trends and physical impact on the Site.	OPW	Year 1	Report published
	A36. Continue to review the optimum number of visitors to the monastic site consistent with site protection.	OPW	Ongoing	Review in place
	A37. Consider opportunities for improving physical access to Clonmacnoise from the River Shannon and enhancing visual relationships between the monastery and the River.	OPW, Site Management Team, local authorities, Fáilte Ireland, regional and local tourism networks	Year 1	Review commenced
	A38. To reduce the effect of traffic on the character of the Site.	OPW, local authorities, local tourism networks	Year 1	Reduction in traffic achieved
	A39. To enter into discussions with Offaly County Council regarding the future upkeep and maintenance of the Pilgrim's Path that traverses the new graveyard and with the Church of Ireland Representative Church Body about including Temple Connor in the visitor experience.	OPW, DEHLG, Offaly County Council, Church of Ireland	Year 1	Meetings held
Objective 7: The provision of an	A40. To enhance the visitor experience by the	OPW	Ongoing	Funding and resources available

appropriate standard of visitor access and interpretation	provision of improved orientation, signage, information, and high quality visitor facilities and services.			
	A41. To co-operate with the local authorities and the National Roads Authority to ensure that adequate road signage is in place to proper criteria.	OPW	Year 1	Signage installed
	A42. Maintain a quality guide service to enhance the visitor experience by ensuring that there are relevant training programmes in place for the guides.	OPW	Ongoing	Satisfactory training in place
	A43. Maintain and improve the educational programmes and facilities on the Site.	OPW	Ongoing	Funding and resources available
	A44. Collect visitor statistics for each season and analyse trends.	OPW	Ongoing	Data collected, collated and report produced
Objective 8: To increase understanding of and appreciation for Clonmacnoise and its environs	A45. Promote, facilitate and encourage appropriate research to improve understanding of the historical and environmental values of the Site that would assist the implementation of the Management Plan, and ensure that all parties undertaking such research disseminate the results to	DoHELG, OPW, relevant research bodies	Ongoing	Research disseminated

	the relevant bodies and individuals.			
	A46. Publish a series of multilingual pamphlets for public distribution.	DoHELG, OPW	Year 1	Leaflets published
	A47. Maintain a designated website for Clonmacnoise to provide relevant information on the significance of the Site, provide periodic updates on the implementation of the Management Plan.	DEHLG, OPW	Ongoing	Website in operation
	A48. Enhance dissemination of information on Clonmacnoise by the provision of materials in diverse media relating to the Site.	DEHLG, OPW	Ongoing	Archive established in year 2
	A49. Establish an education outreach programme.	DoHELG, OPW	Year 2	Programme established
	A50. Continue to support and give public lectures/case study seminars on the conservation works and the history of the Site.	DEHLG, OPW	Ongoing	Lectures and seminars held
	A51. Promote public awareness of other archaeological sites of importance in the area in order to broaden the experience of the visitors.	Fáilte Ireland, OPW, DEHLG, regional and local tourism networks	Ongoing	Visitor numbers at other local sites increasing
	A52. Liaise with Fáilte Ireland to ensure high quality information and off-	OPW, DEHLG	Ongoing	Quality of off-site interpretation maintained

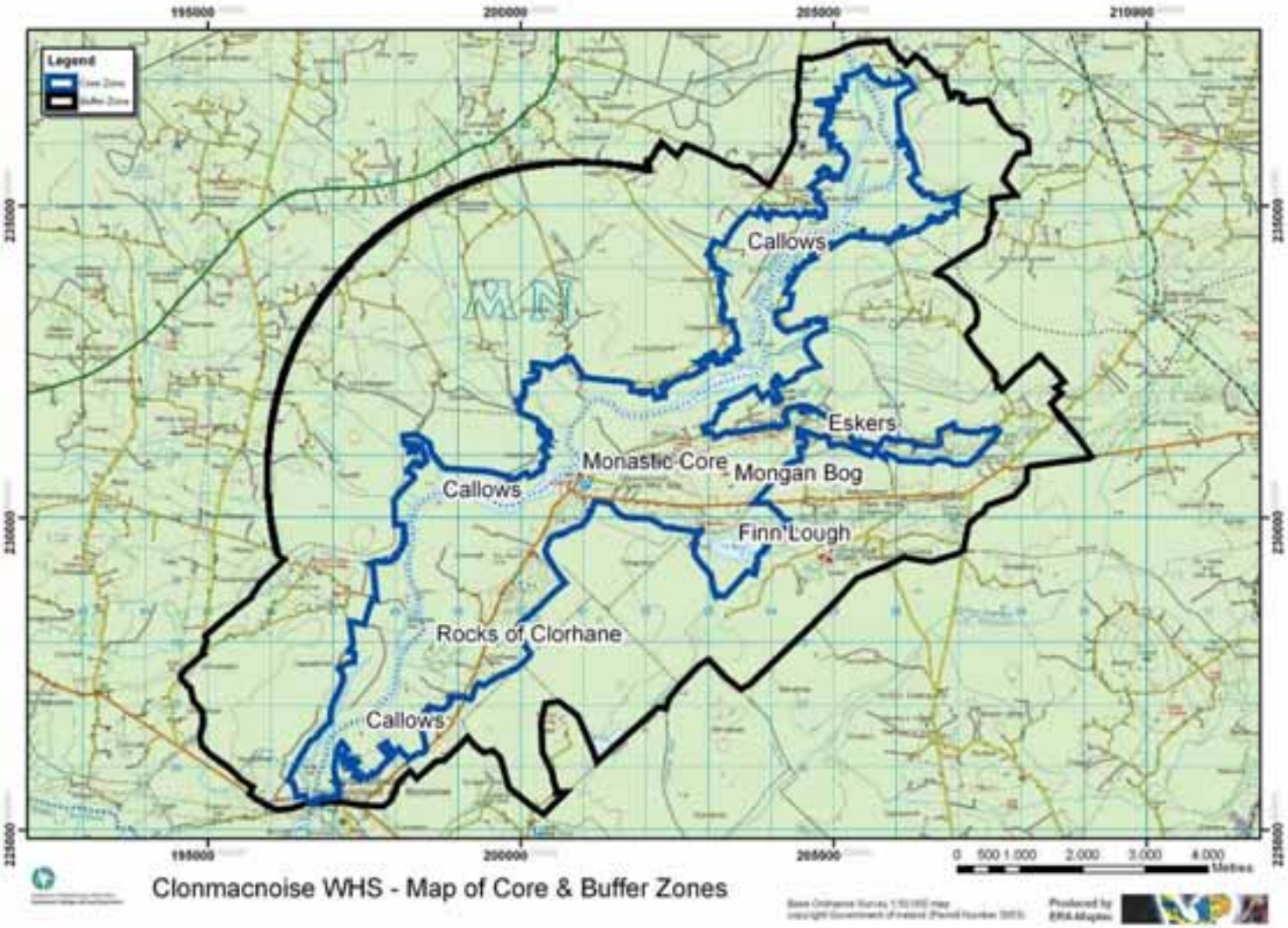
	site interpretation for visitors.			
Objective 9: The provision of a high level of public safety at the Site	A53. Commission a risk assessment strategy for the monastic core.	OPW	Year 1	Assessment published
	A54. OPW to maintain an up-to-date safety statement for the Site, in accordance with Health and Safety legislation, and as part of the risk assessment to be undertaken in the Site.	OPW	Ongoing	Safety statement in place
	A55. To continue to monitor and identify potential threats to the Site and to ensure that appropriate plans and strategies are drawn up and implemented to mitigate for these threats	OPW	Ongoing	Monitoring programme in place, plan drawn up
Objective 10: To maintain and enhance the landscape setting of Clonmacnoise	A56. Maintain current waste-management strategy, agreed with Offaly County Council, of removal and recycling of waste.	Offaly County Council	Ongoing	No waste left on Site
	A57. Continue regular liaisons with the local authority environmental officer.	Offaly County Council	Ongoing	Regular meetings to take place
	A58. Promote and encourage the use of environmentally friendly and sustainable forms of transport in the Site that	Offaly, Roscommon and Westmeath County Councils	Year 1	Monitoring programme implemented, discussions commenced

	reduce the effects of traffic congestion and noise for local inhabitants.			
Objective 11: To monitor those factors with the potential to impact on the built and natural environment of Clonmacnoise	A59. In conjunction with ICOMOS Ireland, develop a framework for monitoring climate change.	DEHLG, ICOMOS Ireland	Year 1	Indicators identified and monitored
	A60. Ensure that any possible impact of climate change on Clonmacnoise is monitored and taken into account in the development of the National Climate Change Strategy.	DEHLG	Year 2	Adapted to National Climate Change Strategy
	A61. Set up a monitoring regime for the hydrology of the Site.	DEHLG (NPWS), Bord na Mona, An Taisce	Year 1	Monitoring programme in place
	A62. Regularly monitor the decay of structures.	DEHLG	Ongoing	Regular monitoring to take place
	A63. Monitor, on an ongoing basis, other factors that may impinge on the built and natural environment.	Site Management Team, Implementation Group	Year 1	Regular review of Management Plan
Objective 12: To establish a research framework for Clonmacnoise	A64. Enhance visitors' experience of the Site through increasing knowledge of it and by encouraging research and ensuring research results are disseminated.	DEHLG	Ongoing	Increased research made available to the public
	A65. Support any relevant national research programmes.	DEHLG, OPW	Ongoing	Support of programmes
	A66. Establishment of a	DEHLG, OPW, Expert	Year 3	Co-ordinator in place,

	research framework that would invite involvement of universities and interested parties in research programmes.	Advisory Committee		research framework established
	A67. Complete research on the cross-slab collection.	DEHLG, OPW, relevant experts	Ongoing	Research published
	A68. Promote non-invasive archaeological research of the Site using geophysical and remote sensing techniques.	DEHLG, relevant experts	Ongoing	Research published
	A69. Complete research on the hydrological regime and management of the Site.	DEHLG, Bord na Mona,	Year 1	Research commenced
Objective 13: To protect the Nominated Site through complimentary actions in the buffer zone	A70. Protect the visual amenity of the monastic site ensuring sympathetic and appropriate development within the zone of visual influence which falls within the WHS buffer zone	DEHLG, Offaly, Roscommon and Westmeath County Councils	Year 1	Buffer zone referenced in each County Development Plan. Regular monitoring of developments and cumulative effects
	A71. Protect the existing hydrological and hydroecological flows between the core and buffer zones by mapping the flows and putting in place policies to protect the flows	DEHLG (NPWS), Bord na Mona, Geological Survey of Ireland	Year 1	Mapping commenced
	A72. Discourage any development of new commercial peat extraction in the buffer zone	Offaly, Roscommon and Westmeath County Councils, Bord na Mona	Year 1	Buffer zone referenced in each County Development Plan

	A73. Consult with Bord na Mona on the long term reuse of cut-over bog as wetlands after the cessation of peat extraction in the buffer zone	Offaly, Roscommon and Westmeath County Councils, Bord na Mona	Year 1	Consultation process in place

Appendix 2: Site Boundary Map



Appendix 3: Summary of Archaeological Excavations, 1979-2008

Clonmacnoise was not alone as a great monastic centre. There were others including Armagh, Clonard, Durrow, Kells and Kildare but Clonmacnoise is unique because its lack of development into a modern metropolis means that its medieval archaeology is relatively intact. The archaeology of early Irish monasteries is little understood despite their role as formative influences in medieval Irish (and European) culture. Traditionally work has concentrated on the small remote churches off the west coast-island sites such as Skellig Mhichíl, Church Island and Illaunloghan. For many people, the typical image of an early Irish monastery remains a small eremitical church built in isolated, out of the way places.

But this is just a part of the story. The monasteries of the centre and east of Ireland were large populous places with many churches. It was at these centres, not the island churches, where the libraries that were to be the powerhouses of the Carolingian renaissance were housed that gave the Irish a significant role as forgers of European civilisation. The excavations at Clonmacnoise, presented below, have been therefore absolutely invaluable in furthering an understanding of the development of one of the great Insular monastic cities and have thrown considerable light on urbanism in northern Europe outside of a Viking setting. The following detailed reports have been extracted from the online database http://www.excavations.ie and reports within the Department of Environment, Heritage and Local Government.

The Monastic core

Over the past three decades there have been a number of excavations in an around the site. Most of these were carried out in advance of small-scale developments such as an extension to St Ciarán's primary school, or in tandem with conservation measures such as the removal of the high crosses to the Visitor Centre (King 1993; 1994; King 1991-98; Ó Floinn and King 1998). Collectively, these excavations have revealed a great deal about the extent and character of the early medieval settlement.

Excavations around St Ciarán's School at the south-west periphery of the complex suggest that in this area occupation was quite limited: the only early medieval features of note were a bowl furnace, evidence for a limited amount of antler working and an eleventh-century hoard of Hiberno-Norse coins which had been concealed in the area (Ó Floinn and King 1998). These trenches were located in the area between the middle and outer enclosures, though at least some of the activity revealed post-dates the infilling of the middle enclosure (above). They indicate that by no means all of the area within the ecclesiastical enclosures was intensively occupied; significant areas seem to have been used for agriculture, as also suggested by contemporary accounts of Irish ecclesiastical sites (Swift 1998).

Excavations in the Old Graveyard

Excavation under the high crosses in the Old Graveyard revealed a good deal of occupation at the heart of the site, including post and wattle structures and hearths together with evidence for iron and bone working (King 2009). However in the seventh century this area was redesignated a burial ground and in around 700 monumental wooden crosses were erected, underscoring the fact that this was now sacred space. It may be at this time that the inner enclosure now represented by the

Old Graveyard was laid out. From then most if not all habitation was outside this enclosure. Geophysical prospection carried out in most of the fields surrounding the Old Graveyard in the mid-1990s indicate that 'settlement at Clonmacnoise was extensive (perhaps covering c10ha) and in some places intensive' and that the 'strength of the evidence suggests a major concentration of population' (Mytum 2003, 56). In particular, a large area of intense activity immediately west, north and east of the Old Graveyard was identified. This has been confirmed by excavation in three areas all sited between the inner and middle enclosure:

1. The New Graveyard immediately northeast of the Old Graveyard which was excavated in advance of grave-digging (King 1991-1998).
2. The Steeple Garden immediately west of the Old Graveyard which was excavated in advance of the construction of a Visitor Centre (Manning 1990; ???).
3. The sloping ground to the northwest extending from the Visitor Centre to the bank of the Shannon which was partially excavated in advance of the installation of a new waste water treatment system (King 2004; 2006).

In each of these areas three principal phases of occupation were identified (King forthcoming 2009). The uppermost strata, largely disturbed by post-medieval agriculture, are of the late 11th and 12th centuries and are characterised by flagged and cobbled areas, pits, well-shafts and postholes. Below this level is the main occupation phase, dating to the 9th/10th century, with a series of houses and other structures. There is also an earlier phase dating to the 7th/8th century with stake-holes and spreads of burnt soil which indicate quite extensive occupation across the site by the late 8th century. Post-excavation work in ongoing, but it is clear that a period of great expansion occurred in the 7th/8th century with a further re-organisation and new features suggestive of urbanisation appearing in the 9th century.

Excavations in the New Graveyard

The largest area opened and that which produced the best evidence for layout and buildings, was in the New Graveyard. The area excavated measured c.45m east-west by 30m north-south. It was traversed by a NNE-SSW oriented metalled street more than 18.5m long and about 3m wide, which extended from the low-lying callows adjacent to the Shannon and probably joined to the Pilgrim's Way, a raised road which is still evident between the Nun's Church and the Old Graveyard. A stone-delimited pathway ran parallel to it, indicating that the overall layout of this quarter of the civitas was carefully planned. At the southeast of the excavated was a docking area with upright posts surviving in situ. Initially the houses fronting onto the street were substantial circular buildings on raised clay platforms but some of these were later replaced by rectilinear buildings. Associated with the houses were sheds, sub-rectangular structures, hearths for cooking, kilns and storage pits. Compared to the Hiberno-Norse towns evidence for plot boundaries between the holdings of individual residents was limited, but in some cases continuity of plot extents is suggested by the fact that some houses were built directly over earlier ones.

This rich archaeological evidence confirms what was already hinted at in the documentary record: that Clonmacnoise developed into an urban centre during the early medieval period. The documentary evidence for urbanism at the site and the archaeological evidence for industrial and craft activity is discussed further below (History). To date only a relatively small proportion of the area which the geophysics suggests was intensively occupied has been excavated. The remaining buried archaeology, especially in the area north of the Old Graveyard, represents a vital cultural resource, for it is probably the only substantial area where a significant amount of early medieval urban archaeology of non-Viking origin survives in Ireland.

As discussed below, the archaeology of the handful of other likely non-Viking urban centres has been obliterated by later developments.

The discovery of the first recorded Ogham stone from Co. Offaly while digging a grave in the new graveyard at Clonmacnoise in 1990 resulted in a series of excavations. The area had long been known to be rich in archaeological remains and grave openings had continuously revealed archaeological deposits of between 1.3m-2.7m throughout the graveyard. The new graveyard is located to the east of the monastic enclosure on an esker ridge (the Eiscir Riada) which runs east - west through the monastic complex. The ground slopes markedly from the top of the esker on the south to the Clonmacnoise Callows and the Shannon on the north. The graveyard is bisected by the Pilgrim's Road which runs from the monastery eastwards to the Nun's Chapel. It is almost completely filled with graves apart from an area in the north-west corner where the excavations took place.

Over 5,000 artefacts have been found in the New Graveyard.. Material recovered from sieving the topsoil included half a Hiberno-Norse coin, bronze dress-pins, bronze toilet implements, worked bronze pieces, decorated bone comb fragments, crucible fragments, iron objects including a fish hook, a buckle and key, a small quantity of medieval and post-medieval pottery, a reused quernstone and other miscellaneous objects. Stratified material included medieval potsherds, some decorated scrap bronze, a stone ingot mould, a cross-slab fragment, bone points including a possible stylus, a range of iron objects, crucible fragments, mortar, slag and furnace bottoms.

Clonmacnoise Bridge

From June 1994 divers, under licence from the OPW, searched the River Shannon at Clonmacnoise for evidence of a bridge. The *Annals of Clonmacnoise* refer to a bridge at the site in AD 1158. In the spring of 1995 a number of timbers were located on the river bed on a narrow part of the river west of the Anglo-Norman masonry castle. The OPW subsequently contracted IUART to carry out a pre-disturbance survey of the river bed in the vicinity of the timbers in order to determine their function.

An initial theory suggests that this is the central part of the original bridge which has either sunk or collapsed onto the river bed. The existing remains on the river bed show that the bridge had a span of at least 116m. Dendrochronology samples from the double post row on the northern river bank produced a date of AD 804, which was supported by radiocarbon dating. This shows that the bridge was constructed in the early medieval period and is not related to the castle site as originally thought. This date makes the Clonmacnoise bridge the earliest known bridge site in Ireland. Six dugout canoes were also located during the course of the survey, lying close to the bridge. One of the dugouts contained an axe head as well as a whetstone. The concentration of so many canoes in such a location would suggest that this area has a long tradition as a crossing or ferry point.

Finds from the Clonmacnoise bridge site include nine wooden dugout boats, four iron woodworking axes, an iron dish, quantities of iron slag, a large decorated copper-alloy basin, a whetstone, iron slag, a prehistoric chert core, and a small but interesting assemblage of animal bone. Apart from the chert core, which may be of Mesolithic or Neolithic date, most of the finds would appear to date from the early medieval period. The basin, datable by typological studies to the 8th or 9th century AD, is an important contribution to early medieval metalwork studies as these basins are rare in Ireland. It is very similar to one from the Derreen hoard, Co. Clare (on the Shannon estuary), that may even have been made in the same workshop.

The early medieval bridge would have been one of the largest wooden structures of its time. The bridge, boats and metalwork can be interpreted in terms of the regional politics and urban economy of the monastic town of Clonmacnoise. The bridge contributes to recent debates about the origins of the town in early Ireland, as it should be seen as the act of a town population who both required and desired the benefits of the improved communications to Clonmacnoise that the bridge provided. Clonmacnoise is situated at the junction of the River Shannon, itself a major nautical route way through the country, with the Eiscir Riada, which was the east–west route way through the country. The bridge should be viewed as part of this route way across the country. Building this structure across the river meant that the Clonmacnoise monastery could control, or at least had access to, a major communications network across the midlands. Incidentally, there are also annalistic references to early medieval bridges elsewhere on the River Shannon, particularly at Athlone.

St Ciarán's Well

Excavation of St Ciarán's Well located half a mile south-west of the main monastic complex, in advance of its partial reconstruction, was carried out in 2004. The location of four monuments surrounding the well was recorded and a cutting measuring 9m by 10m was excavated within the area of the well. Excavation concluded that the well was cut into the natural boulder clay and gravels and that the structure was post-medieval in origin. All finds recovered from the fill of the feature were 19th-20th-century in date and consisted mainly of coins.

Table 4: Excavations at Clonmacnoise 1979-2008

The following list includes all the recorded excavations and other archaeological activities licensed and authorised within the townland of Clonmacnoise.

Year	License Number	Name	Details
1979	E181	Raghnall O'Floinn	Findspot of Hiberno-Norse Coins at St. Kieran's National School
1985, 1989, 1990	E302	Conleth Manning	Steeple Garden
1990-1998	E558 / 91E0013	Heather A. King	New Graveyard Clonmacnoise
December 1992	92E0062	Heather A. King	St. Kieran's National School
December 1992	92E0199	Heather A. King	Clorhane Clonmacnoise Field System
Summer 1994	93E0086	Heather A. King	High Crosses
October 1995	95E0231	Colin Breen / Donal Boland	Clonmacnoise Bridge
Summer 1997	97E0243	Niall Brady	Clonmacnoise Bridge
February 1999	99E0079	Donald Murphy	Plan ref: 98/942 for Pat Dillon Dwelling House
February 1999	99E0715	Donald Murphy	Ecclesiastical site of St Ciarán, in

			advance of the new visitor centre
April 2000	00R0021	Deirdre O'Hara	Detection device consent at Clonmacnoise
May/June 2000	00R0070	Donal Boland	Detection device consent at River Shannon
July 2001	01E0695	Donald Murphy	Plan ref: 00/1080 for Eric Dilworth
August 2002	02E1407	Heather A. King	In advance of waste treatment system
November 2002	02E1712	Eoin Corcoran	Plan ref: 02/403 for Seamus Flannery
July 2003	03E1010	Annette Quinn	For Eric Dilworth monitoring of foundation trenches and demolition of sheds
August 2004	04E1168	Deirdre Murphy	St. Kieran's Well
April 2007	E3324	Anne Carey	Ministerial Consent for excavation works at extension to St. Kieran's National School
November 2007	E3761	Donald Murphy	Ministerial Consent for excavation at Clonmacnoise
March & July 2008	08E0235	Anne Carey	Plan ref: 07/286 testing/monitoring in advance of shed for Tom Moore
July 2008	08R0191	Kevin Barton	Detection device consent at Bridge Site, Clonmacnoise
July 2008	08R0192	Kevin Barton	Detection device consent at Clonmacnoise

Appendix 4: Summary of Conservation Works Undertaken to Date

1. Nineteenth century works

Following the vandalism of Temple Finghin chancel arch and the crosses at Clonmacnoise, described at the time as 'irreparable', which led the Kilkenny Archaeological Society to support a court case against the perpetrator which failed in 1864, the fund set up to fight the case was used for restoration purposes. This was used to repair the Nuns' Church, Temple Finghin, and the round tower. The Cathedral was also cleared and Temple Ciarán pinned and buttressed.

In terms of the approach taken, this was one of minimal intervention and sensitive reconstruction. In both Ireland and England at this time there was a growing debate over the type of repair or conservation which was most desirable. The works at Clonmacnoise are significant because they were amongst the earliest to set a standard of repair in buildings already in ruins.

The interventions of the 1860s were remarkably thoughtful, showing a high level of sensitivity towards the original medieval fabric of the buildings. Indeed, preservation of their authenticity was the over-riding consideration. Notably, interventions were clearly signposted by the use of plain voussoirs at the Nuns' Church or different building stone at Temple Finghin. Similarly, material from individual churches was catalogued as such, and not re-used in the restoration of the other structures, and the Revd. James Graves (1815-1886) was careful to preserve the material from Temple Finghin apart, rather than incorporating it in the rebuilding of the Nuns' Church, where, stylistically, it would have fitted perfectly. Rebuilding of upstanding walls, as with the round tower, was recorded prior to any dismantling, for maximum retention of original masonry features. All told, the levels of care were remarkably high, and bespeak a marked respect for the integrity of the original medieval structures.

2. Twentieth century conservation

Repairs to the boundary walls were undertaken in the 1940s and underpinning of the round tower in 1948. In 1955 pressure for provision for future burials resulted in the New Graveyard east of, and contiguous to, the Old Graveyard being opened; the majority of the monastic site was taken into State care and a programme of conservation was carried out up until 1970. During this time 300 more cross slabs were discovered to add to the 250 slabs, many inscribed, that had been discovered previously; a number were placed on public display in the grounds of the monastery. Numerous large modern memorials were moved from the Old Graveyard to the New Graveyard so as not to impair the visual integrity of the magnificent high crosses. Extensive cleaning and repairs were undertaken to the round tower and all the churches.

In the late 1970s another period of restoration works occurred, with the interior of the round tower being restored and the fragmentary remains of the Romanesque doorway of the cathedral were secured with modern cut-sandstone blocks. In the early 1980s a stone conservation study on the condition of all the high crosses and cross slabs was commissioned. The study indicated high levels of stone decay and surface loss on both the high cross and cross slab collections and accordingly a decision was taken that the cross slabs and the high crosses should be moved to a suitable indoor environment. The outdoor cross slab collection was dismantled, the

entire collection of some 600 cross slabs was catalogued and was eventually housed in an on-site secure single-storey building in 2001.

A programme of research was undertaken on the High Crosses before their removal which revealed that prior to the stone crosses being erected wooden crosses had occupied the same positions around the cathedral. In order to safeguard the architectural integrity and religious significance of the siting of the crosses within the monastic complex, high quality replicas cast from resin were erected in their place. In 1991 the high crosses were moved to a purpose built new visitor centre on the Site where they are protected from theft and erosion, and given appropriate interpretation.

3. Twenty first century conservation works programme

A comprehensive works programme was commenced by the Office of Public Works (OPW) in January 2002 with funding provided under the National Development Plan 2000-2006. A rectified photographic survey of the structures was undertaken and deterioration of the fabric of each site was recorded. Loose stonework was observed constituting a considerable health and safety risk. A project management plan was prepared by the design team and consent for the proposed works was sought from the Minister of the Environment, Heritage and Local Government.

Linking the traditional skills of OPW's craftsmen with the laboratory based forensic expertise of the Engineering Department, Trinity College Dublin, has resulted in the application of appropriate repair materials and the introduction of a range of innovative site works practises. These initiatives include the development of specific lime burning and mortar production techniques in the OPW depot at Athenry together with the provision of a sheltered on-site working environment.

The works programme commenced with the consolidation of the stonework at Temple Dowling and Temple Rí. The original mortar and subsequent modern cement based repairs were analysed and the impact of the latter on the masonry was investigated. The cement based material and loose mortar was removed and the stonework was prepared for re-pointing with a replica lime based repair mortar.

At the Cathedral the surviving sections of internal plasterwork was conserved, in addition to the wall consolidation works. The OPW conservation engineer had established that the upper part of northern outer wall of the monument was developing a lean and rebuilding a section of the western wall to act as a stabilising buttress was recommended. To ensure the integrity of this work it was necessary to extend the area of walling over the fragmentary remains of the West or main doorway of the Cathedral. Detailed survey work and historic research enabled the conservation team to proceed with the restoration of this feature of the site.

Appendix 5: Natural Heritage Information

Breeding and Wintering Birds of the Nominated Site

Table 5 lists of regional, national and international bird surveys currently conducted in the WHS site (Birdwatch Ireland)

Survey type	Year started	Year finished or frequency	Regional, National or International
Barn Owl Survey	since 2005	Ongoing	national
BirdTrack (formerly Migration Watch, monitors bird movements, *	since 2003	Ongoing	National, International
Bird Atlas	2007-11	Ongoing; tetrads	National and International
Breeding Wader Survey	since 2006		National
Corncrake monitoring and research	since 1991	Annual	Local
Countryside Bird Survey	breeding birds, since 1998	Ongoing; 1Km squares	National
Farmland Bird Survey	since 2004	Ongoing	National
Garden Bird Survey	since 1994	Ongoing	National
Irish Wetland Bird Survey (wintering waterbirds)	since 1994	Ongoing	national
Red Grouse	since 2006	Ongoing	national
Waterways Bird Survey	since 2006-2008	Ongoing	Regional
New Breeding Atlas	1988-9	Being updated	National
Shannon Callows; breeding waders	1987, 1997, 2002, 2005-2006	At regular intervals	Regional
Important Bird Areas	2000	N/A	International
Kingfishers	1998-2008	Ongoing	National

Rare and endangered birds in the nominated Site

A report published by Birdwatch Ireland and the Royal Society for Protection of Birds (RSPB), Northern Ireland in the autumn of 2008 has identified alarming declines in a number of bird populations across the island of Ireland. 199 species were assessed and were placed on either Red, Amber or Green Lists with the Red List containing those bird populations that have declined by over 50% or those that are globally threatened. The Irish Red List identifies 25 species which require urgent action to secure their future, this is seven more than in 1999, and the Amber list contains 85 species, the remaining 89 being on the Green list. Other rare and endangered birds in the nominated Site are listed in Annex I of the EC Birds Directive on the conservation of wild birds and Appendix 2 of the Bern Convention.

Black-headed gull (*Larus ridibundus*)
Black-headed gulls are sociable, quarrelsome, noisy birds, usually seen in small groups or flocks, often gathering into larger parties where there is plenty of food, or when they are roosting. A marked decline in their figures has resulted in the species being Amber Listed. It is Listed in Annex I of the EC Birds Directive.

Black-tailed Godwit (*Limosa limosa*)
The black-tailed godwit is a large wading bird with a very long straight bill and long legs. In flight it shows a white wing-stripe and a black and white tail. It has suffered a large breeding population decline in the past and is now a rare breeder. It is a summer visitor to its breeding grounds, wintering in Africa. Birds from northern Europe spend the winter on UK coasts. Listed in Annex I of the EC Birds Directive.

Common Redshank (*Tringa totanus*)
This is a widespread breeding bird across Europe and northern Asia. It is a migratory species, wintering on coasts around the Mediterranean, in south Asia, and on the Atlantic coast of Europe. Redshanks have red legs and bill, and show white up the back and on the wings in flight. They are brown, becoming somewhat lighter-toned in winter. Redshanks will nest in any wetland, from damp meadows to saltmarsh, often at high densities. They lay 3-5 eggs. These are wary and noisy birds which will alert everything else with their loud piping call. Like most waders, they feed on small invertebrates. The Common Redshank is one of the species to which the Agreement on the Conservation of African-Eurasian Migratory Waterbirds (AEWA) applies. It is listed in Annex I of the EC Birds Directive.

Corncrake (*Crex crex*)
The Corncrake, or landrail is a small bird in the family Rallidae. Its breeding habitat is not marshes as with most crakes, but, as the name implies, meadows and arable farmland. It breeds across Europe and western Asia, migrating to Africa in winter. It is in steep decline across most of its range because modern farming practices mean that nests and birds are destroyed by mowing or harvesting before breeding is finished. The adult Corncrake is 22–25 cm long with a wingspan of ranging from 46–53 cm and weighs between 125–210 g. It has mainly brown, heavily spotted upper parts, a blue-grey head and neck, and reddish streaked flanks. It has a short bill and shows chestnut wings and long dangling legs in flight. The sexes are similar, but in the immature bird the blue-grey is replaced by buff. The downy chicks are black. It is included on Ireland’s Red List but its numbers in the Shannon Callows are declining in spite of Corncrake friendly farming methods.

Curlew (*Numenius arquata*)
The curlew is the largest European wading bird, instantly recognisable on winter estuaries or summer moors with its long down-curved bill, brown upperparts and long legs. There have been worrying breeding declines in many areas largely due to loss of habitat through agricultural intensification. The curlew is also included on the red list of Birds of Conservation Concern in Ireland and is listed as a "species that requires monitoring" in the Irish Red Data Book. The curlew is also listed in Annex I of the EC Birds Directive on the conservation of wild birds and Appendix 2 of the Bern Convention.

Dunnock (*Prunella modularis*)
The dunnock is a common small brown and grey bird, with its upperparts streaked black and brown with chestnut on the wings; the head and throat are grey and the breast is buff grey. The legs are pinkish-orange but usually hidden by the semi-crouched posture it adopts whilst feeding. Dunnocks breed from April, building nests of twigs and moss in shrubs and thick hedges, usually not much more than one

metre from the ground. This is one of the species unfortunate enough to be parasitized by the cuckoo. Decline in numbers has led to its Amber Listed status.

Greenland white-fronted goose *(Anser albifrons)*
The Greenland white-fronted goose breeds in Greenland but from late September and through the winter months, Ireland is home to almost 50% of the Greenland population of white-fronted geese. This is probably the most easily recognised of the grey geese with its white forehead "blaze", dark bands on the belly and white under the tail. The Greenland race has orange bills, legs and feet. Both sexes are alike but immature birds lack the barring and white forehead of the adults. The white-fronted goose was once known as the "bog goose" because it was found feeding on white-beak sedge on upland blanket and lowland raised bogs. With the decline of peatlands the geese now feed on freshwater marshes and wet meadows during their stay in Ireland. The Greenland white-fronted goose is listed in Annex I, and II of the Birds Directive, Appendix III of the Bern Convention and Appendix II of the Bonn Convention.

Golden Plover (*Pluvialis apricaria*)
The Golden Plover breeds in heather moors, blanket bogs and acidic grasslands. Its distribution limited to the uplands of northwest counties in Ireland. They feed on a variety of soil and surface-living invertebrates, principally beetles and earthworms, but also on plant material such as berries, seeds and grasses. They regularly feed in association with Lapwing and Black-headed Gulls. Throughout the winter, Golden Plovers are regularly found in large, densely-packed flocks, and in a variety of habitats, both coastal and inland. Their distribution is widespread in Ireland. It is amber-listed and a BoCCI.

Hen Harrier (*Circus cyaneus*)
Males are a pale grey colour, females and immatures are brown with a white rump and a long, barred tail which give them the name 'ringtail'. They fly with wings held in a shallow 'V', gliding low in search of food. Its habitat is open areas with low vegetation. In the breeding season the species prefer upland heather moorlands and in winter they move to lowland farmland, heathland, coastal marshes, fenland and river valleys. A decline in this species has led to its Red Listed status. It is also listed on Annex I of the EC Birds Directive.

Herring gull (*Larus argentatus*)
Herring gulls are large, noisy gulls found throughout the year in coastal areas and inland around rubbish tips, fields, large reservoirs and lakes, especially during winter. Adults have light grey backs, white under parts, and black wing tips with white 'mirrors'. Their legs are pink, with webbed feet and they have heavy, slightly hooked bills marked with a red spot. Young birds are mottled brown. They have suffered moderate decline over the past 25 years leading to their Amber Listed status.

Lapwing (*Vanellus vanellus)*
Residents, summer visitors from the Continent (France & Iberia) and winter visitors (from western and central Europe). Greatest numbers occur in Ireland between September and April.

They feed on a variety of soil and surface-living invertebrates, particularly small arthropods and earthworms. Also feed at night, possibly to avoid kleptoparasitic attacks by Black-headed Gulls, but also, some of the larger earthworm species are present near the soil surface at night, and thus are more easily accessible. They use traditional feeding areas, are opportunistic, and will readily exploit temporary food sources, such as ploughed fields and on the edge of floodwaters. They breed on

open farmland, and appear to prefer nesting in fields that are relatively bare (particularly when cultivated in the spring) and adjacent to grass. Their wintering distribution in Ireland is widespread. Large flocks regularly recorded in a variety of habitats, including most of the major wetlands, pasture and rough land adjacent to bogs. They are red listed and a BoCCI.

Merlin (*Falco columbarius*)
At 25-30cm long, the Merlin is Ireland's smallest bird of prey. The male has blue-grey upperparts and pale buffish-brown underparts with dark streaks. The female and young are dark brown above and look similar. Merlins nest on the ground in thick cover among the heather and bracken, although they will often use an old abandoned crow's nest. The merlin is rare and declining is listed in Annex I, of the Birds Directive, Appendix II of the Bern Convention and Appendix II of the Bonn Convention.

Peregrine falcon (*Falco peregrinus*)
The peregrine is a large and powerful falcon. It has long, broad, pointed wings and a relatively short tail. It is blue-grey above, with a blackish top of the head and an obvious black 'moustache' that contrasts with its white face. Its breast is finely spotted. It is swift and agile in flight, chasing prey. Peregrines have suffered illegal killing from gamekeepers and landowners, and been a target for egg collectors, but better legal protection and control of pesticides (which indirectly poisoned birds) have helped the population to recover considerably from a low in the 1960s. It is listed on Annex I of the EC Birds Directive.

Reed bunting (*Emberiza schoeniclus*)
Sparrow-sized but slim and with a long, deeply notched tail, the male has a black head, white collar and a drooping moustache. Females and winter males have a streaked head. In flight the tail looks black with broad, white edges. Although their preferred habitat is marshy ground, reed buntings live in a variety of habitats, including bogs, fens, heathland, farmland hedgerows and gorse scrub. This wetland bird has suffered a serious population decline making it a Red List species.

Skylark (*Alauda arvensis*)
The skylark is a small brown bird, somewhat larger than a sparrow but smaller than a starling. It is streaky brown with a small crest, which can be raised when the bird is excited or alarmed, and a white-sided tail. The wings also have a white rear edge, visible in flight. It is renowned for its display flight, vertically up in the air. Its recent and dramatic population declines make it a Red List species.

Snipe (*Gallinago gallinago*)
Snipe are medium sized, skulking wading birds with short legs and long straight bills. Both sexes are mottled brown above, with paler buff stripes on the back, dark streaks on the chest and pale under parts. In winter, birds from northern Europe join resident birds. During the winter, snipe are common in upland blanket bogs, lowland raised bogs, fens and wet meadows. They are very secretive and are not usually seen until they are alarmed, when they zig-zag away making harsh "scaap" calls. The Irish population of snipe has undergone moderate declines overall in the past twenty-five years, possibly as a result of the loss of suitable nesting habitat. The Snipe is listed in Annex II/1 of the Birds Directive, Appendix III of the Bern Convention and Appendix II of the Bonn Convention. It is also Amber Listed.

Water rail (*Rallus aquaticus*)
Smaller and distinctly slimmer than the moorhen, the water rail is a fairly common but highly secretive inhabitant of freshwater wetlands. It has chestnut-brown and black

upperparts, grey face and underparts and black-and-white barred flanks, and a long red bill. Difficult to see in the breeding season, it is relatively easier to find in winter, when it is also more numerous and widespread. Although usually secretive they can become confiding but are still far more often heard than seen. Its recent moderate population declines make it an Amber List species.

Whooper Swan (*Cygnus cygnus*)
The whooper swan is a large white swan, bigger than a Bewick's swan. It has a long thin neck, which it usually holds erect and black legs. Its black bill has a large triangular patch of yellow on it. It is mainly a winter visitor to Ireland from Iceland. The estuaries and wetlands it visits on migration and for winter roosts need protection. Its winter population and small breeding numbers make it an Amber List species. It is also listed on Annex I of the EC Birds Directive.

Rare and endangered flora

The Irish Red Data Book of Vascular Plants (Curtis and McGough, 1978) drew attention to the fact that Ireland has 159 species, 0.7% of the total flora, that are rare or threatened in some way. At the western extremity of Europe, Ireland has a depauperate but interesting flora. It includes a number of species which are restricted to the extreme west of Europe, amphi-atlantic species which are rare or absent elsewhere in Europe and especially interesting populations of various species growing at the limit of their natural distribution. This biogeographical interest of the Irish flora makes it important to conserve the genetic diversity of Irish plant populations. The nominated Site has numerous species that are rare or threatened in some way.

Table 6: Rare and endangered flora of the Candidate WHS Site

Species	Latin	IUCN Status	Source of Data
Green winged orchid	*Orchis morio*	Endangered	Botanic gardens website www.botanticgardens.ie Flora Protection order 1999
Opposite leaved pondweed	*Groenlandia densa*	Endangered	Botanic gardens website www.botanticgardens.ie Flora Protection order 1999
Meadow barley	*Hordium secalinum*	Endangered	Botanic gardens website www.botanticgardens.ie Flora Protection order 1999
Alder buckthorn	*Frangula alnus*	Vulnerable	Botanic gardens website www.botanticgardens.ie Flora Protection order 1999
Basil thyme	*Clinopodium acinos*	Data deficient	Botanic gardens website www.botanticgardens.ie Flora Protection order 1999

Species List

These lists include the scientific names of all species mentioned in the text of this plan

Flora
Autumn gentian (*Gentianella amarella*)
Black bog-rush (*Schoenus nigricans*)

Black Spleenwort (*Asplenium adiantum-nigrum*)
Bogbean (*Menyanthes trifoliata*)
Bog myrtle (*Myrica gale*)
Bottle Sedge (*Carex rostrata*)
Bracken (*Pteridium aquilinum*)
(*Carex lepidocarpa*)
Carline thistle (*Carlina vulgaris*)
Carnation sedge (*Carex panacea*)
Common birds-foot-trefoil (*Lotuscorniculatus*)
Common centaury (*Centaurium erythraea*)
Common knapweed (*Centaurea nigra*)
Common spotted orchid (*Dactylorhiza fuchsia*)
Cranberry (*Vaccinium macrocarpon*)
Fragrant orchid (*Gymnadenia conopsea*)
Hazel (*Corylus avellana*)
Ivy (*Hedera helix*)
Glaucous Sedge (*Carex flacca*)
Green-winged orchid (*Orchis morio*)
Maidenhair Spleenwort (*Asplenium trichomanes*)
Marsh pea (*Lathyrus palustris*)
Meadow barley (*Hordeum secalinum*)
Mud-sedge (*Carex limosa*)
Narrow-leaved plantain (*Plantago lanceolata*)
Opposite-leaved pondweed (*Groenlandia densa*)
Purple Moor-grass (*Molinia caerulea*)
Pyramidal orchid (*Anacamptis pyramidalis*)
Quaking grass (*Briza media*)
Sessile Oak (*Quercus petraea*)
Southern Polypody (*Polypodium australe*)
Sphagnum Mosses:
(*Sphagnum auriculatum*)
(*Sphagnum fuscum*)
(*Sphagnum cuspidatum*)
Spring Sedge (*Carex caryophyllea*)
Summer snowflake (*Leucojum aestivum*)
Sweet vernal-grass (*Anthoxanthum odoratum*)
Wall Rue (*Asplenium ruta-muraria*)
Wild carrot (*Daucus carota*)
Yellow-wort (*Blackstonia perfoliata*)

Fauna

Birds
Dunlin (*Calidris alpina*)
Black-tailed godwit (*Limosa limosa*)
Harrier (*Circus cyaneus*)
Corncrake (*Crex crex*)
Curlew (*Numenius arquata*)
Peregrine falcon (*Falco peregrinus*)
Lapwing (*Vanellus vanellus*)
Merlin (*Falco columbarius*)
Mute Swan (*Cygnus olor*)
Redshank (*Tringa tetanus*)
Redwing *(Turdus iliacus)*
Snipe (*Gallinago gallinago*)

Teal (*Anas crecca*)
Tufted Duck (*Aythya fuligula*)
White-fronted Goose (*Anser albifrons flavirostris*)
Wigeon (*Anas penelope*)

Spider: (*Gongyidiellum latebricola*, Order Arachnida)
Moths: (*Biselachista serricornis* and *Aristotelia ericinella*, Order Lepidoptera).

Mammals
Otter (*Lutra lutra*)

Amphibians
Frog (*Rana temporaria*)

Molluscs
Whorl snail (*Vertigo geyeri*)

Fish
Salmon (*Salmo salar*)
Trout (*Salmo trutta*)
Pike (*Esox lucius*)
Perch (*Perca fluviatilis*)
Bream (*Abramis brama*)
Rudd (*Scardinus Erythrophthalmus*)
Tench (*Tinca tinca*)
Eel (*Anguilla anguilla*)

Control within designated Natural Heritage Areas

In NHAs, SACs and SPAs, certain activities or operations that might be damaging can only be carried out with the permission of the Minister for the Environment, Heritage and Local Government. These are called Notifiable Actions and vary depending on the type of habitat that is present on the site.

Activities listed as notifiable actions are not prohibited but require the landowner/occupier to consult with NPWS (in practice with the local Conservation Ranger) in advance.

Permission from the Minister for the Environment, Heritage and Local Government is NOT required for those activities where:

- permission has been granted by a planning authority (e.g. planning permission)
- a licence or permission has been granted by another regulatory authority (e.g. a fisheries licence or felling licence), or
- where the activities are covered in an approved agri-environmental plan (e.g. REPS or NPWS farm plan)

The following lists notifiable actions on a habitat by habitat basis:

Dry grasslands

- grazing of livestock above a sustainable density (as defined in approved farm plans)/grazing by livestock treated within the previous week with a pesticide which leaves persistent residues in the dung

- changing of traditional use from hay meadow (to either grazing or silage making), or from grazing to silage cutting

- adding lime/adding fertiliser of any sort to areas not previously fertilised/ applying fertiliser which would increase the level of nitrogen in the soil/applying fertiliser which would increase the level of phosphorous in the soil/ applying phosphorous to soils which already have in excess of the REPS index 2 levels mowing grass before the 30th June (Note; if you have been notified that your lands hold breeding corncrakes, or certain rare meadows, special provisions will apply)

- burning of vegetation /ploughing or cultivation of lands which have not been so managed for the last 20 years

- reclamation, infilling, or land drainage/ reseeding, planting of trees or any other species use of any pesticide or herbicide

- dumping, burning or storing any materials

- alteration of the banks, bed or low of watercourses

- operation of commercial recreation facilities (e.g. pony trekking)/introduction (or re-introduction) into the wild of plants or animals of species not currently found in the area

- any other activity of which notice may be given by the Minister from time to time

- The activities listed below, may, and in most cases do, require a licence or consent from another statutory authority (e.g. the local planning authority). If so, these notifiable actions do not apply. However, if such activities are not regulated by another statutory authority, the said activities are notifiable actions:

- developing leisure facilities including golf courses, sports pitches, caravan or camping facilities.

- removal of soil, mud, gravel, sand or minerals

- developing roads or car parks

- construction of fences, buildings or embankments

- afforestation

Wet grasslands

- grazing of livestock above a sustainable density (as defined in approved farm plans)/grazing by livestock treated within the previous week with a pesticide which leaves persistent residues in the dung

- changing of traditional use from hay meadow (to either grazing or silage making), or from grazing to silage cutting

- adding lime/adding fertiliser of any sort to areas not previously fertilised/ applying fertiliser which would increase the level of nitrogen in the soil/applying fertiliser which would increase the level of phosphorous in the soil/ applying phosphorous to soils which already have in excess of the REPS index 2 levels mowing grass before the 30th June (Note; if you have been notified that your lands hold breeding corncrakes, or certain rare meadows, special provisions will apply)

- burning of vegetation

- reclamation, infilling, ploughing or land drainage/ reseeding, planting of trees or any other species

- use of any pesticide or herbicide

- dumping, burning or storing any materials

- alteration of the banks, bed or flow of watercourses

- operation of commercial recreation facilities (e.g. pony trekking)

- introduction (or re-introduction) into the wild of plants or animals of species not currently found in the area

- any other activity of which notice may be given by the Minister from time to time

The activities listed below, may, and in most cases do, require a licence or consent from another statutory authority (e.g. the local planning authority). If so, these notifiable actions do not apply. However, if such activities are not regulated by another statutory authority, the said activities are notifiable actions:

- developing leisure facilities including golf courses, sports pitches, caravan or camping facilities

- removal of soil, mud, gravel, sand or minerals

- developing roads or car parks

- construction of fences, buildings or embankments

- afforestation

Raised bog, cutaway bog; bog woodland

- grazing of livestock/grazing by livestock treated within the previous week with a pesticide which leaves persistent residues in the dung

- adding lime/adding fertiliser of any sort
- creation of new tracks or paths
- burning areas of vegetation reclamation, infilling, or ploughing /reseeding, planting of trees or any other species/cutting trees or removing timber
- drainage works on the bog or within the local water catchment area
- cutting turf or peat moss extraction
- use of any pesticide or herbicide, including sheep dip
- dumping, burning or storing any materials
- alteration of the banks, bed or flow of watercourses
- operation of commercial recreation facilities (e.g. botanical tours)
- introduction (or re-introduction) into the wild of plants or animals of species not currently found in the area
- any other activity of which notice may be given by the Minister from time to time

The activities listed below, may, and in most cases do, require a licence or consent from another statutory authority (e.g. the local planning authority). If so, these notifiable actions do not apply. However, if such activities are not regulated by another statutory authority, the said activities are notifiable actions:

- developing leisure facilities including golf courses, sports pitches, caravan or camping facilities
- removal of soil, mud, gravel, sand or minerals
- developing roads or car parks
- construction of fences, buildings or embankments
- afforestation
- erecting or operating a windfarm

Fens, transition mires, petrifying springs

- grazing of livestock above a sustainable density (as defined in approved farm plans)
- grazing by livestock treated within the previous week with a pesticide which leaves persistent residues in the dung
- changing of traditional use from hay meadow (to either grazing or silage making), or from grazing to silage cutting

- adding lime within 50m of the fen or a water course running into it
- adding fertiliser of any sort within 50m or a water course running into it
- extracting water for irrigation or other purposes
- mowing grass before the 30th June (Note; if you have been notified that your lands hold breeding corncrakes, or certain rare meadows, special provisions will apply)
- supplementary feeding of stock
- operation of boat angling or shore angling business
- restocking with fish
- reclamation, infilling, ploughing or land drainage within 50m of the fen
- reseeding, planting of trees or any other species within 50m of the fen
- use of any pesticide or herbicide within 50m of fen
- dumping, burning or storing any materials within 50m of the fen
- alteration of the banks, bed or flow of watercourses within the fen or running into or out of it
- harvesting reed or willow
- operation of commercial recreation facilities (e.g. bird watching tours)
- introduction (or re-introduction) into the wild of plants or animals of species not currently found in the area
- any other activity of which notice may be given by the Minister from time to time

The activities listed below, may, and in most cases do, require a licence or consent from another statutory authority (e.g. the local planning authority). If so, these notifiable actions do not apply. However, if such activities are not regulated by another statutory authority, the said activities are notifiable actions:

- developing leisure facilities including golf courses, sports pitches, caravan or camping facilities.
- any activity which might cause pollution of the fen
- removal of soil, mud, gravel, sand or minerals
- developing roads or car parks
- construction of fences, buildings or embankments
- afforestation

Marshes & reedbeds

- grazing of livestock above a sustainable density (as defined in approved farm plans) within 50m of the marsh or reedbed
- grazing by livestock treated within the previous week with a pesticide which leaves persistent residues in the dung
- supplementary feeding of stock within 50m of the marsh or reedbed
- adding lime within 50m of the marsh or reedbed
- adding fertiliser of any sort within 50m of the marsh or reedbed
- extracting water for irrigation or other purposes
- operation of boat angling or shore angling business
- restocking with fish
- reclamation, infilling, ploughing or land drainage within 50m of the marsh or reedbed
- reseeding, planting of trees or any other species within 50m of the marsh or reedbed
- removal of trees or any aquatic vegetation within 50m of the marsh or reedbed
- use of any pesticide or herbicide in the marsh or reedbed or within 50m of the marsh or reedbed
- dumping rubbish or other materials or disposing of any chemicals or wastes in marsh or reedbed or into water-courses Running into them
- dumping, burning or storing any materials within 50m of the marsh or reedbed including the land spreading of used pesticides (e.g. sheep dip)
- alteration of the banks, channel, bed or flow of the marsh or reedbed or of watercourses running into or out of it
- harvesting or burning of reed or willow
- causing siltation
- operation of commercial recreation facilities (e.g. bird watching tours)
- introduction (or re-introduction) into the wild of plants or animals of species not currently found in the area
- any other activity of which notice may be given by the Minister from time to time

The activities listed below, may, and in most cases do, require a licence or consent from another statutory authority (e.g. the local planning authority). If so, these

notifiable actions do not apply. However, if such activities are not regulated by another statutory authority, the said activities are notifiable actions:

- developing leisure facilities including golf courses, sports pitches, caravan or camping facilities
- any activity which migh cause pollution of the marsh or reedbed
- removal of soil, mud, gravel, sand or minerals
- developing roads or car parks
- construction of fences, buildings or embankments
- construction or operation of an aquaculture facility
- fishing for eels
- bank maintenance and grading
- creation of weirs and dams

Rivers & streams

- grazing of livestock above a sustainable density (as defined in approved farm plans) within 30m of the river or stream/grazing by livestock treated within the previous week with a pesticide which leaves persistent residues in the dung within 30m of the river or stream
- supplementary feeding of stock within 30m of the river or stream/adding lime within 30m of the river or stream/adding fertiliser of any sort within 30m of the river or stream
- extracting water for irrigation or other purposes
- operation of boat angling or shore angling business/ restocking with fish
- reclamation, infilling, ploughing or land drainage within 30m of the river or stream/ reseeding, planting of trees or any other species within 30m of the river or stream/ removal of trees or any aquatic vegetation within 30m of the river/stream/ use of any pesticide or herbicide in the river or stream or within 30m of the river or stream
- dumping rubbish or other materials or disposing of any chemicals or wastes in streams/rivers or into water-courses running into them
- dumping, burning or storing any materials within 30m of the river/stream including the land spreading of used pesticides (e.g. sheep dip)./alteration of the banks, channel, bed or flow of the river or stream
- harvesting or burning of reed or willow
- causing siltation/ operation of commercial recreation facilities (e.g. bird watching tours)

- introduction (or re-introduction) into the wild of plants or animals of species not currently found in the area

- any other activity of which notice may be given by the Minister from time to time

The activities listed below, may, and in most cases do, require a licence or consent from another statutory authority (e.g. the local planning authority). If so, these notifiable actions do not apply. However, if such activities are not regulated by another statutory authority, the said activities are notifiable actions:

- developing leisure facilities including golf courses, sports pitches, caravan or camping facilities

- any activity which might cause pollution of the river or stream

- removal of soil, mud, gravel, sand or minerals

- developing roads or car parks

- construction of fences, buildings or embankments

- construction or operation of an aquaculture facility

- fishing for eels or salmon

- bank maintenance and grading

- creation of weirs and dams

Limestone pavement

- grazing of livestock above a sustainable density (as defined in approved farm plans)/grazing by livestock treated within the previous week with a pesticide which leaves persistent residues in the dung

- grazing of stock from Ist April to 31st October, except as defined in REPS guidelines

- changing of traditional use from hay meadow (to either grazing or silage making), or from grazing to silage cutting/ supplementary feeding of stock, except as defined in REPS guidelines

- removal of scrub by bulldozer or similar machinery (cutting scrub is permitted)/grazing by sheep

- adding lime/adding fertiliser or organic material of any sort/ creation of new tracks or paths/burning of vegetation/ reclamation, importing of soil, infilling, ploughing or land drainage/ reseeding, planting of trees or any other species/ use of any pesticide or herbicide

- dumping, burning or storing any materials

- alteration of the banks, bed or low of watercourses

- operation of commercial recreation facilities (e.g. pony trekking)/introduction (or re-introduction) into the wild of plants or animals of species not currently found in the area

- any other activity of which notice may be given by the Minister from time to time

The activities listed below, may, and in most cases do, require a licence or consent from another statutory authority (e.g. the local planning authority). If so, these notifiable actions do not apply. However, if such activities are not regulated by another statutory authority, the said activities are notifiable actions:

- developing leisure facilities including golf courses, sports pitches, caravan or camping facilities

- removal of soil, mud, gravel, sand or minerals

- developing roads or car parks

- construction of fences, buildings or embankments

- afforestation

- erecting or operating a windfarm

Woodlands

- grazing by livestock

- adding lime

- adding fertiliser of any sort

- reclamation, infilling, ploughing or land drainage

- reseeding, planting of trees or any other species

- felling of trees, removal of timber

- removal of foliage, moss or other materials

- killing ivy

- use of any pesticide or herbicide

- dumping, burning or storing any materials

- alteration of the banks, bed or flow of watercourses

- operation of commercial recreation facilities (e.g. bird watching tours)

- introduction (or re-introduction) into the wild of plants or animals of species not currently found in the area

- any other activity of which notice may be given by the Minister from time to time

The activities listed below, may, and in most cases do, require a licence or consent from another statutory authority (e.g. the local planning authority). If so, these notifiable actions do not apply. However, if such activities are not regulated by another statutory authority, the said activities are notifiable actions:

- developing leisure facilities including golf courses, sports pitches, caravan or camping facilities
- any activity which may cause pollution of the woodland
- removal of soil, mud, gravel, sand or minerals
- developing roads or car parks
- construction of fences, buildings or embankments
- felling trees or reafforestation

Scrub

- grazing of livestock above a sustainable density (as defined in approved farm plans)/grazing by livestock treated within the previous week with a pesticide which leaves persistent residues in the dung
- supplementary feeding of stock (as defined in approved farm plans)
- adding lime /adding fertiliser of any sort
- reclaiming land covered by scrub; if scrub is cut it must be allowed to regrow
- reclamation, infilling, ploughing or land drainage
- reseeding, planting of trees or any other speciesfelling of trees, removal of timber
- removal of foliage, moss or other materials
- killing ivy
- use of any pesticide or herbicide /dumping, burning or storing any materials
- alteration of the banks, bed or flow of watercourses
- operation of commercial recreation facilities (e.g. walking tours)
- introduction (or re-introduction) into the wild of plants or animals of species not currently found in the area
- any other activity of which notice may be given by the Minister from time to time

The activities listed below, may, and in most cases do, require a licence or consent from another statutory authority (e.g. the local planning authority). If so, these notifiable actions do not apply. However, if such activities are not regulated by another statutory authority, the said activities are notifiable actions:

- developing leisure facilities including golf courses, sports pitches, caravan or camping facilities
- any activity which may cause pollution of the site
- removal of soil, mud, gravel, sand or minerals
- developing roads or car parks
- construction of fences, buildings or embankments
- felling trees or reafforestation

Ditches, hedges, cereals and intensive grasslands, walls, buildings, waste ground, bare soil, parkland grassland, bracken, caves, or quarries

- disturbance of bats
- operation of commercial recreation facilities (e.g. bird watching tours)
- introduction (or re-introduction) into the wild of plants or animals of species not currently found in the area
- any other activity of which notice may be given by the Minister from time to time

The activities listed below, may, and in most cases do, require a licence or consent from another statutory authority (e.g. the local planning authority). If so, these notifiable actions do not apply. However, if such activities are not regulated by another statutory authority, the said activities are notifiable actions:

- developing leisure facilities including sports pitches, caravan or camping facilities
- developing roads or car parks
- construction of fences, buildings and embankments
- afforestation

Marshes & reedbeds

- grazing of livestock above a sustainable density (as defined in approved farm plans) within 50m of the marsh or reedbed
- grazing by livestock treated within the previous week with a pesticide which leaves persistent residues in the dung
- supplementary feeding of stock within 50m of the marsh or reedbed

- adding lime within 50m of the marsh or reedbed
- adding fertiliser of any sort within 50m of the marsh or reedbed
- extracting water for irrigation or other purposes
- operation of boat angling or shore angling business
- restocking with fish
- reclamation, infilling, ploughing or land drainage within 50m of the marsh or reedbed
- reseeding, planting of trees or any other species within 50m of the marsh or reedbed
- removal of trees or any aquatic vegetation within 50m of the marsh or reedbed
- use of any pesticide or herbicide in the marsh or reedbed or within 50m of the marsh or reedbed
- dumping rubbish or other materials or disposing of any chemicals or wastes in marsh or reedbed or into water-courses running into them
- dumping, burning or storing any materials within 50m of the marsh or reedbed including the land spreading of used pesticides (e.g. sheep dip)
- alteration of the banks, channel, bed or flow of the marsh or reedbed or of watercourses running into or out of it
- harvesting or burning of reed or willow
- causing siltation
- operation of commercial recreation facilities (e.g. bird watching tours)
- introduction (or re-introduction) into the wild of plants or animals of species not currently found in the area
- any other activity of which notice may be given by the Minister from time to time

The activities listed below, may, and in most cases do, require a licence or consent from another statutory authority (e.g. the local planning authority). If so, these notifiable actions do not apply. However, if such activities are not regulated by another statutory authority, the said activities are notifiable actions:

- developing leisure facilities including golf courses, sports pitches, caravan or camping facilities
- any activity which might cause pollution of the marsh or reedbed
- removal of soil, mud, gravel, sand or minerals

- developing roads or car parks
- construction of fences, buildings or embankments
- construction or operation of an aquaculture facility
- fishing for eels
- bank maintenance and grading
- creation of weirs and dams

Appendix 6: Planning

Planning Control

Ireland has a comprehensive system of legislation to ensure the proper planning and , sustainable development of areas, whether urban or rural and for protection of the environment. Ireland's planning system is primarily implemented through the planning functions of regional and local authorities and other agencies working within an overall regulatory and policy framework for planning set at a national level by Government.

The proposed World Heritage site at Clonmacnoise is already covered by a range of planning, environmental archaeological and ecological measures aimed at protecting the qualities of the area and for which the World Heritage Site designation will now establish an overarching purpose.

Existing plans statutory and non-statutory plans covering the area included within the proposed World Heritage site at Clonmacnoise are set out below.

Table 7: Development and Management Plans relevant to Clonmacnoise

Title	Date
Midland Regional Planning Guidelines (MRPG) 2004 – 2010.	Adopted 2004 (currently under review)
County Offaly Development Plan 2009-2015	Adopted 2009
County Roscommon Development Plan 2008-2014	Adopted 2008
County Westmeath Development Plan 2008-2014	Adopted 2008
The County Offaly Heritage Plan 2007-2011	Adopted 2007
County Roscommon Heritage Plan 2004-2008	Adopted 2004
County Westmeath Heritage Plan 2008-2014	Under revision, due to be adopted 2009
The Offaly Biodiversity Action Strategy	Adopted 2005
The Roscommon Biodiversity Action Plan	Currently in draft form
The Westmeath Biodiversity Action Plan	Currently in draft form
Mongan Bog Management Plan 2005-2010 (National Parks and Wildlife Service)	Adopted 2005
Management Plan for the Middle Shannon Callows SPA (National Parks and Wildlife Service)	currently in draft form
Management Plan for Fin Lough 2006-2011 (National Parks and Wildlife Service)	Adopted 2006

Actual proposals for future development would be assessed by the relevant planning authorities in line with the detailed policies and objectives of their respective development plans, including any amendments to those plans.

Appendix 7: General Information

International Charters and Conventions

- The International Charter for the Conservation and Restoration of Monuments and Sites (The Venice Charter), 1964.
- World Heritage Convention, 1972.
- European Charter of the Architectural Heritage (Council of Europe), 1975.
- Convention for the Protection of the Architectural Heritage of Europe (Granada Convention), 1985.
- Charter for the Protection and Management of Archaeological Heritage (Lausane), 1990.
- European Convention on the Protection of the Archaeological Heritage (Revised) (Valetta Convention), 1992.
- The Nara Document on Authenticity (Nara Conference on Authenticity in Relation to the World Heritage Convention, Nara, Japan), 1994.
- International Charter on Cultural Tourism, 1999.
- The Australia ICOMOS Charter for the Conservation of Places of Cultural Significance (The Burra Charter) (Australia ICOMOS), 1999.

Safety References

• Safety, Health and Welfare at Work Act 2005

• Safety, Health and Welfare at Work (General Applications) Regulations 1993

• Construction Regulations 2006

• Work at Height Regulations 2006

• Safety, Health and Welfare at Work (Noise) Regulations 2006

• Safety, Health and Welfare at Work (Vibration) Regulations 2006

Appendix 8: Land Agreement with the Church of Ireland

THIS INDENTURE MADE the ninth day of August One thousand nine hundred and fifty five BETWEEN THE REPRESENTATIVE BODY OF THE CHURCH OF IRELAND incorporated under the name of THE REPRESENTATIVE CHURCH BODY of Number 52, Saint Stephen's Green in the City of Dublin, (hereinafter called "the Owners") of the one part and THE COMMISSIONERS OF PUBLIC WORKS IN IRELAND of Number 51, Saint Stephen's Green in the City of Dublin (hereinafter called "the Commissioners") of the other part WHEREAS the Owners are seised of and entitled in fee simple to the Burial Ground known as Clonmacnoise in the Diocese of Meath and County of Offaly (particularly delineated on the Map annexed hereto and thereon edged with a blue verge line) which Burial Ground was vested in them by the Commissioners of Church Temporalities in Ireland in pursuance of their statutory powers under the Irish Church Act, 1869, AND WHEREAS for the better preservation of the said Burial Ground and the National Monuments therein negotiations have taken place between the parties hereto that subject to the reservations , covenants and conditions hereinafter contained the said Burial Ground should be transferred to the Commissioners AND WHEREAS the Owners have agreed with the Commissioners to transfer such part of the said Burial Ground as is hereinafter mentioned to the Commissioners for the purpose aforesaid in consideration of their entering into the covenants and conditions hereinafter contained AND the Commissioners have agreed to accept the same accordingly AND WHEREAS for the purpose of carrying out the terms of the said Agreement the Commissioners have acquired the fee simple interest in the lands immediately adjoining the west side of the said Burial Ground as delineated on the said Map annexed hereto and thereon edged with a green verge line NOW THIS INDENTURE WITNESSETH that in pursuance of the said Agreement and in

consideration

consideration of the covenants and conditions hereinafter contained the Owners under and by virtue of the powers vested in them and as Trustees DO HEREBY GRANT AND CONVEY unto the Commissioners ALL THAT AND THOSE the Burial Ground of Clonmacnoise in the diocese of Meath other than that portion thereof which is delineated on the said Map annexed hereto and thereon edged with a red verge line which is not hereby assured and all of which Burial Ground is delineated on the said Map and thereon edged with a blue verge line and is situate in the Townland and Parish of Clonmacnoise, Barony of Garryoastle and County of Offaly TO HOLD the same unto and to the use of the Commissioners and their successors and assigns forever for the sole purpose of the better preservation of the said Burial Ground and the National Monuments therein subject to the covenants, provisions and conditions hereinafter contained and to such rights of burial as may be subsisting therein as at the date hereof or hereafter may be declared to exist therein AND THIS INDENTURE made in further pursuance of the said Agreement and in consideration of the Conveyance by the Owners to the Commissioners hereinbefore contained FURTHER WITNESSETH as follows:-

1. The Commissioners HEREBY COVENANT with the Owners in manner following, that is to say:

(a) The Commissioners at their own expense will forthwith demolish and remove that part of the existing wall of the said Burial Ground lying between the points "A" and "B" on the said Map and will build and construct with suitable materials and in all respects to the satisfaction of the Owners a new boundary to connect with the existing boundary wall at the point marked "A" on the said Map along the Northern and Western sides of the lands acquired by the Commissioners

(b) The Commissioners at their own expense will layout and construct

(a) To erect and construct such shelters or other structures as may be necessary for the proper preservations and protection of National Monuments, and

(b) To remove or permit to be removed the existing shelter now standing on the plot coloured blue on the Northern side of the said Burial Ground and to permit the Authorities of the Holy Catholic Apostolic and Roman Church of the Diocese of Ardagh and Clonmacnoise if they so desire to erect upon the said plot coloured blue and measuring Fifty feet by thirty feet as indicated on the said Map an Oratory subject to the plans and specifications thereof being approved by the Commissioners.

IN WITNESS whereof the Owners and the Commissioners respectively have caused their respective Seals to be hereunto affixed the day and year first herein WRITTEN

PRESENT when the Corporate Seal of The Representative Body of the Church of Ireland was affixed hereto:

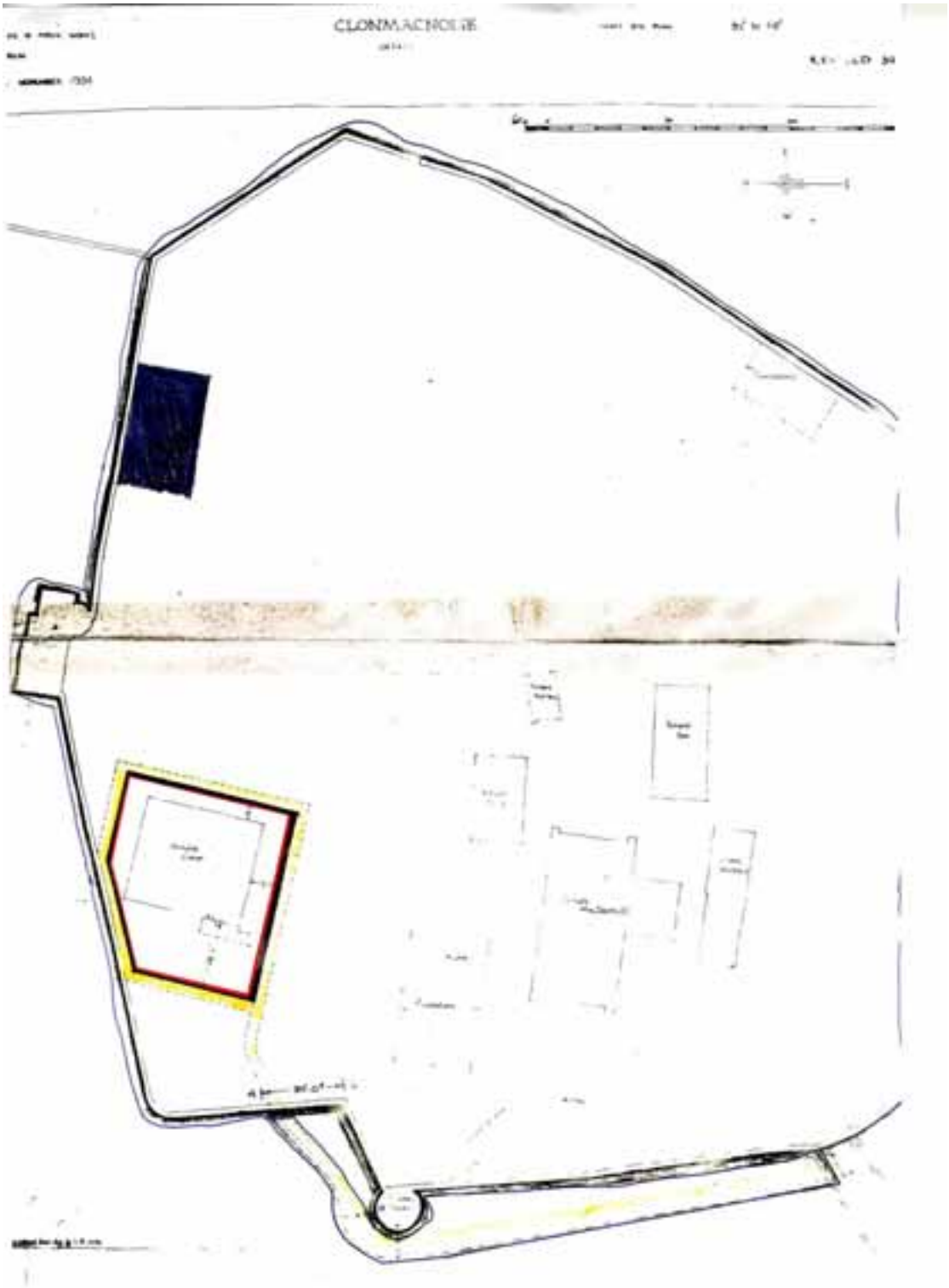
D.M. Hudson,
Deputy Chief Officer,
Representative Church Body,
52, St. Saint Stephen's Green, East,
Dublin.

Maurice Moran,
Solicitor,
Dublin.

PRESENT when the Seal of The Commissioners of Public Works in Ireland was affixed hereto:

Francis J. Burbage,
Sean P. Mc Grane,
Office of the Finance-Solicitor,
51, St. Stephen's Green, East,
Dublin.

Civil Servants.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Glossary

Glossary

Alluvial: (from the Latin, *alluvius*, from *alluere*, "to wash against") is soil or sediments deposited by a river or other running water. Alluvium is typically made up of a variety of materials, including fine particles of silt and clay and larger particles of sand and gravel.

Anglo-Norman: General term used to refer to cultural traditions, especially architectural styles, current in England in the period after the Norman Conquest, broadly 1066 to 1200. In Ireland the Anglo-Normans were the invaders who arrived in Ireland in AD 1176 at the instigation of Diarmait Mac Murchada.

Barbican: (From medieval Latin *barbecana*, "outer fortification of a city or castle," or from the medieval English *burgh-kenning*) is a fortified outpost or gateway, such as an outer defence to a city or castle, or any tower situated over a gate or bridge which was used for defensive purposes.

Bog: Also referred to as ‘mire’, is a wetland type that accumulates acidic peat, a deposit of dead plant material, usually mosses.

Bronze Age: The period from about 2300 to 700 BC, when metal first began to be widely used.

Calcareous grassland: (Or alkaline grassland) is an ecosystem associated with thin basic soil, such as that on chalk and limestone downland.

Callow: Derived from the Irish *caladh* (river meadow), this refers to land submerged during flooding.

Celtic: Epithet of the peoples now identified as Bretons, Welsh, Cornish, Irish, Manx, and Scots Gaels. Of, or relating to, these Celtic people, their art and their languages.

Chronicle: An extended account in prose or verse of historical events, sometimes including legendary material, presented in chronological order and without authorial interpretation or comment.

Civitas: A Roman local government administrative unit based on the citizenship of its occupants, usually based on pre-Roman tribal groupings. They were ruled from a *civitas* capital which, in Britain, were towns deliberately founded for the purpose. A *civitas* thus comprised the citizens and magistrates of a town together with the people occupying the surrounding associated territory.

Cloigthech: Irish for “bell tower”.

Crannog: A type of ancient, circular loch-dwelling found primarily in Scotland and Ireland that seem to have been built as individual homes to accommodate extended families.

Crinoid: Marine organisms that first appeared in the early in the middle of the Cambrian period.

Cross slab: Often carved of local stone, this is usually a grave memorial, which bears a representation of the Christian cross.

Damliag: An Irish word signifying a stone edifice.

Dark Age: A term in European historiography referring to the transitional period between Classical Roman Antiquity and the High Middle Ages, characterised by a lack of Latin literature, contemporary written history, general demographic decline, limited building activity and material cultural achievements in general.

Esker: From the Irish ‘eiscir’ referring to a long narrow ridge, often sinuous, composed of stratified sediment and marking the former location of a glacial tunnel.

Fenland: Low-lying wet land with grassy vegetation, usually marking a transition zone between land and water.

Fluvial: The deposits and landforms created by the action of rivers or streams and the processes associated with them.

Fosse: A ditch or moat.

Fullacht fiadh: Stone lined pits for cooking meat.

Gaelic: Of or pertaining to the Gaels, including language and culture; it also refers to the group of languages spoken by the Gaels, or to any one of the individual languages.

Geomorphological: Pertaining to a landform feature.

Glacial erratic: A piece of rock that deviates from the size and type of rock native to the area in which it rests; the name "erratic" is based on the errant location of these boulders.

High cross: A free standing cross made of stone and often with a circle around the head of the cross and rich ornamentation. The high cross is the primary surviving monumental work of Insular art.

High king: A king who holds a position of seniority over a group of other kings, without the title of Emperor.

Hydrology: The study of the movement, distribution, and quality of water throughout the Earth, and thus addresses both the hydrologic cycle and water resources.

Illuminated manuscript: A manuscript in which the text is supplemented by the addition of decoration, such as decorated initials, borders and miniature illustrations.

Insular: A term derived from *insula*, the Latin for "island" is used to cover Christianity in the British Isles during the post-Roman period (5th to 8th centuries). Insular art, also known as the Hiberno-Saxon style, is the style of art produced in the post-Roman history of the British Isles, and the term is also used in relation to the script used at the time. In this period, beginning around 600 AD, Britain and Ireland shared a largely common style different from that of the rest of Europe. Most insular art originates from the Irish monasticism of the Celtic church, or metalwork for the secular elite. In England this merged into Anglo-Saxon art around 900, whilst in Ireland the style continues until about 1200, when it merges into Romanesque art.

Invertebrate: An animal lacking a backbone or spine.

Iron Age: The Iron Age is the last principal period in the three-age system for classifying prehistoric societies, preceded by the Bronze Age. In the British Isles, the Iron Age lasted from about 800 BC until the Roman conquest and until the 5th century AD in non-Romanised parts.

Justicar: From the English form of the medieval Latin *justiciarius* or *justitiarius* ('man of justice', i.e. judge). In medieval England and Scotland, the Chief Justiciar (later known simply as the Justiciar) was roughly equivalent to a modern Prime Minister as the monarch's chief minister.

Keep: A strong central tower often the most defended area of a castle, usually forming the main habitation area. It often contains an armoury, food stores, and the main water well.

Limestone pavement: A natural karst landform consisting of a flat, incised surface of exposed limestone that resembles an artificial pavement, formed by the action of glaciation exposing horizontally-bedded limestone. Subsequent weathering creates joints and cracks in the limestone.

Liturgy/Liturgical: The “liturgy” normally refers to a standardised order of events observed during a religious service, be it a sacramental service or a service of public prayer. Not infrequently in Christianity, a distinction is made between "liturgical" and "non-liturgical" churches based on the elaboration and/or antiquity of the worship.

Medieval: Pertaining to the Middle Ages, the second of three periods in a traditional schematic division of European history: the classical civilization of Antiquity, the Middle Ages, and the modern period. The Middle Ages lasted for roughly a millennium, commonly dated from the fall of the Western Roman Empire in the 5th century to the beginning of the Early Modern Period in the 16th century, marked by the division of Western Christianity in the Reformation, the rise of humanism in the Italian Renaissance, and the beginnings of European overseas expansion.

Monastery: Term for the building, or complex of buildings, that houses a room reserved for prayer (e.g. an oratory) as well as the domestic quarters and workplace(s) of monastics. Monasteries may vary greatly in size – a small dwelling accommodating only a hermit, or in the case of communities, anything from a single building housing to vast complexes and estates housing tens or hundreds.

Monastic: Those living a monastic life are known by the generic terms monks (men) and nuns (women). Monastics generally dwell in a monastery (monks) or a convent (nuns), whether they live there in a community (cenobites), or alone (hermits). Monastic communities are usually organized into orders and congregations guided by a particular religious rule, and also serve the purpose of their own founder.

Necropolis: A cemetery, especially a large and elaborate one belonging to an ancient city.

Normans: The people who gave their names to Normandy, a region in northern France. The Normans are famed both for their culture, such as their unique Romanesque architecture, their musical traditions, and military accomplishments and innovations. In 1066, Duke William II of Normandy conquered England. The invading

Normans and their descendants replaced the Anglo-Saxons as the ruling class of England.

Ogham: Named after the Celtic god of writing, this is the earliest form of writing used in Ireland and was in use between c.300 AD to c.700 AD. The alphabet consisted of short lines on either side of a line. Inscriptions were carved on standing stones or pillars, called Ogham stones and were read from bottom to top. The Ogham script was superceded by one based on the Latin alphabet.

Ombrotrophic: rain-fed.

Pattern: The traditional celebration of the feast-day of a saint who is a local ‘patron’. Patterns developed from the 17th century into important social occasions, and were often accompanied by dancing and sports. Due to the prevalence of drinking and fighting, they earned the disapproval of the clergy in the later 19th century and were largely discontinued, although there has been some revival in recent years.

Phenology: The study of the times of recurring natural phenomena.

Pilgrim: One who undertakes a pilgrimage, literally 'far afield', traditionally to visit a place of some religious or historic significance.

Reformation: The English Reformation was the series of events in 16th century England by which the Church of England first broke away from the authority of the Pope and the Roman Catholic Church.

Relict: A remnant of an earlier time that has survived in an environment that has undergone considerable change.

Reliquary: A container or shrine that stores and display relics (an object or a personal item of religious significance).

Ring fort: A circular space surrounded by a bank, sometimes with a fosse or ditch outside the bank. Dating from probably the late Bronze Age into the Iron Age, the typical ring fort was an early type of farmstead containing one or more simple houses made of upright wooden posts interlaced with a wattle-and-daub lattice construction.

Romanesque: A term used to describe a style of architecture which was identifiably Medieval and prefigured the Gothic, yet maintained the rounded Roman arch and thus appeared to be a continuation of the Roman tradition of building, albeit a much simplified and less technically competent version.

Sacristy: In a church, a room for the storage of sacred objects and for the carrying-out of certain church activities.

Sacral: A synonym for sacred, something entitled to veneration or religious respect by association with divinity or divine things; holy.

Saint: A person of exceptional holiness of life, formally recognised as such by the Christian Church, especially by canonisation; a person of great holiness, virtue, or benevolence; a founder, sponsor, or patron, as of a movement or organisation.

Sandstone: A sedimentary rock composed mainly of quartz and/or feldspar grains.

Scriptorium: A place for writing; a room or cubicle in medieval European monasteries devoted to the copying of manuscripts by monastic scribes.

See: The official seat, centre of authority, jurisdiction, or office of a bishop.

Shrine: The tomb of a venerated person, such as a saint or a place at which devotion is paid to a venerated person. A site hallowed by a venerated object or its associations or a reliquary might also be considered a shrine.

Togher: Wooden track way

Transitional: Term used to denote the merging of one style with another, especially the 12th century transition from Romanesque to Gothic, but sometimes applied to other styles.

Turbary: Land from which peat may be cut for fuel.

Unicameral: Consisting of a single chamber.

Vallum: A rampart or a wall, as in a fortification.

Viking: Relating to the Norse (Scandinavian) explorers, warriors, merchants, and pirates who raided and colonised wide areas of Europe from the late eighth to the early eleventh century.

Voussoir: One of the wedge-shaped masonry blocks out of which an arch or vault is composed. The central voussoir is the keystone.