1.0 INTRODUCTION

1.1 PROPOSED DEVELOPMENT

1.1.1 Introduction

This Environmental Impact Assessment (EIA) Report has been prepared on behalf of Art Data Centres Limited (herein referred as 'the Applicant') to accompany a planning application to Clare County Council (CCC) for a data storage and energy centre facility development on lands in the townlands of Tooreen and Cahernalough, Tulla Road, Ennis, Co Clare.

This planning application for the proposed data storage facility, energy centre, and associated development forms part of an overall 'project' which also includes the provision of electricity transmission infrastructure to serve the data storage facilities and energy centre. The electricity transmission infrastructure is required to be applied for via a separate application to An Bord Pleanála (ABP) under section 182 of the Planning and Development Act, as it falls within the meaning of 'transmission' as defined within that section of the Act.

It should be noted that this Environmental Impact Assessment Report has been prepared to provide the information necessary for the competent authority / authorities to undertake Environmental Impact Assessment of both the data storage facility and energy centre application and the substation and associate infrastructure (electricity transmission development applied for under section 182) i.e. "the project". The project boundary is shown in all drawings within relevant chapters.

As part of the Clarification for Further Information (CFI) response, May 2022, for the data storage facility application, the applicant is taking the opportunity to clarify the extent of the red line boundary for the electricity transmission development application to the ABP (due to the further development of the design of the electricity transmission development during the course of the planning process for the data storage facility development). The updates reflected in this update to the EIAR ensure consistency between the EIARs for both applications (both of which relate to parts of the same overall 'project' as set out above).

The following drawings present the project boundary for the EIA assessment and the redline boundaries for the data storage and energy centre facility application and the SID application

Figure 1.1 The project boundary

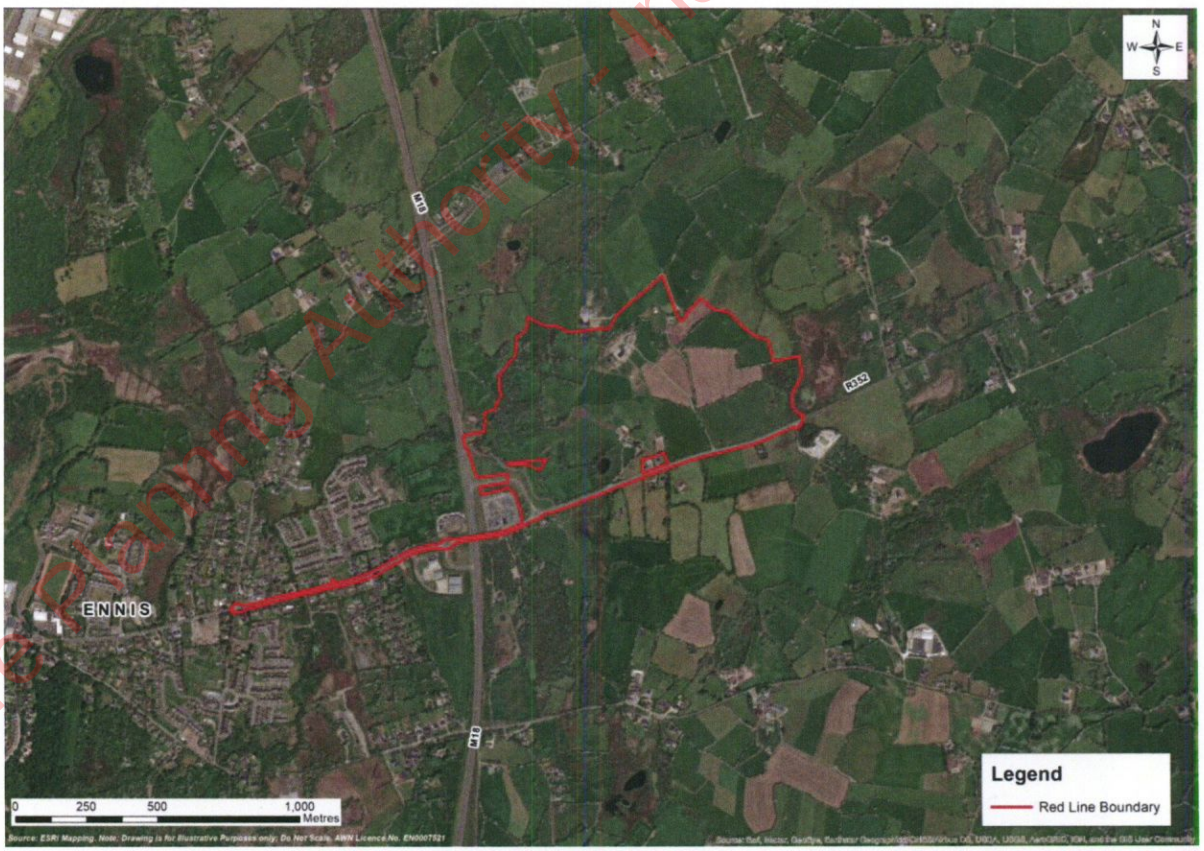

Figure 1.2 *The redline boundary for the data storage and energy centre facility application*

Figure 1.3 The redline boundary for the SID application

1.1.2 Summary description of the project.

The development will consist of the following:

- The demolition of an existing farm dwelling house together with a number of farm outbuildings on the overall site;
- The construction of 6 No. two storey data storage facility buildings with three storey plant/office levels and associated ancillary development that will have a combined gross floor area of 118,740 sq.m. These data halls are 86 x 105 x 18m high and will consist of multi levels 9m slab to slab for the data halls and air handling units and 4.5m slab to slab for offices and ancillary plant and support. Each of the six data halls will include data storage rooms, associated electrical and mechanical plant rooms, loading bays, maintenance and storage spaces, office administration areas, pump rooms plus water storage tanks and plant as well as backup (standby) generators for emergency use only (11 per building) situated along one elevation of the building. The diesel generators will have associated 8 m high flues. Each generator will also include a diesel belly tank with a single refuelling area to serve the proposed emergency generators.
- Two single storey buildings used for 20/10 kV switchgear control and ancillary (each approx. 20m x 6m x 6m height)
- A gas powered energy centre and Above Ground Installation (AGI). The energy centre will primarily comprise 18 no. lean-burn natural gas engines. Each generator will have its own flue of 25m height. The energy centre will be on a 110m x 100m plot and buildings within the compound will be 12 m high. The building will house an office and welfare facilities and associated parking.
- A two storey Vertical Farm Building. The vertical farm will be c. 50 x 50 x 12m high. It will comprise c. 60% growing space and 40% office area.

- Solar Panels and Rainwater harvesting included in the development.
- Provision of a proposed Substation and associated electricity transmission line connections, and the undergrounding of two existing overhead 110kv circuits and ancillary development (subject of a separate Strategic Infrastructure Development application).
- Undergrounding of two of the existing overhead 110kv circuits and ancillary development.
- Ancillary site development works, that will include attenuation ponds and the installation and connection to the underground public water supply, foul and storm water drainage network, and installation of utility ducts and cables. Other ancillary site development works will include hard and soft landscaping throughout the site, lighting, fencing, signage, central services road, security gate, 276 No. car parking spaces, and 108 no. bicycle parking spaces. The development will be enclosed with landscaping to all frontages including the retention of an ecological buffer area to the west.
- The development will be accessed from the Tulla Road (R352) with the provision of a new vehicular access road, together with an emergency access/egress road to the south west of the site.

A full description of the project is provided in Chapter 2 (Description of the Proposed Development) of this EIA Report.

The data storage facility will facilitate the secure storage, and distribution of information to individuals, businesses and organisations.

This application is for a ten-year permission for a data storage facility campus. A 10-year permission is sought due to the nature of this specific development. The proposed development will respond to current and future use demands in the area. The logistics of the site and use of the buildings mean that their delivery must be programmed on a phased basis over the duration of a 10-year planning permission.

The planning permission will reinforce the planning objectives of the Variation No.1 to the CCDP 2017-2023. As described in the Variation. The 55ha area at Tooreen was "*identified and zoned as Enterprise (45ha) and Buffer (10ha) with a specific use for a Data Centre Campus due to; its proximity to the electricity sub-station; its proximity to the M18 motorway and adjoining regional road network; the location of the site relative to the Gas Pipeline; the availability of Dark Fibre and the proximity of the site to Shannon International Airport and Ennis Town. This site is zoned to accommodate a Data Centre campus which consists of one or more structure, used primarily for the storage, management and dissemination of data and the provision of associated power electricity connections and energy generating infrastructure.*"

These Local Authority ambitions have been captured and incorporated in the submitted documentation.

1.2 CONTEXT

1.2.1 Legislative Requirements

The requirement for EIA for certain types and scales of development is set out in the EIA Directives (2011/92/EU and 2014/52/EU), European Union (Planning and Development) (Environmental Impact Assessment) Regulations 2018 (the bulk of which came into operation in September 2018), the European Communities (Environmental Impact Assessment) Regulations 1989-2006, Planning and

Development Act 2000 (as amended) and the Planning and Development Regulations 2001, as amended. It should be noted that this EIA Report is prepared in accordance with the 2011 EIA Directive (2011/92/EU), as amended by the 2014 EIA Directive.

The EIA Directives list those projects for which an EIA is mandatory (Annex I) and those projects for which an EIA may be required (Annex II). With regard to Annex II projects, Member States can choose to apply thresholds or use case by case examination, or a combination of both, to assess where EIA is required. In Ireland, a combination of both has been applied.

The project proposed is not listed under Annex I of the EIA Directive and it is below the relevant threshold as set out in the Planning and Development Regulations 2001-2019 for Annex II projects. The threshold for "*industrial estate development projects, where the area would exceed 15 hectares*" as set out in Part 2 of Schedule 5 of the Regulations was considered to be the most relevant threshold in the context of the proposed development in the subject location.

1.2.2 Format of the EIA Report

This EIA Report has been developed in accordance with the most relevant guidance, including:

- EIA Directive (2011/92/EU) as amended by EIA Directive (2014/52/EU)
- Planning and Development Act 2000 (as amended)
- Planning and Development Regulations 2001 (as amended)
- *Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment* (Department of Housing, Planning and Local Government, 2018)
- *Guidelines on the Information to be Contained in Environmental Impact Assessment Reports* (EPA, 2022)
- *Guidance on the preparation of the Environmental Impact Assessment Report* (European Commission, 2017)
- *Draft Advice Notes for Preparing Environmental Impact Statements* (EPA, 2015)

Using the Grouped Format Structure, the EIA Report examines each environmental aspect in a separate chapter. Each chapter generally covers the following:

- Receiving Environment;
- Characteristics of the Proposed Development;
- Potential Impacts of the Proposed Development;
- Do-Nothing Scenario;
- Remedial and Mitigation Measures;
- Predicted Impacts of the Proposed Development; and
- Cumulative Impacts of the Proposed Development.

A Non-Technical Summary of the findings of the EIA Report is provided as a separate document.

Cumulative impacts for each environmental topic are assessed in each chapter.

Interactions i.e. the interrelationship between each environmental aspect, are assessed as they occur in each chapter. The final chapter of the EIA Report, Chapter 15 shows where interactions have been identified and how they have been addressed.

1.2.3 Need for the Development

The Applicant is seeking to build a significant data storage facility development to meet growing global demand for Cloud Computing space. The digital economy is seen as key by Government and Enterprise for sustained growth from overseas investor in Ireland and there is a strong demand for more data storage facility space to meet demand in Ireland. The digital economy provides high value jobs and the location of this facility in County Clare will provide up to 1200 construction staff phased over a period of 7 years and 450-475 high quality jobs during operation. The vertical farm will provide c. 40 full time jobs.

1.3 CONSULTATION

The Applicant and the project team have liaised with the relevant departments of CCC in advance of lodgement of this application.

In addition, relevant specialists in the proposed development project team have liaised with statutory bodies (including the Water Services, Roads/Transportation, National Parks and Conservation, Irish Water, Eirgrid, ESB, Bord Gais) by correspondence during the course of the EIA Report preparation.

1.4 REGULATORY CONTROL

Industrial Emissions Directive 2010/75/EU

The Integrated Pollution Prevention and Control (IPPC) Directive was transposed into Irish law by the Protection of the Environment Act, 2003, and the Industrial Emissions Directive 2010/75/EU under the European Union (Industrial Emissions) Regulations 2013, S.I. 138 of 2013.

These Regulations primarily amend the EPA Act 1992 to introduce a system of licensable activities from both the Integrated Pollution Prevention and Control (IPPC) and Industrial Emissions (IE) directives. The First Schedule of EPA Act 1992 lists the activities that require an Industrial Emissions Licence from the EPA.

It has been concluded that the Energy Centre component of the proposed development will require an IE to operate. The proposed Energy Centre will require a licence under *Class 2.1 Combustion of fuels in installations with a total rated thermal input of 50 MW or more.*

The proposed Data Storage facility, emergency backup generators, and all other aspects of the proposed development have been reviewed against the First Schedule, and it is concluded that an IE licence is not required for these activities.

Medium Combustion Plant Directive

The European Union (Medium Combustion Plant) Regulations 2017 were signed into Irish law in December 2017. Their purpose is to limit emissions to atmosphere from boilers and other stationary combustion plants in the 1-50 Megawatt Thermal Input (MWth) range. It covers all fuel types. The Regulations transpose the Medium Combustion Plant (MCP) Directive (EU 2015/2193) which was adopted in 2015.

The stationary combustion plants on site (emergency generators) will exceed 1 MWth, and, accordingly, this plant will be registered in advance of the commissioning phase as required with the Environmental Protection Agency (EPA).

Emissions Trading Directive

The EU is committed to achieving a reduction of greenhouse gas emissions; this is being implemented by the EU Emissions Trading Directive (Directive 2003/87/EC). The EPA has been given the responsibility for implementing the Emissions Trading Directive in Ireland. The Directive establishes an allowance-trading scheme for emissions to promote reductions of greenhouse gases, in particular carbon dioxide.

The trading scheme applies to facilities with:

Combustion installations with a rated thermal input exceeding 20 MW

The rated thermal input of relevant on-site fuel consuming equipment (emergency generators) will exceed 20 MWth; therefore, a Greenhouse Gas (GHG) Permit is required for the operational phase of the proposed development. The GHG permit will be applied for by the operator in advance of the commissioning phase, as and when the site fuel consuming equipment exceeds a rated thermal input of 20 MW.

1.5 CONTRIBUTORS TO THE EIA REPORT

The preparation and co-ordination of this EIA Report has been completed by AWN Consulting and specialist subcontractors. Specialist inputs were provided by the following (Table 1.1).

Table 1.1 *Roles and Responsibilities in the EIA Report*

Role		Company
EIA Project Management		AWN Consulting
Engineering Design		ARC-MC, Clifton Scannell Emerson (CSEA) and Hurley Palmer Flatt
Architectural Design		ARC-MC
Planning Consultant		John Spain Associates
EIA Chapter No.	Chapter Title	Company and Consultant
	Non-Technical Summary	AWN – Input from each specialist
Chapter 1	Introduction	AWN – Teri Hayes
Chapter 2	Description of the Proposed Development	AWN – Teri Hayes
Chapter 3	Planning and Development Context and Alternatives	AWN – Teri Hayes and Jonathan Gauntlett
Chapter 4	Population and Human Health	AWN – Teri Hayes with specialist input from Damian Kelly and Jovanna Arndt
Chapter 5	Land, Soils, Geology & Hydrogeology	AWN Pat Groves and Colm Driver
Chapter 6	Hydrology	AWN – Pat Groves and Colm Driver
Chapter 7	Biodiversity (including AA Screening Report)	Scott Cawley – Siofra Quigley and Kate-Marie O'Connor
Chapter 8	Air Quality & Climate	AWN – Dr Edward Porter and Dr.Jovanna Arndt
Chapter 9	Noise & Vibration	AWN – Damian Kelly

Chapter 10	Landscape and Visual	Nicholas de Jong Associates - Samuel McKeever
Chapter 11	Archaeological, Architectural and Cultural Heritage	IAC Archaeology – Faith Bailey
Chapter 12	Traffic & Transportation	Alan Lipscombe Traffic and Transport Consultants Ltd.
Chapter 13	Material Assets	AWN – Teri Hayes
Chapter 14	Waste Management (including C&D Waste Management Plan)	AWN – Chonaill Bradley
Chapter 15	Interactions-Interrelationship between the Aspects	AWN – Teri Hayes

Project Director, Teri Hayes, BSc MSc PGeo. Teri is a Director with AWN Consulting with 25 years of experience in water resource management and environmental assessment and risk analysis. Teri is a professional member of the International Association of Hydrogeologists (Irish Group) – former president and a professional member of the Institute of Geologists of Ireland She has project managed and contributed to numerous environmental impact assessments and design of appropriate mitigation measures, acted as an expert witness at public hearings, lectured in EIA for post graduate classes and providing expert advice on EIA sections for planning authorities. Teri is experienced in projects with ecological sensitivities having worked on the Ennis Flood Study, Doonbeg golf club and Kildare By-pass. She is also familiar with the design and impacts of datacentre and energy project developments having worked on similar developments for most of the datacentre operators in Ireland.

Land, Soils, Geology, Hydrogeology & Hydrology

Pat Groves (*BSc, HDip EIA HDip Env Eng MSc Env. Hydrogeology*)**.** Pat is a Senior Hydrogeological Consultant with the Water Team at AWN, with over 18 years' experience in the field of environmental sciences including hydrogeology, soils, geology, geotechnical engineering, and impact assessment. His role at AWN includes responsibility for groundwater related projects including groundwater resource management and assessment, aquifer characterisation and source protection plans, groundwater modelling, hydrogeology and geology in EIAR. He is involved in project managing IPPC groundwater monitoring sites, contaminated land assessments, and had an advisory role for the EPA National WFD Groundwater Monitoring Programme in 2012. His experience also includes the provision of hydrogeological conceptual site models (CSM) and ArcGIS mapping. Pat is member of the International Association of Hydrogeologists (Irish Group).

Colm Driver (*BSc MSc MIT*). Colm is an Environmental Consultant (Hydrogeologist) with AWN Consulting with over 5 years' experience in the field of environmental sciences including hydrogeology, soils, geology, geotechnical engineering, and impact assessment. His role at AWN includes responsibility for groundwater related projects including groundwater resource management and assessment, aquifer characterisation and source protection plans, contaminated land assessments, groundwater modelling, hydrogeology and geology in EIAR. His experience also includes the provision of hydrogeological conceptual site models (CSM) and ArcGIS mapping. Colm is a member of the International Association of Hydrogeologists (Irish Group), Irish Brownfield Network and Institute of Geologists Ireland.

Teri Hayes (as above)

Biodiversity/Appropriate Assessment,

Síofra Quigley B.Sc. (Hons) M.Sc. is a Consultant Ecologist with Scott Cawley. She obtained an honours degree in Zoology, from National University of Ireland Galway, and a Masters in Wildlife Biology and Conservation from Edinburgh Napier University. She has four years' professional experience working in the UK on large to small scale infrastructure projects, with governmental and private clients. Síofra is experienced in carrying out field surveys in several protected species, including bat, otter, badger, red squirrel, reptile, pine marten and mountain hare. She has also been involved in radio tracking mountain hares and bats, bat call analysis, badger bait marking, acting as an Ecological Clerk of Works, Phase 1 habitat surveys and reports (JNCC standard), and carrying out desk top studies. Since joining Scott Cawley, Síofra's work involves the preparation of reports, including Ecological Impact Assessment and Appropriate Assessment reports for residential, commercial, and infrastructural projects across Ireland.

Kate-Marie O'Connor B.A. (Hons) M.Sc. MCIEEM is an experienced ecologist with over eight years' experience in professional ecological consultancy. She holds an honours degree in Natural Sciences from Trinity College Dublin, specialising in Botany, and obtained a distinction in her Masters in Environmental Modelling, Monitoring and Reconstruction from the University of Manchester. She also holds an advanced diploma in Planning and Environmental Law from The Honourable Society of King's Inn. She is a Full Member of the CIEEM. Her experience as a principal ecologist has focused on the preparation of ecological assessments, most frequently for EIA and AA, with all the key elements of those processes including planning for and undertaking ecological baseline surveys, desk studies, analysis and presentation of data and results, undertaking assessment of impacts and identifying appropriate mitigation measures. She has worked on a range of public and private sector schemes in the UK and Ireland. Kate-Marie has a specialist interest in botany but is also competent in a range of fauna surveys (*e.g.* mammals including badgers, bats and otters, and newts).

Andrew Speer B.Sc. (Hons) Pg.D. Adv.Dp MCIEEM is a Technical Director at Scott Cawley Ltd. with over 14 years' professional ecological consultancy experience in ecological impact assessment. Andrew is a Full Member of the Chartered Institute of Ecology and Environmental Management (CIEEM) and holds an honours degree in Zoology from NUI Galway, a Postgraduate Diploma in Geographic Information Systems (GIS) from the University of Ulster and an Advanced Diploma in Planning and Environmental Law from Kings Inns. He has extensive experience in the Appropriate Assessment (AA) process and has been the lead author for the preparation of numerous Screening for Appropriate Assessment Reports, Natura Impact Statements (NISs) and Natura Impact Reports (NIRs). Andrew also provides technical review and due diligence of Appropriate Assessment documentation for public and local authorities to aid their decision-making process as well as peer review of AA documentation prior to lodgement of planning applications.

Air Quality & Climate,

Dr. Edward Porter is Director with responsibility for Air Quality with AWN Consulting and has completed Chapter 9. He holds a BSc from the University of Sussex (Chemistry), has completed a PhD in Environmental Chemistry (Air Quality) in UCD where he graduated in 1997 and is a Full Member of the Royal Society of Chemistry (MRSC CChem), the Institute of Environmental Sciences (MIEnvSc) and the Institute of Air Quality Management (MIAQM). He specialises in the fields of air quality, EIA and air dispersion modelling.

Jovanna Arndt BSc PhD is a Senior Air Quality Consultant with AWN Consulting. Dr. Jovanna Arndt holds a BSc (Hons) in Environmental Science and a PhD in Atmospheric Chemistry from UCC and is a member of the Institute of Air Quality Management. Jovanna has specialised in air quality since 2010 and has extensive knowledge of air dispersion modelling of a variety of infrastructure projects, including power stations, and is experienced in monitoring and managing the associated air quality impacts.

Noise & Vibration, Damian Kelly BSc MSc is a Director and Principal Acoustic Consultant with AWN Consulting. Damian holds a BSc from DCU and an MSc from Queens University Belfast. He has over 18 years' experience as an acoustic consultant. He is a member of the Institute of Acoustics. He has extensive knowledge in the field of noise modelling and prediction, having prepared the largest and most complex examples of road and industrial noise models currently in existence in Ireland. He was also co-author of the EPA document "*Guidance Note for Noise: Licence Applications, Surveys and Assessments in Relation to Scheduled Activities" (2012)* and advised in relation to the noise limits applied to commercial developments by the various local authorities in the Dublin region.

Landscape and Visual Impact Assessment, Samuel McKeever MA (Hons) CMLI is a Senior Landscape Architect with Nicholas de Jong Associates with 14 years' experience in the private sector. He is a chartered member of the UK Landscape Institute. Samuel has over 11 years' experience of preparing Landscape and Visual Impact Assessments. These have included projects such as large scale windfarms in Scotland, offshore gas and oil exploration, transmission lines, residential developments and the New Istanbul Airport. Samuel is also highly experienced in Landscape Design having worked on numerous residential and mixed-use developments in Ireland, Northern Ireland, Scotland and England and a number of public realm spaces in Ireland.

Archaeology, Faith Bailey BA is an Associate Director, Project Manager and Senior Archaeologist and Cultural Heritage Consultant with IAC Archaeology. She holds an MA in Cultural Landscape Management (archaeology and built heritage) and a BA in single honours archaeology from the University of Wales, Lampeter. She is a licence eligible archaeologist, a member of the Chartered Institute of for Archaeologists, a member of the Institute of Archaeologists of Ireland and has over 18 years' experience working in the commercial archaeological and cultural heritage sector. As an EIAR Archaeologist and cultural heritage consultant, she has been responsible for the production and delivery of a large number of archaeological and built heritage assessments and EIAR chapters associated with all sectors of development in the Republic and Northern Ireland. She has acted as the cultural heritage expert witness at multiple Oral Hearings, with the most recent examples being the Limerick-Foynes Road Scheme (2021) and Galway Ring Road (2020/21).

Traffic & Transportation, Alan Lipscombe (BAI, BA) is a traffic engineer with ten years' experience in the traffic and transportation field. This section of the EIAR has been prepared by Alan Lipscombe of Alan Lipscombe Traffic and Transport Consultants Ltd. Alan is a competent expert in traffic and transport assessments. In 2007 Alan set up a traffic and transportation consultancy providing advice for a range of clients in the private and public sectors. Prior to this Alan was a founding member of Colin Buchanan's Galway office having moved there as the senior transportation engineer for the Galway Land Use and Transportation Study. Since the completion of that study in 1999, Alan has worked throughout the West of Ireland on a range of projects including: major development schemes, the Galway City Outer Bypass, Limerick Planning Land-Use and Transportation Study, Limerick Southern Ring Road

Phase II, cost benefit analyses (COBA) and various studies for the NUI Galway. Before moving to Galway in 1997, Alan was involved in a wide variety of traffic and transport studies for CBP throughout the UK, Malta and Indonesia. He has particular expertise in the assessment of development related traffic and transport modelling, including over 20 wind farm developments, and is an accomplished analyst who has experience of a wide variety of modelling packages and methods.

Waste Management, Chonaill Bradley, BSc (Environmental Science) is an Associate Member of the Institute of Waste Management (AssocCIWM). He is a Senior Environmental Consultant in AWN and has over 7 years' experience in environmental consultancy experience in Waste Management and Environmental Impact Assessment. He has helped coordinated and prepare specialist inputs including the Waste Management Chapters, Operational and C&D Waste Management Plans and Construction environmental Management Plans for numerous EIS/EIA/EIAR's.

1.6 DESCRIPTION OF EFFECTS

The quality, magnitude and duration of potential effects are defined in accordance with the criteria provided in the EPA Draft *'Guidelines on the information to be contained in Environmental Impact Assessment Reports'* (2017) as outlined in Table 1.2.

Table 1.2. *Description of Effects as per EPA Guidelines (Draft, 2017), Table 3.3.*

Effect Characteristic	Term	Description
Quality	Positive	A change which improves the quality of the environment
	Neutral	A change which does not affect the quality of the environment
	Negative	A change which reduces the quality of the environment
Significance	Imperceptible	An impact capable of measurement but without noticeable consequences
	Not significant	An effect which causes noticeable changes in the character of the environment but without noticeable consequences
	Slight	An effect which causes noticeable changes in the character of the environment without affecting its sensitivities
	Moderate	An effect that alters the character of the environment in a manner consistent with existing and emerging trends
	Significant	An effect, which by its character, magnitude, duration or intensity alters a sensitive aspect of the environment
	Very Significant	An effect which, by its character, magnitude, duration or intensity significantly alters the majority of a sensitive aspect of the environment.
	Profound	An impact which obliterates sensitive characteristics
Duration of Effects	Momentary Effects	Effects lasting from seconds to minutes
	Brief Effects	Effects lasting less than a day
	Temporary Effects	Effects lasting less than a year
	Short-term Effects	Effects lasting one to seven years.
	Medium-term Effects	Effects lasting seven to fifteen years

Effect Characteristic	Term	Description
	Long-term Effects	Effects lasting fifteen to sixty years
	Permanent Effects	Effects lasting over sixty years
	Reversible Effects	Effects that can be undone, for example through remediation or restoration
Probability of Effects	Likely Effects	The effects that can reasonably be expected to occur as a result of the planned project if all mitigation measures are properly implemented.
	Unlikely Effects	The effects that can reasonably be expected not to occur because of the planned project if all mitigation measures are properly implemented.
Type of Effects	Indirect Effects	Impacts on the environment, which are not a direct result of the project, often produced away from the project site or because of a complex pathway.
	Cumulative	The addition of many minor or significant effects, including effects of other projects, to create larger, more significant effects.
	'Do Nothing'	The environment as it would be in the future should no development of any kind be carried out
	`Worst case' Effects	The effects arising from a project in the case where mitigation measures substantially fail
	Indeterminable	When the full consequences of a change in the environment cannot be described
	Irreversible	When the character, distinctiveness, diversity, or reproductive capacity of an environment is permanently lost
	Residual	Degree of environmental change that will occur after the proposed mitigation measures have taken effect
	Synergistic	Where the resultant impact is of greater significance than the sum of its constituents

1.7 ADDITIONAL ASSESSMENTS REQUIRED

This section addresses the additional approvals and assessments required under other EU Directives and legislation, which were undertaken:

- **Appropriate Assessment Screening Report** and **Natura Impact Statement** –has been completed for the Proposed Development, as required under the Habitats and Birds Directive (92/43/EEC and 79/409/EEC) and is appended to Chapter 8 Biodiversity as Appendix 8.1; and
- Flood Risk Assessment - A site specific flood risk assessment has been undertaken by CSEA for the site and is included with the planning documentation.

In addition, the following reports have been prepared::

- **Energy and Sustainability Statement** prepared by Hurley Palmer Flatt
- **Construction Environmental Management Plan** prepared by AWN which includes a **Construction Surface Water Management Plan** prepared by CSEA and **Construction Traffic Management Plan** prepared by Alan Lipscombe Traffic and Transport Consultants Ltd.

- **Landscape Management Plan** – Nicholas de Jong Associates

1.8 FORECASTING METHODS AND DIFFICULTIES IN COMPILING THE SPECIFIED INFORMATION

Forecasting methods and evidence used to identify and assess the effects on the environment for each environmental aspect are set out in each chapter.

Any challenges encountered during the assessment of individual factors are noted within the relevant chapters.