

1.0 INTRODUCTION

1.1 CONTEXT

This Environmental Impact Statement has been prepared by McGill Planning in association with O'Connor Sutton Cronin Consulting Engineers on behalf of Bray Town Council for a flood alleviation scheme for the River Dargle through Bray.

1.2 NEED FOR THIS ENVIRONMENTAL IMPACT STATEMENT

In accordance with Part X of the Planning and Development Act, 2000, where a planning application is made in respect of a development or class of development referred to under Section 176 of the Planning and Development Act, that application shall, in addition to meeting the requirements of the permission regulations be accompanied by an environmental impact statement.

An Environmental Impact Statement (EIS) is required for classes of development prescribed under Schedule 5 of the Planning and Development Regulations 2001 – 2006. It is specifically required under Part 2 of Schedule 5 (Category 10 “Infrastructure Projects”) that an EIS is submitted where development comprises:-

- (f)(ii) *Canalisation and Flood relief works, where the immediate contributing sub-catchment of the proposed works (i.e. the difference between the contributing catchments at the upper and lower extent of the works) would exceed 1,000 hectares or where more than 20 hectares of wetland would be affected or where the length of river channel on which works are proposed would be greater than 2 kilometres.*

This EIS takes into account the provisions of the Planning and Development Regulations 2001 – 2006. Schedule 6 of the Regulations sets out “Information to be contained in an EIS” as follows:-

1. (a) *A description of the proposed development comprising information on the site, design and size of the proposed development.*
- (b) *A description of the measures envisaged in order to avoid, reduce and, if possible, remedy significant adverse impacts.*
- (c) *The data required to identify and assess the main effects which the proposed development is likely to have on the environment.*
- (d) *An outline of the main alternatives studied by the developer and an indication of the main reasons for this choice, taking into account the environmental effects.*
2. *Further information, by way of explanation or amplification of the information referred to in paragraph 1, on the following matters:-*
 - (a) (i) *a description of the physical characteristics of the whole proposed development and the land-use requirements during the construction and operational phases;*

- (ii) *a description of the main characteristics of the production processes, for instance, nature and quantity of the materials used;*
 - (iii) *an estimate, by type and quantity, of expected residues and emissions (including water, air and soil pollution, noise, vibration, light, heat and radiation) resulting from the operation of the proposed development;*
 - (b) *a description of the aspects of the environment likely to be significantly affected by the proposed development, including in particular:-*
 - *human beings, fauna and flora,*
 - *soil, water, air, climatic factors and the landscape,*
 - *material assets, including the architectural and archaeological heritage, and the cultural heritage,*
 - *the inter-relationship between the above factors;*
 - (c) *a description of the likely significant effects (including direct, indirect, secondary, cumulative, short, medium and long-term, permanent and temporary, positive and negative) of the proposed development on the environment resulting from:-*
 - *the existence of the proposed development*
 - *the use of natural resources,*
 - *the emission of pollutants, the creation of nuisances, and the elimination of waste.*
- and a description of the forecasting methods used to assess the effects on the environment:*
- (d) *an indication of any difficulties (technical deficiencies or lack of know-how) encountered by the developer in compiling the required information”.*

In addition, this EIS has been prepared having regard to the latest guidelines on Environmental Impact Statements outlined in **“Guidelines on the Information to be contained in Environmental Impact Statements”** and also **“Advice Notes on Current Practice in the preparation of Environmental Impact Statements”**, both of which were prepared by the Environmental Protection Agency and published in 2002 and 2003 respectively.

1.3 NATURE AND EXTENT OF PROPOSED SCHEME

In order to achieve the required defence against a 1 in 100 year fluvial flood event, or a 1 in 200 year tidal flood event works are required both in the river channel and along its banks. These works will take place over a stretch of the river, approximately 3.5 km long, extending from the Railway Bridge to the N11 Bridge.

The basic principle behind the proposed flood defence scheme is containment and riverworks. Works will be undertaken within the river channel to make it as hydraulically efficient as possible within the existing constraints. Defences will then be built along the riverbanks as is necessary to contain at least a 1 in 100 year flood event within the fluvial and tidal reaches of the channel. The proposed scheme is detailed in Section 2.4 of the EIS.

1.4 SCOPING

Scoping is the process which identifies the issues that are likely to be important during EIA and eliminates those that are not.

The process for the Environmental Assessment of a Flood Defence Scheme as per the OPW Guidelines (Flood Risk Assessment and Management Study) is divided into three separate stages.

Stage I – Constraints Study

Stage II – Option Appraisal Study

Stage III – Environmental Impact Assessment

Stage I involved the preparation of a Constraints Report, which identified the key environmental issues associated with a Flood Defence Scheme within the Study Area. These issues related to Flora and Fauna; Habitats; Fisheries; Angling, tourism and recreational use; Water Quality; Archaeology, architectural and cultural heritage; Landscape and Visual Amenity; and Flood-related or socio-economic issues.

It is a requirement under Stage I to undertake initial public consultation including Public Information Days and consult with all relevant statutory bodies and the main non-government organisations with an interest in the study. In this regard, we note that a Public Information Day was held at the Town Hall in Bray on the 10th April, 2006, which took place over two sessions between 2 p.m. and 5 p.m. and between 6 p.m. and 9 p.m.

Notification of the Public Consultation Day was advertised as follows:

- Public Notices were erected around affected areas and shop windows one week prior to the Public Consultation Day
- Advertisement in the Bray People, the local newspaper for Bray
- Leaflets were circulated in affected areas of Bray surrounding the River Dargle
- Advertising on East Coast FM, local radio station
- Advertisement on Bray Town Council website

The main purpose of the Public Consultation Day was to allow the public and other interested parties/bodies to discuss flood protection proposals for the River Dargle and bring along any relevant information relating to flooding or flood protection; solicit the views of the public on the flood management in the Study Area; and establish any environmental issues or constraints which may affect the flood study.

During the Public Consultation Day the public met the Design Team and representatives of environmental consultants and expressed their views on a number of flood related matters.

Questionnaires were circulated at the Public Information Day and returned by Freepost to Bray Town Council. A sample questionnaire is included in Appendix A of the EIS. A total of 152 no. questionnaires were given out during the course of the day. Of the 152 no. questionnaires, 47 no. completed questionnaires were returned to Bray Town Council.

The Output of Stage I consisted of a Constraints Report, which identified environmental constraints and opportunities relevant to the development of

possible flood risk management measures and strategies. The key constraints were identified as follows:

Table I.1
Key Constraints identified under Stage I

Environmental Aspects	Key Constraints
Flora and Fauna	<ul style="list-style-type: none"> - Potential impacts on yellow-cress arising as a result of a flood defence scheme, or proposed mitigation not being implemented. - Potential impact on kingfisher nest sites as a result of a flood defence scheme, or proposed mitigation not being implemented. - Potential impact on otter and other mammals as a result of a flood defence scheme, or proposed mitigation not being implemented.
Habitats	- Potential impact of habitats and in particular the most natural stretch of habitat and vegetation along the banks of the river between the western end of People's Park and La Vallee.
Fisheries	<ul style="list-style-type: none"> - Potential impact on salmonid fish as a result of a flood defence scheme, or proposed mitigation not being implemented. - Potential impact on riparian habitats and in-stream habitats such as riffle-glide-pool type sequence.
Tourism and Recreation	- Potential impact on amenity and usage of People's Park during construction of a flood defence scheme.
Water Quality	- Potential impact on water quality and hydrology during construction of a flood defence scheme.
Archaeology, architectural and cultural heritage	- No constraints were identified at this stage of the Study in relation to archaeology, architectural and cultural heritage.
Landscape and Visual Amenity	<ul style="list-style-type: none"> - Potential impact of the proposed flood defence scheme on the visual amenity of the River during the construction of the scheme. - Potential impact on the removal of trees along the River. - Impact on views.
Flood-related social or socio-economic issues	- Potential impact of a flood defence scheme on residential amenity.

The Constraints Study was issued to the Office of Public Works; Bray Town Council; and Royal Haskoning. Any comments made in relation to the Constraints Study were subsequently taken on board.

Having identified the environmental constraints in Stage I, the Design Team progressed with the development of viable flood risk management measures and options (Stage II).

Six possible Options were identified, as follows:

- Option 1 – Do Nothing
- Option 2 – Containment Only
- Option 3 – Containment and River Works
- Option 4 – Upstream Storage
- Option 5 – Partial Storage and Containment
- Option 6 – Partial Storage with Containment and River Works

In accordance with the OPW Guidelines, public consultation evenings and a Public Information Day took place in October/November 2006.

Three informal Public Consultation evenings were held on 31st October 2006; 1st November 2006; and 2nd November 2006. These evenings were attended by invited residents of:-

- Coburg, Killarney Glen, Upper Dargle Road, River Vale and La Vallee on Tuesday 31st October;
- Seapoint Court, The Maltings and Bray Golf Club Lands on Wednesday 1st November, and
- Little Bray and Dwyer Park on Thursday 2nd November.

Notification of the Public Consultation Day was advertised as follows:

- Advertisement in the Bray People, the local newspaper for Bray
- Advertising on East Coast FM, local radio station

At each of the Public Information evenings, the six Options were put on display. The display included engineering and landscaping drawings for each Option. Members of the public were given the opportunity to study each Option and discuss the Options with the relevant Design Team Consultants in attendance.

Representatives from Bray Town Council; O'Connor Sutton Cronin; Dr John O'Sullivan from UCD; Mitchell and Associates, Landscape Architects; and McGill Planning Ltd. were in attendance at each Public Information evening.

A formal Public Consultation Day was held on the 6th November 2006 in the Royal Hotel, Bray. The Public Consultation Day was divided into two separate sessions from 2 p.m. to 5 p.m. and from 7 p.m. to 10 p.m. At each of the two sessions, members of the public were given the opportunity to view and discuss each of the Options with the relevant Consultants in attendance. Members of the Public were also given leaflets, which contained a brief written description of each Option, a plan drawing of each of the Options and a summary of the advantages and disadvantages associated with each Option. A copy of this leaflet is included in Appendix A of the EIS.

Each of the two sessions included a power point presentation of the six Options; an explanation of the background to the process; and an explanation on how the Options would be assessed before the preparation of an Environmental Impact Statement for the chosen Option. Each presentation was followed by a question and answer session, chaired by Peter Thornton, Royal Haskoning.

The Steering Committee for the River Dargle Flood Study includes representatives from the OPW, in addition to Bray Town Council; O'Connor Sutton Cronin Consulting Engineers; and Dr John O'Sullivan. In this regard, we note that Timothy Joyce from the OPW was in attendance at the Public Consultation Day.

Those attending the Public Consultation Day were given the opportunity to make formal submissions on the six Options that were presented and to express a preference for a particular option. A total of over 100 comments forms were given out at the Public Consultation Day. Of the 100 comments forms, 23 no. respondents were received by Bray Town Council. A sample comments form is included in Appendix A of the EIS.

Table 1.2 below provides a summary of the comments from the public in relation to each of the Options.

Table 1.2
Comments from Public with respect to Flood Defence Options presented at Public Consultation Day

	No.	Comments
Option 1	-	No Comment
Option 2	1	- Unacceptable impact on human environment (raising walls/visual cut off etc). - River ecology (fauna, fish, birds) Least impact of existing features, maintaining safe viewing.
Option 3	8 (6)	- Loss of amenity/recreational space - Children's play area & opportunities to develop urban park - Excavation unacceptable - anti-social behaviour, H&S risks/dangerous - River ecology Walkway along bank by Maltings - undesirable elements
Option 4	2	- Risks of dam failure Possible alternative potable water supply
Option 5	-	Comments as Option 2
Option 6	5 (2)	- As Option 3 - Dam failure - Lesser impact Regeneration of eastern end of People's Park perceived as beneficial
Don't Know or No Indication of Preferred Option	7	- Numerous comments
Total	23	

The number of people who stated a particular preference for an individual Option is indicated in brackets. There were also an additional number of respondents who described their preferred Option in the questionnaire, without actually stating the Option number. The sum of the two numbers gives the total number of respondents who stated a preference for a particular Option.

While it is acknowledged that not all those who attended the Public Consultation Day availed of the opportunity to make a formal submission, the majority of those who did respond, expressed a preference for Option 3 or Option 6, subject to variations. Three specific variations which required further investigation related to the concerns expressed by significant proportion of the respondents. These concerns related to the proposals for the Golf Club Lands; People's Park; and the inclusion in Option 3 and Option 6 of the south bank river walk, which is an objective of the Bray Development Plan 2005 – 2011.

A significant number of those in attendance at the Public Consultation Day were opposed to the landscaping proposals through People's Park, which were part of both Option 3 and Option 6. Alternative variations to these Options, which would retain the existing characteristics of People's Park, were considered to be more viable.

Widening of the river on the northern bank through excavation in People's Park (Measure C2) provided a significant increase in the channel capacity for the design conditions. Therefore, in replacing this with a vertical defence on the alignment of the existing People's Park wall, as requested by the Public Consultation Day attendees, this additional capacity was lost. Therefore in order to compensate for this loss of capacity, alternative measures would have to be investigated.

Following on from the Public Consultation Day, the Options Appraisal Study assessed and reported upon the possible environmental impacts associated with each engineering measure and element of each strategy, and suggested mitigation measures, where feasible.

The six Options were assessed with respect to each of the following:

- Human Beings;
- Terrestrial Ecology;
- Aquatic Ecology;
- Soils, Geology and Hydrogeology;
- Water;
- Air Quality and Climate;
- Noise and Vibration;
- Landscape and Visual;
- Material Assets;
- Cultural Heritage; and
- Interaction of the Foregoing.

The Options Appraisal Study included the completion of the following tasks that would build towards the completion of the Environmental Impact Statement:

- Predicting the impact of the options;
- Evaluating the significance of the impacts; and
- Identify the need for mitigation.

The contrasting merits of variations to Option 3 and Option 6 were discussed at a series of Steering Committee meetings. These variations are described in section 3.3.2 of the EIS. It was noted that, in relation to the Public Consultation Day, more respondents expressed a preference for Option 3 above all other options. It was also noted that Option 3 had a greater cost benefit than Option 6. Public concerns about the reliance on upstream storage contributing to the provision of a 1 in 100 year defence standard from a Health and Safety viewpoint were also highlighted.

For these reasons, it was agreed by all that a two Phase approach would provide the optimum solution to protecting the low lying areas of Bray while addressing the primary concerns of local residents. Phase I would involve the implementation of Option 3 Variation E, as described in Section 3.3.2, to provide flood defence against the 1 in 100 year flood event. Phase II could involve further study and implementation of upstream storage by the OPW to provide a higher level of defence. The scheme in its final state would provide a c. 1 in 300 year defence level.

Stage III involves the undertaking of an Environmental Impact Assessment on the selected Flood Defence Scheme and the production of an Environmental Impact Statement.

As part of the Scoping process, Section 3 of the EPS's *Advice Notes on Current Practice in the preparation of Environmental Impact Statements* was consulted. This section provides guidance on the topics which would usually be addressed when preparing an EIS for floor relief works (Project Type I2A). It is generally considered that the positive impact on property, Landuse and public safety arising from flood relief works, need to be balanced with potential impacts on aquatic ecology, archaeology, amenities and induced flooding effects downstream. The Advice notes recommend that the following aspects of the environment should be considered for flood relief projects:-

Table I.3
Aspects of the environment to be considered

Human Beings	<ul style="list-style-type: none"> • Displacement of properties and rights to access or use; • Creation / loss of amenities; • Land use intensification in flood protected areas
Fauna	<ul style="list-style-type: none"> • Induced effects due to loss of river and bankside flora; • Disturbance during construction; • Changes due to habitat alterations; • Induced effects due to changes in water quality and flow regime
Flora	<ul style="list-style-type: none"> • Alterations to aquatic, bankside and floodplain habitats; • Indirect impacts due to induced changes in adjacent Landuse practices
Soils and Geology	<ul style="list-style-type: none"> • Erosion and deposition – especially downstream of a project area; • Excavation / deposition of spoil; • Contamination spoil disposal and handling; • Alteration to soils due to changed flooding and/or water table.
Water	<ul style="list-style-type: none"> • Changes to the physical, chemical and biotic characteristics of water bodies; • Direct and indirect effects on the groundwater and surface water flow regimes
Air	<p>Misprinted but we assume that this section is supposed to read as follows:-</p> <ul style="list-style-type: none"> • Changes to the physical, chemical and biotic characteristics of air; • Direct and indirect effects on the air
Climate	<ul style="list-style-type: none"> • Local microclimatic changes due to alterations / loss of the floodplains
The Landscape	<ul style="list-style-type: none"> • Alterations to the natural appearance and character of the river due to loss of vegetation and the introduction of regular geometric landforms; • Alterations to the appearance and character of floodplains following flood protection; • Potential for new river and riverside amenities.
Material Assets	<ul style="list-style-type: none"> • Diversion interception / accommodation of infrastructure; • New riverbank access routes
Cultural Heritage	<ul style="list-style-type: none"> • Loss /disturbance of monuments, artifacts and cultural landscape due to excavation or disturbance; • Alteration to long established Landuse patterns.
Interaction of the forgoing	<ul style="list-style-type: none"> • Flood Protection can induce significant and widespread changes to Landuse and settlement patterns in hitherto unusable areas; • Intensification of Landuses particularly for leisure and amenity – can follow major capital works projects or rivers.

All of these topics have been considered as part of this EIS.

1.5 STRUCTURE OF THE EIS

The preparation of an Environmental Impact Statement requires the co-ordination and synthesis of associated yet diverse elements of the overall assessment. To facilitate this process, a schematic structure is proposed in order to provide a coherent documentation of the varied aspects of the environment considered. The proposed Grouped Format structure of the Environmental Impact Statement is listed below with a brief outline of each specific stage.

1) Receiving Environment (Baseline Situation)

A description of the specific environment into which the proposal will fit, taking account of other developments likely to occur. The particular aspects of the environment are discussed in terms of their context, character, significance and sensitivity.

2) The Characteristics of the Proposal

The projection of the specific “load” on particular aspects of the environment, which the proposal would be likely to generate.

3) Potential of the Proposal

- a) The potential impact of the proposal comprises a general description of the possible types of impacts which proposals of this kind would be likely to produce.
- b) This includes a consideration of the “Do-Nothing” impact. The “Do-Nothing” impact describes the environment as it would be in the future if the scheme was not carried out.

4) Remedial or Reductive Measures

A description of any specific remedial or reductive measures necessary and practicable resulting from the assessment of potential impacts described in (3) (a) above.

A description of any post development monitoring of effects on the environment which might be necessary, covering the monitoring methods, and the agencies responsible for their implementation.

5) Predicted Impact of the Proposal

- a) An assessment of the specific direct and indirect impact of the proposal arrived at by the receiving environment (as in (1) above), the loading of the proposal (as in (2) above) and the remedial or reductive measures (as in (4) above). The predicted impacts are discussed having regard to their character, magnitude, duration, consequences and significance.
- b) A “Worst Case” impact is also considered. A “Worst Case” impact is an impact arising where a development, or its mitigation measures substantially fail.

1.6 EIS STUDY TEAM

The Environmental Impact Statement has been prepared by a study team led by McGill Planning Ltd., who were responsible for the overall management and co-ordination of the EIS. The members of the study team and their respective inputs are detailed in Table I.1 below.

Table I.4
EIS Study Team

EIS CONSULTANT	EIS SECTION
McGill Planning Ltd. Chartered Town Planners	<ul style="list-style-type: none"> • Introduction • Non-Technical Summary • Description of the Study Area • Planning and Development Context • Human Beings • Material Assets (excluding Traffic and Transportation during Construction) • Interactions
O'Connor Sutton Cronin Civil and Structural Engineers	<ul style="list-style-type: none"> • Description of the Proposed Scheme • Soils, Geology and Hydrogeology • Material Assets – Traffic and Transportation during Construction
Dr. John O'Sullivan University College Dublin	<ul style="list-style-type: none"> • Water
Mitchell and Associates Landscape Architects	<ul style="list-style-type: none"> • Landscape and Visual Impact
Biosphere Environmental Services Environmental Consultants	<ul style="list-style-type: none"> • Terrestrial Ecology
Ecoserve Environmental Consultants Aquatic Ecologists	<ul style="list-style-type: none"> • Aquatic Ecology
Central Fisheries Board	<ul style="list-style-type: none"> • Fisheries Impact
Byrne Mullins and Associates Archaeological Consultants	<ul style="list-style-type: none"> • Cultural Heritage
ANV Technology Environmental Consultants	<ul style="list-style-type: none"> • Air (Noise) • Climate (Air Quality)
HKR Architects	<ul style="list-style-type: none"> • Photomontages

Royal Haskoning were appointed by Bray Town Council to undertake a review of the environmental reports produced for the Flood Defence Scheme, including this Environmental Impact Statement.

1.7 EIS STUDY TEAM PROFILES

McGill Planning Ltd.

Colin McGill

Academic Qualifications:

B.A Honours in Geography QUB 1978

M.Sc. Town & County Planning QUB 1980

Professional Qualifications:

Chartered Town Planner MRTPI 1984

Colin McGill has twenty five years experience of planning in Ireland in various Local Authorities, An Bord Pleanála and Town Planning Consultancies. Experience culminated with position as Managing Director, Planning & Environment (Ireland) for RPS plc.

Responsible for the management and delivery of large scale projects involving masterplanning, preparation of environmental impact assessments and lodgement of Planning Applications.

Patricia Keane**Academic Qualifications:**

MA Environmental Science Trinity College Dublin, 1998

MRUP Masters in Regional and Urban Planning UCD, 2001

Professional Qualifications:

Chartered Town Planner MRTPI since 2002

Member of the Irish Planning Institute since 2002

Patricia has been practicing as a Town Planner for the past 6 years and has gained a variety of work experience within that period. Her work responsibilities have included:-

- The co-ordination and production of Environmental Impact Statements
- The co-ordination, preparation and lodgement of Planning Applications
- The preparation of 1st and 3rd Party Appeals and responses to Appeals.
- The preparation of submissions to Planning Authorities during the preparation of Development Plans
- The preparation of submissions to Planning Authorities seeing variations of Development Plans.
- The co-ordination and preparation of Local Area Plans
- The co-ordination and preparation of Master Plans

April Ryan**Academic Qualifications:**

BA Geography and Economics Trinity College Dublin, 2001

MRUP Masters in Regional and Urban Planning UCD, 2005

April has been practicing as a Town Planner with McGill Planning Ltd. since 2005 and has gained a variety of work experience within that period.

O'Connor Sutton Cronin

O'Connor Sutton Cronin are one of the leading Civil and Structural Engineering Consultants in Ireland and have worked on a wide variety of Public and Private Sector Projects.

O'Connor Sutton Cronin was formed in 1988 and have grown to a staff of over 200 with offices in Dublin, Cork, Galway, Belfast and London. All Senior Engineers have

attained Chartered Engineer status with Engineers Ireland and/or other recognised International Institutions.

O'Connor Sutton Cronin have been Management and Lead Consultant in the compilation of EIS's for many large scale infrastructural developments including those through sensitive areas. O'Connor Sutton Cronin have also contributed extensively to many EIS's as part of the overall design team, including inputs in respect of the following chapters:

- Material Assets – Traffic.
- Material Assets – Services (Drainage, Water, Flooding).
- Material Assets – Soils, Geology and Hydrogeology.

Dr John O'Sullivan

Academic Qualifications:

BA Mathematics, Trinity College Dublin, 1993

BAI Civil Engineering, Trinity College Dublin, 1993

M.Sc. Civil Engineering, Queens University Belfast, 1994

PhD University of Ulster, 1999

John O'Sullivan is a Lecturer in UCD Civil Engineering and is a member of the Water Resources Research Centre. John graduated from Trinity College Dublin with a Civil Engineering degree in 1993 and following this completed a Masters degree at Queen's University Belfast. Further work at the UK Flood Channel Facility contributed to his PhD and since that time, all work has involved hydrology and river engineering. Through this, John has participated in project teams addressing river related issues in Ireland, the UK, South Africa and Australia and has published many peer reviewed scientific papers in the area.

Dr Martin O'Grady, Central Fisheries Board

Dr. Martin O'Grady is a Senior Research Officer with the Central Fisheries Board in Ireland. He has spent over 30 years working as a freshwater biologist. He has an in-depth knowledge of Ireland's salmonid stocks and has published many peer reviewed scientific papers in this area.

Over the past 20 years, he has developed specialist expertise in relation to enhancing salmonid riverine habitat. He oversaw the expenditure of the Irish Government's major investment in this area in the 1990s. His expertise has been widely recognised internationally. Dr. O'Grady has advised many fishing owners in Britain, Iceland and Canada in relation to the enhancement of their fisheries. He has run numerous courses, both at home and abroad, training fisheries staff in relation to riverine enhancement techniques. His achievements have been recognised with awards from Trout Unlimited (North America), The Association of River Trusts and The Wild Trout Society in Great Britain.

Mitchell and Associates

Amélie Leroy

Amélie Leroy is a Landscape Architect with Mitchell and Associates.

Academic Qualifications:

Landscape Architecture from E.S.A.J. Paris.

Amélie Leroy has been employed with Mitchell and Associates since 2003 and has been involved in a wide range of urban and environmental improvement projects and town centre regeneration projects and has also gained extensive experience in residential development schemes.

Colin Carroll

Colin Carroll is an Associate with Mitchell and Associates.

Academic Qualifications:

Diploma in Architectural Technology from Dublin Institute of Technology, 1984.

Diploma in EIA Management from University College Dublin, 1998.

Colin Carroll has gained considerable experience working on various Landscape projects as a Landscape Technician. He has experience working on a large range of Environmental Impact Statements.

Ciaran Keating

Ciaran Keating is a Senior Landscape Architect, employed with Mitchell and Associates since 1999. Ciaran Keating leads the Arboriculture section of the Mitchell and Associates. He is an I.S.A. certified arborist and holds a range of qualifications in plant science/ecology, horticulture and arboriculture.

Academic Qualifications:

BSc. Plant Science/Plant Ecology; H.N.D. Hort. R.B.G.E.; R.F.S. Cert. Arb.

In Mitchell and Associates, Ciaran Keating occupies a key position as arboricultural consultant involved in the specification, installation and maintenance of tree protection works during construction. He is involved in the production of tree survey reports.

Biosphere Environmental Services

Biosphere Environmental Services (BES) specialises in environmental impact assessment and nature conservation related projects. BES regularly works for government departments such as the Department of the Environment, Heritage and Local Government.

Dr Brian Madden

Terrestrial Ecologist

Academic Qualifications:

Brian Madden graduated in Natural Sciences at Trinity College and completed a Ph.D degree (awarded 1991) at University College Dublin.

Between 1991 and 1994 he worked with the National Parks and Wildlife Service on the national resurvey of Areas of Scientific Interest (ASIs). Since 1994, he has been the principal ecologist with Biosphere Environmental Services.

Brian Madden is also an expert ornithologist. Recently, BES has completed on behalf of NPWS a critical review of the qualifying bird interests within all the Special Protection Areas in the country.

In 1999, Brian Madden was appointed independent scientific advisor to the Special Area of Conservation (SAC) Appeals Advisory Board. Brian Madden is a full member of the Institute of Ecology and Environmental Management (IEEM).

Dr Tom Curtis

Plant ecologist and botanist

Academic Qualifications:

Degree in botany from University College Dublin, 1977. He carried out research leading to a Ph.D. at Trinity College.

Until 2001 Dr Curtis worked in National Parks and Wildlife Service, latterly as Chief Scientist, and he has over 30 years experience in the survey of habitats and assessing them for impacts arising from various proposals. He also has significant expertise in dealing with the management of habitats and species for conservation, and he has played a major role in the designation of Special Areas for Conservation and Natural Heritage Areas up to 2002.

Since leaving NPWS in 2002, he has worked as an ecological consultant and is currently an Associate of Biosphere Environmental Services. He is also engaged by Birdwatch Ireland as their ecological consultant on the restoration of a fenland/wet woodland complex and the preparation of a management plan for the property at Blackditch, Co. Wicklow.

This consultant's experience in conservation and impact assessment dates from 1975. Of particular relevance, is his detailed knowledge of the flora of County Wicklow – he has lived in Bray all his life and is the BSBI recorder for the county. He is the principal author of The Irish Red Data Book: I:Vascular Plants and he has produced over 44 papers and books on habitats, plant species and conservation in Ireland.

Dr Chris Smal

Mammalogist

Dr Chris Smal has over 30 years experience of working on mammals in Ireland and abroad. In the early 1990s he carried out the National Badger Survey for the Department of Agriculture and since the mid-1990s has contributed the mammal component for a large number of planning applications. He has recently compiled the draft 'Guidelines for Badger Survey in Road Schemes' for the National Roads Authority.

Chris lives in Greystones and is very familiar with the Dargle River valley.

Conor Kelleher

Bat expert

Conor Kelleher is a leading bat specialist in Ireland. He has carried out a wide range of bat surveys for the National Parks and Wildlife Service and he regularly contributes to planning applications and provides specialist bat advice to local authorities etc.

Ecoserve Environmental Consultants

John Brophy

Academic Qualifications:

Degree in Zoology from Trinity College, Dublin

Masters degree in Fisheries Management, Development and Conservation from University College Cork.

John has gained work experience with the Marine Institute, South Western Regional Fisheries Board and the Department of Zoology, Ecology and Plant Science in UCC.

John Brophy is an ecologist with EcoServe, covering both marine and freshwater environments. In the course of his work with EcoServe, John has carried out environmental impact assessments, desktop studies and field surveys, water and sediment physico-chemical sampling, freshwater and marine macroinvertebrate sampling and identification, using kick sample, cores and grab methods, Q-index determination, mapping of marine habitats and biotopes, fisheries assessments including electro-fishing, seine netting, and trawling, and threatened and endangered species surveys, including freshwater pearl mussels (*Margaritifera margaritifera*) and otters (*Lutra lutra*).

Byrne Mullins and Associates

Martin Byrne

Academic Qualifications:

Degree in Archaeology and History from University College Dublin, 1987;

Masters in Archaeological Prospecting Techniques from University College Dublin, 1996;

Diploma in EIA Management from University College Dublin, 2000.

Martin Byrne is a member of the Institute of Archaeologists of Ireland (2001–Present; Vice-Chairperson 2001-2002; Chairperson 2002-2003); the European Association of Archaeologists (2000 – Present); and formerly a member of the Irish Association of Professional Archaeologists (1993-2002, PRO 1998-9; Vice-Chairperson 1999-2002).

Martin Byrne has been a partner in Byrne Mullins and Associates, Archaeological Consultants since 1994. Principal areas of responsibility include preparation of Intrusive and Non-Intrusive Archaeological Impact Assessment Reports; Archaeological/Historical/Cultural Heritage Assessment Reports for inclusion in E.I.S'; Historical and Archaeological Research; and Excavation.

Martin Byrne is the author of a series of publications.

ANV Technology

Colin Doyle

Colin Doyle is the Director of ANV Technology, which was established in 1995.

Academic Qualifications:

BA in experimental physics, 1979;

Masters in Physics from Trinity College Dublin, 1982;

Certificate in noise measurement and control from the British Occupational Hygiene Society, 2003;
Postgraduate Diploma in Pollution Management from the University of Staffordshire, 2005.

Colin Doyle has provided noise and air quality consultancy for a wide range of projects.

Kieran Corcoran

Kieran Corcoran is an Environmental and Occupational Hygiene Consultant, employed with ANV since 2003.

Academic Qualifications:

B.Sc. in Environmental Science from the University of Limerick, 2000

M.Sc. in Environmental Engineering from Queen's University, Belfast.

Relevant Consultancy Projects include environmental impact assessment of various developments on air and noise; emissions monitoring and assessment of environmental impact; occupational hygiene assessments; industrial noise and vibration exposure surveys, and workplace exposure control; and computer modelling of noise emissions and air emissions.