



RECORDING AND CONSERVING IRELAND'S INDUSTRIAL HERITAGE

AN INTRODUCTORY GUIDE

Fred Hamond and MaryMcMahon



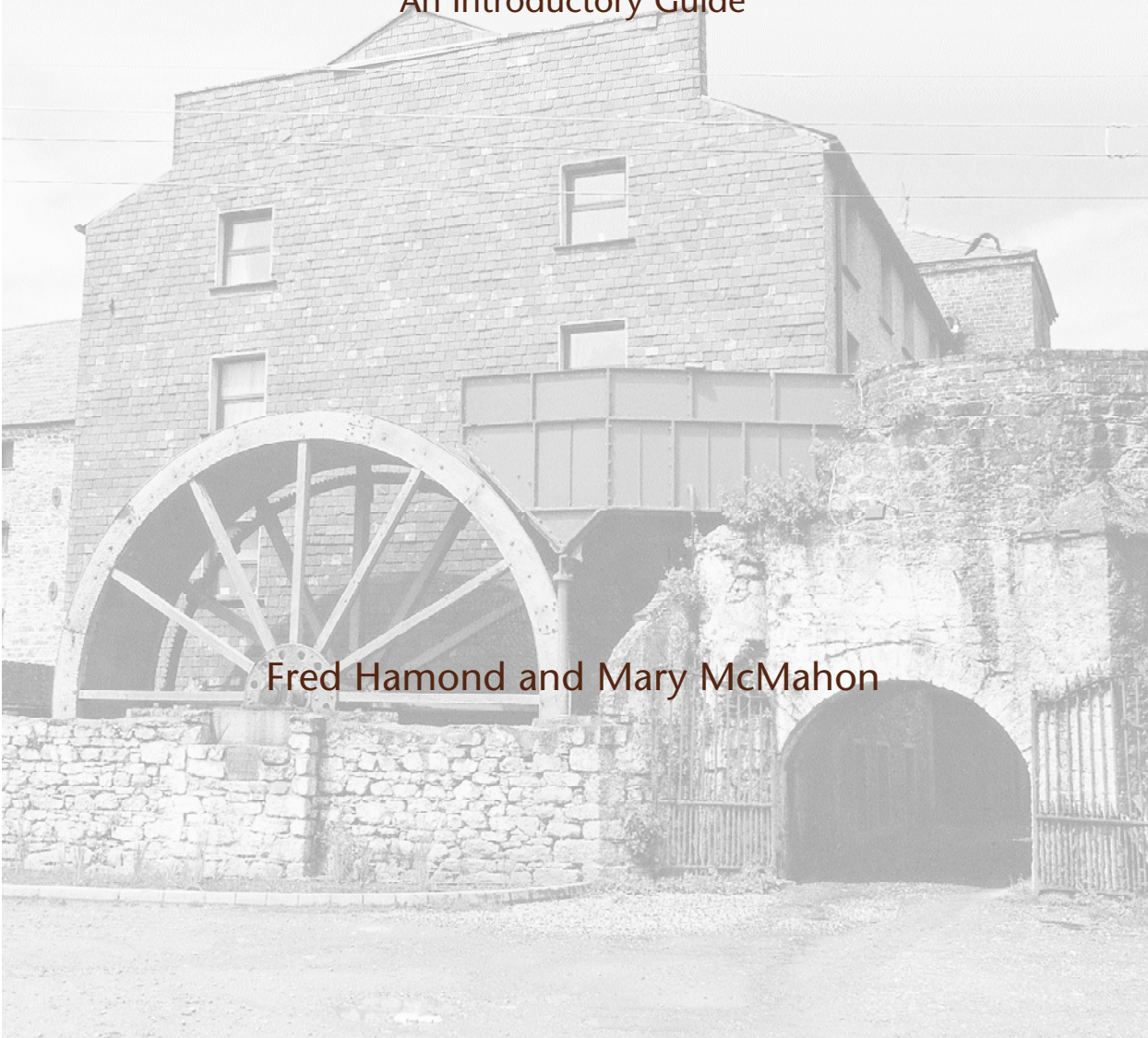
An Chomhairle Oidhreachta
The Heritage Council



Recording and Conserving Ireland's Industrial Heritage

An Introductory Guide

Fred Hamond and Mary McMahon



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*Issued by the Irish Copyright Licensing Agency Ltd.,
The Writers Centre,
19 Parnell Square, Dublin 1.*

Published by the Heritage Council

*Production and design by
B. Magee Design*

ISSN 1393 - 68 08

The Heritage Council of Ireland Series

ISBN 1 901137 39 2

Price: €20



Printed on 100% Recycled Paper

CONTENTS

ACKNOWLEDGEMENTS	4
FOREWORD	5
SUMMARY	6
CHAPTER 1: WHAT IS INDUSTRIAL HERITAGE?	7
CHAPTER 2: RECORDING AND RESEARCHING	11
WHAT TO RECORD?	13
PAPER SURVEY	18
FIELD SURVEY	20
SITE INTERPRETATION	22
CHAPTER 3: CONSERVATION	24
PRINCIPLES OF CONSERVATION	24
CONSERVATION PLANS	25
PHYSICAL CONSERVATION	26
FINANCIAL ASSISTANCE	31
CHAPTER 4: PROTECTING THE INDUSTRIAL HERITAGE	33
STATUTORY LEGISLATION	33
EVALUATING INDUSTRIAL SITES	37
CHAPTER 5: THE SIGNIFICANCE OF OUR INDUSTRIAL HERITAGE	40
APPENDICES	
APPENDIX 1 HERITAGE CONTACTS	41
APPENDIX 2 INDUSTRIAL HERITAGE SURVEYS	49
APPENDIX 3 ARCHIVAL SOURCES	67
BIBLIOGRAPHY	73
TABLES	
TABLE 1 THE SCOPE OF INDUSTRIAL HERITAGE	9
TABLE 2 TYPES OF RECORD AND LEVELS OF RECORDING DETAIL	14
TABLE 3 CRITERIA OF USE IN EVALUATING INDUSTRIAL SITES	38
TABLE 4 CRITERIA USED TO HIGHLIGHT SCHEDULED MONUMENTS (UK)	39

ACKNOWLEDGEMENTS

We would like to thank Terry Barry, Ruth Delany, Mary Hanna and Beatrice Kelly (The Heritage Council). For their help during the preparation of this book. For their useful comments on the text, our thanks to Paul McMahon (Department of Arts, Heritage, Gaeltacht and the Islands) and Ken Mawhinney (Department of the Environment and Local Government). A special word of thanks to those who responded to the questionnaires which formed the basis of Appendix 2. Our thanks to those who kindly allowed us to use their illustrations. Finally, we would like to acknowledge the useful advice and support received from the members of the Industrial Heritage Association of Ireland.



FOREWORD

Throughout the country we can see the remains of our industrial past: bridges, canals, railways and stores still in use all bear testimony to the work of past generations. However, there are other signs too – a derelict mill, a rusting machine, a lone chimney marking the site of a once-thriving industry. The Heritage Council is conscious of this often-neglected part of our heritage, and in this publication seeks to raise awareness of what we have as well as giving simple guidance as to how to record and conserve it. The list of contacts shows the extent of interest in and commitment to our industrial past. The Heritage Council hopes that this guide will encourage a sharing of information and experience which will lead to an increasing appreciation and protection of this important part of our heritage.



Tom O'Dwyer

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The Heritage Council



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Chief Executive
The Heritage Council

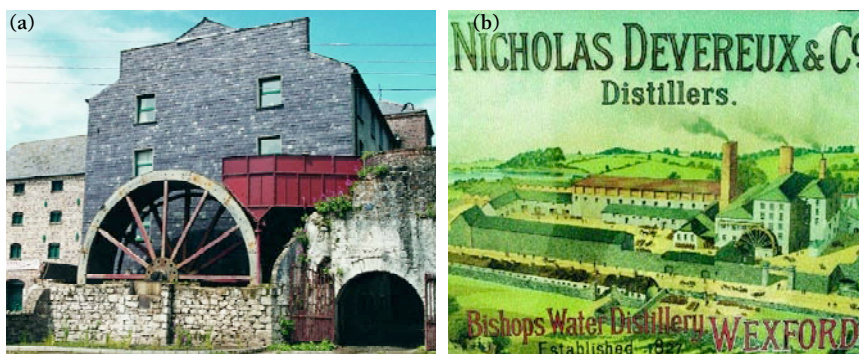
SUMMARY

The purpose of this publication is to give guidance to site owners, individuals, voluntary organisations, professionals and public bodies in the identification, recording, conservation and protection of industrial sites. The first chapter sets out the nature, scope and relevance of industrial heritage. Chapter two deals with how to go about researching, recording and interpreting industrial sites. The general principles of conservation, the practicalities of various forms of physical retention, routine maintenance and funding are all addressed in chapter three. Chapter four outlines the statutory legislation relating to the protection of industrial sites. Contacts and sources of further information are listed in the Appendices. A select reading list which covers the main themes, is provided in the Bibliography.



1. WHAT IS INDUSTRIAL HERITAGE?

The visible remains of prehistoric burials, castles, abbeys and grand houses are instant reminders of Ireland's rich and diverse cultural heritage spanning many thousands of years. Less familiar are the features of our recent industrial heritage such as the quiet canal towpath, the disused mill with its waterwheel and millstones, the deserted quays and dockside cranes, factory buildings and workers' houses.



Watermills were in use until well into the 1900s. Most produced oatmeal, but other activities included flour milling, corn threshing, flax scutching and saw milling. Where water was in short supply, the wind was harnessed. (a) Water-powered flour mill, Castlebridge, Co Wexford. (b) Nicholas Devereux Distillers in Wexford.

During the industrial revolution which took place in Britain between 1750 and 1850, large-scale industries developed which had a profound effect on the nation's economy and society. In Ireland, partly due to the fact that there were no significant deposits of coal and iron to form the basis of heavy industries, much industrial activity focused on the processing of agricultural products. However, as a consequence of the Famine in the 1840s, the countryside became depopulated as the towns and villages expanded. This set the scene for the development of urban industries, and steam power; mechanisation and factory labour became the norm in the cities and larger towns during the late 1800s.

Industry is not confined to manufacturing which is the processing and conversion of raw materials into usable products. It also includes the extraction of raw materials by mining and quarrying. The urban growth sustained by industry and commerce led to the provision of public utilities such as water, sewerage, gas and electricity. Transport was essential to industry; harbours, canals, railways and airports were built for the carriage of people, raw materials and finished goods. Information was also increasingly being transmitted by post and telecommunications. Prime movers are also an important facet of industry, all being necessary prerequisites of mechanisation and transportation.



Ireland has only limited coal reserves and mining has therefore focused mainly on the extraction of minerals and metals such as lead and copper, as here at Avoca, Co Wicklow (courtesy Nick Coy).

In essence, our industrial heritage comprises the surviving physical remains of these various types of industry (Table 1). These remains are evident in despoiled landscapes, abandoned sites, overgrown buildings, decayed plant and rusting machinery. Although some of this heritage extends back to prehistoric times, most of what now survives relates to the past 250 years, the period during which Ireland became progressively industrialised.



Stone was quarried throughout Ireland for building and road material. Limestone, which occurs widely, was particularly valuable as it could also be burnt for use as mortar, whitewash and fertiliser. (a) Granite quarry, Ballyknockan, Co Wicklow. (b) Lime kiln, Connemara National Park, Co Galway.

Table 1: The Scope of Industrial Heritage

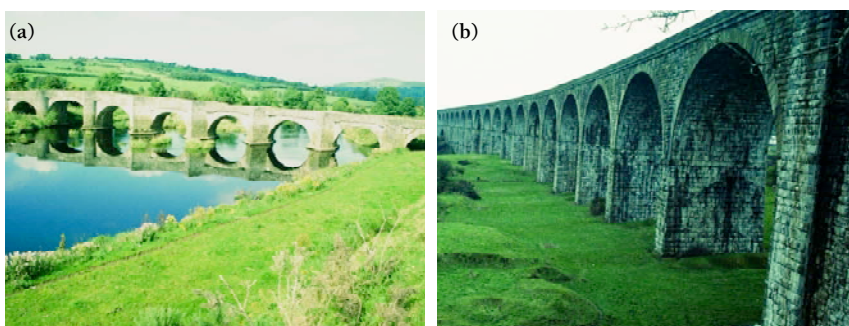
<i>Industrial Examples</i>	<i>Category</i>	<i>Activities Encompassed</i>
<i>Extractive industries</i>	Extraction of naturally occurring raw materials.	Mines, quarries, sand and gravel pits.
<i>Manufacturing industries</i>	Processing of raw materials into usable forms.	Lime kilns, brickworks, salt pans, flax scutching mills.
	Transformation of materials into finished products.	Glass works, foundries, corn mills, textile mills, breweries, engineering works
<i>Public utility industries</i>	Power production; gas and electricity	Coal and oil gas works, hydro-electric plant.
	Sanitary provision; water supply and drainage; waste and sewage disposal.	Reservoirs, wells, hand pumps, refuse depots, sewage pumping stations.
<i>Transport</i>	Movement of materials, products, people and animals by road, water, rail and air.	Roads, bridges, mileposts, harbours, coast-guard stations, lighthouses, canals, railways, tramways, airfields.
<i>Communications</i>	Transmission of information by post, telegraph, telephone, radio, television and electronic means.	Post boxes, post offices, telegraph offices, telephone boxes, radio and television masts, satellite tracking stations.
<i>Prime movers</i>	Renewable energy powered: human, animal, wind and water.	Tread mills, horse gins, windmills, tide mills.
	Fossil energy powered: steam, internal combustion and electric.	Steam engines, gas, oil, petrol and diesel engines, electric motors.



As towns and villages expanded during the 19th century, the provision of public services became essential. (a) Water pump, Belleek, Co Fermanagh. (b) Coal gasworks, Carrickfergus, Co Antrim. (c) Hydro-electric power station, Ardnacrusha, Co Limerick (courtesy ESB).

Industrial archaeology is the study of this heritage. Its aims are to shed light on the social, economic and technological factors which produced it and to gain a better understanding of the lives of our ancestors. Besides the remains of earthworks, structures, buildings and houses, there is also a rich vein of documentary evidence, including, photographs, ledgers, and engineers' and architects' drawings. This is of inestimable value in extending our understanding of the surviving physical evidence as well as reminding us of what has disappeared. As we are dealing primarily with the remains of a recent historical period, the oral testimony of people who have been employed in rapidly changing or vanishing industries can also enhance our understanding of obsolete industrial processes.

The broad scope of industrial archaeology also makes it attractive to people from many different backgrounds – archaeologists, engineers, geographers, historians, architects and those employed in industry. A surprisingly large number of organisations also have a general or specific interest in Ireland's industrial heritage (Appendix 1). Applying this specialist knowledge and expertise to the vast range of surviving industrial material can give us a much keener insight into the past than is usually possible for most forms of conventional archaeology.



Roads, harbours, canals and railways form a significant proportion of the industrial heritage. Many 18th and 19th century transport-related structures are still in everyday use. (a) 18th century road bridge over River Finn at Clady, Co Donegal. (b) Craigmore Viaduct on the main Dublin - Belfast railway near Newry, Co Down.

2. RECORDING AND RESEARCHING

A substantial proportion of our industrial heritage has already disappeared. Many of the surviving sites are defunct and falling into ruin as they have no obvious reuse or are expensive to adapt. This makes them particularly susceptible to unsympathetic alteration or demolition in advance of redevelopment. It is essential therefore that what survives is properly recorded in order to inform and develop a conservation policy so that significant examples are preserved for posterity. As we have very little knowledge from documentary or oral evidence of traditional manufacturing processes, it is also vital that sites which still function using 19th century technologies are targeted for recording.

Over the past thirty years, a number of organisations and individuals have been engaged in the recording of industrial sites.



Kilcarbury Mill, Co Wexford.

NATIONAL SURVEYS

Dúchas, the Heritage Service of the former Department of Arts, Heritage, Gaeltacht and the Islands compiles and manages two national inventories of the built heritage: the Sites and Monuments Record (SMR) and the National Inventory of Architectural Heritage (NIAH).

The SMR is a database of all known archeological sites and currently holds details on over 150,000 sites, some 3,000 of which are of industrial interest. Until recently, however, there has been a marked bias towards ruinous and buried sites of pre-1700 date. The remit of the NIAH is to record all built forms which survive above ground. Its practical focus has been mainly on reasonably intact and reusable structures, buildings and houses of post-1700 date. Many upstanding industrial sites will therefore be included, but it will be some years before all 26 counties are fully surveyed. Although they are excellent starting points for further research, neither inventory purports to deal with all types of industrial heritage in a systematic and comprehensive way.

OTHER SURVEYS

Other statutory organisations, voluntary groups and individuals have also gathered a surprising amount of data on industrial sites. During the 1970s, An Foras Forbartha carried out preliminary surveys of industrial sites in 19 counties in order to highlight those meriting inclusion in local authority development plans. During the 1980s and '90s, several planning authorities commissioned their own surveys for the same purpose, notably in Co Dublin and Co Kilkenny. The Custom House Docks Development Authority of Dublin also commissioned a survey to identify significant industrial sites. The Royal Irish Academy funded a detailed survey of Cork City, and the Institution of Civil Engineers of Ireland has completed a survey of significant engineering works. A recent investigation carried out by the authors at the behest of the Heritage Council also revealed an active amateur interest in the recording of industrial sites and the existence of a number of inventories relating to specific areas and themes (Appendix 2).

On the basis of the above surveys, it is estimated that over 100,000 sites of industrial interest have operated at one time or another in Ireland. Unfortunately only a small fraction – less than 5% – has actually been identified and recorded in the field. Moreover, we are largely unaware of the many industrial sites which have disappeared, thus making it difficult to appreciate the full extent of past industry and evaluate the historical significance of what now remains.

Given the vulnerability of our industrial heritage, a record of all surviving sites and those which formerly existed is urgently required. The potential value of such a record is five-fold:

- A continuing reminder of Ireland's industrial heritage, much of which is now lost.
- An administrative tool for central government in the evaluation and selection of sites for protection and the allocation of financial assistance towards preservation and conservation.
- A basis for planning authorities to formulate conservation policies in their local development plans.
- A research tool for the identification and interpretation of local, regional and national trends in industrial development, both generally and thematically.
- A foundation for the development of educational and leisure activities focused on industrial heritage.

WHAT TO RECORD?

The extent to which a site is recorded will depend on the purpose of the survey and the resources available. As Table 2 shows, a survey can embrace four main types of record: documentary references, descriptive field notes, photographs and drawings. Each of these categories has four levels of increasing detail. To be most effective, the aim and scope of a survey should be established at the outset, and the appropriate type and level of record chosen to fulfil this purpose. It is often best to commence with a general basic survey (levels 1 and 2) which will reveal what now exists and highlight those sites meriting more detailed attention. Only sites of special interest or under threat of demolition are likely to warrant a level 3 record. Considerably more input is required at this level, particularly in the case of scale drawings. A level 4 survey will probably only be required in exceptional circumstances, for example, site conservation, replication or restoration. In some instances, archeological excavation may also be necessary to understand fully a site's past development, particularly if little now survives above ground.



The archeological excavation of Islandbridge Mill, Dublin in advance of redevelopment revealed a buried gasworks.

Table 2: Types of Record and Levels of Recording Detail		
Level	DOCUMENTARY RECORDS	
1	Map recognition	All available OS map editions at 6 inch scale (and 25 inch and larger where appropriate).
2	General secondary records	Secondary documents – mainly published (e.g. county histories, local history journals, 18th and 19th century travelogues, street directories, valuation books); Photographic sources (eg W. Lawrence); Published Ordnance Survey memoirs (1830s); Published Griffith valuation (1860s); Pre-OS maps.
3	General primary records	Primary documents – mainly selected unpublished manuscripts (eg valuation books and maps, fire insurance specifications, Grand Jury presentment books); Aerial photographs.
4	Site-specific records	Site specific documents (e.g. company records, deeds).

DESCRIPTIVE FIELD RECORDS

1	<i>Basic site parameters</i>	Note site name (if any), location (county, townland, town/street, National Grid) and access. Mark up on OS map. Highlight principal site components, forms, and (where practicable) main items of surviving plant. Note overall site survival, condition, present use and potential threats (whether by alteration or destruction).
2	<i>General descriptions of site components</i>	Identify all upstanding site components. Establish site setting and boundaries. Brief descriptions (mainly qualitative) of each site component, surviving machinery and features of particular interest (e.g. datestones, roof trusses). In all cases, note structural form, materials of construction, function(s), contents, survival, condition and present use. Where appropriate, establish main dimensions of principal components. Highlight any significant absences. Provisional dating of site components (based mainly on building style and construction materials).
3	<i>Detailed descriptions of site components</i>	Detailed descriptions (quantified where practicable) of all site components and machinery. Note any evidence of demolitions, enlargements and new buildings. Provisional assessment of inter-relationships within and between site components and of site development.
4	<i>Descriptions of component details</i>	Detailed examination of inter-relationships within and between site components. This level would encompass oral records, intrusive investigation/excavation, and specialist inputs (e.g. structural analysis, wood identification and tree-ring dating).

PHOTOGRAPHIC FIELD RECORDS		
1	<i>General site view</i>	General <i>aide-memoire</i> view of site to give an impression of its scale and what now remains.
2	<i>General views of site components</i>	General external and internal views (generally oblique) of site components and groupings, with focus on principal components. General views of any significant features (eg inscribed plaques). General views of main items of machinery(e.g. prime movers).
3	<i>Detailed views of site components.</i>	Front-on views of principal site components Oblique views of secondary components not surveyed at level 2. General views of selected component detail (e.g. roof trusses, wear patterns on floors/stairs). General views of primary machinery not surveyed at level 2. General views of all secondary machinery (e.g. elevators in a corn mill). Use of metric scale rod where practicable.
4	<i>Views of component details.</i>	Systematic photographic survey of selected site component detailing (e.g. all windows and doors in a principal building). Detailed views of specific features (e.g. roof truss jointing). Detailed views of machinery (e.g. waterwheel hub). This level includes photogrammetry and video recording.
DRAWN FIELD RECORDS		
1	<i>Sketch site plan</i>	Sketch plan of site showing general arrangement of site components.
2	<i>Sketch plans/ elevations of site components</i>	Sketch plan of individual site components (with principal dimensions where practicable) and spatial configurations thereof.

3	<i>Scale drawings of site components</i>	Scale drawings of principal floor plans, elevations and sections of site's principal components. Floor configurations of principal machinery. Overall site plan.
4	<i>Scale drawings of component details</i>	Scale drawings of selected features (e.g. roof trusses), machinery (e.g. power transmission gearing), and selected secondary site components.

A thorough understanding of a site is essential if its significant features are to be conserved, whether by means of a paper record or through actual physical retention. This entails pinpointing its location, establishing its function(s) and age, and recording the range of physical forms which survive, their present condition and threats thereto. Such knowledge, which can only come about through documentary research and field survey, enables a site's special features to be recognised and its heritage significance assessed. The results are of value in not only being a record in their own right, but also in establishing a firm basis for any future programme of physical conservation.

The process of recognising and delineating most types of sites such as ringforts, megalithic tombs, churches and dwellings is relatively straightforward. In the case of industrial sites, the complex as a whole may be of greater significance as a working unit than its individual component parts. For example, a weir, pond and race, although each a discrete unit, are physically linked to act as the water supply to a mill. In surveying this industrial site, each of these components should be recorded and their functional and spatial relationships noted. Special attention should also be given to prime movers and machinery where they exist. Some specialist knowledge may, however, be required to interpret their function and significance.

SAMPLING STRATEGIES

Every site that falls within the scope of industrial heritage should, in theory, be identified and recorded. However some sites may be so prevalent that they demand an inordinate amount of effort in terms of research and field survey while yielding relatively little meaningful data in return. For example, there are countless quarries and bridges throughout the country, only a small proportion of which are likely to be of any special industrial heritage interest. Some form of sampling strategy, which should be clearly noted at the outset, may therefore be required to avoid being overwhelmed.

COMPUTERISED DATABASES

A computerised database is one of the great achievements of modern technology for the effective storage, analysis and retrieval of data. Many proprietary programmes are currently available and their basics can be quickly mastered. However, before inputting any sizeable quantity of data, it is worth spending time on the content and structure of the database so that the information can be interrogated easily and retrieved in a variety of formats. The use of such a database also gives rigour to the recording process in that one is forced to state which site characteristics are to be explicitly noted. The fact that these attributes will be recorded at every site also ensures a more uniform coverage than might otherwise be the case, thus enabling a more meaningful comparison between sites. It is also worth bearing in mind that by providing internationally recognised core data relating to a site's location, function and age, such a database can also be of immense value to others.

PAPER SURVEY

An essential first step in any recording exercise is to gather together background information based on documentary sources. This is known as a paper survey.

Field recording and interpretation will be made easier if the surveyor has some prior knowledge of the location, nature, extent and content of the site being investigated. Appendix 3 lists the main institutions where historical documents and Valuation Books can be consulted.

ORDNANCE SURVEY MAPS

Most of the industrial surveys carried out to date have shown that Ordnance Survey maps are the single most useful starting point for site identification. Between 1829 and 1845, some 1,600 maps were published on a county-by-county basis at a scale of 6 inches to a mile (1:10,560). A resurvey was completed in 1891, and at periodic intervals thereafter. From the turn of the last century, 1:2500 maps were also produced, and detailed town maps appeared at 1:1056 and 1:500 scales. Since 1964, updated surveys at 1:5000, 1:2500 and 1:1000 scales have also been published.



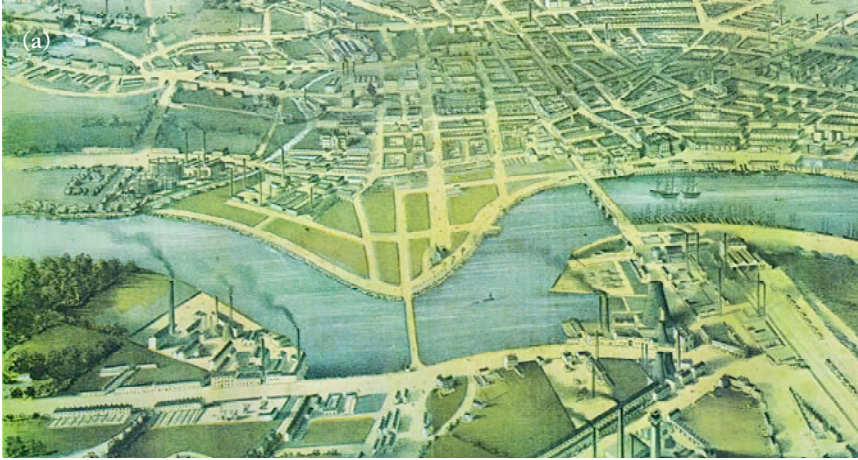
This 1904 OS 6 inch map of Gilford, Co Down depicts a variety of industrial sites, notably the flax spinning mill around which the village developed.

The scale of OS 6 inch maps is such that individual structures are clearly discernible. The majority of industrial sites are generally explicitly captioned, e.g. mine, corn mill. Even where not captioned, the presence of associated features such as mill races may reveal sites of interest, as do certain map symbols such as those for windmills and lime kilns. The first edition OS maps are likely to depict many industrial sites which operated during the second half of the 18th century. The location, nature and pace of change of Irish industry over its most significant period of development can be gauged by using all map editions up to the present time.

OTHER DOCUMENTARY SOURCES

Maps do have limitations, particularly in urban areas where many industrial sites, and associated sites such as factory workers' houses, may not be highlighted because of the congestion of buildings, particularly on the 6 inch maps. Moreover, because of the time interval between surveys, sites may have come into and out of use and may not be highlighted on the map.

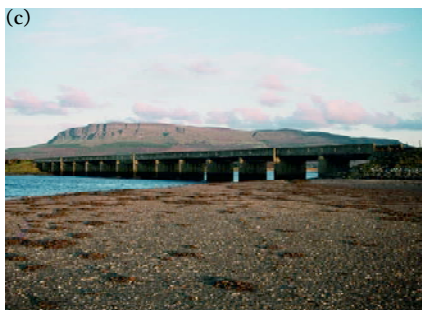
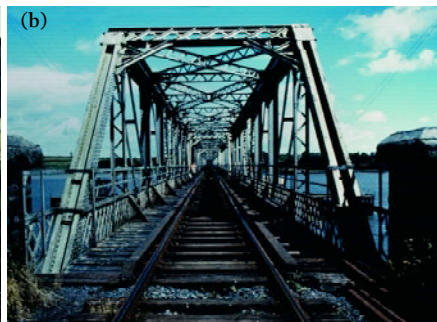
Many of the omissions and gaps can be filled by using historical documents, notably the Valuation Books which cite many small-scale industrial sites from the 1840s onwards. Their locations can then be pinpointed by using the associated Valuation Maps. Eighteenth and 19th century travelogues and local history publications, street directories, illustrations, photographs and business records will also supply additional background information. General and specialist regional and national archives may also prove useful (Appendix 3).



(a) This 1865 view of Belfast shows the industrial enclave of Ballymacarrett (foreground) at the mouth of the River Lagan, and various steam-powered mills and terraces of workers' housing to the west of the town centre (background). (b) Photographs are invaluable in illuminating the workforce engaged in industry, as in this 1920s' one of flax scutchers at Quinn's Mill, Killeel, Co Down (courtesy Rose Crawford).

FIELD SURVEY

A site visit will almost certainly reveal features not apparent from the paper survey, particularly later modifications, additions and demolitions. The surveyor is usually faced with a combination of different physical forms in various states of completeness and repair. The recording will therefore demand both archaeological and architectural recording skills, as well as some specialist knowledge and experience in making sense of what is being recorded.



There is no substitute for field observation in interpreting a site. Building materials, for example, are often indicative of its date of construction: masonry was the norm until the early 1900s, but brick and metal were increasingly used from the mid 1800s, and concrete from the mid 1900s. (a) Mid 19th century masonry and brick road bridge, Dundrum, Co Down. (b) Early 20th century metal girder railway bridge over River Barrow, Co Kilkenny. (c) Mid 20th century pre-cast concrete railway viaduct over River Roe, Co Derry.



External view of flax mill, Ballybofey, Co. Donegal.

INDUSTRIAL ARCHAEOLOGY RECORD - Field survey									
Site work no		Sub no		Site type		Recorder		Date d/m/y	
DG/ 78/30		01		Flax Mill		F.W. Hamond		27/8/2000	
Built forms	Remains Survival Condition			Building House Earthwork Excavation Mech str Non-mch str					
	Yes <input checked="" type="checkbox"/>	1 <input checked="" type="checkbox"/>	G <input type="checkbox"/>	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>					
	No <input type="checkbox"/>	2 <input type="checkbox"/>	F <input checked="" type="checkbox"/>	Other <input type="text"/>					
Power	Remains Survival Condition			Human Animal Wind Waterwheel Wat turbine Steam eng					
	Yes <input checked="" type="checkbox"/>	1 <input checked="" type="checkbox"/>	G <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>					
	No <input type="checkbox"/>	2 <input type="checkbox"/>	F <input checked="" type="checkbox"/>	Oil engine Gas engine Electric mtr Electric main Other <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> + Tractor					
Plant	Remains Survival Condition			Power trans Prime mchy		Past function(s)			
	Yes <input checked="" type="checkbox"/>	1 <input checked="" type="checkbox"/>	G <input type="checkbox"/>	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>		<input type="text"/>			
	No <input type="checkbox"/>	2 <input type="checkbox"/>	F <input checked="" type="checkbox"/>	S'dary mchy Plant other <input type="checkbox"/> <input type="checkbox"/>		Present function(s) <input type="text"/>			
IA merit			Photographs (reel/frame)			Threats			
Arch High <input type="checkbox"/> Tech High <input checked="" type="checkbox"/> L'scape High <input type="checkbox"/> Med <input type="checkbox"/> Med <input type="checkbox"/> Med <input checked="" type="checkbox"/> Low <input checked="" type="checkbox"/> Low <input type="checkbox"/> Low <input type="checkbox"/>			B/W 8/27-23 Slide 8/20-16 Colour			<input type="text"/>			
						Further action			
						<input type="text"/>			
Site details (identify and describe each significant component's built form, past/ present functions, special features and contents)									
One-bay / two-storey building aligned E-W. Pitched corrugated metal roof. No rainwater goods. Random rubble walls, cement rendered. Openings at all elevations. Brick trim to some openings suggests mid-19th century construction. Concrete heads to openings on principal elevation indicates 20th century refurbishment. External waterwheel on W gable. 4.57m dia x 1.24m wide. High breast-choat. All metal save for 40 angled timber buckles and soleing, now gone. Internal machinery survives - power transmission gears and shafts (2-step) and 5 scutching rings (7 blades). Remains of flax breaker rollers scattered about floor.									
Comments									

Mk4/ 25 July 2000

Survival 1= complete/ substantial remains of original structure, 2= some remains, 3= traces
Condition G = good (maintained / sound), F = fair (not fully maintained/ sound), P = poor (unsound)

This standardised survey sheet for the flax mill uses 'tick' boxes to record the presence, completeness and condition of the buildings, plant and machinery. There is also space for a 'free-format' description.

RECORDING FORMS

A specially prepared form is recommended for levels 1 and 2 field recording rather than a blank sheet of paper. This will ensure that all relevant data are noted in a consistent fashion and that nothing of significance is missed. Given the wide variety of industrial sites, it is impossible to describe everything in detail using the one

recording format. For this reason two basic types of form are usually used. The first is a general 'free format' one which has space for an open-ended site description. Obviously the quality of the field notes depends on the surveyor's awareness of the important features of each site type. It is also useful to have individually styled forms for the main types of site likely to be encountered, e.g. one for bridges, another for water-powered corn mills etc. The presence or absence of all key site attributes can then be noted using the form headings as prompts and by ticking or circling boxes. This recording technique has been found to speed up the recording process. It is also worth bearing in mind the arrangement of the data on the form so that it can be easily computerised at a later date.

PHOTOGRAPHIC RECORD

This is probably the quickest and most immediate form of recording. The use of a single lens reflex (SLR) camera is strongly recommended. Black-and-white photographs and at least one colour slide should be taken at every site, even if little or nothing remains. A general-purpose 400 ASA film for b/w and Kodachrome 200 ASA for colour slides have been found to have the best archival qualities. The long-term storage of digital photographs has yet to be proven.

SITE INTERPRETATION

The above levels of survey will create stand-alone permanent records of value in their own right and can be added to if new data subsequently comes to light. However they also require interpretation if the site is to be understood. By integrating the data from the maps, historical documents and the field survey, it should be easier to interpret a site's evolution than if relying solely on one type of record. For example, wall breaks and changes in building materials which are only evident in the field may signify different phases of construction which would not have been evident from the paper survey. By separating the recording and the interpretation processes, the records remain as objective sources to be re-interpreted by others at a future date.

The ultimate written record of the site is basically the integration of the data revealed by the paper and field surveys and will present a description of the site's historical development and current state.

NOTE OF CAUTION

A word of warning before embarking on fieldwork – issues of health and safety, site access and trespass should be addressed. Many of these sites by their nature are in a derelict condition and can be dangerous, so make sure your whereabouts are known, and wear clothing and footwear appropriate to the circumstances.

3. CONSERVATION

Unlike pre-1700 archeological sites, most of which have reached a state of stabilised ruination, many industrial sites have only become defunct within the past 50–100 years and are therefore still undergoing a process of active deterioration. The only way of curtailing this progressive loss of heritage is to intervene through deliberate conservation. There are three basic ways in which the physical elements of a site may be retained:

- *stabilisation* of the site in its existing state (*Preservation*)
- *reinstatement* to a former state (*Restoration*)
- *alteration* to some new use (*Adaptive Reuse*)

Irrespective of what type of conservation is enacted, the challenge is to intervene in such a way that a site's significant features remain unchanged insofar as is practically possible.

PRINCIPLES OF CONSERVATION

Although there are as yet no specific national or internationally agreed guidelines for conserving industrial sites, the basic general conservation principles set out in international charters such as the 1964 Venice Charter¹ and the 1981 Burra Charter² are also relevant to industrial sites. To paraphrase these charters, the conservation principles are:

- Monuments and places of cultural significance should be preserved *in situ* whenever possible.
- Whilst it may be desirable to put monuments to new uses, their original character, layout and setting should be respected.
- Conservation must be based on sound archeological, historical and field research. All phases of construction should be retained except where the importance of revealing an earlier construct greatly outweighs the value of the later material.
- The emphasis should be on minimal intervention.

¹ International Council on Monuments and Sites (ICOMOS) *International Charter for the Conservation and Restoration of Monuments and Sites*

² ICOMOS *Charter for the Construction of Places of Cultural Significance*

- It should be possible in the future to remove any new works without destroying the original historic structure (reversible intervention).
- Where possible, the retention and repair of original elements using matching traditional materials and techniques is preferable to outright replacement.
- Reconstruction of missing parts must be in keeping with the original. It must also be clearly distinguishable and should stop short of conjecture.
- New additions must respect the character and setting of the original structure.
- All works to a historic site should be properly documented before, during and after intervention. This record should be placed in a public archive.
- A maintenance plan is essential if the site is not to deteriorate in the future.

These principles are now being increasingly adopted in conservation plans and have been taken on board by national bodies such as ICOMOS Ireland, the Royal Institute of the Architects of Ireland, the Department of the Environment and Local Government, the Department of Arts, Heritage, Gaeltacht and the Islands, and the Heritage Council. In applying these principles, any specific planning requirements and regulations relating to buildings, fire, health and safety must also be complied with.

CONSERVATION PLANS

Prior to interference with a site, the formulation of a conservation plan with professional help is essential if a project is to be brought to a successful conclusion. The objective of the conservation plan is to assist in planning a programme of conservation. Unfortunately, it is all too common for such a plan to be implemented in reverse. Starting with the offer of a fixed amount of grant aid, this is then translated into what can be done rather than what should be done, little thought being given to how the site will be maintained once the capital is expended.

The essence of a conservation plan is to identify a site's special features, the threats to these features, and to devise policies to guide the conservation of these significant features. At the start, a preliminary study should be carried out. This will entail researching the site's historical development (paper survey) and carrying out a field survey (levels 1 and 2) to ascertain what survives, its

completeness and present condition, and its industrial heritage merit. The conservation plan should present a historical analysis of the site, details of its current state, and its key features of interest, their heritage significance and vulnerability to loss or change. It should also state the reasons for conserving that particular site, and the conservation strategies for retaining its significant features. An action plan can then be formulated in which the funding, implementation and management of the conservation work are addressed. Consideration should also be given to the management and maintenance of the site once preserved.



The Heritage Council financed a conservation report on these monumental lime kilns at Proleek, near Dundalk, Co Louth and also grant-aided their subsequent consolidation.

PHYSICAL CONSERVATION

Where physical preservation of a site is proposed, it is essential that expert advice be sought on the proper course of action. Calling in a sympathetic professional with experience of conservation and restoration work at the early stages will minimise the risk of costly error, or unintentional damage being done. Appendix 1 lists organisations which may be able to offer advice, the Bibliography gives a selected reading list of published information on the topic.

PRESERVATION

The preservation of a site in its existing form essentially entails stopping the causes of decay and the retention and repair of what survives. The introduction of new materials to extend the durability of the surviving original fabric may be required. In all cases, traditional materials should be used as appropriate, taking care to match like with like, e.g. natural slate and stone, native timber, lime putty, limewash, and cast- and wrought-iron in preference to mild steel.

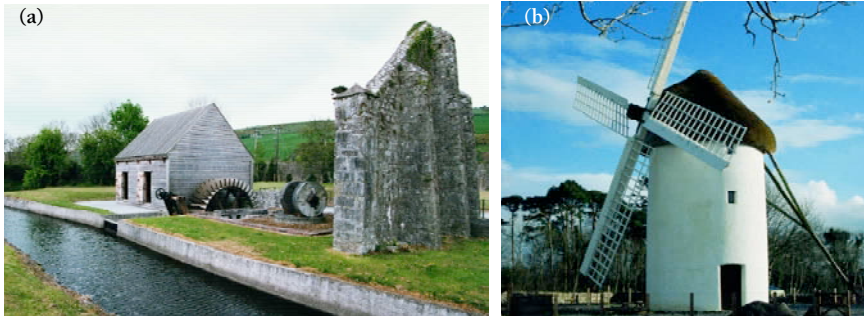


Ireland's tallest windmill, at Thomas Street, Dublin has been preserved by the simple expedient of fitting a watertight cap.

Circumstances will vary depending on the scale and number of items to be preserved, the skills and finance at hand and the resources available for subsequent upkeep. In the short term, the best course of action may well be to:

- Remove the principal causes of deterioration: e.g. cut back vegetation, repair leaking roofs and cap walls. Care should be taken, however, not to inflict further damage, for example by dislodging stones when removing ivy.
- Arrest wood decay by eliminating all sources of moisture. Ensure that buildings are adequately ventilated to promote drying and to minimise the onset of further rot. Where practicable, cut out and replace decayed timber. Treat with a clear preservative.
- Apply heavy-duty grease, oil, wax and proprietary rust inhibitors to metalwork (paint is to be avoided if it was not used originally).
- Secure the site to counteract vandalism and theft. Where security is a problem, machines and artefacts may have to be removed either temporarily to a secure lock-up or to a museum with public access. Although contrary to the Venice Charter due to the loss of setting, this action may sometimes be the only viable option.

RESTORATION



(a) Local authorities are increasingly recognising the amenity value of the built heritage. Ballincollig Gunpowder Mill was restored to working order as a visitor attraction by Cork County Council in 1993. Only minimal traces survived above ground level and its reconstruction was based on documentary research, archeological excavation and field observation. (b) The reconstruction of the cap, sails and machinery of Elphin Windmill, Co Roscommon, within its original shell is an example of what a local community group can achieve with minimal resources and the support of a FÁS workforce.

Many conservation schemes involve the restoration of part of a site to a former state generally as visitor attractions. Most industrial sites have evolved over many years and are likely to have undergone many changes in that time. Their restoration will therefore entail some or all of the following:

- Decide whether or not it is appropriate to remove later additions. Should the site be returned to its state when last in use or to an earlier incarnation? A balance has to be sought between the loss of what is being removed and the gain of what is being revealed as a consequence.
- Retain, repair and consolidate selected items (see Preservation).
- Refurbish existing machinery. If taken to extremes, this can result in what is essentially a replica, faithfully reproducing the original's form and function but not its fabric. This dilemma can arise with restoration to working order, particularly in the case of engines and vehicles which are intended to operate. Balance must be found between the potential wear and tear on original materials, the need to comply with modern health and safety regulations, the benefits of demonstrating and understanding the actual use of the machinery for which it was devised, and the passing on of traditional skills.

- Recreate and reconstruct missing items and determine where they should be positioned. The more intact the site and the fuller its past documentation, the more accurate will be the reconstruction. In all cases, it is imperative that the original detailing on which the reconstruction is based is fully recorded.
- Decide on acquiring replacement equipment which may be available from another similar site. However, care should be taken to establish that its removal does not compromise the latter's preservation and that the context of any salvaged item is noted.



(a) Straffan Steam Museum, Co Kildare displays a unique collection of working stationary steam engines which illustrate the technical evolution of this important prime mover.
 (b) Various items of transport have been restored to working order by voluntary groups and enthusiasts. Steam engine rallies are always a popular draw with the general public.



The restoration of Mullicovet Mill, Belcoo, Co Fermanagh required the use of traditional materials and craftsmanship to replicate the machinery.

ADAPTIVE REUSE

Many industrial buildings are virtually impossible to reuse in their existing form and for this reason are susceptible to irrevocable change. Being built for a specific purpose, their design may restrict modern reuse due to their internal plan form, low ceiling heights, poor light levels and narrow doorways. Unfortunately it is often the case that only the facade of a building is retained, everything else being demolished. Machinery is especially vulnerable as it may impede internal reuse. Whilst some machinery may be retained for decorative purposes, most is usually scrapped without a record being made of either it or the process which it formerly carried out.



Recreational use has been the main driving force behind the retention and restoration of Ireland's canals, as here on the Royal Canal (courtesy Ruth Delany).

In considering a change of use, one must ask whether the building or structure can accommodate the new use without a significant loss of character. In answering this question, one should be aware of the site's critical features, those which it is essential to retain at all costs, and its tradable features, the loss of which would be outweighed by the benefits of reuse. For example, in re-watering a canal for recreational use, one would have to weigh up the permanent loss of historical integrity and heritage value brought about by widening the locks and raising the bridges with any benefits of allowing large cruisers to use it. The internationally recognised approach is that a conscious decision must be made to do as much as

is necessary to secure a site's future, but at the same time as little as possible which will compromise its special features and historical integrity.

There are many examples of the successful adaptive reuse of small buildings such as watermills for dwellings, restaurants and craft shops. Some watermills have also been adapted to generate electricity using modern water turbines in place of the original waterwheels. Larger buildings and multi-component sites are more problematic. Many large sites lie derelict, not only because of the high conversion costs but also due to lack of demand for industrial and commercial space at those particular locations. The potential of such sites for many different uses is being increasingly demonstrated throughout Europe. Although changes of use pose significant architectural challenges, they are to be welcomed if our built industrial heritage is to survive.



(a) Watermills are often in attractive settings and lend themselves to small-scale commercial redevelopment. This woollen mill at Glanworth, Co Cork has been converted into award-winning b&b accommodation. (b) This corn mill at Clonakilty, Co Cork was converted into a public library and won a Europa Nostra award in 1987 (courtesy William Houlihan, Cork CC).

FINANCIAL ASSISTANCE

Under recent legislation local authorities now have powers to grant-aid the conservation of a structure which is included in the Record of Protected Structures of the relevant planning authority. Each local authority is allocated a fixed amount of money each year and grant applications are prioritised within available resources. The current standard amount of grant is 50% of the approved cost, subject to a maximum of £10,000. In exceptional circumstances, a local authority may approve a larger sum. Eligible works include structural stabilisation, weatherproofing, conservation of external walls and internal features, and temporary repairs where there are immediate risks to the structure. Further information and grant application forms can be obtained from the relevant authority's planning or conservation officer.

The Heritage Council also gives discretionary grants in support of the built heritage but only exceptionally are these for site restoration. The Council has also financed the preparation of a number of conservation plans. Other agencies have also assisted, both directly and indirectly, with capital funding, for example the International Fund for Ireland, FÁS and some business initiatives such as the AIB Nationwide 'Better Ireland' Award.

In recent years, the European Union has become the main source of funding for schemes involving the built heritage. Conservation projects undertaken by local authorities and community groups have benefited from initiatives such as the Local Urban and Rural Development programme. However it has been the smaller-scale funds such as Leader and Agri-Tourism, administered by the Department of Agriculture and Food, which have been to the fore in the conservation of the industrial heritage.



The former Locke's Distillery, Kilbeggan, Co. Westmeath, now a museum.

One should also be aware of the need to adequately finance the upkeep and running of a site once it is conserved so that it remains in a sound condition. This need not be expensive provided regular maintenance is carried out, e.g. replacing broken slates, unblocking gutters and painting external woodwork. A comprehensive analysis should therefore be made of the long-term viability of any such project as part of its conservation action plan.

4. PROTECTING THE INDUSTRIAL HERITAGE

In 1997, Ireland ratified and adopted the principles of the Granada Convention. This established common principles and obligations for its signatories regarding identification of properties for preservation and the implementation of statutory protection procedures. Under recent legislation, a range of measures has been put in place which should go some way towards meeting our international obligations under the Convention.

STATUTORY LEGISLATION

The two principal legislative measures for the protection of the archeological and architectural heritage, of which industrial heritage is a significant element, are the National Monuments Acts and the Local Government Planning Acts respectively. Both types of legislation reflect the need to exert some form of control on intended alterations to sites of special heritage value.

NATIONAL MONUMENTS ACTS

These Acts are administered by the Department of Arts, Heritage, Gaeltacht and the Islands*, having been originally implemented by the Office of Public Works. The Acts encompass five measures which offer varying levels of statutory protection:

- *Register of Historic Monuments.* This was established under Section 5 of the National Monuments (Amendment) Act 1987. It is a criminal offence to alter a registered site without giving two months' advance notice to the Department of Arts, Heritage, Gaeltacht and the Islands*, of any intended work. This gives the Department the opportunity to discuss the proposals with the developer and to stipulate the most appropriate course of action. A small number of sites of industrial interest are protected under this legislation.
- *Record of Monuments and Places.* The RMP was instituted under the National Monuments Act 1994 and is also enacted through Articles 32 and 132 of the Local Government (Planning and Development Regulations) 1994. Sites included in the Record are afforded the same protection as those in the Register but site owners do not have to be individually notified. Currently the RMP contains over 110,000 sites of which some 3,300 are industrial. The vast majority of sites are of pre-1700 date but as most industrial ones are older, the majority have yet to benefit from this form of protection.

*Since June 2002 certain functions of this Department have been transferred to The Department of the Environment & Local Government.



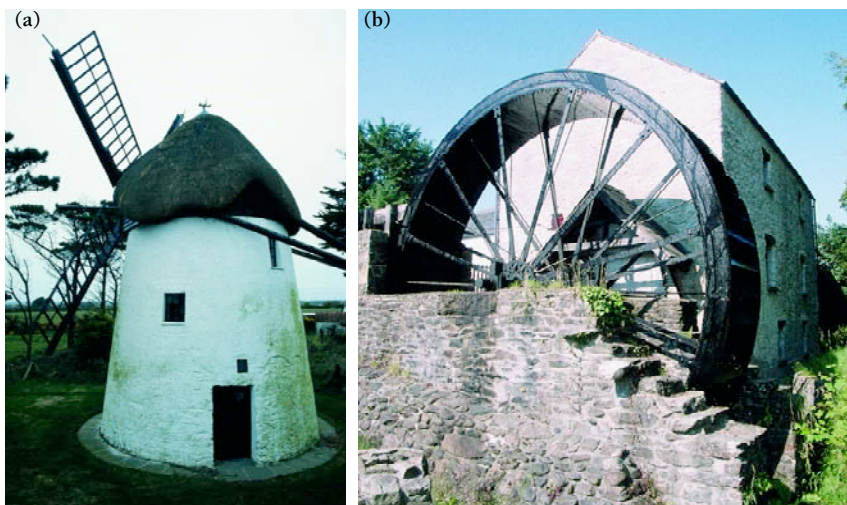
The inclusion in the RMP of a 19th century mill dam in the grounds of the Pye (Ireland) Factory at Dundrum, Co Dublin ensured that all the buildings were recorded prior to their demolition in advance of the site's redevelopment; the dam itself was retained. Planning applications relating to industrial sites are increasingly required to include detailed surveys and impact assessments irrespective of whether or not they are protected.

- *Preservation Orders.* Under Section 8 of the National Monuments Act 1930 and Section 4 of the 1954 amendment, the State can place a temporary (six months) or permanent Preservation Order (PO) on a national monument which is considered to be in danger. Such a monument is defined under the 1930 Act as a 'monument or the remains of a monument, the preservation of which is a matter of national importance by reason of the historical, architectural, traditional, artistic or architectural interest attaching thereto'. To date, some 420 POs are in place, of which six relate to shipwrecks and four to conventional industrial sites.



This mid 19th century chimney at Ballycorus Lead Mine, Co Dublin, is protected by a Preservation Order (courtesy Rob Goodbody).

- *Sites in Guardianship.* Under the National Monuments Act 1930, the owner of a national monument can transfer responsibility for its upkeep to the State or local authority. Two of the 177 sites which are currently under a Guardianship Order are of industrial interest.



(a) Tacumshin Windmill, Co Wexford, is one of only a few such sites to retain its machinery. Although privately owned, its future is reasonably secure as it is also in State guardianship. (b) Newmills corn and flax mills, near Letterkenny, Co Donegal, are in State ownership. They have been restored to full working order and demonstrate traditional oatmeal milling and flax scutching.

- *Sites in State Ownership.* At present 425 sites are afforded this ultimate form of protection, five of which are of industrial interest. The State also maintains an extensive inland waterway network comprising the Shannon–Erne, Barrow and Shannon navigations, and the Grand and Royal canals.

PLANNING ACTS

Sections of the Local Government (Planning and Development) Acts relate to the protection of the built heritage by local planning authorities. The 1963 Planning Act obliged local authorities to draw up development plans for their respective areas. Section 21(1c) empowered local authorities to include provision for the preservation of structures because of their ‘artistic, historic or architectural interest’ and for the preservation of ‘caves, sites, features and other objects of archeological, geological or historic interest’. A site included in a plan was deemed to be ‘listed’, requiring explicit permission to be altered or demolished. During the 1970s and ‘80s, An Foras Forbartha and various local authorities carried out surveys which resulted in a number of industrial sites being listed.

The Local Government (Planning and Development) Act 1999, which came into effect on 1 January 2000, later subsumed into the Local Government (Planning and Development) Act 2000, made it compulsory for local authorities to list sites of special interest, a condition which was optional under the 1963 Act. It also introduced two mechanisms for site protection:

- *Record of Protected Structures (RPS)*. All planning authorities are obliged to compile and maintain a list of structures of special architectural, historical, archeological, artistic, cultural, scientific or technical interest within their respective administrative areas.



Although most of the Dock Mill complex on the Grand Canal Basin, Dublin has been demolished to make way for apartments and offices, the large red-brick flour mill, which dates from 1900, will be retained and incorporated in the new development as it is a Protected Structure.

- *Architectural Conservation Areas (ACAs)*. This mechanism is to be used to protect groups of structures and their setting. An ACA is defined as a place, area, group of structures or townscape which meets the same evaluation criteria as those of individual listed structures or which contribute to their appreciation. Development plans must include the objective of preserving the character of ACAs.

Under the Architectural Heritage (National Inventory) and Historic Monuments (Miscellaneous Provisions) Act 1999, the Minister for Arts, Heritage, Gaeltacht and the Islands* has the power to make recommendations to the local authorities to include certain structures in their listings. Structures which have been given a rating value of international, national or regional importance by the National

Inventory of Architectural Heritage will be submitted for inclusion. However the Minister also has the right to make recommendations to planning authorities concerning individual structures at any time.

Listing also extends statutory protection to a structure's fixtures and features such as waterwheels and internal machinery. It also applies to structures lying within the curtilage of listed structures and to other features of interest within their attendant grounds. This is particularly relevant to dispersed, multi-component sites such as mills and mines, where the whole may be of greater significance than specific individual elements.

HERITAGE ACT

Under Section 10(4) of the Heritage Act 1995, the Minister for Arts, Heritage, Gaeltacht and the Islands* may, on the advice of the Heritage Council, designate a building in the ownership of a public authority as a heritage building. This could encompass those owned by local authorities and by semi-State bodies such as Córas Iompair Éireann, the Electricity Supply Board and Bórd na Móna. Once designated, the owner must inform the Council of any proposed works, demolition or disposal, thus enabling dialogue on a special building's future.

EVALUATING INDUSTRIAL SITES

It would be unrealistic to suggest that all industrial sites can or should be preserved. Common sense tells us that the allocation of our finite resources should target only those special sites, the significance of which makes them most deserving of protection.

In the past, industrial sites have probably received less attention under the Planning Acts than they deserve due to their lack of architectural quality. While many industrial sites undoubtedly have some visual interest, they are in no way comparable with obvious architectural statements to be found, for example, in many large country mansions. However under the 1999 Act, it is realised that sites should be evaluated on the basis of multiple criteria, not just their visual appeal. Table 3 sets out the range of criteria which should be considered in making such an evaluation. Thus a site may be a good example of a particular type of structure, have an unusual function, be built in a certain way, have an unusual internal spatial arrangement, or retain all its plant and machinery.

*Since June 2002 certain functions of this Department have been transferred to The Department of the Environment & Local Government.

Table 3: Criteria of Use in Evaluating Industrial Sites

Intrinsic Values	
–	<i>Aesthetic qualities</i> : Scale, form, composition, decoration, materials, quality of interiors, craftsmanship. Vernacular character can also be of importance. These attributes may be tempered by later modifications (some of which may be reversible) and present condition.
–	<i>Other physical qualities</i> : Examples of particular building types and functions, constructional techniques, plan forms and innovatory qualities.
–	<i>Group value</i> : Where part of a larger unity.
–	<i>Historic interest</i> : Links with important people or events; illustrative of important aspects of the nation's social, economic and cultural history.
–	<i>Technical and scientific interest</i> : The quality, innovativeness and representativeness of plant and machinery.
–	<i>Social interest</i> : Structures and buildings which illustrate particular lifestyle or social conditions.
–	<i>Age and rarity</i> : The older and rarer the site, the greater its perceived historical importance.
–	<i>Setting</i> : Where it forms a particularly important visual element within its surrounding area.
Contextual Values	
–	Does the site contain evidence of successive adaptations to different uses or does it represent the evolution of the one type of use?
–	Does the site demonstrate a particular period of development with regard to that industry (does it represent an innovation in building form or function)?
–	Is it demonstrative of a particular regional variant of a particular class of site?

By taking all these criteria into consideration, it should be possible to gauge a site's industrial heritage significance in a regional and national context.

The National Monuments legislation makes no attempt to discriminate between those archeological sites which are sufficiently special for more stringent development controls to apply. The criteria outlined in Table 4, which are used in the United Kingdom to confer Scheduled Monument status, could also be applied to assessing industrial monuments in Ireland and highlighting those meriting preservation using existing statutory measures.

Table 4: Criteria Used to Highlight Scheduled Monuments (UK)

- *Period*: How representative is this type of monument of its period of history or prehistory and how long was it in use?
- *Rarity and representivity*: How rare is this type of monument, both regionally and nationally? Does it have any importance as a good example of the commonplace and most typical?
- *Diversity of form*: Are there variations in the type of monument specific to its region or period?
- *Survival*: How well does the monument survive, both above and below ground?
- *Group value*: Is the monument associated with other sites of the same period, or is it part of a sequence of sites which has developed through time?
- *Potential*: What potential has the site to teach us about the past? Can we predict if it is likely to contain as yet undiscovered archeological evidence?
- *Documentation*: Are there any historical records of the monument, or any modern surveys or studies such as excavation reports?
- *Diversity of features*: How many features characteristic of its class does the monument include, i.e. how complete is it and is there also evidence of successive types of use?
- *Additional factors* include a monument's amenity value (i.e. public access), vulnerability and fragility, the practicality of maintaining it, and whether scheduling is the most appropriate measure to achieve its long-term preservation.

One should not lose sight of the fact that statutory protection is but the first step in ensuring the future survival of a site. Active intervention in securing any site's future is largely in the hands of local communities and private individuals. Such involvement will only come about through an appreciation and understanding of the industrial heritage.

5. THE SIGNIFICANCE OF OUR INDUSTRIAL HERITAGE

The built industrial heritage is a tangible reminder of our past, indicating where we have come from and how we have arrived at our present situation. As such, it can give local communities a sense of their identity and place in the nation. It also shows how people have responded to technological change and cycles of industrial growth and decline, the lessons of which are relevant today and tomorrow. It is also being increasingly recognised that our built industrial heritage is a resource for the future which can contribute positively to sustainable regeneration. In short, it has a cultural significance beyond its mere physical presence.



Heritage-led development is nowhere better illustrated than at this wind-powered flour mill at Blennerville, Co. Kerry. Its restoration to full working order in the 1980s was the catalyst for the restoration of the railway and ship canal between Blennerville and Tralee, and the reconstruction of the *Jeanie Johnston*, a trans-Atlantic emigrant famine ship.

Through our industrial heritage we can also come to appreciate the contribution of those Irish industrialists, engineers, craftsmen and labourers who built our network of roads, canals and railways, quarried and mined, brewed and distilled, scutched and spun, and ground grain for flour and meal – achievements of which we can be proud but which have been largely overlooked in the past. Many mills, warehouses, railway stations and viaducts are among the greatest architectural and engineering achievements of the 18th and 19th centuries and are as representative of their time as medieval abbeys and castles are of theirs. They are monuments to the design skills, inventiveness and craftsmanship of an age whose achievements we are only beginning to appreciate.

APPENDIX 1

HERITAGE CONTACTS

This section lists statutory organisations and voluntary groups involved with the built heritage in general, with industrial heritage, and with practical conservation. Only those bodies with a national remit are listed but they may know of like-minded local groups. Note that telephone numbers and website addresses may change without notice.

BUILT HERITAGE

An Taisce – The National Trust for Ireland

The Tailors' Hall, Back Lane, Dublin 8

Tel 01 454 1786 Website www.antaisce.org

A voluntary organisation founded in 1948 to promote the sustainable conservation and management of Ireland's built and natural heritage. Monitors planning applications and environmental impact statements. Local branches throughout the country.

Department of Arts, Heritage, Gaeltacht and the Islands*

Dún Scéine, Harcourt Lane, Dublin 2

Tel 01 411 7100 Website www.heritageireland.ie

The Department's remit includes the formulation of national policies relating to archaeology and architecture. Under Dúchas The Heritage Services, it compiles and maintains the Sites and Monuments Record, the Record of Monuments and Places, and the National Inventory of Architectural Heritage. It is also responsible for National Monuments in State care.

Department of the Environment and Local Government

Custom House, Dublin 1 Tel 01 888 2000 Website www.environ.ie

Responsible for national policies relating to the environment and for a range of public services provided through local authorities. Also administers planning legislation and European Union funding relating to the protection and conservation of the built heritage.

*Since June 2002 certain functions of this Department have been transferred to The Department of the Environment & Local Government.

Federation of Local History Societies

Frank Taaffe, c/o Rothe House, Kilkenny

Tel 0507 38181 Website www.localhistoryireland.ie

An association of over 120 local history societies throughout the Republic. Publishes an annual journal and quarterly newsletter.

Federation for Ulster Local Studies

18 May St, Belfast , BT1 4NL

Tel 048 9023 5254 Website www.ulsterlocalhistory.org

Comprises a network of local history societies in Northern Ireland, Donegal, Cavan and Monaghan. Organises regular seminars and fieldtrips and publishes *Due North*.

Heritage Council

Kilkenny, Co Kilkenny

Tel 056 70777 Website www.heritagecouncil.ie

Established under the Heritage Act 1995 to advise the Minister for Arts, Heritage, Gaeltacht and the Islands on heritage issues. Also proposes policies and priorities for the identification, protection, preservation and appreciation of the built heritage.

National Museum of Ireland

Kildare St. Dublin 2 Tel 01 6777 444

The country's principal repository of portable artefacts. The National Museum in Kildare St focuses on archaeology and history. The Art and Industry section is based at Collins Barracks, where items relating to the decorative arts and folklore are also displayed.

INDUSTRIAL HERITAGE

Local groups and industrial heritage sites open to the public are listed in *The Irish Heritage & Environment Directory 1999*, produced by Archaeology Ireland in association with the Heritage Council.

Córas Iompair Éireann

Greg Ryan, Heritage Officer, Inchicore Works, Dublin 8

Tel 01 703 3919

Responsible for the identification and conservation of significant items of the built railway heritage.

Industrial Heritage Association of Ireland

The Secretary, c/o The Tailors' Hall, Back Lane, Dublin 8

Website www.steam-museum.ie/ihai

Founded in 1996 to foster an appreciation of Ireland's diverse industrial heritage. Organises regular seminars and tours, and publishes a quarterly newsletter and occasional papers.

Inland Waterways Association of Ireland

Rosaleen Miller, Rondavel, Owinging, Piltown, Co Kilkenny

Website www.iwai.ie

Founded in 1954 to promote the restoration and recreational use of Ireland's waterways; 14 branches throughout the country. Publishes *Inland Waterways News*.

Institution of Engineers of Ireland Heritage Society

John Callanan, c/o 22 Clyde Rd, Ballsbridge, Dublin 4

Tel 01 668 4341 Website www.iei.ie

Organises a regular series of talks on various aspects of engineering heritage.

Irish Railway Record Society

Joseph Leckey, Archivist, P.O.Box 9, Heuston Station, Dublin 8

Website www.irrs.ie

Dedicated to the study of the development of Irish railways and tramways.

Irish Steam Preservation Society

Ettie Kennedy, Timahoe Rd, Stradbally, Co Laois

Tel 0502 25444

The governing body for traction engine steam rallies in Ireland. Organises an annual national rally at Stradbally Hall.

Irish Traction Group

Kenneth Manto, 12 St Conleth's Rd, Greenhills, Dublin 12

Tel 01 450 9559 (between 7 pm – 9 pm)

Founded in 1989 to preserve and operate diesel locomotives and rolling stock. Practical work takes place at its Carrick-on-Suir base and the restored stock is loaned to other railway groups. The *Irish Mail* is published regularly.

Maritime Institute of Ireland

Robert Brennan, Haigh Terrace, Dun Laoghaire, Co Dublin
Tel 01 280 0969, Website www.mii.connect.ie

Founded in 1941 to promote an appreciation of Ireland's maritime heritage. Operates the National Maritime Museum in Dun Laoghaire and publishes the *Maritime Journal*.

Mining Heritage Trust of Ireland

John Morris, c/o Geological Survey of Ireland, Beggars Bush
Haddington Rd, Dublin 4
Tel 01 604 1473 Website www.mhti.ie and www.mhti.com

Established in 1996 to promote the appreciation, recording and conservation of Ireland's mining heritage. Publishes an annual journal and newsletter. Programme includes site visits and workshops.

Railway Preservation Society of Ireland

Paul McCann, PO Box 171, Carrickfergus, Co Antrim, BT38 9PF
Tel 048 2826 0803 Website www.rpsi-online.org

Actively engaged in the restoration, maintenance and operation of mainline steam locomotives and rolling stock. Organises regular talks, outings and publishes *Five Foot Three*.

The Steam Museum

Robert Guinness, Straffan, Co Kildare
Tel 01 627 3155 Website www.steam-museum.ie

This museum houses a unique collection of working steam engines and prototype locomotive models. A useful first contact for information on engines of every variety.

Transport Museum Society of Ireland

Liam Kelly, 39 Dunree Park, Coolock, Dublin 5
Tel 01 848 0831 Website www.nationaltransportmuseum.org

Since 1949, the society has been active in the restoration of public and commercial road vehicles. These are displayed at the National Transport Museum, Howth Castle Demesne, Co Dublin.

Ulster Aviation Society

Ernie Cromie, 27 Woodview Crescent, Lisburn , Co Antrim, BT28 1LF
Tel 048 9267 7030 Website www.d-n-a.net/users/dnetrAzQ

Founded in 1968 to promote an appreciation of aviation, both past and present. Activities include aircraft restoration, opening of the Aviation Heritage Centre at Langford Lodge, regular talks and the monthly issue of *Ulster Air Mail*.

There is no official aviation heritage group in the Republic, but the *Irish Air Letter* has been published by a group of enthusiasts since 1975. Contact the editor at 20 Kempton Way, Navan Rd, Dublin 7 for details.

Waterways Ireland

20 Darling Street, Enniskillen, Co. Fermanagh
048 66323004

A cross-border body responsible for the development and operation of canals and river navigations in Northern Ireland and the Republic.

CONSERVATION

In addition to the organisations listed below, many local authorities now have Conservation Officers who will be able offer practical advice and information on grant availability.

ICOMOS Ireland

c/o RIAI, 8 Merrion Sq, Dublin 2

The International Council on Monuments and Sites (ICOMOS) is a UNESCO-sponsored non-governmental organisation founded in 1965 to pursue the objectives of the Venice Charter. The organisation seeks to set standards for the conservation, protection and enhancement of the built heritage.

The Irish National Committee is an active organisation providing a forum for interdisciplinary discussion and exchange. It currently has sub-committees on archaeology, education and training, and cultural landscapes.

Institute of Historic Building Conservation

Bernard Dee, PO Box 7145, Rutland Place, Dublin 1

The ROI branch of this UK-based organisation was established in 1999 with the aim of furthering the appreciation and conservation of Ireland's built heritage.

Irish Georgian Society

Mary Bryan, Conservation Officer, 74 Merrion Sq, Dublin 2

Tel 01 676 7053 Website www.archeire.com/igs

The Society aims to encourage an interest in, and the conservation of, distinguished examples of architecture and the allied arts of all periods in Ireland. These aims are achieved through education and planning participation. Publications include *Traditional Building and Conservation Skills – a Register of Practitioners* (1998).

Royal Institute of the Architects of Ireland

8 Merrion Sq, Dublin 2

Tel 01 676 1703 Website www.riai.ie

Founded in 1839 as the representative body for professionally qualified architects in Ireland. Publications include *Guidelines for the Conservation of Buildings* (2001) and *Conservation Guidelines for Local Authorities in the Preparation of Development Plans* (1998).

Ulster Architectural Heritage Society

66 Donegal Pass. Belfast, BT7 1BU

Tel 048 9055 01213 Website www.suahs.co.uk

Aims to promote a better appreciation of the built heritage and good conservation practice. Monitors planning applications relating to listed buildings and conservation areas. Publications include *Buildings at Risk* and *Directory of Traditional Building Skills*.

APPENDIX 2

INDUSTRIAL HERITAGE SURVEYS

These are organised by general and industry-specific survey. The former encompass more than one category of industry but do not necessarily purport to cover all types. They are arranged according to the extent of their coverage – national, county and sub-county. Surveys relating to specific industrial categories are listed by site type. In all cases, contact with their compilers should be made in writing in the first instance.

GENERAL: NATIONAL

Department of Arts, Heritage, Gaeltacht and the Islands*

Archeological Survey of Ireland, Dúchas the Heritage Service, Dún Scéine
Harcourt Lane, Dublin 2

The Sites and Monuments Record, begun in 1982, contains site-specific data gleaned from paper surveys (mainly OS maps), aerial photography and fieldwork. Each site has a file containing map designations, documentary references, and field survey notes (where carried out) and is cross – referenced to the relevant OS map. There are upwards of 150,000 sites, mainly of pre-1700 date. The Record of Monuments and Places is a subset of the SMR, being those sites meriting some form of protection. It encompasses over 110,000 sites, of which about 3,300 are of industrial interest. Manufacturing sites (mainly sites of mills) comprise just over half this total, and communications (mainly bridges, roads and toghers) most of the remainder. The RMP is held in the form of an Access database arranged by county, townland, type, function, period, material; it is also accessible through GIS.

Department of Arts, Heritage, Gaeltacht and the Islands*

National Inventory of Architectural Heritage, Dúchas the Heritage Service
Dún Scéine, Harcourt Lane, Dublin 2

A comprehensive and systematic survey of all upstanding built forms, including those of an industrial nature, begun in 1991. Most are of post-1700 date, and the industrial sites are mainly mills and factories, bridges and railway stations. By early 1999, 26 towns have been surveyed and at the time of writing, data are currently available on eight (figures in brackets denote the number of industrial sites): Carrick-on-Shannon (35), Cavan (11), Clonmel (96), Cork (385), Kilkenny (69), Letterkenny (44), Roscommon (37) and Roscrea (70). The remaining towns had been surveyed and the

*Since June 2002 certain functions of this Department have been transferred to The Department of the Environment & Local Government.

data are undergoing computerisation: Athlone, Athy, Ballina, Carlow, Castlebar, Dundalk, Ennis, Galway, Longford, Monaghan, Navan, Portlaoise, Sligo, Tralee, Tullamore, Waterford, Wexford, Wicklow. The core data attributes, field descriptions and documentary references to each site are described on standardised forms and cross-referenced to a large-scale map and photographs. Sites are also evaluated for inclusion in each local authority's Record of Protected Structures. All the text data are also held on an Access database. Interim county surveys are also progressing in response to the new listing legislation (counties Clare, Donegal, Kerry, Laois, Monaghan, Roscommon, Sligo). However, only those sites already identified by An Foras Forbartha and noted in other published sources are being examined for the moment. It is intended to follow these preliminary county surveys with a more comprehensive survey.

Institution of Civil Engineers/ Institution of Engineers of Ireland

c/o Dr Ron Cox (Republic of Ireland), Centre for Civil Engineering Heritage
Trinity College, Dublin 2

Dr Michael Gould (N. Ireland), 19 Glencreagh Drive, Belfast BT6 0NJ

A comprehensive survey of around 300 significant civil engineering structures throughout Ireland, mostly of 19th and 20th century date, carried out by Dr R. Cox and Dr M. Gould for the ICE Panel for Historical Engineering Works. Most sites relate to water supplies (reservoirs etc.) and transport (road and railway bridges). Sites are located by national grid, described in detail on standardised forms and photographed; historical and other documentary data are included where available. Computerised files also exist. Published as Cox R.C. and Gould M.H. (1998), *Civil Engineering Heritage Ireland*. The project is also discussed by Cox R. (1998), 'Recording Ireland's civil engineering heritage', *Taking Stock of Ireland's Industrial Heritage*, pp 29–33.

GENERAL – US COUNTIES

An Foras Forbartha

c/o Irish Architectural Archive, 73 Merrion Sq, Dublin 2

Nineteenth and 20th century industrial sites in various counties were surveyed in the 1970s by Gavin Bowie and John Courlander for An Foras Forbartha in order to highlight those meriting inclusion in county development plans. These records, which have been deposited in the Irish Architectural Archive, are in the form of manuscripts and typescripts organised by county, townland, function, grid and sheet/plan/trace.

The following list of surveyed areas is arranged by county, survey date (where known) and approximate number of sites recorded: Carlow (1977–78) – 40; Cavan (1974) – 25; Clare (1973) – 13; Cork, north (1978) – 75; Donegal (1975) – 25; Dublin, south – 40; Galway (1975) – 30; Kerry (1973) – 25; Kildare (1973) – 20; Leitrim (paper survey only) – 39 ; Longford (1976) – 35; Louth (1975) – 25; Mayo (1977) – 40; Meath, part of – 20; Monaghan (1974) – 10; Sligo (1978) – 20; Tipperary, north (1973) – 15; Waterford (1976) – 40; Wexford – 120; and Wicklow (1977) – 60.

Co Cavan

Irish Landmark Trust, 25 Eustace St, Temple Bar, Dublin 2

A survey carried out in 1998 to identify disused buildings suitable for conversion into holiday homes. Of the c.150 sites noted, 14 are of industrial interest and date from the 19th and early 20th centuries. Each site is noted by location, 6" OS sheet number, national grid and townland. A brief field description is given along with a photograph. The data are published in typescript form – Gibbons E. (1998), *The Irish Landmark Trust: Cross-Border Restoration Survey: Co Cavan* (2 vols).

Co Cork (excluding Cork City)

Cork Archeological Survey, c/o University College, Cork

A comprehensive paper and field survey carried out in 1980s under the auspices of University College Cork on commission from OPW Archeological Survey. Objective was to identify and survey all sites of pre-1700 date. Industrial sites of later date were, however, also included and those identified from OS 6" maps and still shown on the 3rd edition map (1926–37) were visited. Almost 700 upstanding sites were described on standardised forms, sketched and photographed and cross – referenced to OS maps. Some of these data are also held on computer. All the field notes are held in Cork and selected details are also included in the Record of Monuments and Places. Selected sites have been published in several county inventories. The project is discussed by Sleeman, M. (1998), 'Cork's Rural Industrial Heritage: A Field Archaeologist's Approach', *Taking Stock of Ireland's Industrial Heritage*, pp 12–15.

Cork City and environs

Dr Colin Rynne, University College, Cork

A comprehensive and systematic study of c.700 industrial sites dating from late 1700s onwards in greater Cork area. Paper survey undertaken in 1988 focused on

site identification using large-scale town maps and other documents (e.g. Goad fire insurance manifests); hand craft industries were excluded. Detailed fieldwork carried out in 1990–93 entailed site descriptions and photographs; measured drawings also made of some sites. Formally organised records are located by street and cross-referenced to maps; some data have been computerised using Aldus FilemakerPro. Project sponsored by Royal Irish Academy and Dúchas. Published as Rynne, C. (1999) *The Industrial Archaeology of Cork City and its Environs*. Also discussed by Rynne, C. 1998 'The Industrial Archaeology of Cork City and its Environs', *Taking Stock of Ireland's Industrial Heritage*, pp16–19.

Co Dublin (excluding Dublin City)

Fingal County Council, Planning Dept, Fingal County Hall, Swords, Co Dublin

In 1988–89, Dublin CC commissioned Georgina Scally to undertake a comprehensive paper survey of industrial archaeological sites as part of a revision of its development plan. Site identification was based on 18th/early 19th century maps and OS 6 inch/ 25 inch maps from 1837 to 1938. A total of 1,156 sites were recorded. Each has a numbered index card noting its name, function, power source, townland/parish/barony, map sheet, grid and map designations; supplementary historical data are also included in some instances. Data are held as site record files which are cross-referenced to 6 inch maps, and all are held by Fingal CC. Methodology and results published as Scally, G. 1998 'Industrial Archaeology Survey of County Dublin', *Taking Stock of Ireland's Industrial Heritage*, pp 4–7. Sites were inspected by members of Dublin CC planning staff in 1989. Those meriting inclusion in the 1993 development plan were photographed, but otherwise no field records were made. A file and at least one photograph is said to exist for each listed site. These have been dispersed amongst the three councils into which Dublin CC was subsequently divided: Fingal, Dun Laoghaire/Rathdown, and South Dublin.

Co Dublin (north)

Barry O'Reilly, Sonas, Curraghscarteen, Moyglass, Co Tipperary

Comprehensive and systematic field survey of industrial sites of vernacular character undertaken in three phases during 1997 under the auspices of FÁS as part of a wider vernacular buildings survey of north Co Dublin. All sites depicted on OS 6 inch maps were visited in the field and upstanding structures and buildings identified. About 80 mills, forges, bridges, mileposts and water pumps of 19th century date were subsequently recorded. Location, map designations and documentary references were noted, along with standardised site record sheets

detailing construction, condition, sketches and photographs. Pen and ink drawings of selected sites were made by Herbert Alexander and others. Each site is cross-referenced to OS maps. All data held in Gilbert Library, Dublin. Findings were published in *Annual Report of Dublin Heritage Group* (1993, 1994, 1995), and as O'Reilly, B. (1993) *Vernacular Buildings of East Fingal*.

Co Dublin (Clondalkin area)

Joe Williams, 91 Floraville Ave, Clondalkin, Dublin 22

On-going research in conjunction with Clondalkin History Society into industrial sites within a 3 km radius of the village. Informal notes, photographs and documentary references. Findings published as William, J. (1985) *A Walk through the Past*, and Williams, J. (1997) *Clondalkin Postal Views*.

Dublin City (Docklands)

Professor Loughlin Kealy, School of Architecture, University College Richview, Clonskeagh, Dublin 14

In 1996, a team led by Professor Kealy undertook a paper survey of the built heritage of the Docklands on behalf of the Custom House Docks Development Authority (CHDDA). Mary McMahon was commissioned to undertake a paper survey of the industrial sites. Examination of 18th century maps and OS maps from 1847 to 1936 revealed 430 sites of industrial interest on both sides of the Liffey east of the Custom House. Index sheets were compiled noting function, location and map designations and cross-referenced to 1:2500 OS maps. This was followed by the systematic field survey of buildings in over 60 streets. Some 40 sites of industrial interest were described externally and photographed. Data are held in UCD in the form of card indexes, computer database and CDs (photographs) and also published as CHDDA 1996, *Dublin Docklands Area – Inventory of the Architectural and Industrial Archeological Heritage* (2 vols). The industrial heritage aspects are also discussed by McMahon, M. (1998) 'Recording the Industrial Heritage of Dublin's Docklands', *Taking Stock of Ireland's Industrial Heritage*, pp 8–11.

City (South Dock Ward)

Mary McMahon, 77 Brian Rd, Marino, Dublin 3

Undertaken in 1995 and financed by the Royal Irish Academy and Dublin Archeological Society. Perusal of large-scale OS maps indicated 80 sites of industrial interest in the area bounded by Merrion Square, Grand Canal and River

Liffey. Index sheets compiled noting function, location and map designations. Results presented in typescript form – McMahon, M. (1995) *Industrial Archeological Survey: A Proposal for the Dublin County Borough*. See also McMahon, M. (1998) 'Recording the Industrial Heritage of Dublin's Docklands', *Taking stock of Ireland's Industrial Heritage*, pp 8–11.

Dublin City (part)

Dublin Civic Trust/Historic Heart of Dublin, 4 Castle St, Dublin 2

A few industrial sites are included in an architectural inventory of two city centre zones: (1) the area bounded by Amiens St, North Circular Rd, Phibsborough Rd and the River Liffey and (2) the area bounded by St Stephen's Green, South Circular Rd, Pimlico and Dame St. The survey methodology is similar to that devised for Dublin Docklands; sites are described in detail (general externally) and photographed. The data are held in paper and computer formats.

Dublin City (part)

Peter Walsh, 36 Sutton Pk, Dublin 13

Researching 18th and 19th century industrial sites in the Earl of Meath's City Liberty in connection with a study of his impact on the development of a Dublin suburb.

Co Galway

Paul Duffy, Cascia, Rockbarton North, Salthill, Galway

On-going paper and field surveys since 1975 have resulted in the accumulation of several thousand records. Selective material is currently being edited for publication.

Co Kerry (east)

Patricia O'Hare, c/o Muckcross House, Killarney, Co Kerry

A comprehensive survey carried out 1985–93 under auspices of FÁS and Castleisland District Development Association on archeological sites in east Kerry (OS 6 inch map sheets 22–24, 30–32, 39–41, 48–50). It includes over 100 industrial sites of post-1700 date. Its methodology was similar to Cork Archeological Survey. Sites were identified on OS 6 inch maps and new ones discovered during the course of fieldwork. Each site was noted by townland and

grid, described on standardised forms and photographed. These data were supplemented by sketches and documentary material where available. Unfortunately, the whereabouts of this information is currently unknown.

Co Kildare (Naas)

Paddy Behan, 34 Ashgrove Ave, Naas, Co Kildare

Notes and photographs on industrial sites compiled during course of local history research in conjunction with Naas Local History Group. Some findings published by the Group as *Nas Na Riog: Poor House to Fairy Flax* (1990).

Co Kilkenny

Kilkenny County Council, Planning Dept., County Hall, John St, Kilkenny

A comprehensive and systematic paper and field survey carried out by Fred Hamond for An Foras Forbartha and Kilkenny CC in 1988 to identify sites meriting inclusion in county development plan. Sites were identified mostly from OS maps and published documents. Site attributes noted include location (townland, OS map, grid), name, past and present function, condition, surveyor, survey date and photographs. Each site was also described on a standardised form and photographed. Data on each of 646 sites are held in separate indexed files cross-referenced to OS maps. The actual survey records are held by the Council's Planning Department and have been summarised in typescript form by Hamond, F.W. (1990) *An Industrial Archaeology Survey of County Kilkenny* (3 vols).

Co Limerick

Limerick County Council, Planning Dept, PO Box 53
County Buildings, 79–84 O'Connell St, Limerick

A record of 65 industrial sites compiled in 1997–98 in connection with preparation of county development plan. Contains basic field notes and photographs.

Co Louth

Susan O'Connor, Louth County Museum, Jocelyn St, Dundalk, Co Louth

A paper survey carried out by Fred Hamond in 1994 in connection with the setting up of the museum's industrial gallery. Comprises several hundred sites of industrial interest as depicted on 1835/36 and 1907/09 OS 6 inch maps. These

have been noted by sheet number, townland and map depiction and cross-referenced to marked-up maps.

Co Louth

Irish Landmark Trust, 25 Eustace St, Temple Bar, Dublin 2

A survey carried out in 1998 to identify disused buildings which might be restored as holiday homes. Of the c.150 sites noted, 21 are of industrial interest and date from the 19th and early 20th centuries. Each site is noted by location, 6" OS sheet number, national grid and townland. A brief field description is given along with a photograph. The data are presented in typescript form – Gleeson, C. (1998) *The Irish Landmark Trust: Cross-Border Restoration Survey: Co Louth* (2 vols).

Co Mayo (Ballina district)

Jim Gilvarry, Ballymachola, Crossmolina, Co Mayo

Notes and photographs of industrial sites identified from local knowledge and compiled as part of a local history project organised by the North Mayo Heritage Centre. Material has also been published as O'Reilly, T. (1993) *Dear Old Ballina*.

Co Sligo

Irish Landmark Trust, 25 Eustace St, Temple Bar, Dublin 2

A survey carried out in 1998 to identify sites which could be converted into holiday homes. Of the c.150 sites noted, 14 are of industrial interest and date from the 19th and early 20th centuries. Each site is noted by location, 6 inch OS sheet number, national grid and townland. A brief field description is given along with a photograph. The data are presented in typescript form – Nolan, J. (1998) *The Irish Landmark Trust: Cross-Border Restoration Survey: Co Sligo*.

Co Wicklow

Wicklow County Council, Planning Dept, Station Rd, Wicklow, Co Wicklow

A record of 35 industrial sites compiled in 1996–97 in connection with preparation of the county development plan. Contains basic field notes, photographs and GIS map identifications.

EXTRACTIVE INDUSTRIES:

Mines – National

Mining Heritage Trust of Ireland, John Morris, c/o Geological Survey of Ireland
Beggars Bush, Haddington Rd, Dublin 4

A national inventory of mines is currently being compiled on the basis of material submitted by MHTI members. Data recorded for each site includes name, location (county, townland, map sheet, grid), material mined, owner and brief description of component features (type, function, condition, threats). This inventory was initiated in 1997 and its methodology is outlined in the Society's newsletters of July 1997 and September 2000.

SE Ireland

Des Cowman, Knockane, Annestown, Co Waterford

Survey of mine sites, including engine houses, chimneys and powder magazines.

Co Wicklow (Avoca)

Nick Coy

16 Lakeside Park

Naas

Co Kildare

On – going survey of mines in Avoca district. Documentary files, field notes (grid location, construction and condition) and photographs relating to about 20 sites, including engine houses and tramways.

MANUFACTURING INDUSTRIES

Breweries - Co Waterford (Clonmel)

Shirley Markley, Cloonfad Cottage, Cloonfad, Carrick-on-Shannon, Co Leitrim

Field description, photographs and documentary research (especially valuation records).

Butter churns – Counties Carlow, Kilkenny and Laois (Castlecomer Plateau)

Michael Conry, Avila, Chapelstown, Carlow, Co Carlow

A survey undertaken 1996–1998 of animal-powered butter churns on Castlecomer Plateau. Each site is identified by county, townland, 6 inch OS map and owner's name. Location and technical data have been collected on several dozen sites. Findings published in 2001.

Carpet factories – National

Máiréad M. Johnston, The Sign of the Golden Fan, Kill, Co Kildare

A survey of five hand-tufted carpet factories and general research into carpet and rug – making in Ireland. Details of site location, physical remains, photographs

and documentary references. For a general overview see Johnston, M. (1997) *Hidden in the Pile: the Abbeylax Carpet Factory, 1904–1912*.

Corn mills – Co Limerick (Newcastle West)

Sean Kelly, Lower Maiden St, Newcastle West, Co Limerick

Photographs of five local corn mills taken between 1975 and 1985.

Corn Mills, Co Waterford (Clonmel)

Shirley Markley, Cloonfad Cottage, Cloontad, Carrick-on-Shannon, Co Leitrim

Field description, photographs and documentary research (especially valuation records).

Culm Crushers - Counties Carlow, Kilkenny and Laois (Castlecomer Plateau)

Michael Conry, Avila, Chapelstown, Carlow, Co Carlow

A comprehensive field survey carried out 1985–1998 into animal-powered culm crushers. These were used to crush culm (derived from anthracite) and mix it with clay for use as fuel. Almost 80 sites are identified by county, townland, 6 inch OS map and owner's name. Size, material, mechanics and condition of each crusher is also noted. Findings published as Conry, M.J. (1999) *Culm Crushers: Edge-Runner Grinding Stones for Tempering Culm, Carlow*.

Flax mills – Co Longford

Paddy Egan, Glanmore, Kenagh, Co Longford

Notes and photographs on about 15 sites made during the course of historical research into the county's linen industry. Published as Egan, P. (1998) *The History of Flax and Linen in Co Longford, 1698–1998*.

Lime Kilns - Co Kildare (north)

Des O'Leary, Donadea, Naas, Co Kildare

On-going research and fieldwork on lime kilns. Sites identified on first edition OS maps are described and photographed and the records organised by townland.

Mills - National

Andrew Ogden, Main St., Johnstown, Naas, Co Kildare

Notes and photographs of tuck mills and wool preparing. Also film/video footage of working mills (eg Odlum's Flour Mill and Dripsey Woollen Mills) and mill engines.

Mills - Co Dublin (Liffey catchment)

William Dick, Redbog, Blessington, Co Wicklow

On – going survey of wind and watermills in Liffey catchment (including Dodder, but excluding Tolka; also parts of Co Kildare and Wicklow). Map designations, documentary references, field notes and photographs are held for over 100 sites. Selected data are also held on an Access database.

Mills - Co Westmeath

Michael Conlon, Castlepollard, Co Westmeath

Paper survey of mills throughout the county based on first edition OS 6 inch maps, Griffith's Valuation and published sources. Data arranged by barony, parish, townland. Members of Westmeath Archeological and Historical Society will survey selected mills. Mr Conlon has already completed a field survey of mills in Castlepollard Parish.

Mills - Co Wexford (River Sow area)

Alice Devine, Ballydicken, Crossabeg, Co Wexford

A survey carried out in 1997 as part of a diploma in local history studies at St. Patrick's College, Maynooth. Site descriptions and photographs supplemented by documentary sources.

Windmills - National

Fred Hamond, 75 Locksley Pk, Belfast , BT10 0AS

A paper survey of upwards of 500 windmill sites as shown on past editions of OS 6 inch maps. Noted by county, townland, map sheet and depiction. Field survey in progress.

PUBLIC UTILITY INDUSTRIES

Water - National

Institution of Civil Engineers, c/o Dr M Gould, 19 Glendregagh Drive
Belfast, BT6 0NJ

A comprehensive survey of water towers in Ireland (excluding domestic supplies) carried out by Dr M. Gould and Dr R. Cox for the ICE Panel for Historical Engineering Works. Data on some 100 sites (mainly of 20th century

date) arranged by county. Includes historical information, field descriptions, photographs and some drawings. Overview published by Cox, R. and Gould, M. 1998–99 ‘The water tower in Ireland’, *Transactions of the Institution of Engineers of Ireland*, vol 122, pp 19–36.

Water - N. Ireland

Dr Michael Gould, 19 Glencregagh Drive, Belfast , BT6 0NJ

Paper survey of public water supply dams of 19th and 20th century date.

TRANSPORT

Canals – Grand Canal and branches

Heritage Council, Rothe House, Kilkenny , Co Kilkenny

A systematic photographic survey carried out by Ian Bath in 1997 of all structures associated with the Grand Canal and its branches. A total of 347 numbered photographs is arranged sequentially in six photo albums and cross – referenced to an inventory of each site’s function (bridge, lock, lock house etc), locality and grid.

Canal – Royal Canal and branches

Heritage Council, Kilkenny, Co Kilkenny

A systematic photographic survey carried out in 1996 by Ian Bath of all structures associated with the Royal Canal and its branches. A total of 225 numbered photographs is arranged sequentially in four photo albums and cross–referenced to an inventory of each site’s function (bridge, lock, lock house etc.), locality and grid.

Canals – Co Wexford

Eithne Scallan, Carraig Mór House, Maudlintown, Co Wexford

A survey of the Ballybrennan, Bridgetown and Castlebridge canals (and associated bridges) carried out for a local history diploma at St. Patrick’s College Maynooth. Includes documentary references, field descriptions and photographs. A copy of her report is lodged with Wexford Library.

Canals and Railways – National

Fergus Mulligan, 44 Oakley Rd, Ranelagh, Dublin 6

Documentary research and field photography relating to railways, canals, bridges, viaducts and locks built by William Dargan (1799–1867). Encompasses around 300 sites, all organised by railway company or canal line.

Railways – National

Thomas Wall, 92 Navan Rd, Dublin 7

A collection of about 500 photographs taken between 1955 and 1990 of railway-related structures, buildings and rolling stock.

Railways – National

Ewan Duffy, 64 Grange Village, Mullingar, Co Westmeath

An extensive collection of photographs from 1995 onwards of railway structures and buildings. Each print is catalogued by county, place name, rail company, description of view, date taken and medium (slide or print). Data are held on an Access database and the actual images are also on CD Rom.

Railways – National

Kenneth Manto, 12 St Conleth's Rd, Greenhills, Dublin 12

An inventory of about 200 signal cabins organised by line and station name. The cabins have been photographed and their technical equipment described in detail. Mr Manto is also an active member of the Irish Traction Group.

Railways – National

Heritage Council, Kilkenny, Co Kilkenny

An inventory of 80 significant Iarnród Éireann structures and buildings compiled by David Parks. Organised by line and station.

Railways – Co Wexford (Bree district)

Clare Doyle, Garranstackle, Bree, Co Wexford

A survey of railway stations and bridges carried out in 1996–97. Held as paper files, photographs and maps. Some data have been published in *Bree Parish Journal* (1997, 1999).

Roads – National

Maurice Barrett, 12 Knocklyon Drive, Templeogue, Dublin 16

An on-going survey of 19th/20th century milestones, posts and plates. Over 100 sites identified on OS maps have been described and photographed. Data are held in paper and computerised forms.

Roads – National

Michael Corcoran, 99 Ardcollum Ave, Artane, Dublin 5

On-going research on road transport: descriptions and photographs of tram and bus garages; these data are held in paper and computer formats. Mr Corcoran is also President of the National Transport Museum.

COMMUNICATIONS

Post – National

Brian Warren , 2 Dargle Valley, Marley Grange, Rathfarnham, Dublin 16

A survey of letter boxes from 1857 to the present. Field descriptions and photographs held in paper and computer form and organised by box type (pillar/ wall/ lamp). A listing has been published by the UK-based Letter Box Study Group, of which Mr Warren is a member.

Post – National

An Post, Group Public Relations, GPO , Dublin 1

Records deposited by the estate of Mr Barney O'Connor relating to an inventory of Irish letter boxes which he undertook in connection with the assistance of An Post. Sites are recorded on standardised forms (includes box type, place and date of manufacture) and photographed.

APPENDIX 3

ARCHIVAL SOURCES

This section lists institutional and company archives which may prove useful to anyone researching the industrial heritage. Phone to check opening hours and access arrangements. Local authorities also hold records on transport (roads and bridges) and public utilities (water and sewerage). A more extensive listing, which includes county archives and libraries, is to be found in *A Directory of Irish Archives* (ed Helferty, S. and Refaüssé, R.), third edition 1999, Dublin.

Irish Architectural Archive

73 Merrion Sq, Dublin 2

Tel 01 676 3430 Website: www.archeire.com.com/iaa

Photographs and drawings of buildings, some of which are of industrial interest. Arranged by county and locality. Also holds an extensive run of *The Irish Builder*.

National Archives

Bishop St, Dublin 8

Tel 01 478 3711 Website: www.nationalarchives.ie

Holds five types of record relevant to the industrial archaeologist. (1) Valuation Office manuscripts of first national valuation carried out in the 1840s. The 'house' and 'mill' books list operators of manufactories (mostly watermills), dimensions of buildings and their machinery. Arranged by county, electoral division and townland; (2) Records of the Commissioners of Public Works in Ireland relating to roads, royal harbours, fishery piers and harbours, inland navigations, coastguard stations and railways. These comprise minute books, registers, accounts, letter books, reports, maps and drawings as itemised by Lohan, R.(1995) *Guide to the Archives of the Office of Public Works*, Dublin; (3) Archives of government departments (eg Transport, Energy and Communications); (4) Miscellaneous business records; (5) 1901 and 1911 Census records.

National Gallery of Ireland

Merrion Sq, Dublin 2

Tel 01 661 5133 Website: www.nationalgallery.ie

Catalogued collection of paintings and drawings, some of which may depict industrial structures and buildings. Specific enquiries should be addressed to the Librarian in writing.

National Library of Ireland

2–3 Kildare St, Dublin 2

Tel 01 603 0200 Website: www.nli.ie

Extensive collection of books, newspapers, manuscripts, maps (including Ordnance Survey), prints, drawings and photographs (eg Aerophotos, Eason, Lawrence and Valentine), some of which may be of industrial interest.

Public Record Office of Northern Ireland

66 Balmoral Ave, Belfast , BT9 6NY

Tel 04890 9025 1318 website: <http://proni.nics.gov.uk>

Extensive collection of primary manuscripts, maps and photographs derived from public and private sources. Although the bulk of these records relate to the six counties of Northern Ireland, some encompass areas within the Republic. There is a computerised catalogue arranged by townland and subject.

Registry of Deeds

King's Inn, Henrietta St, Dublin 1

Tel 01 6707 500 Website: www.landregistry.ie

Leases, mortgages and conveyances relating to land ownership throughout Ireland from the early 1700s onwards. Some transactions include sites of industrial interest. Catalogued by personal name and county/barony/townland.

Royal Irish Academy

19 Dawson St, Dublin 2

Tel 01 676 2570 Website: www.ria.ie

The library houses a comprehensive collection of books, manuscripts (including the Ordnance Survey Memoirs) and journals relating to Ireland. For access details, contact the Librarian or visit the Academy's website.

Trinity College Map Library

Trinity College, College Green, Dublin 2

Tel 01 608 2087

A comprehensive (but not exhaustive) collection of Ordnance Survey and other printed maps relating to the Republic and Northern Ireland. Opening hours are restricted so an appointment is advised.

Valuation Office Ireland

Irish Life Centre, Abbey St Lower, Dublin 1

Tel 01 817 1000 Website: www.valoff.ie

Extensive collection of Valuation books and maps from 1850 onwards. These give details of mill operators and functions. Arranged by county and electoral division. A search fee may be payable.

EXTRACTIVE INDUSTRIES

Geological Survey of Ireland (Minerals Section)

Gerry Stanley, Beggar's Bush, Haddington Rd, Dublin 4

Tel 01 604 1367

Documentary extracts, written descriptions, drawings and maps relating to 19th and 20th century mines and quarries. Organised by county, townland and site name. Non-confidential records are accessible by appointment.

MANUFACTURING INDUSTRIES

Guinness Ireland Archives

Teresa O'Donnell, St James's Gate, Dublin 8

Tel 01 453 6700

Documents and photographs relating to St James's Gate Brewery and related sites from 18th century onwards. Postal or phone enquiries only.

Irish Distillers Ltd

Bow St Distillery, Smithfield, Dublin 7

Tel 01 872 5566

Records of Bow Street (Dublin), Bushmills (Co Antrim) and Midleton (Co Cork) distilleries and also malt lofts and grain stores. Postal or phone enquiries only.

Public Utility Industries

Bord Gáis Éireann

PO Box 51, Gasworks Rd, Cork

Tel 021 4534000

Any queries on historical records should be directed to the Public Relations Department.

Carrickfergus Gaswork Preservation Society Ltd

44 Irish Quarter West, Carrickfergus, Co. Antrim, BT37 0QB

Extensive library of gas-related books and journals, including references to various gasworks throughout Ireland.

Electricity Supply Board

Brendan Delany , ESB Archives, Parnell Ave, Harold's Cross, Dublin 6

Tel 01 604 2132/702 6496

Subject files, administrative records, microfilm, newspaper, magazine and journal records, drawings, maps, photographs. audio–visual material and memorabilia on all aspects of the electricity industry. Restricted opening – appointment advisable.

TRANSPORT

Commissioners of Irish Lights

Inspector of Lights and Marine Superintendent, 16 Lower Pembroke St, Dublin 2

Tel 01 632 1900 Website: www.cil.ie

Journals, drawings and property deeds relating to lighthouses and related maritime navigational aids throughout Ireland from 19th century onwards. Postal or phone enquiries only.

Irish Railway Record Society

Joseph Leckey, Archivist, P.O. Box 9, Heuston Station, Dublin 8

Opening hours Tuesday 8pm–10pm (by appointment) website: www.irrs.ie

Extensive transport archives including waterways, roads and air transport, but predominantly railways. Maps and drawings including parliamentary plans of railways, books of plans of docks, drainage, tramways, reservoirs, markets and hotels as well as contractors' plans of railways.

Waterways Ireland

20 Darling Street, Enniskillen, Co. Fermanagh

048 66323004

Miscellaneous records relating to the Royal and Grand canals, and Barrow and Shannon navigations. Records are also held in the National Archives. Postal enquiries only.

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