

# Heritage Bridges of County Cork

Published by Heritage Unit of Cork County Council 2013  
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Paperback - ISBN No. 978-0-9525869-6-8  
Hardback - ISBN No. 978-0-9525869-7-5

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Printed and bound in Ireland by  
Carraig Print inc. Litho Press  
Carrigtwohill, Co. Cork, Ireland.  
Tel: 021 4883458



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**Message from Cllr Noel O'Connor Mayor of the County of Cork and  
Martin Riordan, County Manager**

It is with great pleasure that we mark the publication of the Heritage Bridges of County Cork. The role of Cork County Council in promoting the heritage of the county – archaeology, architecture, biodiversity, and cultural heritage is a very important one. This publication serves as a fine example of that role and we feel confident that it will encourage a greater appreciation and sense of pride in the many, many bridges in our county.

Cork, or Corcaigh “as gaeilge”, which is the largest County in Ireland, derives its name from the Irish word ‘Corcach’, meaning marsh. This instantaneously conveys the image of a tricky terrain for the movement of people and goods, and throughout the millennia, and not too long after the last Ice Age, people have strived to devise methods and ways to overcome these marshes, rivers and other natural obstructions for the ease of movement.

It is therefore not surprising that the County of Cork is home to thousands of bridges, in their many shapes and forms. How many of these do we pass over (or under) each day on our way to work or school or a hurling match against the rival parish? What can you tell of the history of that bridge? When and why was it constructed? Do you know that a mighty battle was fought at that very same site 400 years ago as in the case of Aughariddera Bridge in Mullinhassig? Do you know that Buttevant Old Bridge is believed to date back to the 13th Century? Do you know that an earlier bridge in Innishannon was completely destroyed in 1755 as a result of an earthquake over 900 miles away and do you know that an ogham stone was once used to cross the Delehinagh River, now the present day site of St. Olan’s Well Bridge?

This publication is full of many other interesting stories about the history of bridges throughout the County. Moreover, the publication also sets out to convey to the reader, the importance of the bridge in the development of places, and society as a whole, from the earliest times right down through the centuries. This is done by looking at the various types of bridges over time, the need for different architectural forms and styles, the ecology of bridges and their environment and their place in the psyche of so many Irish people owing to sources such as placename evidence.

By covering these and so many other aspects it is hoped that this publication will both entertain and inform the reader, and most importantly, not unlike our bridges - build links with the past, present and future.

We commend the work of the Heritage Unit in producing this fascinating and very informative publication.

## Preamble and Acknowledgements:

This publication is an action of the County Cork Heritage Plan and has gratefully received funding from the Heritage Council and the heritage budget of Cork County Council. For more information on the effortless work and support of the Heritage Council, visit their website [www.heritagecouncil.ie](http://www.heritagecouncil.ie).

The Heritage Unit of Cork County Council wishes to sincerely thank Tobar Archaeology (Miriam Carroll and Annette Quinn), Blue Brick Heritage (Dr. Elena Turk) and Lisa Levis Carey as the primary contributors to this publication, who devised a text that is both interesting and informative. Their ingenuity, unfaltering commitment and professionalism is evidenced throughout every page of this book. A special thank you also to Síle O' Neill for her many artistic sketches.

The idea for this publication owes itself to County Archaeologist Mary Sleeman who in her many years working as an Archaeologist, has continued to be fascinated by the Bridges all around us – what better way to convey their story than this publication.

The project process from commencement to completion was managed by County Heritage Officer, Conor Nelligan, with the backing and support of John O' Neill, Director of Service, Mary Sleeman, County Archaeologist and Mona Hallinan, County Conservation Officer. A special thank you also to Beatrice Kelly, Head of Policy and Research with the Heritage Council, for her advice and support in relation to this publication and to Sharon Casey and John Redmond for their advice of an ecological nature.

As part of this project, numerous Heritage Groups and individuals throughout the County were asked to nominate bridges in their locality and share with us any stories, folklore or interesting facts about them. Although the number of bridges put forward greatly outweighed the scope of this publication, it was delightful to see such a high response. We are extremely grateful for every single contribution and it is thanks to these submissions that this publication contains such a variety and wealth of information. Thank you all.

A special thank you also to Liam Dromey and Daniel Ryan for their assistance with specific information relating to many of the bridges featured in this publication.

Prior to the design and print phase of this publication, the final text was edited by Conor Nelligan, Mary Sleeman and Mona Hallinan. A very special thank you to all at Carraig Print for their professionalism and approachability in creating the typeset and layout for the publication as well as the printing of same.

Lastly, thanks to you, the reader, for your interest in the shared Heritage of County Cork.

Conor Nelligan  
Heritage Officer  
Cork County Council

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## CHAPTER 1

### Introduction

Bridges are an integral part of our landscape, and our daily lives. Yet we rarely take time to look at them, or think about their rich history and meaning. Cork County is crossed by a number of notable rivers over 1,200 kilometres in length with some of the most prominent of these being the Blackwater, the Lee and the Bandon (140km, 85.5km and 62km in length respectively (O' Mahony, 2009)), as well as many other important rivers, tributaries and streams such as the Bride, Awbeg, Funchion and Allow. Many of these watercourses spread out to form marshes, lakes and wetland areas along their course and it is therefore not surprising that the meaning of the County name Cork is derived from the Irish word Corcach meaning marsh. It is this natural landscape and topography of the County that has determined how people move from place to place. Over time, this has resulted in the construction of a wide range of bridges and crossing points and together, these form a cohesive cultural heritage resource which can give us a valuable insight into the history of County Cork.

Rivers and their crossing places have had a significant influence on the development of permanent settlement sites, such as towns and villages. Rivers, as natural boundaries, have considerable political and military significance. Bridges and crossing places form gateways and in some cases their tactical value was such that castles were built to protect them, and battles fought around them.

The history and development of bridges is interlinked with the development of routeways and later, on more permanent road and highways. In the later medieval period the Anglo-Normans invested heavily in bridge construction and defence to help them gain a foothold in Ireland. In addition the development of roads facilitated the ease of movement of goods to and from the market in the newly established towns.

The better the bridges and routeways, the quicker an army could advance into an area and suppress insurrection. A similar pattern is seen in the 17th century with the Plantations, and indeed, in the British Government's response to the 1798 rebellion and the 1820's Whiteboy insurrection. The Griffiths Bridges in Duhallow were an attempt to reduce the risk of insurrection by making it easier for law keeping forces to move about the country. Bridges have indeed continued to hold political significance into more recent times. One of the first moves of the Irish Government after coming to power in 1922 was the repair and reconstruction of roads – this allowed commerce to recover and helped establish the Irish State as a viable entity.

Of course the social role of bridges is hugely significant also. Without a bridge, the other side of a river is often so remote that it may as well be a foreign country, often a long way round. The presence of a bridge unites communities across rivers, and makes those living on opposite banks into neighbours. We forget, in these modern times, the real danger posed by rivers in times of even minor floods. Today, we take it for granted that we can cross a river easily, but, in times past, when people depended

on stepping stones and fords, floods could divide families for months on end. The bridge was more than just a structure of convenience to a community; it was a lifesaving connection with family and home.

The structural engineering of bridges evolved to meet the needs of those who used them, largely dependent on technology and available material at the time. For example, up until the mid 18th century, bridges were narrow with provision for a single lane as it was only catering for a very small volume of traffic, mostly pedestrian. On the rare occasion where two carts met, it was not at a speed we know today and seldom lead to a collision. It was only in the late 18th century onwards with increased traffic, the need arose for two way traffic across a bridge. However there are many other factors which dictate a bridge's character.

Flooding is always a danger to bridges and in order to combat this, cutwaters and flood arches were developed to protect them. To allow pedestrians safe passage, on some bridges, pedestrian refuges were constructed. To allow for smooth traverse over level carriageways, the segmental arches were widely built in the later 18th century and into the 19th century. Elliptical arches, developed in the 19th century, were a further advancement in flattening the carriageway. To accommodate a direct approach to the site from the road, skewed arches were invented. Bridges reflect the needs and wants of those who used them, they reflect the way people saw the world, and the way they lived their day to day lives.

By their very nature we are drawn to the formal, large spectacular bridges but we should not forget the large number of smaller, often unnamed, bridges that serve local communities across small rivers and streams throughout the County.

These vernacular bridges, by virtue of their simplicity in design and construction are particularly vulnerable to unsympathetic alteration or complete demolition. Vernacular architecture refers to informal architecture, buildings which are built without a specially trained architect but rather rely on local knowledge, material, skills and traditions. Promoting an understanding of the significance of such structures to our heritage will ensure their ongoing preservation and appropriate restoration.

Many of the sites featured in this Guidebook show signs of repair and alteration throughout their lifetime, and, in many ways this is part of their charm. The juxtaposition of medieval fabric with 18th century extensions seen at sites like Buttevant Old Bridge or Castletownroche creates a charming patina of age, like a readable historic document that intrigues and interests the viewer.

This guidebook, a publication of the Heritage Unit of Cork County Council, aims to draw attention to the interesting character of Cork's Heritage bridges. It outlines some of the basic characteristics of these bridges, examining the way they changed through time, and evolved to meet changing demands. Examples of bridges of different dates and forms, from all over the county, have been used to highlight the richness and diversity of the bridges of County Cork.

## CHAPTER 2

### The History and Development of Bridges

Bridges have played an important role in the social history of Ireland from the earliest times to the present day. They facilitate movement between areas which would otherwise be wholly isolated. They also create a focal point for settlement, and so bridges are often the structures at the heart of communities. It is worth considering the history of bridges in Cork, taking time to think about the way they developed and changed through time, how they came to be symbols which represent a locality or place, and how they were adapted to meet the needs of the communities who used them.

#### Crossing Rivers in Prehistoric Times

People have lived in County Cork since Mesolithic times (around 7000 BC). We know of these early settlers from archaeological sites which produced flint tools, for instance at Kilcummer Lower outside Castletownroche. These people, who lived as transient hunter gatherers would, of course, have needed to cross Cork's extensive system of waterways and marshes although we have little evidence as to how they did this. It was not until the Neolithic period (around 4000BC) that people began to farm and establish permanent settlements. From this time on, formal paths and routeways began to be established, connecting different communities. The creation of safe crossings became ever more important.

Before the development of permanent bridges, the only way of crossing a river was by ford, boat/ferry or stepping stones. In general, the majority of Irish rivers have fording points on the river where it is narrow enough to cross easily, or the current is slow enough not to pose a risk when crossing. Such sites, as reliable and safe crossings, often acted as a focal point for settlements and this is reflected in the archaeological record and the names of many places in the County of Cork, such as Milford and Coachford.

Sometimes crossings at deeper fords were made easier by placing stepping stones across the water, and evidence of these sometimes survives. The main benefit of stepping stones is that they allowed pedestrians to cross a river and stay dry, a major advantage particularly in cold waters. Stepping stones were placed between the townlands of Corrycommane and Corryleary, on the Coomholla River to the north of Bantry, for instance, and the site is now a recognised archaeological monument (RMP CO105-069). There are numerous examples of these sites labelled on the 6" Ordnance Survey Maps. Other sites are labelled 'Footsticks' on these maps. Footsticks are timber posts hammered into the river bed, functioning much like stepping stones. Previously a footstick existed at the site of present day Aghabullogue Bridge.

If people needed to cross rivers at places where the water was too deep for a fording point, boats were necessary. These may have become permanent ferries at busy crossings. They allowed people to cross wide stretches of water, and, for many years continued to be more practical than long bridges with numerous arches.

The earliest formal bridges were probably made of timber. Due to the fragile nature of wood, if timber bridges are not regularly repaired, they are vulnerable to rot and damage from flooding or general wear and tear. As a result, these structures do not survive above ground, and can only be identified through archaeological investigation. Early timber bridges may have first been constructed in the prehistoric period with something as simple as a log laid across a narrow river channel, but, as settlement patterns became more stable, they became more complex. Indeed, we know that timber had been used to create formal roads and routeways from at least the Iron Age (c.400 BC– AD 400). These routeways, called *toghers*, were constructed of timber planks laid flat. In wetland areas they were supported on timber posts hammered into the ground, and formed raised walkways – essentially bridges. Placename evidence suggests that Cork had its fair share of *toghers*. County Cork with over 19,000 known archaeological sites, has extensive evidence for over 8000 years. The county must have been criss-crossed by many routeways, and the many water courses and wetland areas may have been traversed by the construction of timber bridges. The engineering skills, and the materials necessary to build these bridges, certainly existed in this period and there is no reason to suspect that archaeological investigations will not expose evidence of early timber bridges in Cork in the future.

Other early timber bridges might not have looked much like a bridge to our modern eyes. Some bridges, described in the medieval law tracts, seem to have been designed as a floating causeway, where a number of boats or rafts were tied together, with the ends pegged to the shore. Unfortunately, this design has no permanent stable structure at all, and the site would be almost impossible to identify today. Other bridges were built of wicker mats or timber planks strung between posts (hurdles) pounded into the ground at either side of the river; or comprised of moveable planks set over gaps in stepping stones or supported on pebble filled wicker baskets. These were, by their nature, short lived structures (McEnery 2009). The only evidence for these today may be through place name evidence such as *Annakissha* in North Cork which suggests oral evidence of a wicker causeway crossing in the area.

It should, at this stage, be noted that there has been no systematic survey of our rivers and streams to identify remains of the fords, stepping stones, footsticks, clappers, and vernacular bridges – this is an important job waiting to be done and would be an interesting topic for community based archaeological survey projects. These crossings are an important part of our shared cultural heritage and further studies should be carried out in this area to ensure that such features are not vulnerable to alteration or removal.

## Bridges in the Early Medieval Period

Before the 12th century most journeys were short, on foot or pack horse. This was facilitated by a network of paths and tracks which evolved over the centuries. They tended to follow the line of least resistance avoiding obstacles where possible and many of our contemporary roads descended from these old trackways.

This early medieval period in Ireland (around AD 400–1200) is characterised by the coming of Christianity and the spread of monasticism. There was an extensive network of monasteries built across Ireland. These places functioned as more than simple religious establishments, the larger monastic sites were also the centre of complex trade networks and in many ways they were the basis for Ireland's earliest towns. More importantly the early monastic system brought with it the spread of writing, and Ireland finally began to get a written history. In the latter half of this period the Vikings came to Ireland and by the end of the early medieval period the Vikings had established towns in Cork, Limerick, Waterford, Wexford and Dublin. The nature of Irish life had begun to change, with trade and commerce becoming increasingly visible in the archaeological record.

By the early medieval period, as a more extensive road network was built up between these 'monastic towns', ringforts (early Christian farmsteads) and other important settlements, fords and ferries had begun to be widely augmented by bridges. The early crossings did not disappear, but we begin to see evidence of the wider construction of complex timber bridges. These bridges serviced the ever more important footpaths, mass paths and pilgrim paths, which generally followed the path of least resistance meandering through the countryside.

The archaeological evidence for timber working in the medieval period in Ireland is very diverse. The wide range of artefacts, as well as sites such as crannógs and timber houses, shows that the Irish had a distinct preference for building with timber, and possessed some excellent carpentry skills. Sadly, as a result of the poor survival of timber in this country, Ireland has no surviving examples of medieval timber bridges. Nevertheless, we do know about some specific sites from archaeological investigations and documentary sources, and a local source has related that the present day Ballyhooly Bridge replaced a much older timber bridge.

The earliest archaeological evidence for large scale bridge construction in Ireland is the substantial timber bridge at Clonmacnoise in Offaly, which was excavated and dendrochronologically dated (dating using tree rings) to AD 804 (Condit and Cooney 2000, 1). However, some of the first documentary evidence for bridge construction in Ireland is even earlier, there are references in law tracts from at least the 7th century (Kelly 1988, 393). The archaeological evidence suggest that the larger timber bridges used piles driven into the river bed to support the walkway over, or would have been designed with braced timber trestles supported on a solid plank which was laid across the river bed. These trestles could have been cross braced in more regularly used sites to make them more stable, forming a kind of box-framed support for the walkway of the bridge. It is this latter type which was identified at Clonmacnoise.

## Later Medieval Period

The late medieval period in Ireland (around AD 1200 to AD 1550) is characterised by the influence of the Normans, the introduction of formally planned European style monasteries, and the development of a feudal system of government. The Anglo-Normans established several walled towns, and urban centres became more and more important in the Irish economy. One of the most important features in a medieval town was the market. Formal market days were established in towns and large villages, and these regular events encouraged people to travel long distances to sell their goods. Road networks were expanded to meet this need, and with roads came bridges. By the 15th century the Gaelic Lords had begun to build their own castles, and both Norman descended and Gaelic Lords lived in castles called Tower Houses. The dominant architectural style seen in this period is Gothic, and this is reflected in the arch forms of some of the stone bridges that were built at this time. Foundation technology was fairly minimal, and in most cases large buildings were made stable by the support of wide walls. In medieval bridges, the piers are often very wide, almost as wide as the arches.

Of course the vast majority of the population continued to travel on foot, and so the late medieval period continued to witness the use of early crossing styles – fords, ferries, stepping stones and clapper bridges, especially along the smaller streams and rivers. Such sites, as reliable and safe crossings, often acted as a focal point for settlements, or, because they form a natural meeting place, were the focal points of battles between the Norman colonisers and the native Irish lords. The Ford at Knocknaglass, to the east of Kanturk on the River Awbeg, was the site of the Battle of Knocknaglass and is remembered today as the ‘Chieftains Ford’. Aughariddera Bridge, near Coachford, marks the site of a ford which witnessed the ‘Battle of Mullinhassig’ between Sir James Fitzgerald of Desmond & the MacCarthys of Muskerry.

Trestle timber bridges continued to be built too. These structures were common across Europe throughout the later medieval period, and, surviving examples of timber bridges in England show little change in design from the 11th century into the 14th century (Munby 2001, 393).

At this stage it is also very important to mention about clapper bridges. Although these features could be from any date, from prehistoric to modern times, some academics assert that this site type begins around the 13th century (O Keeffe and Simmington 1991). However, one example, Tarr Steps in Exmore in England, has been dated to the prehistoric period (Coyne and Kelleher 2008, 19). In reality clapper bridges could have been used at any period to bridge rivers and streams for pedestrian traffic, they certainly continued to be used into modern times, and some examples were not built until more recent years.

A clapper bridge is a simple stone structure made by laying stone slabs across stone supports (piers or boulders) set at intervals across a river. These are typically just meant as footbridges, they are not wide enough for carts or horses, which had to be driven across through the water beside the bridge. Many clapper bridges may have begun as stepping stones, with timbers crossing larger gaps, and only later developed into more permanent stone structures. This site type is thought to be very

rare in Ireland, yet a concentration of at least seven sites survives in County Cork. It is certain that there are many more, and there is a real need for field work to find other examples. Five Cork clapper bridges are protected in the archaeological record today, including examples at Ballingearry, Ballybeg near Buttevant, and at Ragoonagh West/Gort An Acra near Ballyvourney. There is certainly a need for more field work to determine if other such noteworthy sites are still in existence.

Bridges, as we imagine them today, are typically solid stone structures - 'masonry arched bridges'. While the existence of masonry arched bridges in Ireland prior to the 1100s cannot be ruled out, all the surviving masonry arched bridges in Cork date to after the Anglo-Norman conquest in the 12th century. The Anglo-Norman association with masonry bridge construction is no co-incidence. The construction of a new network of roads, especially near towns, became a defining characteristic of the expansion of their colony, because routeways helped to build and protect that colony. Overall, the extent of infrastructure, including the construction and maintenance of roads and bridges, impacted greatly on the level of control which could be exerted over an area, as well as supporting economic growth. Poor transport networks slowed an army's progress through the country, limiting their ability to respond to attacks, whilst well defended bridge sites enabled the control of areas flanking the river, and created a focus for civic development.

From the documentary sources, it is clear that defensive towers or gate houses and drawbridges, were features regularly constructed on or near bridges by the Anglo Normans and Gaelic Lords during the later medieval period. It is likely that these structures were primarily constructed for defensive purposes. While ancillary defences such as tower houses cannot always be satisfactorily linked with the date of construction of the bridge, it is apparent that defensive structures for bridges remained important throughout the later medieval and into the early modern period. Mogeely Bridge (near Curraglass), Carrigadrohid Bridge, Buttevant Old Bridge, Mallow Bridge, Castletownroche Bridge, Blarney Castle (ruined bridge) and Glanworth Bridge, are all good examples of bridges built in close association with castles. Carrigadrohid is perhaps Cork's most dramatic example of a castle and bridge pairing. The present stone bridge was not built until at least the 17th century, but it is thought to have been built on the site of a timber bridge. There can be no doubt looking at the site today, that the castle controlled all traffic crossing the bridge from either direction.

It should be remembered, of course, that roads with their accompanying bridges in the medieval period were not just built by lords with castles. Many sites are instead associated with religious foundations. Buttevant Clapper is associated with a nearby Augustinian foundation and the bridge at Kilcrea, near Farren, was probably also built in association with the nearby Franciscan friary, a National Monument. In the medieval period, religious orders were wealthy, and often formed the focal point for a community. Routeways for pilgrims, and connections for commerce and trade, were as important at some monastic establishments as they would have been in any of the larger towns.

## Bridges during the Early Modern Era

The period between 1550 and 1691 is often referred to as the Post Medieval or Early Modern Era. This period in Irish history is characterised by several developments which would eventually create a society very much like the one we understand today, based on commerce and established international influences. The eventual suppression of the Lords of Desmond in 1583, after the Desmond Rebellion, allowed Queen Elizabeth to establish firm control over much of Munster. The Plantations, beginning in the 1590s, resulted in further social change, with many new towns being built. In Cork, Sir Walter Raleigh and Lord Boyle were among the most influential characters. Boyle, particularly, was active in the construction of general infrastructure such as bridges and roads which supported economic growth around the county.

Naturally, the bridge building and river crossing traditions of the medieval period were not abandoned during this period. For instance we know that a regular river ferry crossed the river at Bandon, from at least the early 17th century. However, in a pattern similar to the construction of bridges which accompanied the Norman colonisation, the logistics of the Munster Plantation required a certain amount of bridge building. The Bridge Act of 1634 made it legal to raise taxes specifically to build or maintain bridges.

Documentary evidence shows that bridges built during the plantations in the 17th century often included at least some timber components. The Earl of Cork built a wooden bridge at Fermoy in the 1620's. Boyle also built several timber bridges in Bandon. These bridges do not survive well, but in some cases their location is known archaeologically or through archival evidence. However, it is from this period we begin to see some interesting surviving remains such as at Cromwell's Bridge in Glengariff, and Ahakista Bridge in west Cork. These surviving sites typically have rough unworked stone, pointed cutwaters, a narrow hump-backed carriageway and semi-circular or very slightly segmental arches, and it can be quite difficult to distinguish them from medieval sites. These features illustrate the sense of continuity of style which characterises Ireland's bridges at this time. They continue to be characteristic of 18th century bridges, although usually they are more elegantly executed in the latter time period.

Of course, not all stone bridges constructed at this time were built in towns or for the Plantations. The Vernacular stone bridges continued to be important for crossing the smaller rivers and streams as paths and track ways continue to be used by the vast majority of the population going about their everyday business in their locality – getting water, going to mass, helping neighbours. The clapper bridge in Goleen, near the village quay, may well date to this period. Local historian Jim O'Meara remembers a rhyme from his childhood which ran 'Cian O'Mahony, lacking bricks, built this bridge in 1646'.

Up until this period the road systems in Ireland remained a basic network and somewhat neglected. In 1615 the Highway Act introduced a statutory labour system where each parish was required to appoint two parishioners to act as surveyors and each farmer was to send two able bodied men, a team of horses and tools to work on the roads for 6 days a year. While the system worked on the repair of roads its impact

was limited. By 1634 the administration passed to County level and was later abolished with the introduction of the Grand Jury's in 1765.

### Bridges in the 18th Century

The 18th century saw a time of massive social change. Irish art, culture, and society at this time experienced a renaissance, with architectural and artistic developments rivalling that of many European countries. Government at last took on a truly national character, and regional differences become less important. Networks of civic services began to develop, communication links improved dramatically, and people began to develop a national identity set in a shared national consciousness. The period saw the beginnings of the industrial revolution developing across Europe, leading to great technological developments, and resulting in significant improvements in transportation. The fashion for the 'picturesque', the introduction of landscape gardening, new movements in formal architecture, improving economic conditions and increased trade, all had their effect on the form and fabric of roads and bridges. The increase in traffic from the late 18th onward century led to the need to accommodate two way traffic. This required existing roads to be widened and the construction of new roads with more of an emphasis on minimum gradient and of course the widening of bridges together with level carriageways.

At the same time, there was a real movement towards visible philanthropy in the landowning classes. They wanted to show their important position in society by carrying out improvements in the towns and villages near their estates. There were several landlord sponsored villages developed in Ireland at this time, and many other towns were expanded and new houses and facilities constructed, for instance Kingston's expansion of Mitchelstown. Many landlord improvement schemes were associated with new industrial developments, for instance the construction of weaver's houses at Innishannon, Co. Cork by Thomas Adderly or the worker's houses around Blarney Woolen Mills and St. Patrick Woolen Mills in Douglas. These improvement schemes inevitably increased the need for good infrastructure, including strong bridges. In many instances, bridges built during this period reflected the elegance and style of the period.

The expansion of transport systems in Ireland in the post medieval period had a profound impact on the style and material construction of bridges. The growing importance of the port of Cork in the 1700s led to the creation of an extensive road network in the county. The port of Cork was a significant centre in the supply chain for the British Empire, and the Butter Market in Cork City supplied large quantities of high quality butter to ships heading out to the colonies across the world. Such an important link in the military and social supply chain was, naturally, to be facilitated with accompanying road connections- hence the development of the Butter Road, which physically linked the market with the agricultural hinterland. The first commission for the butter road was issued in 1748. This, in turn, led to a real need to improve and widen the country's stock of bridges, and Cork has some excellent examples which typify this. Improvements were achieved using money raised by the Grand Jury and, to some extent, the Turnpike Trusts. The Grand Jury was the forerunner of the County Council and it was usually made up of the county's local influential property owners.

The Grand Jury Act of 1765 abolished statutory labour and developed a presentment system. Under this system an individual wishing to construct or improve a road or bridge could submit costed plans for the project to the Grand Jury for approval. Therefore most roads that came into existence in the 18th century were planned. They are easily recognisable because of their straight lines, cutting across older road systems, ploughing through physical obstacles such as bogs or hills and as they were mostly sponsored by powerful landlords they were designed to go around their estates. The Grand Jury could levy direct taxes which paid for the construction and repair of essential infrastructure like roads and bridges.

The Turnpike Trust, established in Ireland in 1729, was a body set up to maintain inter-county roads - routes which had been neglected by the county-focused Grand Jurys. The turnpike system required users to pay fees at tollgates placed at intervals along the route and had to be authorised by an Act of Parliament. In general the turnpike system was not a success, failing to generate enough income as people avoided paying the toll – does anything ever change! The Turnpike Trust was also responsible for clearing roads of obstructions like snow and debris and for carrying out repairs. Many toll sites were located near to bridges because they formed a natural funnel for traffic.

In Cork, the Turnpike Trust did play a roll in building and maintaining a number of main roads such as Cork to Killarney, Cork to Limerick, Cork to Dublin. Buttevant Old Bridge for example was extended and widened by a grant from the Turnpike Trust in c.1760-70. At sites where timber bridges had been built in haste during the tumultuous years of the 17th century, many new stone bridges were erected such as at Mallow and Fermoy. These bridges, built with public money for the public good, represent the change from a local identity focusing on feudal style control and need for defence, to a sense of national civic identity. They were a part of a national network of bridges which reflected the formal architecture, social improvement and town planning, much like the court houses built across the country around the same time. Bridges built at this time typically have semi-circular arches, regularly spaced and regularly sized piers protected by pointed cutwaters, and, while often still built in rubble stone, tend to have more regularly sized stone and more distinctive voussoirs than medieval sites. The piers become thinner and more graceful, and are built in proportion to the width of the arches, indeed, the ideas of proportion, symmetry and balance are the key development in the 18th Century. Of note is that in order to accommodate the increased traffic during this period, an Act of Parliament was passed in 1727 which mandated for wider roads and a minimum of 12ft width for bridges. If you look under many of the historic masonry bridges today you will notice the older bridge widened on one side such as Ballineen Bridge, Murragh Bridge in West Cork, Cork Bridge Midleton, Bride Bridge and Conna Bridge in East Cork.

In order to increase the span of semi-circular arches, it is necessary to increase the height; typically resulting in a hump-backed carriageway seen on early bridges. Where the priority was to have a level carriageway, masons simply built many smaller arches together. However, the more arches a bridge uses, the more piers it needed, which impede the flow of water and make the bridge more susceptible to damage by flooding. Therefore, it is preferable to have as few arches as possible. However, with establishment of the Irish Post Office, in 1789 high speed carriages

began to travel Irish roads more regularly. Hump backed bridges are very problematic when travelling at speed, as anyone who has driven at speed over a hump-backed country bridge will know. Level carriageways became increasingly important in the later 18th and into the 19th century. One of the major advances in bridge construction, the perfection of the segmental arch, occurred as a direct result of this desire for level carriageways. From the late 18th Century on, bridges began to incorporate this important revolution in bridge design.

It is interesting to note that culvert bridges were also widely built through Grand Jury presentment at this time. These are vernacular bridges which cross small streams or drains, and are usually built of stone slabs laid flat on stone piers. They are somewhat similar to Clapper Bridges, but were designed for wheeled traffic along local roads crossing small rivers and streams.

More significant advances in bridge design occurred during the 1700's too. The introduction of canals, beginning with Newry canal in 1742, revolutionised transport in Ireland. Cork has a short stretch of canal – the Lombardstown Canal (near Mallow), which was built between 1756 and 1761, as well as a canal network in the Royal Gunpowder Mills, Ballincollig. One of the most important technological advances, in terms of bridge design, which occurred as a result of the growth of canals, was the invention of the skew arch. This arch style allowed arches to be built over obstacles at an oblique angle, rather than at right angles as was necessary before. The first ever skew arch in Britain or Ireland was built over the Kildare Canal in 1787 (Rynne 2006, 354). In general, the skewed arch was not used in road construction but came to the fore in the 19th century for the development of railways which needed a similarly straight crossing line.

However, these sites built for the public benefit were not the only bridges built at this time. Bridges built for large landed estates form an important group of their own. Within demesne estates, bridges began to be seen as eye-catchers and landscape features rather than mere infrastructural necessities. They became both more aesthetically embellished and locally more varied in terms of form and fabric. The four bridges in the parklands around Doneraile Court are each stylistically unique, but each has its own decorative embellishment. Christopher Myers, the architect responsible for the design of the Georgian mansion at Blarney Castle, also designed several ornate bridges in the estate – flamboyant gothic revival style structures with alternating limestone and sandstone voussoirs. Wallis' bridge, near Dripsey Castle, incorporates gothic-revival arches and stepped parapets to create a sense of drama. A similar flamboyant bridge carrying the R595 Regional Road was built at the entrance to Old Court near Skibbereen. Clearly all these bridges were influenced by changing fashions in landscape design. Many could be considered folly-bridges and they are all symbols of the aesthetic sensibilities of this period.

### 19th Century Bridges

The 19th century in Ireland witnessed social changes developing around several significant events. The fallout from the Great Famine, and the continued tensions between the Irish and English, led to several attempts on the part of the British Government to suppress civil unrest through social charity and economic supports.

19th century developments such as the National School System, the development of routes like the Butter Road, Famine relief schemes and the spread of some localised narrow gauge railways, all owe their origins to this strategy. The further improvement of roads generally, and the spread of the railway network across Ireland, owes much of its impetus to economic and commercial developments connected to the advancement of industrialisation, which, while not on a par with that seen in England, did affect Ireland's economy at this time. The buildings of this date are typically described as Victorian style, in reality they are a blend of neo-Gothic and Classical style architecture. There is no one style that signifies the Victorian era.

The Grand Jury and the Turnpike Trust continued to finance road improvements into the 1800s, including the repair of existing sites and the construction of small local roads and bridges, including one bridge in 1870, between the townlands of Mitchelstown East and Ringnanean, just 1 mile South of Belgooly off the Regional Road to Kinsale. The postal service was also still influential in the development and improvement of roads, particularly as the tolls paid by mail coaches were the main source of funding for the Turnpike Trusts. An Act passed in 1805 required surveying and mapping of the roads used by the mail coaches, and subsequently, high engineering standards were set out in terms of width and gradient, which resulted in many new roads being built and many existing bridges being widened. At the same time the introduction of public transport, in the form of the regular coaches first run by Charles Bianconi in 1815, increased the need to build wide bridges. During this time some of the work to widen and maintain bridges was carried out by the Office of Public Works

## CHAPTER 3

### PARTS OF A BRIDGE

#### The Structure of Bridges

The word ‘bridge’ describes any man-made feature designed to cross over a gap, linking two places and allowing passage between them. These sites evolved from structures as simple as a log across a river, into complex feats of engineering incorporating technological advances and aesthetic flair. The following chapter describes the different kinds of bridges which survive in Cork, and the components that make up a bridge. Armed with an understanding of these features, together with the history and development of bridge as outlined in the previous chapter, it is hoped that the reader will get a greater understanding of the heritage aspects of a bridge and be in a position to apply this knowledge to other bridges across the county. Moreover, understanding the purpose of architectural features on a bridge, and the ways they vary, can be a valuable tool in understanding and assessing a bridge in order to fully appreciate its social context and background.

There are many different ways of describing bridges but the three key aspects are the function (eg: road bridge); fabric (eg: iron bridge) or form (eg: Suspension bridge). In the case of form, well known examples of suspension bridges (supported on suspension cables) are the former suspension bridge in Bandon, and Daly’s Bridge in Cork City (commonly known as the ‘Shakey Bridge’). Also of note, the earlier Dunkettle Bridge, no longer extant, was referred to as a swing bridge, meaning it could be swung into or out of position to accommodate the movement of shipping vessels, for instance. The vast majority of such terms are self-explanatory. In this book bridges are described using fabric and function. There are however, a few bridge types likely to be encountered in Cork, which may be more difficult to understand and need more explanation – namely clapper bridges, aqueducts and viaducts.

The term ‘clapper bridge’ refers to a simple stone structure with low stone piers supporting stone slabs. They are a type of Foot Bridge that were used along pedestrian pathways over small rivers and streams.

Viaducts (from the Latin *via*; way and *ducere*; to bring) are bridges built to carry a feature over a long distance – they are essentially raised route ways rather than simple bridges, and many are approached by high causeways. Viaducts can carry roads or railways, the examples in Cork are confined to railway viaducts like the Monard, Bridgetown or Mallow Viaducts.

By contrast, an aqueduct (from *aqua*; water and *ducere*; to bring) carries water over land (Dension and Skeward 2012, 73). These are typically associated with larger canals in Ireland, and Cork has no large examples, although there are some small aqueducts built to carry millraces in the county, for instance at Midleton Distillery.

## The Make-up of a Bridge

Most bridges will share certain architectural components; these vary in form and fabric depending on the bridge type, setting and date of construction. In describing or assessing a bridge, these features are referred to by their technical name, so it is worth taking the time to understand the meaning of some technical terms which may be encountered elsewhere in this Guidebook. The terms are described in the order they would typically be built when constructing a bridge.

### Fabric

The first thing which needs to be decided upon, when building a bridge, is the materials it will be made from. As we have seen in the history chapter, timber, stone and metal have all been used in the historical bridges of County Cork. The fabric from which bridges are constructed is usually dictated by local geology, the availability of imported materials and access to suitable transport links, local building traditions and preferences, and the engineering complexities of the final design.

Masonry bridges are the most common bridge type in County Cork, and the majority of road bridges discussed in this book are of masonry construction. The bedrock of County Cork is predominantly limestone and sandstone, and consequently these are the most common stones used in bridges in Cork. Many believe that Cork's red and white county colours are derived from this underlying geology of red sandstone and limestone.

In earlier bridges, the stonework usually consisted of rough unworked stone called 'rubble stone'. This can be either coursed or un-coursed ( 'random rubble') and is seen in medieval bridges such as Buttevant Old Bridge and continued to be used in the smaller less formal vernacular bridges that occur all over the County. This style of masonry slowly gave way to more smooth and decorative stonework, particularly in respect of the bigger bridges in the later eighteenth century. If the edges alone are shaped it is referred to as squared rubble, if the face is also lightly worked (i.e. chiseled flat) it is called dressed stone. Heavily dressed smooth stone, regularly sized and laid in very regular courses, is called 'ashlar'. Ashlar is the most labour intensive form of masonry; it required long hours of chipping away and preparing the stone. Because of the many hours it took to create ashlar masonry work, it was very prestigious and was used on the more important sites. Many bridges would have a rubble core with an outer coat of well-cut ashlar stonework.

The 19th century section of Mallow Bridge is built in this manner, with an ashlar face over a rubble core. String courses (lines of stonework set along the face of the bridge) are also used to decorative effect in these later bridges. They allowed masons to incorporate small sections of well worked stone into the bridge, without the expense of having to build the entire structure from it.

The masonry cannot always be used as a reliable indication of the date however. From the 19th century onward it became fashionable for buildings to look older than they were. Architects and engineers began to design buildings and especially bridges, where a form of rustication in the stone work (known as 'rock faced') was adopted for

use. This is where the face of the stone appears to be undressed rubble, but the joints and regularity of size is more like that of ashlar stone work. For instance the spandrel walls of Fermoy Bridge are designed to contrast with the smoothly finished voussoirs. Rock faced rustication stone work is commonly used in railway architecture especially railway bridges, giving a very solid appearance to the structures.

## Mortar and Render

The stones within a bridge are laid and bonded together using what is known as a 'mortar'. Lime mortar is the most common type of mortar used in all historical masonry structures. Stones were laid or bedded horizontally and the joints between the stones are pointed with a lime mortar to prevent water penetration. In very simple early bridges there may have been no mortar material at all. In such cases the weight of the stones was relied on to keep the structure stable, for instance in some clapper bridges.

Lime mortar has many positive characteristics. It is a natural material that is easy to work with, it is permeable (i.e. it does not trap moisture within the structure), it is both a durable and flexible material in that it is resilient enough when hardened to allow for minor structural movement as well as shrinkage or expansion of the fabric and is aesthetically pleasing. In most masonry buildings a lime render (i.e. a plaster finish) is applied externally to the stonework, except where cut or decorative stone is used.

There is however, no significant evidence that masonry bridges would have been rendered - it appears where they were not of cut or decorative stone, the rubble or coursed stone was simply left exposed.

Cement is often inadvertently used in the repair of historical bridges. Cement is a more modern material which appeared in the late 19th century. Prior to this, lime mortar was the primary material used. When applied to older sites, cement can cause serious problems, creating an impenetrable barrier that can trap water in the structure. In order to ensure these structures retain their integrity it is imperative that repair, restoration or conservation works are carried out using appropriate materials and technologies. Specialist advice should be sought in this respect.

## Abutments

Once you have selected the fabric, the next step in building a bridge is preparing the ground at either side of what you are trying to cross, making sure it has sufficient support for the bridge. These supports, which eventually flank the bridge, are called 'abutments'. They brace the structure and help it to resist the pressure of water flowing against it. They can be built onto a natural rock outcrop or, in some instances, onto man made foundations, and can be made of earth, stone, timber, metal or concrete. Walls on top of abutments are called wing walls.

## Piers

If a bridge is to have more than one arch, it needs support between the arches as well as at the abutments. These supports are known as 'piers'. They are the vertical columns, which support the arches. On earlier bridges with more than one pier, the piers were typically solid, often as wide as the arch, frequently with slightly different sizes and irregularly spaced across the river. This is because in medieval and early post-medieval bridges, formal foundations are rare.

The size and spacing of the piers reflects the presence of suitable natural bedrock in the riverbed. In later bridges more formal foundations or footings were prepared, making it possible to arrange the piers regularly and build them all the same size, for example Bandon Bridge. The base of the pier often steps out a little where it meets the ground; this is the visible part of the footing.

## Cutwaters

The piers are the part of the bridge which is most at risk in times of flood. They bear the brunt of the pressure from heavy flows of water and can be damaged by floating debris. In order to protect the piers, masonry projections called 'cutwaters' are built. Cutwaters are designed to do exactly what the name suggests; they break up the flow of water, reducing the risk of damage caused by scouring, or impact from debris.

Cutwaters come in a number of different shapes including V-shaped (or pointed), rounded, and the rare trapezoidal form. The V-shaped is the earliest form. Cutwaters on earlier bridges were built only on the upriver side. However, in later years people began to build cutwaters on both faces, or to add them to existing sites, for example at Castlemartyr. This both created a more symmetrical feature and helped to protect the downstream elevation, which would be in danger from eddying water. Dressed stone rounded cutwaters began to be used more commonly around the same time, and they are a common feature on 19th century bridges in County Cork.

## Centering

Once the piers have been constructed, the next stage in building a bridge involves preparation for arch construction. 'Centering' refers to the scaffold built to support the arch during its construction; this was usually timber, with woven wicker matting (or timber planking) supporting the shape of the arch until the mortar sets. The inner vaults of tower houses also regularly show marks of wicker centering which served the same function. On rare occasions, an impression of this wicker support is preserved in the render under the arch of a bridge, for example at Ahakista – although this is now obscured by more recent repairs. The loss of this feature is regrettable and irreplaceable and demonstrates the need to assess the heritage of the bridge before works commence.

The timber scaffold was sometimes set on corbels – stone which projected out from the sides of the piers. These stones often remain visible, and were sometimes designed to look like a decorative component, for example a string course, in bridges of the 18th and 19th century.

## Voussoirs

Once the centering was ready, the arch could begin to be formed. One important feature to note on all arches, are the voussoirs; the wedge-shaped stones that make up the ring of the arch. The voussoir at the highest point of the arch is known as the keystone; it locks the other voussoirs in place, and stabilises the structure such that the supportive centering can then be removed. If the keystone were to fall out, the arch would become unstable and may collapse. Earlier voussoirs were usually undecorated, and are made from rough rubble stone. In later sites, particularly in the 19th century, as the bridge design began to take on a stronger sense of architectural aesthetics, voussoirs became more elaborate. The laying of the voussoirs over the centering was a skilled task, carried out by knowledgeable masons.

## Arches

The centering supported various different shapes of arch. The arch forms one of the main distinguishing features of a bridge. They are significant in that they affect almost every other aspect of the bridge, from the gradient of the carriageway to the number of piers required. In some cases, flood arches are also built onto the bridge. These are extra arches built into the abutments on the flood plain, to help protect the bridge structure during flooding. Flood arches are often smaller than the main arches of the bridge but otherwise will typically look similar to the other arches. Arches are named based on their overall shape, and this can also give a loose indication of the date of the structure. There are four main shapes, pointed, semi-circular, segmental and elliptical.

## Pointed Arch

The pointed arch is built in the shape of two circle segments intersecting to form a point. It is a typical feature of medieval Gothic style architecture, fashionable from the 12th to the 16th centuries. Arches of a very similar shape can be seen in the doors of medieval tower houses and churches, and it was also an important feature of the later Gothic Revival style for instance at Colthurst's Bridge, or parts of Carrigadrohid Bridge.

## Semi-circular Arch

Many of the masonry bridges in Cork utilize semi-circular (or round-headed) arches; the arch starts to curve halfway up the pier into a smooth half-circular form. In order to increase the span of semi-circular arches, it is necessary to increase the height; typically resulting in a hump-backed carriageway seen on early bridges. This style of arch was used in Roman times in England, but, because the Romans never settled in Ireland, it is not seen here until at least the medieval period. It was the main arch form used into the 18th century and remained a popular arch form at smaller sites well into modern times. High semi-circular arches were often used for road bridges over canals to allow clearance of boats underneath, and they remain an important part of canal architecture across the world.

## Segmental Arch

The segmental arch was seen in England from the medieval period (Cook 1998), and there are some early Irish examples too, for instance the 17th century Ahakista Bridge. However, segmental arches were not really perfected in Ireland until the late 1700s, when it was used at places like Lewis' Bridge in Midleton. These arches were designed to allow flatter carriageways, reducing the hump-back profile. It became a common feature of 19th century bridges with many examples over major river crossings such as Mallow, Fermoy or New bridge in Skibbereen over the Ilven river. This arch type is made from a segment of a circle, allowing for a flatter arch. Segmental arches had a number of significant advantages over the semi-circular form. They have a wider span and allowed the engineer to be more economical with the amount of stone used, as fewer piers had to be constructed, and the lower height of the arch did not require as much stone to be used as would have been the case in a semi-circular arch over the same span. Furthermore, as these longer spans involved fewer arches and piers, the risk of collapse as a result of scouring and flood damage was lessened. The most significant advantage was, however, the ability to create more level carriageways. The need to build bridges capable of accommodating high speed traffic was a natural consequence of the spread of the Irish Postal Service with the introduction of mail coaches in 1789. The mail coaches ran at high speeds and struggled with the pronounced humps in carriageways on early bridges.

## Elliptical Arch

Elliptical arches are arches in the shape of a squashed circle – they are wider than they are high. They were the next step in the move to create more level carriageways. True elliptical arches are difficult to construct, requiring complex engineering and skilled masonry work. They are fairly rare in County Cork but are seen at some sites, for instance the bridge to Innishbeg in West Cork. They are more common in urban centres in Ireland and Cork City's Patrick's Bridge is probably one of the most well-known elliptical arched bridges.

## Skew Arch

Early bridges cross the river in the most direct and shortest route possible, they are always built at right angles to the river banks. If the road was not travelling in line with this, there was often a pronounced bend before and after the bridge. The later 18th century, however, saw the development of a revolution in bridge design and technology – the 'skewed arch'. Technically more a technique than a specific shape of arch, skewed arches incorporate a twist in the arch form, allowing the bridge to be built at an oblique angle across a river rather than at right angles. They emerged as a result of the spread of canals in Ireland in the 1700s, but only became commonly used in Cork with the spread of the railways in the 1800s, where they were important because trains are not capable of making a sharp turn over a short distance. The skewed arch is technically difficult as it requires precisely cut voussoirs in compound shapes, or complex arrangements of courses. In Cork this arch form is not common, and only found in some 19th century railway bridges.

Once the arches have been built over the piers, the remainder of the structure can be filled in, including the core of the bridge with outer face including the spandrels, carriageway, and parapets.

### Core of Bridge and Spandrels

The core or body of the bridge is usually made up of rubble stone that is externally faced with stone walling. This walling which forms the face of the bridge, both upstream and downstream, is usually rubble stone in the earlier bridges and in late 18th/19th century this is often cut stone or ashlar. This walling is sometimes referred to as 'Spandrel Walls'. The spandrel is the area between the curve of the arch and the outer framework – essentially the area between the arches.

### Carriageway

The top of the bridge which carries the traffic is called the 'carriageway'. Earlier carriageways in Ireland were generally quite narrow in width, allowing only individual passage over the bridge - traffic would have to take turns going over the bridge. There was usually a pronounced hump in the carriageway also. However, the late 18th and 19th century saw the development of bridges built with a gentle gradient in the carriageway and wide enough to accommodate two lanes of traffic. Many of the earlier narrow carriageways were widened and the road built up on either side to level off the hump. As a result of this, it is not always possible to tell the date of a bridge by the width or hump of the carriageway as it appears today. If you examine the underneath of the arch, it is sometimes possible to see the masonry joint, where the original width of the arch meets with the section added on to widen it, called a widening joint.

### Parapet Walls

The walls either side of the carriageway are called the 'parapet walls'. They are typically built of the same masonry fabric as the main bridge. In today's world of heavy traffic this is often the most damaged section of the bridge and the wall can be rebuilt using different materials or in a different style of masonry. In most cases rural pack horse bridges lack parapet walls, so as not to hinder the movement of horses carrying heavy loads attached to their sides.

### Coping Stones

The stones along the top of the parapet wall are called coping stones, they can be laid flat, rounded or set vertically. Their main function is to prevent rainwater getting into the wall, (which may wash out lime mortar and make the structure unstable) but they are sometimes dressed to decorative effect.

## Pedestrian Refuges

Where the carriageway was very narrow, and the bridge was very long, pedestrian refuges were sometimes built. The cutwaters were extended upwards to the parapet walls, and a little alcove, large enough for a person to stand in, was built. In most cases, these pedestrian refuges are V-shaped as a result of the triangular shape of the cutwaters common on narrow bridges. From the 18th century onwards, as bridges began to be widened and even footpaths incorporated to facilitate pedestrian movement, there was less of a need for pedestrian refuges, and in most cases they were removed. These features are therefore rare in the County of Cork and Kilcrea Bridge is the only known example of a Cork bridge where the refuge is still extant.

It is clearly evident that the different features and stylistic elements of a bridge can provide an important insight into how and why it was built. From the early stone bridges, to 19th century cast iron railway structures, each bridge tells a story through its form and fabric. Visiting these sites, and carefully observing the form and fabric, can enable the viewer to understand an important part of the development of communities around them.

## CHAPTER 4

### ECOLOGY

The bridges of County Cork are not only significant as reminders of our built heritage - with all their little nooks and cranny's, they also provide a rich habitat for many species of flora and fauna. The undersides of bridges are often home to a wide variety of animals and birds, while the masonry of the bridge itself may support flora such as lichen, moss and other familiar plants. Similarly, the rivers and streams over which many bridges pass support bird and plant life which forms a rich natural habitat.

Watching the water flowing under the arches evokes feelings of nostalgia in many, because traditionally these sites have been used as places to observe the world around us, to play pooh-sticks in the river, to hear the flow of water on a warm summer's day and to feel time slowing down and settling into comfortable domestic rhythms. The bridge carriageway offers a commanding view point from which to enjoy the many plant and animal species, native and naturalised, on Irish waterways. They are balconies overlooking a natural stage. At times of flood or freezing, bridges provide a viewing point over ecological dramas which we cannot help but be drawn to.

#### Mammals

One mammal commonly associated with bridges throughout Cork County is the bat. Cork County Bat Group has found that many bridges in the county are important habitats for protected bat species. Traditionally, bats roosted in natural structures such as old trees and caves, however due to the loss of suitable natural sites, bats now frequently make use of man-made structures such as bridges, where they hibernate between the cracks in stones. All bats in Ireland (of which 10 different species have been recorded) eat small insects, which they hunt primarily using sound (echolocation), and a typical bat consumes one third of their own body weight in insects every night - the equivalent of a person who weighs 10 stone eating 150 apples a day. The ability of water to bounce sound back, coupled with the high numbers of insects found over water, mean that rivers are an excellent hunting ground. There are a number of bats which are known to roost under bridges in Cork, including; Daubenton's Bat (Irish; Ialtóg Dhaubenton), the Brown Long-eared Bat (Irish; Ialtóg Chluasach Donn), the Natterer's Bat (Irish; Ialtóg Natterer), the Pipistrelle (Irish; Ialtóg Fheascrach) and the Whiskered Bat (Irish; Ialtóg Ghiobach). In fact, Daubenton's Bat is so often seen hawking for insects near bridges that it is commonly called 'the water bat' (D'Arcy 2008b). All bats in Ireland are protected under National and European legislation.

Otters (Irish; Madra Uisce) are semi-aquatic carnivores that are widespread throughout all Irish freshwater and coastal habitats. They are protected under the Wildlife Act and are considered among the most vulnerable of Ireland's native species. Otters typically have resting places within their territories called holts - usually found among trees roots, and can be seen hunting and playing in the water

near bridges, or marking their territory on river rocks. Where more than one otter is seen in an area it is probably a female with young. Otters are quite cautious and hard to spot, but they are common near many bridges along the Blackwater River in North Cork as well as other locations throughout the County such as Cromwell's Arch in Glengarriff. Often otters may be mistaken for minks and both, for example, are known to occur in Glengarriff.

The National Biodiversity Data Centre ([www.biodiversityireland.ie](http://www.biodiversityireland.ie)) provides a great database of species throughout the Country and you can check the online map for the number of species recorded in an area near you, such as at a bridge and its environs. For example, there have been more than 100 species recorded within 1km of the Innishcarra Bridge, Ballincollig, including fish, invertebrate and bird species in addition to other mammals. Such other mammals often encountered at bridges include the House Mouse, Wood mouse, Brown rat, and Ireland's smallest mammal, the Pygmy Shrew.

## Birds

Many species of birds also favour bridges as nesting sites, or can be seen along the nearby river banks. Most commonly, Swallows, Swifts and House Martins use bridges as their summer nesting sites, with the distinctive cup-shaped mud nest of these birds often seen under the bridge arch. The Dipper (Irish; Gabha Dubh) and the Kingfisher (Irish; Cruidín) can also be seen in glimpses from bridges, for instance at Conna Bridge in East Cork. The Heron (Irish: Chorr Éisc) is one of the most visible of river bank birds, it wades in slowly to catch fish on many of Ireland's river's and estuaries and can be regularly seen from many bridges in the County of Cork including on the weir downstream from Inishcarra Bridge, at Bandon Bridge and also from the Bridge in Carrigaline, where it is so common a site that it has become somewhat of a local emblem. Ireland is, also, home to swans and an amazing variety of dabbling and diving ducks, who favour in-shore waters. Water 'hens' like the Water Rail (Irish; Rallóg Uisce) and Moor Hen (Irish; Cearc Uisce) can be seen in the calm waters near bridges, for example at the Clapper Bridges in Buttevant and Gouganebarra. Both the Great Crested Grebe (Irish; Foitheach mor) and the Little Grebe (Irish; Spáigaire Tonn) can also be seen from these same sites, carrying their chicks 'piggy-back' (D'Arcy 2008a).

## Flora

Plants, too, share in the river habitat protected and overlooked by bridges. The Bog Pondweed (Irish; Liach Mhona), a large floating plant with oblong green waxy leaves, is an important species for biodiversity. It is under threat from colonising non-native water plants. Flowering plants like the tall Yellow Flag Iris, the Ragged Robin, the Water Lobelia, the Flowering Rush and Water Mint (Ross, 2008) can also be seen in the waters of Cork's rivers, for example from the Clapper bridge in Aghavrin near Coachford. The bridges themselves support flora too, and one of the most common native species often associated with these sites is Ivy, which can form dense coverings, providing a habitat for roosting and nesting. Fern species, such as the Hart's Tongue Fern and the Maidenhair Spleenwort Fern, can be seen at many of the

bridges across the County, for example the Railway road bridges around Mallow in North Cork or the seventeenth-century bridge outside Mogeely in East Cork. Flowering species such as Red Valerian (Irish; Slán iomaire) often grow on parapet walls on banks near to bridges, and Middleton Bridge even has these flowers growing on the top of the cut-waters. Moss, such as species of Brachythecium and Grimmia, and Lichens (a symbiotic organism made up of a fungus and an algae) - for example the creamy white circles of *Lecanora campestris*, or the reddish-brown *Caloplaca decipiens* - are seen growing on the stones of many Cork bridges. The presence of specific types of lichen in an area can often be an indicator of the air quality in that location.

## Fish

As well as these mammals, birds and plants, remember, too, that Ireland's rivers support a variety of fish including salmon (Irish; bradáin), trout (Irish; breac) and pike (Irish; liús). The base of many bridges forms a safe place to fish from, and anglers in Cork regularly fish near bridges, for instance at Middleton, and Innishannon and the calm waters near Buttevant Old Bridge support shoals of young fish ('frys'). Some fish like to rest under the bridge and there is no better way to see fish than to quietly peer over the parapet wall and watch them resting in the water below.

The historical bridges of County Cork support a rich biodiversity, home to a variety of flora and fauna. It is not uncommon to find ferns, lichens, mosses and flowering plants as well as birds and bats at a bridge, and many bridges also provide a great viewing point from which a much wider variety of species, including otters, swans, grebes and ducks, can be observed. These sites are important habitats within the local landscape, and many bridges are treasured by communities as a place to observe the natural world.

It is also important to note that many bridge sites can be part of a larger area which may be of National importance (Natural Heritage Area (NHA)) or even European significance in the case of Special Areas of Conservation (SACs) and Special Protection Areas for Birds (SPAs)). Such sites are protected through legislation and this publication refers to a number of bridges located in such ecologically important areas such as the Blackwater River SAC. While not all bridges are located within areas that have been designated on a National or even European Scale, it is important to note that they are often valuable for biodiversity locally. As such one should take stock of and value the environment of many of these bridges. As the old saying goes – 'leave nothing but footprints and take nothing but photos'.

## CHAPTER 5

### Bridges of County Cork

The foregoing chapters have discussed the general history, physical development, and environmental settings of bridges in Cork. To truly understand these interesting and varied sites, however, it is useful to consider specific examples in a little more detail. To that end, this section of the book considers a selection of thirty sites in County Cork which illustrate historical developments or can be considered good examples exhibiting varying architectural features. These sites will be described and items of interest will be highlighted to help the reader get a better understanding of the morphology and date of bridges. These are not, of course, the only interesting bridges in Cork, but it is hoped they do give a general flavour of what can be found throughout the county.

### Medieval Bridges

County Cork retains a small number of bridges which have fabric dating back to later medieval times (c.1100AD–1550AD). Nearly all the known examples are in this publication. These are all defined by their rough rubble stonework. As we have seen in the historical chapter, this group includes a number of Clapper Bridges, as well as the more robust masonry arched bridges which typically have pointed or semi-circular arches and irregular sized piers and arch spans.

## 1. Ballingearry Clapper Bridges

Ballingearry, in West Cork, is lucky to possess a pair of clapper bridges, situated in the townland of Drom an Ailigh, south of Ballingearry village. These picturesque footbridges cross a silted-up meander in the River Lee. They were built as part of an important local access path, and are now part of a popular riverine amenity walk.

The northern most clapper bridge comprises 18 limestone slabs, resting on rubble stone piers. It is just over 20m long. Today, only the southern nine slabs cross over water, the remainder pass over silted-up marshy ground. The second bridge, c.150m to the south, is very similar in style. It is the longer of the two, bridging a gap more than 30m wide, and has been recently restored. Its length coupled with its low stature complements the narrow pathway which leads to it, creating the impression of an adventurous trail far removed from the modern world.

Clapper bridges like this pair are defined by their simple structure, they are little more than stone slabs laid flat across rough stone piers. Given their simple form and vernacular nature they typically go unnamed or un-indicated on early OS maps. Similarly, as they are built of virtually un-dateable fabric (uncut stone), it is very difficult to say when, exactly, these bridges were built. As we have seen in the history chapter, these may be among the earliest bridges in the county, yet many clapper bridges continued to be used into modern times. The southern clapper bridge at Ballingearry was partially destroyed in the later 1980s, due to the deepening of the river upstream. This increased the water volume and velocity of flow and knocked the central spans of the bridge into the river. However, the site, which is a registered archaeological monument was restored by Cork County Council. This has revived the walkway between the two clappers, and both bridges are now in regular use by locals and visitors alike. Ballingearry is justly proud of its pair of clapper bridges; the longer of the two is thought to be the longest clapper bridge in Ireland.

## 2. Buttevant Old Bridge

Buttevant Old Bridge stands at the northeastern end of Buttevant town, crossing the Awbeg River. The tree lined river banks, crossed by the gentle hump of this stone bridge, create an attractive approach to the town from Doneraile. In fact the world's first steeplechase is said to have taken place between Buttevant and Doneraile in the mid-18th Century, and it is possible that this bridge was then traversed during this historic event.

This low hump-backed road bridge is built in two parts. The original early bridge, possibly 13th century in date, was extended in the 18th Century (Power et al. 2000). The joint between these two parts can be seen under the arches towards the upriver side, helping to create a patina of age and giving the site real character. The earlier part is on the downriver side, and it possess all the typical features of a medieval bridge; wide piers, irregular span to the arches, which are pointed, and rubble stone construction. There are four pointed arches in all, with squared limestone voussoirs, supported on limestone rubble piers built directly onto the river bedrock. This is the only clear example of medieval pointed arches in the County.

The heavy mass of the piers, and the low flow of the water, have kept the site secure without formal foundations. The span (width) of the arches increases slightly from east to west; the arch width was probably dictated by the location of bedrock outcrops and the piers themselves are more regular in size. The second arch from the western end is noticeably higher than the other three, and the voussoirs have been altered to create a flatter arch profile. The upriver side, the more recent part of the bridge, has four segmental arches with well-cut limestone voussoirs and rubble stone piers protected by pointed cutwaters.

The bases of the piers on both sides of the bridge are protected by a cement apron, this is fairly common in bridges still in use today, and serves to protect the base from scouring and erosion.

The low, hump-backed road bridge is known locally as Blake's Bridge, it was built to carry the former main road from Cork – Limerick. The site is thought to be 13th century in date, and, if so, its' construction would coincide with the early formation of the town and the building of the Augustinian abbey and Franciscan friary nearby.

Buttevant was a Walled Town in medieval times – a fact that Buttevant is still very proud of to this day. This is reflected in Buttevant's inclusion in the Irish Walled Towns Network. The earliest documentary reference to a town here comes from a grant dated 1234, which allowed David de Barry to hold a “weekly market on Saturday at his Manor of Botavant” (Cotter 2013). It has been proposed that Buttevant Old Bridge was probably built within the confines of this medieval walled town (ibid), not surprising therefore that it constitutes an important feature in the Buttevant Architectural Conservation Area and is also both a protected structure and an archeological monument. Also of note is that the bridge is located along the River Awbeg, within a wider habitat that is of European significance - the Blackwater River Special Area of Conservation (SAC).

The bridge is shown clearly on the 17th century Down Survey Barony Map of the area, and it is named Buttevant Old Bridge on the first edition OS map of the 1840s. It continued to be an important crossing place as Buttevant developed in the early modern era so that, by the 18th century, the town had grown to the extent that this bridge needed to be widened. The local Turnpike Trust paid for just over 2m to be added on the upriver side, probably between 1730 and 1800 (Thomas 1992, vol. 2, 29). This addition would have made the bridge much more accessible to carts carrying heavy loads as well as two way traffic. While a new road has been built further to the west, this bridge continues to be a busy crossing place locally. The attractive setting and interesting pointed arches make it a popular local heritage attraction, and the tree-lined river banks and waters around the bridge make it an important habitat for local wildlife. Young fish can often be seen in the gravelly river bed in later summer.

Buttevant Old Bridge is considered “a landmark bridge in the national context” representing an important stage in the development of bridges in Ireland (O Keeffe and Simington 1991).

### 3. Glanworth Bridge

Glanworth Bridge crosses the River Funshion, to the southeast of Glanworth Castle, east of Glanworth village. Its pastoral setting, at the edge of the town, makes this an appealing heritage site for locals and tourists alike.

The site is a hump-backed road bridge, built of random rubble limestone, with thirteen semi-circular arches defined by limestone rubble voussoirs. There are flood arches at either end of the site, crossing over dry land. Its scale makes it a tremendously eye-catching feature in the landscape, it seems to underscore the views out from Glanworth Castle, saying this is the point where medieval Glanworth meets the rest of the world. A mill weir runs under the bridge from northwest to southeast, and the northwestern most arch was partially buried by the construction of a mill race in the 19th century. Typical of medieval bridges, the arch spans are appealingly irregular, increasing in width towards the centre. The twelve piers on this bridge are also characteristically medieval in form; they are of rubble stone construction, vary slightly in width, and are built straight onto the river bedrock. The piers have low pointed cutwaters on the upstream side, enhancing the sense of stability which surrounds the bridge. The carriageway of the bridge is its most striking feature; at c. 3.75m in width, the National Inventory of Ireland remarks that it is the narrowest and oldest public bridge still in everyday use in Europe. According to O'Keeffe and Simington (1991), Bealahaglashin Bridge near Marcom was a similar bridge to Glanworth but was submerged in the Lee Valley Hydro-Electric Scheme.

Its picturesque setting, impressive architectural features and historic location have made Glanworth Bridge one of the most photographed in the country. It is both a protected structure and an archeological monument. The site is traditionally dated to 1446, though there is little direct evidence for this date, and most academics agree that a pre-15th century date is possible for the site (O'Keeffe and Simington 1991). The bridge is overlooked by Glanworth Castle (13th century) and forms an attractive group with the castle and nearby mill. The latter was built in the 1840s as part of a famine relief scheme. Slightly upriver from the bridge, and below the castle, a basin has been carved into the exposed bedrock of the riverbank. The basin, which is approached by carved stone steps, was used in the 19th century to wash wool.

The traffic crossing Glanworth Bridge is controlled by alternating traffic lights, locally said to have been erected as a result of a local dispute which caused a serious backlog of traffic on either side!

#### 4. Castletownroche Bridge

This road bridge, in the village of Castletownroche, is overlooked by a 19th century mill and forms the backdrop of the village park. It crosses the Awbeg River.

Castletownroche Bridge, which comprises five arches rising slightly towards the centre to create a hump backed carriageway, has a real sense of charm. The bridge incorporates fabric from a number of different dates, and the two elevations are very different, constantly re-engaging the viewer with these changes. The oldest section occurs on the upstreamside. This consists of solid rubble piers with three low medievall arches; one semi-circular and one slight pointed, both with rubble voussoirs. The third is a flat headed opening west of centre, which is a modern repair. The largest arch, inserted in the 19th century over the millrace for the near-by corn mill, is set east of centre and is segmental headed, and has dressed voussoirs. Its relative size makes it the most noticeable of the arches on the bridge. There is a second, smaller segmental arch to the east of this, of similar date. All piers are protected by rubble stone pointed cutwaters, some with cement rendering.

The bridge was extended on the downstream side in the late 18th/early 19th century. All five arches have dressed voussoirs. There are three semi-circular arches at west, and the remaining two arches are the inserted segmental arches over the millrace. The spandrel and parapet walls are built of coursed limestone rubble throughout, and the parapets are capped with dressed stone copings. There are some wrought-iron tie staples reinforcing the bridge.

The bridge over-all has an attractive patina of arches, with a series of irregularities which make it an intriguing site to study in detail. It is one of the best examples of bridges in the County to illustrate the alteration of features of bridges over time. For this reason it is both an archaeological monument protected by listing on the RMP, and an architectural feature listed on the Record of Protected Structures for Cork County Council. It is also important in an ecological context, constituting part of the wider Blackwater River Special Area of Conservation.

This bridge inspired the well-known song “The Old Rustic Bridge by the Mill”, made famous by Foster and Allen.

## 17th Century Bridges

The tumultuous 17th century saw the Munster Plantations, which had a significant impact on the development of towns in County Cork. This period saw a spate of timber bridges being constructed, but these sadly do not survive today. Notwithstanding this, Cork is lucky to possess two known stone bridges which have been tentatively dated to this period. These bridges have a hump-backed carriageway, rubble stone masonry work, and semi-circular arches with rough voussoirs.

### 5. Cromwell's Bridge

Cromwell's Bridge crosses the River Proudly near the point where it opens into Glengarriff Harbour. The area brims with yew, holly, arbutus, and numerous other trees and plants, and the bridge forms an attractive and picturesque ruin within this backdrop.

The humped back carriageway and semi-circular arch form found on this structure make it typically 17th century in date. The site has been damaged over the centuries, and all that remains of the original bridge is a single semi-circular arch extending from the south bank towards an outcropping of bedrock in the centre of the river channel. The arch is defined by rubble stone voussoirs, and the piers and spandrel walls are also constructed of a mixture of limestone and sandstone rubble. There is a pointed cutwater, extending to the full height of bridge, protecting the remaining pier. A short section of the rubble stone voussoirs of the central arch remain clinging to the pier.

Cromwell's Bridge also known as Keamagower Bridge is situated near the mouth of the River to the south of the town. It is built to straddle the easiest crossing point of the river, Keamagower, meaning 'goats step or jump'. While some sources suggest that this was originally a three arched footbridge of dry stone construction, the 1842 drawing by the English illustrator WH Barlett depicts the humped backed bridge with five semi-circular arches. In this illustration these arches varied in height and width, with the northern arch significantly shorter than the others. This would have created a sharp rise coming onto the bridge from this side. This hump-backed form is still apparent when looking at the extant remains. While the bridge itself and the road crossing it are now named after Cromwell, this would appear to be only of a coincidental nature as it has been reported that Oliver Cromwell never travelled to this part of the County. It is more probable, therefore, that the name is a corruption of the Irish word 'Crom-Choill', which means 'sloping wood', the local name for the area where the bridge stands.

The bridge itself is widely accepted as dating to the 17th century; it had fallen out of use by the late 1800s when it was replaced by the newer bridge, located upstream. Shortly after this date, one of the original arches on Cromwell's Bridge collapsed. There are numerous sketches, photographs, postcards and publications of the site depicting it as a picturesque ruin, a fitting inclusion on the Record of Monuments and Places (RMP). Another arch collapsed in the 1980's after serious flooding. This site is part of the Glengarriff Harbour and Woodland Special Area of Conservation.

## 6. Aghakista Bridge

Aghakista Bridge is situated on a bend over Aghakista stream on the eastern perimeter of Castletown Berehaven. It is an important local heritage site, which is well known in the area.

Aghakista Bridge is a low hump-backed bridge. It possesses all the typical features of a seventeenth century packhorse bridge, with a high humped back, no parapets, very slightly segmental (although almost semi-circular) arches and rubble stone fabric.

Pack horses were the main method of transport used in Ireland in the 17th century, because the road network was typically not well maintained enough for a horse and cart. The bridges built for pack horses are narrow, because they only needed to be wide enough for a single person to lead a horse across. They usually lack parapets because the pack the horse carried would project out to either side and parapets might get in the way. It was easier to do away with the parapets than to build a bridge wide enough to accommodate any foreseeable load. It is constructed of limestone and red-sandstone rubble masonry, bonded with lime mortar. This bridge is an important Irish site because of its date, but also because of the individual features it incorporates. It is an extremely rare example of an early segmental arch, not commonly seen until the 1800s, and the outline of wicker centering was once visible in the render under the arches. The two semi-circular arches on this bridge are of varying height and length, with the northern arch slightly larger than the southern one. The arches are defined by irregular sized limestone rubble voussoirs. The pier between the arches is short, and has been repaired with lightly worked stone. The pier, and the abutments at either end, are built directly onto the river bedrock. The low flow of the water has kept the site secure without formal foundations. The remains of a pointed cutwater can be seen attached to the upstream side of the pier.

The hump-backed bridge is known locally as Cromwell's Bridge despite the fact that Oliver Cromwell never came to this region. This is a common name associated with bridges, as is the case with Cromwell's Bridge in Glengariff, just mentioned. Like the latter site this bridge is listed as an archeological monument. In addition, it is also considered an important architectural site and is therefore also a protected structure. It was built as the main access point into the town, and on to the local Tuck Mill (to the west). It remained the main access point into the town until the nineteenth century when Brandy Hall Bridge was constructed, to the southwest of this bridge. In recent times the area around the bridge has become overgrown. The bridge has suffered weather damage and there is evidence of erosion of the limestone by the rain. Although it has been altered in recent times, with the addition of a concrete carriageway, the picturesque setting makes it popular with photographers.

## 18th Century Bridges

The 18th century in Ireland was a time of dramatic social change. The relative peace and prosperity experienced at this time led to a renaissance of art and architecture. Commerce improved too, and bridges began to be built in earnest. They became gradually more formal in style. Arch voussoirs, although still of rubble stone, are carefully chosen to be fairly regular in size and shape. The piers, too, which by the 18th century are becoming thinner and more graceful, are more finely executed, and the stonework in general is more likely to be shaped and coursed rubble than random rubble. The vast majority of historical bridges in Cork date to this period or the 19th century (next section). It is worth noting that many of the bridges of this date do show some 19th century additions and extensions, a result of a phase of bridge widening schemes carried out at that time, shortly after the 1727 road act.

### 7. Mogeely Bridge

Mogeely Bridge is situated less than half a mile northwest of the village of Curraglass, crossing the River Bride. It forms an appealing approach to the village of Curraglass, and sits comfortably in the surrounding farming landscape which is crossed and defined by extensive stone walls.

The bridge is a hump-back road bridge with six semi-circular arches, defined by limestone rubble voussoirs and with projecting centering stones visible to the interior of the arches. There are lofty limestone piers of coursed rubble construction, protected by well executed dressed stone pointed cutwaters on the upstream faces. The narrow carriageway is flanked by coursed limestone rubble parapet walls, and it is probable that there were originally drain holes opening at the base of these walls; rubble stone projections visible to the spandrel walls are thought to have been water spouts for these drains. The central arch shows signs of repair, as does part of the parapet wall.

Mogeely Bridge is a very good example of a bridge approached by a sharp turn from the road. This is a characteristic feature of 18th century bridges, illustrating the fact that the engineering technology at that time and/or simply the need to cross the river quickly, had not advanced sufficiently to allow for the construction of bridges at an oblique angle to the river banks. A small dip in both the southwest and northwest embankment allows for easy access and viewing of the upstream side, and the bridge is well known locally as an attractive heritage site. It forms a cohesive group with the 15th century Mogeely Castle, to the south, and a nearby medieval church site. The bridge, along with the latter sites, is listed on the RMP. The site is also part of the larger Blackwater River Special Area of Conservation.

## 8. Conna Bridge

Located in the centre of the village of Conna in East Cork, this impressive bridge forms an important part of the streetscape. It carries the road over the River Bride.

Conna Bridge is a slightly hump backed road bridge with five tall semi-circular arches. The arches gently increase in height towards centre, a typical feature of bridges of this date. The stonework on the spandrel walls and parapet walls is coursed limestone rubble, and the voussoirs to the arches and the downstream side are also rubble, sized to create an even arch surround. To the upstream side, the voussoirs are cut stone, and the piers are protected by low pointed cutwaters made of dressed limestone, with decorative stepped caps. There is vertical stone coping on the parapet walls to the downstream, and horizontal slab coping to the upstream side.

Conna Bridge is a beautiful example of an 18th century bridge which was widened in the beginning of the nineteenth century. The site is protected as both an architecturally important feature (on the RPS) and an archaeologically interesting monument (RMP). The coursed rubble body work and semi-circular arches are iconic 18th century features, while the dressed voussoirs to the upstream side, and the decorative embellishment of the cutwaters, are representative of the 19th century.

There was an attempt to blow up this crossing during the Irish Civil War, but the site was so important to the community that the local priest stood in the carriageway and refused to move unless he was guaranteed the bridge would be safe. The event is commemorated with a plaque near the bridge. Conna Bridge remains a favourite local meeting place, and the low grassy banks to either side form an attractive viewing point, situated within the wider Blackwater River Special Area of Conservation.

## 9. Ballineen Bridge

Located to the south of the village of Ballineen and Enniskean, this bridge, which crosses the Bandon River, forms an important local landmark and is the focal point of a small public park.

This slightly hump-backed road bridge stretches across the flood plain of the Bandon River. It is built in two parts - the upstream side was built in the 18th century while the downstream side was added at a later time, probably around the beginning of the 19th century. The bridge was built originally with the carriageway just over 12ft wide, and was almost certainly constructed off the back of the 1727 Road Act which stipulated 12ft widths. The extension was a result of the need to widen carriageways to accommodate two lanes of traffic in the 19th century proper. The join between the two parts is clearly visible on the inner face of the arches, and centering stones are visible on the inner faces of the arch to the older section of the bridge only. The bridge has ten semi-circular arches. These are defined by sandstone rubble voussoirs on the upstream side, and by dressed limestone voussoirs on the downstream side. The spandrel walls are of coursed sandstone and limestone rubble construction to both sides, but are decorated with a dressed limestone string course set above the arches on the downstream elevation. The piers are built of coursed rubble to the upstream face; they are protected by well executed coursed

rubble stone full height pointed cutwaters. To the downstream side the piers are of dressed stone. The northern end of the bridge, to the upstream side, has been rendered in cement, and a circular iron tie-plate, set near the centre arch, indicates that there have been further structural repairs to the site. The parapet walls, which are built of coursed rubble stone, show signs of extensive repairs also. However, they do retain their vertical coping stones which have been shaped into a rounded profile. This is a feature of many bridges over the Bandon, such as the nearby Murragh Bridge. It may be indicative of an established craft tradition, and may even have been the work of a single craftsman.

This bridge is a significant local landmark to the village of Ballineen. It is listed as an archaeological monument on the RMP. It is a beautifully built structure, with clear indication of skilled masonry work on both the 18th and 19th century elevations. The bridge is given further gravitas by its size, the ten arches elegantly span the Bandon River's wide flood plain. Ballineen, in Irish, is Béal Átha Fhinín which means 'mouth of Fighin's ford', suggesting that a ford crossed the Bandon here prior to the construction of this bridge.

#### 10. Innishannon Bridge

Innishannon Bridge crosses the River Bandon to the west of the town of Innishannon. The site is used as a base for local fishermen, and there is a woodland walk to the immediate south which serves as an important local amenity.

The bridge has a level carriageway, probably a result of later modifications which built up the road level to either end. It comprises six semi-circular arches, gently rising in height towards the centre. The high arches are formed by dressed limestone voussoirs, and the piers have full height pointed cut-waters to the downstream side. This repeating of vertical lines, in the piers and the angle of the cutwater, draws the eye upwards. The site is surprisingly tall and the lofty arches frame the views upriver, making the riverbank here a popular local scenic spot. The bridge has been extensively modernised to meet the needs of the high volumes of traffic which cross it, and the original fabric is only apparent from the downstream side, however it is still considered both an archaeological monument (RMP) and an important architectural structure (listed on the RPS). The upstream side has been widened and is built of concrete, and the parapet walls have been replaced by modern metal railings to both sides.

Prior to the construction of this bridge there was a ford crossing the Bandon River a short distance downstream. Indeed Innishannon town probably owes its existence, at least in part, to the importance of this ford, located at the other end of the town. At one time this was the only crossing between Kinsale and Bandon, and it was the point at which O'Neill and O'Donnell forces met in 1601 to travel on to the Battle of Kinsale. The site of the ford is still known as Boreen Awe or Bothairin an Atha (meaning 'road of the ford'). The Bandon River is tidal from the mouth of the river at Kinsale up as far as the bridge at Innishannon, and when the tide was in a ferry service operated at the site of this bridge. The ferry was granted to Philip de Barra by

King Henry IV in 1412. The first known mention of Innishannon Bridge comes from a record of a resolution by Kinsale Corporation, in 1665, “to oppose the payment of money towards Innishannon Bridge”.

This bridge was completely destroyed in the tsunami of 1755, following an earthquake in Lisbon, Portugal. This earthquake, known as the Great Lisbon Earthquake, is thought to have had a magnitude of 8.5-9, and shockwaves were felt across Europe. It created tidal waves which hit coastlines as far away as North Africa, and the boats in Kinsale harbour are said to have spun around on their moorings. The wave travelled up the estuary of the Bandon River from Kinsale as far as Innishannon, devastating the bridge here. Having been rebuilt, the bridge was again extensively damaged in the severe floods of 1761 and 1765. The Corporation of Bandon paid for the repair of the Innishannon Bridge in 1765 because it was such an important link for the commercial life of the town of Bandon.

The bridge, although it has been significantly altered and modernised, retains all the characteristics of an 18th century bridge; semi-circular arches, a gentle rise towards the centre, coursed rubble stone construction, fairly evenly spaced arches with regularly sized voussoirs, and pointed cutwaters. Like Ballineen Bridge, it also has a sharp turn in the road approaching the bridge, which crosses the river at right angles.

Innishannon Bridge, in its many guises, has crossed the Bandon River at this point for over three centuries. It has been the chief crossing point for traffic into south western Cork.

### 19th Century Bridges

The 19th century in Ireland was a time of dramatic economic and political change. The economic prosperity initiated and led by the industrial revolution, which was coming into its strength in Ireland at this time, had a major impact on the country's bridge stock. The spread of the Irish Postal Service in the late 1700s, and the increased volumes of traffic moving the produce of Ireland's main industries (food and textiles), meant that bridges had to be built, and older sites renovated, at a steady pace. Several new engineering innovations came to the fore in the bridges built during the 1800s in Cork. The segmental arch is probably the most significant of these when considering masonry arched bridges. The spread of the railways, however, meant that viaducts and smaller railway bridges were now also being built. Cork possesses numerous bridges dating to this period, and a small selection of road bridges are discussed in this section, followed by a selection of railway bridges and viaducts.

## Road Bridges

### 11. Bridge at Mogeely

This small road bridge is not named on the Ordnance Survey maps and is selected to represent the many bridges in the County with no official title. It is located to the north of Mogeely village, crossing over the Kiltha River.

This small unnamed bridge crosses the river with four evenly sized semi-circular arches. The voussoirs are lightly dressed limestone, and the remainder of the structure is built of coursed limestone and sandstone rubble. The regularly sized piers are protected by pointed cutwaters on the upstream side, these are built of dressed limestone and have domed caps.

The structure is slightly atypical for 19th century bridges, in that it makes use of semi-circular arches, highlighting the fact that there is often continuity of form in bridge designs, particularly in more rural areas. The pattern is also seen in Inishcarra Bridge discussed next. The use of semi-circular arches then, can probably be linked to two factors, firstly it is very small and is likely to have been built by local masons, who would draw on the vernacular traditions of the area rather than necessarily incorporating new ideas about arch forms. Secondly, the river's small stature meant that it could be crossed with relatively few small arches, so the issue of hump backed carriageway which would have arisen in a larger bridge and mitigated for a segmental arch, was not a concern here. The bridge forms a grouping with the early 19th century Mogeely Bridge (just north of the village of Mogeely), and shares a number of similar stylistic features with the latter including the arch shape, voussoir dressing and the stonework generally. These similarities would further support the theory that the bridge was made by a skilled locally based mason.

### 12. Inishcarra Bridge

Inishcarra Bridge crosses the Lee River at the western end of Ballincollig town, immediately north of the west entrance to the Gunpowder Mills and Regional Park.

Like the previous bridge in Mogeely, this is an example of a nineteenth century bridge that looks like an 18th century structure. It has twenty four semi-circular arches, with twelve crossing the river and the remainder being flood arches ranged across the grassy flood plain to the south. It has one of the largest number of arches in a bridge in the County. The height of the arches increases gently towards centre, creating a hump backed carriageway. For its time it is a narrow bridge with a width of 5.37m and just about accommodating two way traffic. The arches are defined by rubble limestone voussoirs. The central arch has been repaired. The piers are built of coursed rubble stone, protected by pointed cutwaters that rise unusually to the top of the parapet wall. These full height cutwaters may have originally accommodated pedestrian refuges in the parapet wall, but if so, they are now all blocked. The inner face of some arches have niches to support the centering. There has been extensive damage to the parapet walls, and repairs are much in evidence, however, some vertically set coping stones remain along the parapet walls.

Charles Wilkes, superintendent of the Ballincollig Gunpowder mills from 1805, rebuilt Inishcarra Bridge to provide safe transport for the product of the mills (Cox and Gould 2003, 76). The bridge is very much atypical of 19th century bridges in Cork, it is much closer in style to bridges built in the 1700s, with a narrow carriageway, semi-circular arches, fairly undressed stonework, and a pronounced hump. Nonetheless, the bridge is clearly well built, and has stood the test of time, accommodating an exponential increase in the volume of traffic passing over it. Inishcarra Bridge is listed on the RMP and the RPS.

In discussing this bridge, it is also necessary to highlight the significance of the adjacent Royal Gunpowder Mills Site. These mills were an important source of ammunition for the British army and navy; regular loads of gunpowder were transported from Ballincollig to the Port of Cork. The site has a long history of association with military developments, and the bridge was often used as an Army Checkpoint during World War II. The Gunpowder Mills are an important regional heritage attraction today, and constitute Ireland's largest industrial heritage site. The Inishcarra bridge forms an appealing approach to the site.

### 13. Bandon Bridge

Bandon Bridge is situated in the centre of Bandon town (Droichead na Banndan), within an Architectural Conservation Area, connecting the north and south banks of the River Bandon. The current structure was built in 1773-78, on or near the site of an earlier bridge. It was enlarged in 1838 to the east, and has much the appearance of a 19th century bridge. The bridge was enlarged using an unusual corbelling technique in which the stonework is stepped out in stages to the top of the pier walls.

The bridge comprises five segmental arches with a splayed arch to the southern end of the upriver elevation. A splayed arch is one which fans out to be wider at one side than the other, giving roads turning onto the bridge a gentle curve. It uses some of the same technological skills as a skew arch, and is typically seen on 19th century urban road bridges. The arches gradually increase in width towards the centre, they are defined by decorative cut-limestone voussoirs, each of which has been carved with a different design. The walls are built of coursed lightly dressed limestone, the piers are of dressed limestone, protected by pointed cutwaters. The cutwaters to the upstream side are probably close to the original form, they are built of limestone ashlar with pyramid shaped cap stones. The later downstream side cut-waters are more ornate, built of limestone ashlar which steps out at the cap to support the spandrel walls. The coursed dressed rubble parapet walls have cut limestone copings. The carriageway was lit by cast-iron gas lights in the 19th century, and these still remain on raised limestone blocks at the centre of the bridge. Commemorative plaques have been set below these lights, detailing the original construction of the bridge, and its extension in 1838. The northeast abutment has been constructed onto a low plinth, which today forms a walkway and is an important local amenity.

The town of Bandon Bridge owes its name to the erection of a bridge over the river Bandon by English settlers in the 16th century, although the Irish O' Mahony clan are locally reputed to have built a timber bridge nearby as early as the 14th century. Nonetheless, it is certain that a bridge was constructed here in 1594, joining settlers on the north and south banks of the river. The construction of the bridge facilitated increased trade, allowing the town to develop rapidly and it was shortly after established as a Walled Town, when in 1611, William Newce recommended walling the town. The historic walled town of Bandon is today part of the Irish Walled Town Network.

The 1594 bridge was destroyed during heavy flooding in 1765 and a new structure was built in 1773. Parts of this bridge remain contained within the present site, however much of the visible architectural detailing of the structure dates to 1838. This combination of many phases and dates has led to the site being considered both of archaeological and architectural interest (it is listed on both the RMP and RPS).

#### 14. Mallow Bridge

Mallow Bridge crosses the Blackwater River in Mallow town linking Ballydaheen on the south bank to the town centre. The bridge is an important part of the urban environment, and can be viewed from a new river walkway, accessed from the road to the southeast of the bridge. The area is also important ecologically, constituting part of the Blackwater River SAC.

Mallow Bridge is at a strategic crossing point and there is clear documentary evidence that it is on or near the site of earlier bridges. The bridge today is a composite of an early 18th bridge with a mid 19th insertion over the river; the northern half of the bridge dates to 1712, the later southern section was constructed in 1856. It is an excellent example of the two period style. The distinction between the two sections is clearly evident in both the stonework used and the style of its eight arches. Its four northern arches are semi-circular in shape, two of these are flood arches. The four southern arches are elegant wide spanning segmental arches, executed in crisp ashlar limestone. The arches are formed by well dressed voussoirs with a dropped projecting keystone. The last arch on the south side is a flood arch, and it is splayed, similar to Bandon Bridge, softening the turn at the junction between the road and the bridge. There is a decorative string course running along the inner faces of the arches in the southern half of the bridge, an example of centering supports being developed into decorative embellishments. The walls on the earlier section to the north are constructed with rubble limestone masonry. The parapet on this section has been removed and replaced with iron railings and concrete bollards. The wall of the southern half is built of limestone ashlar, with carved string course, ashlar parapet walls, and dressed coping stones. The piers on both sections of the bridge are uniform in size, and have U-shaped cutwaters projecting from both the upstream and downstream elevations. The pier dividing the flood arch from the main arches on the southern section has been further embellished, with a square-profile limestone ashlar column rising up above the truncated curve of mock cutwaters.

Mallow is locally known as the 'Crossroads of Munster'. Taylor and Skinner's road maps of the 1770s identify Mallow as a significant junction, connecting on to Limerick, Kanturk, Millstreet, Cork, Fermoy and Newcastle West. The connection of Mallow to Cork was provided by Mallow Bridge, which throughout the centuries became a central feature of the town. Mallow was struck by severe floods in 1853, when much of the bridge was swept away. The evidence from the Grand Jury shows that the reconstruction of the bridge was an important event in the town. Records show several presentments granted for works to Mallow Bridge, and these covered the construction of new foundations, piers and parapets. Local man Jeremiah Higgins was one of those tasked with this work. In 1856 he received £623 15s 'to rebuild Mallow bridge, on the road from Cork and Mallow to Limerick, at Mallow'. This payment of £623 15s was to be the last of four instalments for a total sum of £2495, which was first granted in the summer assizes of 1854, one year after the floods (O' Connor, 2010). An inscribed stone dated 1856, possibly recording the construction of the bridge, was found c. 500m to the north west of the bridge near the site of a shopping centre. This has been inserted into the wall of the shopping centre.

The bridge at Mallow, an RMP, shares a number of interesting similarities with that seen at Fermoy. They both replaced timber bridges, and they both employ segmental arches with limestone voussoirs and limestone ashlar walls. They also both possess interesting curved cutwaters. These are characteristic features of bridges of this date. This similarity of design is often seen in bridges built along the same watercourse, and may well suggest that the bridges were built by the same masons.

## 15. Rincrew Bridge

Rincrew Bridge is located to the north of Youghal in East Cork, crossing the Tourig River near to the point at which it meets the Blackwater. The site is overlooked by the remains of Youghal's famous Hoffman Brick Kiln, and forms an interesting industrial group in the landscape. Ecologically, this is an area of European importance, constituting part of the Blackwater River SAC and the Blackwater Estuary Special Protection Area (SPA).

Rincrew bridge is a double arched road bridge with wide segmental arches defined by dressed limestone voussoirs with enlarged key-stones. The spandrel walls and parapets are built of coursed dressed sandstone. The coping stones are limestone blocks. The rounded cutwaters, on both upstream and downstream elevations, are capped by stacked diminishing sized limestone spheres. These cap details, coupled with the symmetry created by the pair of arches, gives the structure a real sense of balance and architectural integrity. The river bank to the southwest of the bridge is accessed by stone steps leading down from the roadway, faced in long limestone cobbles which create an aesthetic link between the banks and the bridge structure itself. At the top of these steps a tap, set in a cast-iron case, was probably used by fishermen who docked near the bridge – the river is tidal at this point and fresh water would have been difficult to get without this amenity. There is a stone stile to the northern end of the bridge, which once allowed access to the bank at northwest, and there are a number of quays, both timber and stone, in the river on both sides of this attractive bridge.

Rincrew bridge, with its rounded cutwaters, segmental arches, and ashlar detailing, has some of the characteristic features of 19th century road bridges in Cork. This bridge was an important part of the communications network which allowed Youghal to become one of the most profitable and long-lasting brick production sites in Ireland during the 19th century. The east and west of the site is flanked by quays which would once have been thriving docking points used by both the brick industry and other local trades. The bridge itself retains marks on the inner surface of the arches, made by boats scraping against the structure as they travelled beneath it (Breslin 2002). The site, with its associated steps, stone lined banks and the quays, forms an important industrial group with the Hoffman kiln visible from the site. The river here is now much silted up, but the area is still an important sheltered docking place for smaller crafts.

## 16. Lombardstown Bridge

This bridge crosses the River Blackwater upriver from Mallow forming part of the much larger Blackwater River SAC, just north of the town of Lombardstown. In the early 19th century the smaller bridge in the centre of Lombardstown was known by this name, but when the present structure was erected the name transferred here, and the former bridge became known as Old Lombardstown Bridge.

Lombardstown Bridge is a fine example of a 19th century road bridge. It has five wide segmental arches defined by limestone ashlar voussoirs. The arches are supported on limestone ashlar piers protected by curved limestone ashlar cutwaters with domed caps to both elevations. This ashlar work makes the bridge a very impressive site, it is well executed and suggests some skill on the part of the mason. This architectural merit has led the site to be included on the RPS in Cork County Council's Development Plan. The walls are coursed limestone rubble, as are the parapet walls. The base of the parapet is defined by a limestone ashlar stringcourse, and the coping stones are also smoothly dressed ashlar limestone. A string course which runs around the cutwaters is continued under the arch of the bridge - a decorative embellishment of something which probably served as centering support when the arch was under construction.

Lombardstown Bridge was built on the site of an important fording point on the Blackwater. This ford was reputedly crossed by O' Donnell forces in 1601 as they travelled on to meet with O'Neill troops, crossing the River Bandon at Innishannon, and going on to relieve Spanish forces at the Battle of Kinsale. The flag stones forming the bed of the ford were still visible in the 1950's, and locals recall seeing them above the current location of the bridge about that time. The bridge was built in the latter half of the 19th century and bears much stylistic similarities to the known Griffith Bridges with well executed cutwaters, segmental arches and ashlar string course and may be associated with the endeavours to open up the area and develop improved transport links between Kerry and Cork. It may also be associated with the development of the railway line on the south side of the river, the bridge providing easy access for the travelers coming from the north side to Lombardstown Railway station.

Lombardstown was not immune to the kinds of flooding which had affected Mallow. The dangerous flooding of 1875 swept some abutments away, and at least one local man was drowned. He was crossing the bridge with a cart load of apples from nearby Waterloo farm to the local railway station. During the war of independence and civil war three attempts were made to blow up the bridge, and while considerable damage was done, none of the arches collapsed. Boreholes for explosives can still be seen underneath the southern arch of the bridge.

## 17. Duncannon Bridge

Duncannon Bridge crosses the River Blackwater, just east of Rathmore. The site joins the counties of Cork and Kerry. The Blackwater, which is an SAC, serves as the county boundary in this area.

Duncannon Bridge is a road bridge with three wide segmental arches. These arches have dressed limestone voussoirs, set in a stepped pattern, with chamfered edges and further decorated with dropped enlarged keystones. The walls are coursed squared rubble, enlivened by a limestone ashlar string course over the arches. The piers are ashlar limestone and have low bluntly pointed cutwaters on the upstream side. The parapet walls have curved limestone copings, and there are integral square-profile columns forming the terminal points at each end of the bridge. The use of these column terminals is a nice way of making the bridge stand out from the road walls at either side, and it is used in a lot of bridges. The stonework on this example is particularly fine. A plaque in the southeast parapet wall reads "Duncannon Bridge. Richard Griffith Engineer", a second plaque on the northwest side reads "W IV REX. AD 1834". There is stone reinforcement to the embankments, and the bridge is built onto stone footings. There is a weir located downstream of the bridge, creating an interesting view of the bridge from this side. The horizontal lines of the bridge are reflected in the horizontal line of the weir.

This bridge possesses all the characteristic features of a 19th century bridge, with well-built slightly rounded cutwaters, ashlar detailing in the form of string courses, and segmental arches. Richard Griffith was an interesting man and extremely productive during the 19th century in Ireland. He was the author of the first geological map of Ireland and is still known today as the 'father of Irish geology'. He was also responsible for the 'Griffith Valuation' in the 1850s, a genealogical resource which many of us are familiar with today. The famine, economic downturn and accompanying Agrarian Rebellion of 1822 saw Griffith taking charge of bridge and road building in Munster. During the famine of 1845 he again became involved in transport engineering as Deputy Chairman of the Board of Works. Under Griffiths guidance, a series of bridges connecting Cork, Kerry and Limerick were built in an attempt to open up the area, improve law and order and the local economy by providing improved access to the butter market in Cork. This bridge is typical of those designed under this scheme, and it is listed as an archaeological site in the Record of Monuments and Places (RMP).

## 18. Ring Bridge

This bridge is located in the little coastal village of Ring to the southeast of Clonakilty. The small bridge crosses over an inlet of Clonakilty Bay which is a very important ecological site, constituting both a Special Protection Area and an SAC.

The bridge is dated to the early 19th century by the NIAH and the roadway crossing the inlet is likely to have replaced an earlier road with a culvert bridge at the head of the inlet. The bridge is a single semi-circular arched road bridge with dressed limestone voussoirs. The voussoirs stand out against the darker stone used in the rest of the bridge. The walls are built of rubble sandstone, and the copings are cement rendered. The abutments to either side are protected by coursed rubble sandstone walls forming a quay edge which is one of the most memorable features of the area.

This small bridge may seem insignificant when compared to more impressive road bridges elsewhere in Cork, but it forms an important part of the local scenic landscape and forms an aesthetic backdrop to the inlet. Ring was an important base for a number of industries in the 18th and 19th century, the disused corn store and piers to the north of this bridge is an attractive reminder of that. The corn store and bridge are built in similar materials, and, while they may be of slightly different dates, form an attractive group of heritage buildings which add to the identity of the village.

The bridge is also not without its own identity. It is reputed from a local source that during the Irish War of Independence (1919 – 1921), locals altered the bridge with pick axes and shovels at certain places so that the British Military and RIC, garrisoned in nearby Clonakilty, could not cross with their vehicles, whilst the bridge was still easily passable on horseback or with donkey and cart, to the benefit of the locals.

This bridge represents the numerous single arched bridges throughout the County, quietly servicing the local community and part of the local identity but often in danger due to a lack of recognition of their importance. This bridge has however been included in the National Inventory of Architectural Heritage (NIAH ) signifying that it is certainly not without merit.

## 19. Bridge at Monanimy Lower, Killavullen

This bridge has no official name on the Ordnance Survey maps. It is located just north of Killavullen in North Cork and crosses over a tributary to the River Blackwater near to Carlton Bridge, also constituting part of the wider Blackwater River SAC.

The bridge is a single arched road bridge, with a wide semi-circular arch formed by rubble limestone voussoirs. The walls are coursed limestone and sandstone rubble, and there are vertical stone copings to the parapet walls.

The bridge is located in between Killavullen and Monainmy Castle. Like Ring Bridge, this site is important not for any impressive architectural presence, but rather as an example of Ireland's vernacular bridge building tradition. This one single arched masonry bridge represents the vast majority of the historical bridges that are still in

use. Structures like this are in regular use all over the county. They are small, modest, and often go unnamed or unnoticed. Their vernacular nature makes them difficult to date, and Monainmy Bridge, the example here, is stylistically simpler than the typical 19th century bridge, with no sign of formal detailing. It is probable that bridges just like this one have been providing service to local communities for hundreds of years. They are sites that were taken for granted, and yet contribute in a profound way to the quality, character, and local distinctiveness of an area

## Railway Bridges

### 20. Mallow Railway Bridge

Located to the north of Mallow town, to the west of the roundabout on the N20, this disused railway bridge is an excellent example of a single arched railway bridge over a road. The site is highly visible from the surrounding area and constitutes a typical railway bridge of the time.

The bridge is a single arched limestone bridge and was built c.1849, originally carrying the Waterford branch line from Mallow. The line was incorporated into the Great Southern and Western Railway in 1954. It has a semi-circular arch with rusticated limestone voussoirs with dressed margins. The walls are ashlar limestone with rock-faced rusticated limestone. One of the stones, on the southern abutment on the east side of the bridge, retains the mark left by a core dug into the bedrock during quarrying. The core was the channel into which quarry workers pounded a wedge to split off rock from the natural stone face. The structure is supported by sturdy splayed earthen abutments, with walls of rusticated limestone retaining the earthen banks. The abutments and spandrels have dressed limestone copings.

This bridge, listed on the RMP, is characteristic of the hundreds of railway bridges built along the length of Ireland's railways. The Great Southern and Western line (GS&WR) was the first line to link Cork with Dublin, and the Mallow junction was one of the hubs of the line, linking on to Lismore in Waterford to east and Tralee in Kerry to west. The use of robust rusticated stone creates a sense of power and strength, which is appropriately associated with these massive railway schemes. The bridge across the road from this example shares much of the same characteristics, with rock faced rustication on the stones of the limestone walls, and margined voussoirs to the arch.

Even though now disused, these two bridges remain as monuments to the past.

## 21. Skew Arched Railway Bridge, Bandon.

Located north of Old Chapel to the southwest of Bandon Town this railway bridge on the Great Southern and Western Line, crosses a tributary to the River Bandon.

The structure is a double arched railway bridge, built over a small tributary to the River Bandon. It is now no longer in use, but possesses one of the most important innovations in arch design to come out of the industrial revolution; a skew arch. The bridge's elliptical arches are angled obliquely across the river. Such arches are technically very difficult to build, and the construction of this bridge was only possible because the railway company employed expert masons and engineers. The arches are defined by four stepped rows of red-brick voussoirs. The spandrel walls and inner faces of the arch are also redbrick, laid in Flemish bond. The parapet wall has lime render coping. A coursed limestone rubble wall abuts the site to the east and west ends of the south elevation.

This bridge, built around 1865 when the railway line was constructed, represents two important advances in bridge technology which were widely employed by the railway companies in Ireland; the skew arch, and the use of redbrick. Skew arches have been widely discussed in the foregoing chapters, their main advantage was that they allowed for an angled river crossing and removed any need to have a right angled turn from routeway onto the bridge. The arch was developed in the 1700s for the canal arches, but really came to the fore when the railway networks began to expand in the 1800s. While brick was a well-known building material throughout Ireland in the 1700s, it was not until the coming of the railways that it became widely used in structural work, although its use on bridges is rare in Cork. The transport of heavy and bulky goods, like high quality brick, was extremely expensive by road, so bridges tended to be built of locally quarried stone. Brick was somewhat of a prestige material, and its use was, broadly speaking, confined to urban areas or the houses of the wealthy. Railways, on the other hand, are ideally suited to bulky goods transport, and the spread of the railways in Cork led to a construction revolution. Brick was finally widely available, and it began to be used in smaller houses, industrial buildings, and in infrastructure.

This bridge is easily visible from the N71. On closer inspection it becomes apparent that it is built in close proximity to an old disused road bridge – Bernard's Bridge, built in 1823. The latter is an unusual example of a structure which was built with three semi-circular arches and then widened with two segmental arches; it is triple arched on one side and double arched on the other. Coupled with the skew and bricks of the Bandon Skew Arch Bridge described above, the pair tell a fascinating story of development and change in bridge construction techniques. This site, while it may seem unassuming, stands for some of the most important technological advances in modern transportation.

## 22. Ballydehob Viaduct

This viaduct crosses the mouth of the Bawnaknockane River where it enters Ballydehob Bay, part of the Roaring Water Bay (and Islands) SAC. Today, the bridge is part of a walking route which is popular with locals and tourists alike.

The Ballydehob Viaduct is a 12 arch bridge with semi-circular arches. The walls are of coursed dressed limestone. The piers, which are thought to have a concrete core, are faced in dressed limestone with rusticated sandstone and limestone to the base. These bases are battered (they get wider at the bottom), which is a traditional method used to increase stability on tall structures. The arches have cement block voussoirs, and the copings of the parapet walls are also cement.

This bridge is protected by listing on the RMP and RPS as well as being situated within the Ballydehob Architectural Conservation Area. It was designed by S.A. Kirby and John William Dorman as part of the Skibbereen to Schull narrow gauge railway in 1886. It functioned as an important crossing until the line was closed in the mid-1900s (Barry 1985, 45). The use of cement in the voussoirs, coupled with the more traditional use of stone with rusticated detailing elsewhere, is characteristic of railway viaducts in Ireland.

The site is designed to appear traditional and robust to the casual observer, but the engineers were not afraid to use new materials like cement where convenient. The Skibbereen railway was an important local connection which helped to connect the remote areas of West Cork with the markets in Cork City. It was an economic lifeline for many people at this time. Ballydehob viaduct is one of the earliest uses of cement in this part of the country, yet its facing in stone makes it appear more typical of viaducts crossing wide valleys or depressions- in this case the estuary to the sea.

## 23. Chetwynd Viaduct

The Chetwynd viaduct crosses over the main Cork to Bandon Road just south of the Bishopstown Roundabout near Cork City. The Chetwynds of Shropshire came to Ireland in the 16th century, and the family were granted extensive lands in Cork in 1666. By 1786 the family seat, Chetwynd House, was based in this area, and it is probable that either the family or the house itself lent their name to the townland - Chetwynd. The viaduct is a very well-known landmark in Cork and is listed on both the RMP and the RPS.

This imposing bridge comprises four massive spans, with robust coursed ashlar limestone piers. These are topped with low brick piers and support steel girder trussed segmental arches. There is a platform to eastern end, with limestone block parapets decorated with limestone coping and limestone string course. The main Cork to Bandon (N71) road passes under the arches of this viaduct, and the structure forms a magnificent entrance to the west. One cannot help but imagine the splendour and spectacle of passing under this viaduct at the same time as a steam train passes over the carriageway, with coal dust drenching the space between the arches in blackness.

This viaduct, built in 1841 to carry the Cork and Bandon railway, was designed by Charles Nixon, who was himself a student of the famous engineer Isambard Kingdom Brunel. Fox Herderson engineering company supplied the cast-iron sections. (Cox and Gould 2003, 109). Overtime extra bracing was added to the piers to help prevent vibration damage, and the redbrick sections were added on top of the main piers. As a result this viaduct developed a rich patina of age. After the closure of the line the decking was removed.

Chetwynd Viaduct is today the site of one of the most challenging road bowling events in Ireland, where competitors attempt to throw a bowl over the structure. Cork Bowling Legend Mick Barry famously lofted a sixteen ounce bowl over the Chetwynd Viaduct, then fully decked, on St Patrick's Day of 1955 (Crowley et al 2005, 335). Indeed Cork bowl players had attempted the same feat down through the decades and in the early 1900s it is claimed that Dan Hurley from Bandon lofted the viaduct and was presented with a medal for his achievement. The event remains popular today, and more recent contests have attracted international competitors.

## 20th Century Bridges

The beginning of the 1900s saw the development of ever more complex engineering solutions to problems spanning gaps. The widespread use of concrete and steel changed the appearance and shape of bridges dramatically. The popularisation of new architectural style like the Art Deco and Modernist movement had an important impact on the way bridges were designed at this time. No longer were new materials something to be concealed behind traditional exteriors (as at Ballydehob viaduct). Bridges were built with an eye to the future not to the past.

Of course late 20th century bridges have their own character. The National Roads Authority, established as part of the roads act of 1993, have constructed hundreds of bridges and thousands of km of new roads in recent years. These bridges possess some interesting features, for instance the bridges on the M8 are said to be painted pink with white detailing to reflect the colours of the sandstone and limestone used in so many County Cork buildings. The majority of these modern bridges are built in the modernist architectural style, and their starkness, while sometimes jarring in comparison to the stone bridges discussed in this book, will become the heritage of the future.

## 24. Mizen Head Footbridge

The Mizen Head footbridge joins Mizen head to the mainland; it spans a narrow sea channel. The bridge is well known nationally, and, though it has been replaced with a modern bridge, remains an important heritage attraction approaching the lighthouse and visitors centre on the headland.

The original bridge on the site, designed by Noel Ridley, and contracted to Alfred Thorne of Westminster for construction, was a single span footbridge. 52m in length and almost 50 metres above sea level, it was made of concrete with steel reinforcement, in the shape of a parabolic arch. The site is characteristic of bridges built in the beginning of the 20th century, making use of new mathematical based engineering components such as the parabolic arch. The bridge, thought to be the earliest concrete bridge constructed in Ireland, was built in 1909 (Rynne 2006, 335), and rope ladders had to be used to access the cliff face to construct its foundations.

Mizen Head, positioned right at the tip of the Mizen peninsula, is widely thought to be the most southerly point of Ireland, although actually Brow Head, near Crookhaven, has that honour. The tip of the Mizen peninsula is almost an Island, it is cut off from the mainland by a chasm, 45m deep and 50m wide, spanned by the narrow Mizen Head Bridge. The Fastnet Lighthouse and old Marconi signalling station, which houses a museum, as well as the spectacular cliff walks around the lighthouse and bridge, are a much revered and very popular tourist destination. The area is designated as a SPA (Sheep's Head to Toe Head) and an SAC (Three Castle Head to Mizen Head).

The Mizen Head Lighthouse Bridge became dangerously unstable in the later 1900s, and was eventually replaced in 2011, with funding to the tune of €1.8 million from Fáilte Ireland, Cork County Council and the Commissioners of Irish Lights. The new bridge, designed by RPS and built by Carillion Irishenco, is a near replica of the original, built of a mixture of precast and cast in situ elements. Mizen Head foot bridge won the Engineers Ireland Excellence Award 2011.

## Other Bridges of Note

These final five sites date from the medieval period to the 19th century, and are included here because they have components or features which make them unusual or unique.

### 25. Buttevant Clapper

Located to the southeast of Buttevant, northeast of Ballybeg Priory in the townlands of Waterhouse and Ballybeg, this clapper bridge can be accessed on foot by walking east across the field next to Waterhouse.

This clapper bridge survives only partially. It has seven low random rubble masonry limestone piers supporting five flat limestone slabs. They are irregularly spaced, with the span increasing from northwest to southeast. A thin strip of metal has been inserted into the centre of the three wider slabs in an attempt to strengthen them.

The site is unique because of its location and immediate environment. The River Awbeg was dredged and its course altered, c.1910, and at this time that the southeastern half of the site was removed, leaving the remainder, which still stands, stranded on dry land. The bridge, an RMP and located within the Blackwater River SAC, is clearly important today. The bridge is said to have been used by the Monks of Ballybeg Abbey to access a grist mill located in Waterhouse Townland (Grove White 1905-25, Vol 4, 316) and probably dates to the medieval period. The Archaeological Survey Unit also suggested the site may be connected to 'Monks Pond', a pond located to the rear of Springfield House on the southeastern bank of the river (Power et al 2000).

### 26. Carrigadrohid Bridge

Carrigadrohid Bridge is located in the village of Carrigadrohid east of Macroom. It crosses the two diverging channels of the River Lee. The bridge, with its medieval tower house set in the island between the two channels, is among the most impressive sites in the county. It is set beside an amenity park on the North Bank. It is both an archaeological monument (RMP) and listed on the RPS.

This road bridge crosses over two channels of the River Lee, connecting Carrigadrohid and Killinardrish villages. Carrigadrohid Castle, a medieval Tower House, stands midway along the bridge on the intervening island, and access to castle is only possible from this bridge. The site is an interesting example of one with a tremendous continuity of use, coupled with quite dramatic changes. The earliest bridge built here, of which there is now no trace, was built in medieval times out of timber. However, it was replaced in the 17th or 18th century by a stone bridge. The structure which stands on the site today is a combination of bridges built at two different dates. The section over the northern half with two semi-circular arches is

probably 18th century, and the southern section, made of two wide pointed arches, was added when the original four semi-circular arches were damaged by a flood in 1853. The section on the island in the centre, which joins both sections, is solid and archless. An unusual tapering semi-circular plan buttress on the east side, topped with machicolation-like detailing, may suggest the original location of a pedestrian refuge opposite the castle entrance.

The early stone bridge, at north, is largely built of coursed sandstone rubble, with rubble voussoirs. It has two arches, with a smaller flood arch at the north end. The rubble piers are protected by low pointed cutwaters on the upriver side, and there are niches under the arches indicating the location of centering supports. The bridge is narrow with an overall width of 4.33m, with a carriageway accommodating a single lane of traffic. The southern half of Carrigadrohid Bridge comprises two wide pointed arches constructed in 1853, with rubble voussoirs carefully chosen to be similar in height and width. There are low pointed cutwaters on the upriver elevation, protecting the coursed rubble stone piers. The parapet walls are also built of coursed sandstone rubble, with vertical copings. To the south of the bridge a flight of steep stone steps lead down to the riverbank, providing attractive views of this beautiful structure.

Carrigadrohid castle was a McCarthy stronghold from the 15th century until the family lost possession in 1703, at which point it passed to the Bowen family who occupied the Castle into the 19th Century. The bridge is indicated on the Down Survey map (1656) and is described by Civil Survey (1654-6) as a timber bridge. It is thought locally that the castle was accessed via a draw bridge from the narrower northern side in the medieval period, however, there is no physical trace of this mechanism on the site and it may well have been a fixed timber bridge.

The site was an important strategic location for most of its history, today it is a rare example of a castellated bridge similar to the Mauseturm on the River Rhine in Germany. It was the scene of many conflicts, most famously during the Cromwellian Campaign when, on the 10th May 1650, the Castle, garrisoned by Irish troops supporting their Gaelic Lord, was surrounded by Major Nelson and some soldiers from Broghill's troops. They offered Bishop MacEgan, one of the most important ecclesiastical leaders in Cork at this time, his life if he could persuade the Castle to surrender. However, when given a chance to speak the Bishop proclaimed he was willing to give his life for his religion and his country and implored the besieged garrison of Carrigadrohid to hold strong, he was promptly hung from a nearby tree and afterward beheaded. The bridge is shown in an early 19th-century Du Noyer sketch as having six semi-circular arches (O'Keeffe and Simington 1991, 202), four of which were replaced in 1853 with the pair of pointed arches. This site is a good example of the use of Gothic-revival style architecture in Ireland. It was repaired in 1988, and is now a key point on a local heritage trail.

## 27. Kanturk

Kanturk Bridge, a five arched road bridge which crosses over the River Dalua, is one of a pair of similar bridges within Kanturk town.

This bridge has six semi-circular arches, and a seventh which is now no longer visible. The visible arches have dressed limestone voussoirs with raised keystones to the downstream elevation. The walls and parapets are built of roughly coursed limestone and sandstone. There are ashlar limestone pointed cutwaters to upstream elevation.

There are plaques to the parapet walls which provide the date of the bridge as 1760 and attributing the construction to Richard Purcell and Arthur Bastable. Intriguing also are the limestone coping stones that look like they are reused from elsewhere which are carved with the words of a poem describing the commission of the bridge by Lord Egmont of Kanturk, the Duala River, and the surrounding area. The poem fits well in the romantic tradition of poets like Spencer, who is referenced directly in the full text (see end of Chapter 7).

An illustration in O’Keeffe and Simmington (1991, 249) shows a small rectangular prison known locally as the ‘black hole’ in the south west abutment, male and female toilets in each abutment and pointed cutwaters on the up stream side rising to the top of the parapet wall creating refuge niches with seats. These seats were set behind the stones inscribed with the poem, and were roofed in stone. The inscribed stones were removed and protected when the bridge was widened in the 19th century and the seating destroyed (Grove White 1909, 208-9) and they now form the coping stones. This bridge shows all the features of a bridge built in the 18th century and widened in the 1800s. The arches of the 19th century section use wide curved voussoirs similar to those seen on the extension to the nearby Greenane Bridge and both are within Architectural Conservation areas. The site, which is listed on the RMP and RPS and also part of the Blackwater River SAC, is considered unusual not just due to the former prison and refuge seating, but also because of its pairing with the latter bridge. A single bridge is indicated on the Down Survey (1655-6) barony map over both rivers, and these are thought to have been on or near the site of present bridges. The bridges of Kanturk continue to dominate the streetscape of the town today.

## 28. Doneraile Court Bridges

The demesne is the land immediately surrounding a large house or castle, and intended for the sole use of the resident, either recreational or to supply foodstuffs from a home farm. Many demesnes, particularly larger sites with naturalised parkland landscapes, have water features, such as a lake or river. These areas were often enhanced as part of the creation of the designed landscape, and were seen as potential sites for architectural statements in the form of bridges of differing styles. Demesne bridges, built on private land by wealthy individuals with cosmopolitan tastes, are some of the most varied and interesting examples to be seen in Cork. The demesne bridges of Doneraile Court form a cohesive group, which, although each unique, represent the kinds of folly bridges built during the 18th century. All are protected as part of the Doneraile Court Conservation Area. The

bridges are set within the walled demesne of Doneraile court, to the northeast of the village of Doneraile. They cross a number of meanders and side channels in the River Awbeg, which is part of the wider Blackwater River SAC.

There are four distinct bridge types situated in the grounds of Doneraile Court. The most architecturally impressive is probably the avenue bridge. This is a triple-arched road bridge with two distinct elevations. The downriver side is less visible from the avenue and is much plainer than the upriver. The semi-circular arches have simple dressed stone voussoirs to the eastern elevation. To the west, the voussoirs are more heavily dressed, and there are tooled limestone roundels to the spandrels flanking the middle arch. Above this a limestone string course defines the base of the parapet walls. The stepped V-cutwaters, located only on the upriver side, have ashlar capping. The parapet walls are of coursed rubble externally, but with tooled limestone facing to the carriageway. There are moulded dressed limestone caps to the low piers which mark the terminus of the wing walls. This bridge was built on the avenue to Doneraile court, and the more ornate elevation is the more visible of the two from the house and avenue. The bridge is thought to date to the mid-18th century, a time when the land around the main house was remodelled into a fashionable 'naturalised' landscape.

The re-routing of the river as part of this landscape alteration included the creation of a small stream parallel to the River Awbeg. This watercourse was created by digging a narrow meandering channel from the main river. This channel is bridged by two foot bridges, one with a timber walkway and timber railings set over a single diamond plan pier and the other with a pair of elliptical arches made by rough limestone voussoirs. Specimen planting around these bridges indicates they were originally intended as part of a garden walk.

The access to Doneraile Park from the southeast is via a laneway leading from a small side gate in the demesne wall. This lane passes over the fourth bridge built in the park - Hunters' Bridge. This single-arched hump-backed pack-horse bridge, like those considered above, is thought to have been built in the later 1700s. It is of dressed limestone, with a single high semi-circular arch. Intentionally tall and narrow, this structure was designed as a viewing point and eyecatcher that would evoke the feeling of older packhorse bridges.

The 18th century introduction of formal civic planning and landscape gardening had a significant impact on the way Demesne estates were laid out. Bridges were no-longer seen simply as functional aspects of the estate, they became picturesque eye-catchers, romanticised features in the landscape. Together these structures illustrate the way that Landscape Gardening and the fashion for a picturesque set piece within Demesne grounds influenced the form of bridges. The formality of the avenue, the rustic rural style of the footbridges forming part of the woodland walk, and the impressive visual impact of the Hunters Bridge, are all tailored to influence the experience of the people moving through the park.

## 29. Buingea Bridge

Known as the ‘drowned bridge’, Buingea Bridge, an archaeological monument listed on the RMP, is set on the southern side of the lake created by the Inniscarra dam, to the east of Macroom.

The bridge is a single arched sandstone structure, originally built as a road bridge but now disused. The single arch is semi-circular, with rusticated limestone voussoirs. The walls are rusticated limestone, with a dressed limestone string course above the arch. The former road surface has been severely denuded, exposing the top of the arch.

Indicated on the 1842 OS 6-inch map as road bridge over Buingea River, the site has been disused since the flooding of the Lee Valley to create a reservoir for the Hydro-electric Scheme based at Inniscarra. The Archaeological Inventory notes that the bridge is mid-19th century in appearance, and suggests that it was rebuilt when the Cork-Macroom Direct Railway line was built in 1861-66. This site is a well-known landmark on the road outside Macroom. It can be seen from a wide area around, with views being particularly good from the modern road bridge on the N22 to the south.

The construction of the Inniscarra Dam in 1954 and the subsequent impact on the Lee Valley was, quite literally, a watershed in the shaping of this part of the County. This single event flooded acres of land, covering houses, farms, roads, bridges and pasture alike and had a considerable effect on the ecology of the Gearagh which is documented to have been wooded since the last Ice Age (O’ Mahony, 2009). The Gearagh is now designated as a nature reserve, and both an SAC and SPA. It should be noted that the flooding also had an impact on those living in the Gearagh, particularly on the forest dwellers who lived there until the 1950’s and their abandoned settlement is still visible on the ground today (access permitting due to temporal flooding). One may never know the secrets, forgotten places, and monuments of the past which were submerged by this flooding.

Buingea Bridge was not, however, the only bridge to be submerged. The nearby Rooves Bridge and Fitzgibbon Bridge were also covered. The rebuilt Rooves Bridge, erected to replace the flooded bridge in 1950, is believed to be the longest bridge to span the River Lee. The previous bridges, together with Buingea Bridge stand as a symbol of all the features which are forever submerged and lost.

## 30. St Olan’s Well Bridge

St Olan’s Well Bridge is a culverted road bridge over the Delehinagh River, standing to the east of St Olan’s Well, not too far from Aghabulloge.

Originally built of six rectangular lintelled openings, but now having just four openings. There are pointed cutwaters on the up-stream side. The bridge has been recently repaired, and much of the fabric is now covered in cement. Just one sandstone slab is now visible, projecting on the upstream elevation, over the second span from the west.

The ogham stone which now stands west of St. Olan's Well was once reused as a lintel over one of the openings in the bridge. The stone is thought to have been one of a pair removed from the site of a possible ringfort in 1840 and it was only part of the bridge for a short time, as it was subsequently erected next to the nearby holy well under the direction of antiquarian John Windle in 1851. The stone is more than 2m high, and when it was in use as part of the bridge, the structure was little more than a footbridge - indeed it could well have been used as part of a clapper bridge originally. The ogham inscription (ogham is a form of early Irish Alphabet, that is based on Ireland's native trees, consisting of incised lines or notches), though worn and damaged, was read by Macalister as MADORA MAQI DEGO. Maqi is an early Irish form of Mac, and simple name inscriptions like this are very common on Ogham Stones. St Olan's Holy well is located near to the site of an early ecclesiastical enclosure which once contained an Early Christian Monastery, and possibly may owe its origins as a crossing point to the latter. The well, enclosed by a roughly circular stone-built structure, has fresh clean water and is decorated with small votive offerings. Rounds are still made here on St Olan's day (Sept. 5th). Together with the bridge and Ogham stone, it is well worth a visit, all three sites are listed on the RMP. A small car parking area at the side of the road, and an information plaque at the well, help make the site accessible to any interested visitor.

It might further interest the reader to note that at Athnanangle Bridge, not too far from here, it is locally alleged that a 'stand-off' took place between St. Olan of Aghabullogue and St. Lachteen of Donoughmore.

## CHAPTER 6

### Legislative Protection

Historical bridges can be of both archaeological and architectural interest. The legislative means by which the architectural and archaeological heritage is protected is through the National Monuments Act 1930 (as amended) and the Planning and Development Act 2000 (as amended).

Under the Planning and Development Act 2000 (as amended) a Local Authority must maintain a Record of Protected Structures. Structures which are considered to be of architectural, archaeological, artistic, cultural, scientific, social or technical interest can be considered for inclusion in the Record of Protected Structures. Sixty-five bridges are currently listed in the Record of Protected Structures in Cork County. The National Inventory of the Architectural Heritage (NIAH) has identified a total of 336 historic bridges within the county that are considered to be of importance under the criteria outlined above (further information can be found at [www.buildingsofireland.ie](http://www.buildingsofireland.ie))

Under the provisions of the Planning and Development Act 2000 (as amended), planning permission is required if the proposed works would materially alter the character of the structure. Works that involve routine maintenance and repair and which are carried out in accordance with best conservation practice and employing appropriate methods and technologies would not necessarily require planning permission. Nevertheless, clarification should always be sought from the Local Authority's Conservation Officer.

Ireland's archaeological heritage is defined and protected under the National Monuments Acts 1930 (as amended). Archaeological sites and monuments are entered into the Record of Monuments and Places, as established under Section 12 of the National Monuments Act 1930 (as amended). Under Section 12(3) of the National Monuments Act 1930 (as amended) 2 months written notification of intent to carry out works to an archaeological site or monument which is listed in the Record of Monuments and Places, must be given to the Minister for Arts, Heritage and the Gaeltacht. Consultation should also be carried out with the Local Authority's Archaeologist.

As part of the Archaeological Survey of Ireland, the Cork Archaeological Survey (between 1982 and 2009) carried out a comprehensive survey of all historical bridges featured in the 1st Edition Ordnance Survey Maps for Cork County. The result of this survey is available to view in digital format at Cork County Library. From this survey 143 bridges were selected for inclusion in the Record of Monuments and Places (see published inventories or [www.archaeology.ie](http://www.archaeology.ie) for details).

As outlined in this guide there are many historical bridges which are not included, either in the Record of Protected Structures or Record of Monuments and Places. This is not a reflection on their lack of architectural or archaeological value but is more likely due to the absence of a systematic survey of this monument type as well as a

failure to recognise the contribution and value of smaller vernacular bridges. Nevertheless, Cork County Council does make provision for such structures and includes objectives for the protection of the archaeological and architectural heritage generally within the County Development Plan.

The Heritage Unit of Cork County Council is at hand to provide advice and information in respect of any proposed works to such bridges designated as archaeological monuments, protected structures, or both.

## CHAPTER 7

### Conclusion

Bridges are one of the few historic structures that perform the same function today as they did when they were first constructed and in the majority of cases, they have remained predominately unaltered from their original inception. As such, and as a subject topic, the study of Cork's historical bridges is truly fascinating. They are a link with the past, aesthetically pleasing, give a sense of place and still serve their local communities. Those that are highlighted in the guide have generally stood the test of time and have accommodated the pressures and demands created by a fast paced modern world. While this has ensured their continued existence, paradoxically it can also be the primary factor in a bridge's day to day wear and tear.

Climatic and environmental factors may also cause damage to our historical bridges. Masonry bridges constructed of softer stones such as limestone and sandstone are particularly susceptible to weathering. This action causes lime mortar to be washed out of the joints between the stones, ultimately loosening the masonry of the bridge. In addition, heavy rain, floods and fast-flowing rivers can also have a devastating impact on historic bridges, in extreme circumstances completely destroying the structure itself.

Damage to historical bridges is not confined to environmental factors - man-made damage is equally prevalent. Many historic bridges have been seriously impacted upon due to the introduction of heavier traffic volumes onto our roads in modern times. The larger number of vehicles using these structures has also resulted in increased wear and tear and today new bridges are being designed to withstand these heavy volumes of traffic, resulting in wider and smoother carriageways than would be typical of the more traditional bridges discussed in this guide. However, given the prominent location of so many of these historical bridges, as ongoing functioning structures it is inevitable that they will require works to repair and protect them. What is of the utmost importance, therefore, is the appropriateness of the materials and technologies employed in their repair and conservation. A careful balance between practicality, preservation and aesthetic quality is required.

With this in mind the NRA (National Roads Authority) through EIRSPAN and the Local Authority are responsible for the care and maintenance of our bridges generally. The practicalities of keeping bridges in good working order is necessary and is constantly being addressed by both Authorities. However, during this process care needs to be taken to maintain and preserve the integrity of historical bridges. Historical masonry bridges require careful and sympathetic maintenance and repair work in accordance with best conservation practice.

## Final Remarks

The rich history and development of bridges, from medieval times to modern, illustrates the way these sites interact with the changing world around them and this Guide offers a small taste of the rich range of bridges located across the County. These bridges have served the County and its people well and the strategic importance of bridges cannot be denied.

Throughout history bridges have been focal points for the sites of battles, castles, religious foundations and long lasting communities. The extensive system of roads and tracks, which criss-crossed Ireland in the medieval period and before, has become the infinitely complex and wide ranging transport infrastructure we use today. As this network has grown, our bridges have succinctly reflected each stage of development and change. These bridges are true icons of vernacular tradition, and, at the same time, form part of formal civic architecture, reflecting a rich masonry tradition and social significance in the County of Cork. More, too, they are havens for wildlife, inspiration for poetry, lyrical prose and song. They are vessels to hang memories on. From games of 'pooh sticks' to otter spotting, sheltering from the rain to setting out on adventures, bridges symbolise our collective childhood, our homeward innocence and our worldly travels. They encapsulate our past, and our hopes for the future. Bridges are history and art, architecture and recreation, society and home, all in one.

As a final thought –

Study a bridge and learn why it was first crossed,  
And think back to the time when far banks were deemed lost.  
A stone's throw away, yet a world apart  
Can two places unite to form the one heart?  
Stones to step on or timber to join,  
Both banks of the river, let us become one.  
Put the difference aside by bridging the gap  
A node is born, a new place on the map.  
Over time as needs must the bridges will change  
From clappers to ashlar but one thing remains-  
A connection to place or the path out of town  
Troubled waters below forever washed down.

*Conor Nelligan*

The following is the poem which can be found inscribed along the coping stones of Kanturk Bridge, describing the commission of the bridge by Lord Egmont of Kanturk, the Duala River, and the surrounding area:

I from my womb on Windmill Hill,  
Great Egmont's Order to fulfil,  
Was Brought with seven of my race  
His Lordships honoured town to grace

See Kanturk Castle and Fermoyle-  
Retreats of Perceval and Boyle,  
Illustrious in their country's cause,  
And guardians of its rights and laws.

Secur'd from surly wind and rain  
The gentle nymph and amorous swain  
May here their tender vows repeat  
Which I shall surely ne'er relate.

See Daluo rolls its flood along,  
And Allo, famed in Spenser's song-  
Where lordly swans in wanton pride  
Expand their plumes or stem the tide.

Hence Bluepool's waving groves delight,  
Amuse the fancy, please the sight,  
And give such joy as may arise  
From sylvan scenes and azure skies

The weary here in safe repose-  
Forgetting life's attendant woes,  
May sit secure, serene and still  
And view with joy yon famed hill.

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#### Personal Communications

Personal Communications with various local historians and those interested in Cork's bridges. We are particularly grateful to Mick Barry and all the team at Camden Fort Meagher, Mary Crowley, Sue Hill, Jane Hurley, John Hurley, Diarmuid Kingston, Jerry Larkin, Jim Lerner, Doug Lucey, Max McCarthy, Cllr. Aindrias Moynihan, Cllr. Frank O' Flynn, Eilís Ní Bhríain, Michael O'Connell, Donie O' Sullivan, Christy Roche, and Lillian Sheehan.

## Web links

- [www.archaeology.ie](http://www.archaeology.ie); Information on archaeological sites in Ireland.
- [www.buildingsofireland.ie](http://www.buildingsofireland.ie); Information on sites listed in the National Inventory of Architectural Heritage.
- [www.corkcoco.ie](http://www.corkcoco.ie); A Pdf copy of the Cork County Development plan can be downloaded from the county council webpage at this address.
- [www.corkcoco.ie/heritage](http://www.corkcoco.ie/heritage): The Heritage Website of Cork County Council
- [www.dia.ie](http://www.dia.ie); Information on Architects in Ireland listed in the online Dictionary of Irish Architects.
- [www.heritagecouncil.ie](http://www.heritagecouncil.ie); The Heritage Council
- [www.loganim.ie](http://www.loganim.ie); Information on Irish placenames.
- [www.nli.ie](http://www.nli.ie); The catalogue of the National Library of Ireland, including the National Photographic Archive, can be accessed through the NLI website.