The Origins and Evolution of Ornamental Lakes in English Designed Landscapes

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Abstract.

The aim of this thesis is to investigate the origins and evolution of ornamental lakes in England, to establish when they first appeared, how they were constructed and what factors led to their emergence. For the purposes of this study, a lake is defined as a man-made piece of water covering one hectare or more. To aid discussion and analysis, a classification system to describe lakes has been drawn up, the two main categories being geometric and irregular lakes, with sub-divisions.

The investigation begins with an appraisal of water in landscapes preceding the eighteenth century, with a focus on fishponds (*vivaria*), and elements such as moats, millponds and water-gardens. The appearance and development of ornamental lakes in the early eighteenth century is then explored in depth, as is the work of Lancelot Brown. The contribution of other lake-makers such as Richard Woods and William Emes is also examined. Humphry Repton's work, and the impact of the Picturesque on lakes, are evaluated to assess their importance in the evolution of lakes, and the chronological study extends into the late nineteenth century.

The construction of lakes is investigated, and related to different lake types. Also, the question of whether lakes were lined to retain water is considered. Geological and topographical factors are also studied in order to see how they might affect the construction and siting of lakes. The reasons for the emergence of ornamental lakes are also explored, and these include the fact that landscapes increased in size around 1700 and became less symmetrical, the effect of the Grand Tour, and the paintings associated with it, and the changing ways in which parks were used.

Contents.

Abbreviations and Notes.

OS	Ordnance Survey
EH	English Heritage (before April, 2015)
HE	Historic England (after April, 2015)
BGS	British Geological Survey
WANHS	Wiltshire Archaeology and Natural History Society
WSHC	Wiltshire and Swindon Heritage Centre
OED	Oxford English Dictionary
VCH	Victoria County History
RCHME	Royal Commission on the Historical Monuments of England
ODNB	Oxford Dictionary of National Biography
h	hectares

i) Photographs and diagrams are by the author, unless otherwise stated.

ii) North is at the top of maps, unless otherwise stated.

iii) OS maps were accessed on line at http://digimap.edina.ac.uk/

iv) First Edition 6" OS maps were accessed on line at
http://maps.nls.uk/geo/find/#

v) Tithe maps were accessed on line at
https://www.thegenealogist.co.uk/account/signup/?from=%2Fsubscription%2F

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1. Introduction.

The aim of this thesis is to investigate the origins and evolution of ornamental lakes in England, to establish when they first appeared, how they were constructed and what factors led to their emergence. A statistical approach will be central to the enquiry, in order to give a fuller picture of their development and to aid an analysis of chronological trends. An approach of this kind has not been attempted before, and will shed new light on how ornamental lakes developed and changed. Terminology is important in this subject, and every effort has been made to ensure that it is clear and precise, for example, 'ornamental lake'. In this thesis it denotes a man-made, primarily ornamental body of water, and exactly what is meant by 'lake' is discussed below.

Despite a large body of information on eighteenth-century landscapes, very little is known about ornamental lakes. They were one of the main features of landscapes in the later part of the century yet information about when they were made, and by whom, can be very scarce. Often, it is not known when a lake was made, and frequently the designer is also a mystery. This is reflected in the Historic England listings, where the presence of a lake may be mentioned, but often no other information is given – because it is not known. Similarly, it is not known with any certainty when, more generally, ornamental lakes began to appear. There were bodies of ornamental water in the seventeenth and early eighteenth century such as ponds and canals, but these were geometric in style, as were the landscapes of the time. It was only in the course of that century, as landscape style changed dramatically, that true lakes appeared. There is a tendency to divide landscape evolution into distinct styles or phases, but lakes do not fit neatly into those templates, and landscape studies can benefit from an examination of individual constituent parts, rather than 'styles'. A focus on lakes may produce new concepts about them, and the landscapes they inhabited, as well as new information about how and where they were made. The informal lakes of the eighteenth century did not fit easily into the geometric landscapes of the 1700s and by the mid-eighteenth century, the prevailing landscape style had also become informal. What role did lakes have in that change, and when precisely did these lakes first appear? What were the factors which led to

ornamental water becoming irregular? These questions have not been addressed before, and this thesis aims to throw some light on the answers.

1.1 Sources.

Very few sources, historical or present day, deal directly with the use, design or construction of ornamental lakes, but a number have an oblique bearing and of these, the most significant are Roger North's *A Discourse on Fish and Fishponds,* 1714, and Stephen Switzer's writings: *Ichnographia Rustica, or the Nobleman, Gentlemen, and Gardener's Recreation* 1718*, An Introduction to a General system of Hydrostaticks & Hydraulics* 1729 and *A Universal System of Water & Water-works* 1734. Attitudes to ornamental water, as well as factual information, can be gleaned from diaries of travellers, both British and foreign, such as Baron Waldstein, who travelled round England visiting great houses and palaces in 1600-1, Celia Fiennes, the antiquarian William Stukeley, Daniel Defoe, Bishop Pococke, and Arthur Young, among others. Similarly, the letters of Sir John Vanbrugh and Lady Mary Wortley Montagu (who knew Vanbrugh) shed light on the actual making of lakes, and relationships between the people who made them, respectively.[1]

Some of the most valuable primary sources are estate maps, the county maps of the late eighteenth century and, later, the Ordnance Survey (OS) maps, including the OS drawings of the early eighteenth century. Tithe maps, usually mid-nineteenth century, were also consulted, plus documentary evidence such as estate accounts and letters.

In terms of secondary sources, little has been written on the subject, and there are no specific books on the history of lakes. Christopher Currie's article 'Fishponds as Garden Features, *c.* 1550-1750' is very insightful about the relationship of fishponds to ornamental ponds, whilst Judith Roberts' article ''Well Temper'd Clay': Constructing Water Features in the Landscape Park' discusses how lakes are constructed, an aspect which will be considered in some detail in this thesis. Two seminal books on the history of dams give considerable information on their construction: G. M. Binnie *Early Dam Builders in Britain* 1987, and N. Smith *A History of Dams* 1971. Although both are

primarily concerned with reservoirs and water supply, their technical approach is valuable, as well as their historical information.

Among the many general books on the seventeenth and eighteenth centuries, there are several which are of particular relevance, including T. Williamson's *Polite Landscapes* and T. Mowl's *Gentlemen and Players*. These, in conjunction with J. Dixon Hunt's *Garden and Grove* and J. Dixon Hunt's and P. Willis's *The Genius of the Place*, provide a sound basis for any study of the period. In addition to these seminal works, D. Jacques's *Georgian Gardens: The Reign of Nature,* and *The Gardens of William and Mary* written with A. J. Van der Horst, are valuable. Mention must also be made of Mowl's series of books on landscapes by county, *The Historic Gardens of England*, which currently (2017) covers fourteen counties. As well as the information they contain, the insightful analyses of landscapes and their maps and plans are invaluable. Two works which cover more specific areas are also of value: M. Girouard's *Life in the English Country House* and J. Black's *The Grand Tour in the Eighteenth Century*.

In order to look at the origins of lakes, the landscapes which preceded the eighteenth century will be assessed, from the medieval period up to *c.* 1700. The dawning of design in ornamental landscapes is a somewhat contentious subject, as Christopher Taylor sets it in the medieval period.[2] However, it may certainly be traced back as far as men such as William and Robert Cecil, and Sir Francis Bacon, and was promoted in the writings of people such as Thomas Whateley, Humphry Repton, the polemics of Sir Uvedale Price and Richard Payne Knight, and more considered works by Edward Kemp and J. C. Loudon, to name some of the most important. However, it was the men who actually made lakes who are of the greatest interest in this context, and it would be impossible to write anything on the subject without mentioning Lancelot 'Capability' Brown. His general contribution to landscape making in the eighteenth century is well known, initially through Dorothy Stroud's ground-breaking book. Thomas Hinde's *Capability Brown*, 1986, must also be mentioned in this context, and the 300th anniversary of Brown's birth (2016) has seen the production of several new books. Studies such as Fiona Cowell's book on Richard Woods, David Brown's work on Nathaniel Richmond, and Keith Goodway's article on

Richard Emes, help to put Brown's contribution into context, demonstrating that he was not the only person to construct lakes in the eighteenth century.

1.2 Etymology.

An enquiry into the etymology of the word 'lake' is very revealing about attitudes to lakes. Until around the 1740s, it meant a naturally occurring body of water. Until well into the eighteenth century, people generally used the terms 'pond', 'pool', 'mere' or 'water' when referring to bodies of water in ornamental landscapes. Usually, these were geometric ponds in gardens, or fishponds. However, the word 'pond' could mean a body of water of any size and a few of these geometric features were sizable. In the early eighteenth century, a 'lake' meant a large body of water occurring *naturally*, as in the Lake District. Generally, the only man-made bodies of water of any size were fishponds for breeding (*vivaria*), and these were in the park. The concept of a *man-made* 'lake' simply did not exist before *c.* 1720, and the etymology confirms this. When lakes did begin to be made, various terms were used such as 'The Great Water', 'the Piece of Water' (1724, Vanbrugh about Castle Howard[3]), 'The Bason' (1738, on Roque's plan of Claremont), 'The Intended Water' (1756, Brown's lake at Wimpole[4]), 'The River', 'The Broad Water'. Vanbrugh was the first person known to use the term 'lake' as we use the word today, in 1709, in a letter about the water at Blenheim: "The Water (where it will appear to best Advantage, whether Lake or River) is full in View."[5] An exception is a comment by Sir Godfrey Copley, in a letter of 1703:

> I am glad the Canalls & Ponds go on so Well, but I am told great
> Lakes are now the mode. Vanbrook set out one for the D: of
> Newcastle to front his new house of 40 acres.[6]

However, Vanbrugh was the person planning this lake, also suggesting the word originated with him. It appears that he was instrumental in promulgating the concept of a lake, which will be explored below. Plans of Blenheim drawn by him in *c.* 1705 show that he was trying to persuade Sarah, Duchess of Marlborough, to let him make a lake of 3-4 h in the valley to the west of the

house.[7] She subsequently used the word in letters to various people in 1723-5 when she was planning a piece of water to the east of Vanbrugh's bridge:

> tho Sir John formerly sett his heart upon turning that [the west side] into a lake, as I will do it on the other side; & I will have swans & all sorts of things in it.[8]

The irony is that the Duchess, who hated Vanbrugh, popularised a term he introduced. It was then used by Stukeley, who sketched Blenheim, and by Switzer, who worked there, in his 1727 *Universal System of Water and Water-works*, and it became attached to large bodies of ornamental water. However, even as late as the 1770s, 'lake' was not a term routinely used, though both Thomas Whateley and Arthur Young occasionally employ it. Repton commonly used it in the 1790s, in his Red Books, and by *c.* 1800 large areas of ornamental water were generally referred to as lakes.

1.3. Definitions.

Because of the statistical approach adopted in much of this thesis, some more specific definitions, based on the physical attributes of water bodies, need to be established. The primary definition of 'lake' for the purposes of this study is a body of water of one hectare or more, which was intended to be primarily ornamental and to provide aesthetic pleasure, although it could be used to stock fish, as well as being used recreationally. It may be argued that this is an arbitrary size to choose. It has the advantage, however, that a piece of water of this size cannot be mistaken for a pond, using today's concept of that word. It is also large enough to appear on most maps.[9] A hectare (2.4 acres) is about the same size as Trafalgar Square in central London (including the pedestrianized area outside the National Gallery, Fig. 1.1).
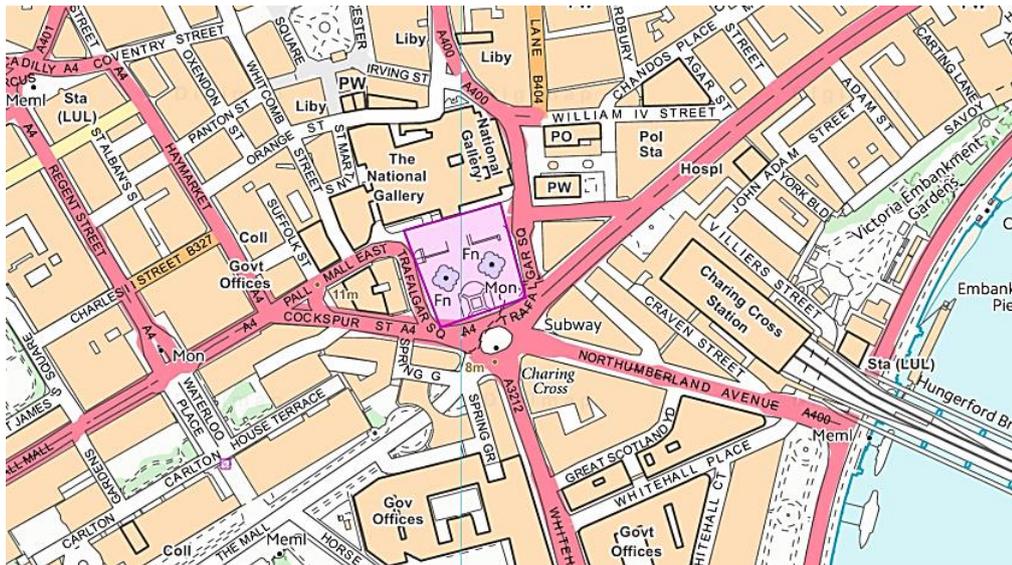
Fig. 1.1. Trafalgar Square: a familiar area corresponding to a hectare.[10]

The one hectare criterion takes no account of islands. Thus an island counts as part of the area of the lake. This was partly a practical decision: the time required to measure islands and then subtract that area from the overall size was too great, but partly it was because often lakes started life without islands, then acquired them, and then had them altered or removed, so a comparison of the size of a lake as it evolved would have been very complex, and the amount of space the lake occupied in the landscape did not necessarily change.

Ornamental lakes are characterised by having a visual relationship with the house, and/or by having ornamental walks or drives relating them to the house if they lie at some distance from it. In order to provide a framework for discussing the changes in the chronology and form of lakes, a number of sub-categories were drawn up:

i) a **geometric lake**, which may be further sub-divided as a) fully **geometric** lake (known as 'geometric'), with the characteristics that all sides are straight, an arc or a circle, the shape is symmetrical in plan view, associated planting is formal, it fits into the geometry of the overall design; b) **semi-geometric** lake, with the characteristics that all sides are straight, or a geometric arc, the shape is *asymmetrical* in plan view, associated planting varies in formality, it broadly fits into the geometry of the overall design;

ii) a **hybrid lake**, with the characteristics that two or more sides are straight, one or more sides are wavy, the plan view reflects this asymmetry, associated

planting varies in formality, it may partly fit into the geometry of the overall design – often one straight side (or more) is on an axis;

iii) an **irregular lake**, which may be further sub-divided as a) an **irregular** lake, with the characteristics of an irregular or wavy outline in plan view, informal planting is associated with it, and it is not part of a symmetrical scheme of design; b) a **river-lake**, with the characteristics that it is consistently narrow along the entire length, the shape very much echoes the original course of the river it was made from, it is flowing, and visibly so, islands are not common, associated planting is informal, it is not part of a symmetrical scheme of design. Whilst it is tempting to use the word 'basin' for a geometric lake, this has been avoided because it tends to suggest a body of water which is much smaller than one hectare.

The term 'serpentine lake' is a popular one and, according to the definition of lakes above, it is a description of a particularly sinuous form of irregular lake. Arthur Young appears to have been the first person to use the term in 1771, in *A Six Months Tour Through the North of Britain*, after visiting the Lake District. He used it to describe the lake at Ditchley, Oxon:

> The gardens are disposed with taste; the sloping banks
> scattered with wood, and hanging to the serpentine lake, with
> the rotunda, finely placed on a rising ground among the trees, is
> a very beautiful landscape.[11]

However, the term does not appear to occur again until 1948 when Christopher Hussey used it.[12] The origin of this descriptor is The Serpentine itself (Fig. 1.2), and was actually short for 'The Serpentine River', made by Charles Bridgeman for Queen Caroline in 1731.[13] This will be discussed in more detail below, but the salient fact here is that, for contemporaries, it was considered to be a form of canal or river, and the category of 'serpentine canal' has been used in this study to describe not just The Serpentine (in Kensington Gardens), but also water at Longleat, Wiltshire, in the 1730s, and at Foot's Cray Place, Kent.
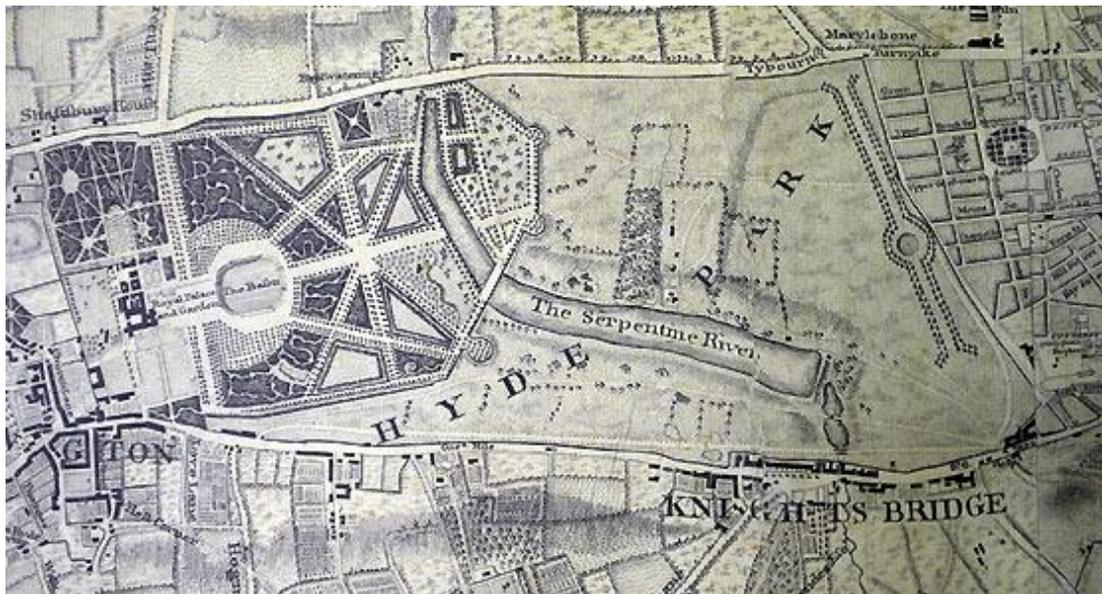
Fig. 1.2. The Serpentine, Hyde Park; engraving by John Rocque, 1746.[14]

A handful of sinuous lakes, such as Luton Hoo and Syon House, or Morton Hall (Norfolk), may be described as 'serpentine' but they have not been deemed significantly different from other irregular lakes to merit a separate category. The mode of construction and site constraints are the same.

1.4. Examples illustrating the lake definitions.

Geometric lake:
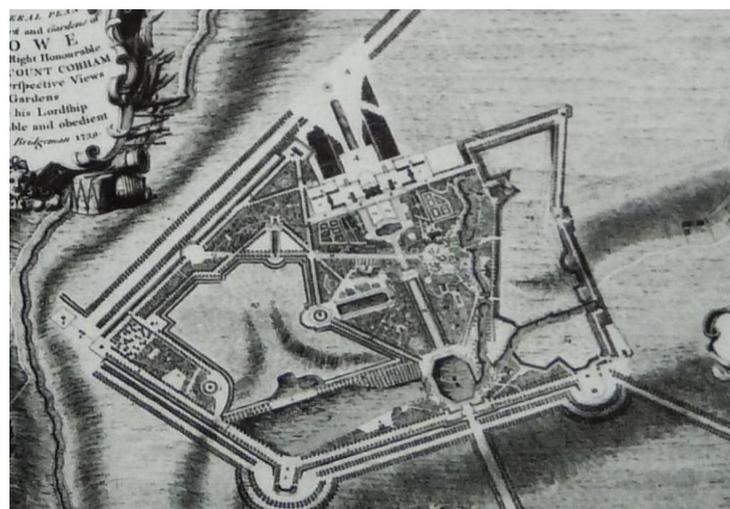
Fig. 1.3. The Octagonal Lake at Stowe, 1739, engraving by Jacques Rigaud.[15] The lake is *c.* 1 h and was made in the 1720s. The lakes to the left and right of the octagon, as depicted here, are semi-geometric lakes.

Semi-geometric lake:
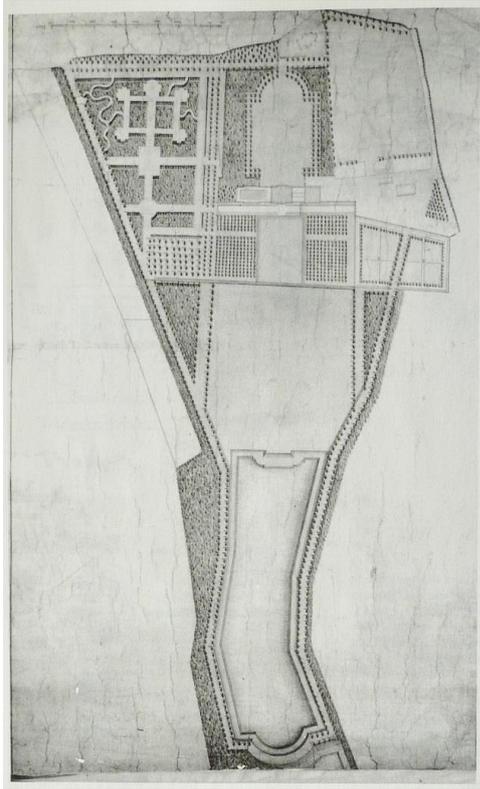
Fig. 1.4. Wolterton, Norfolk. A *c.* 4 h lake was made by 1732.[16]

Hybrid lake:
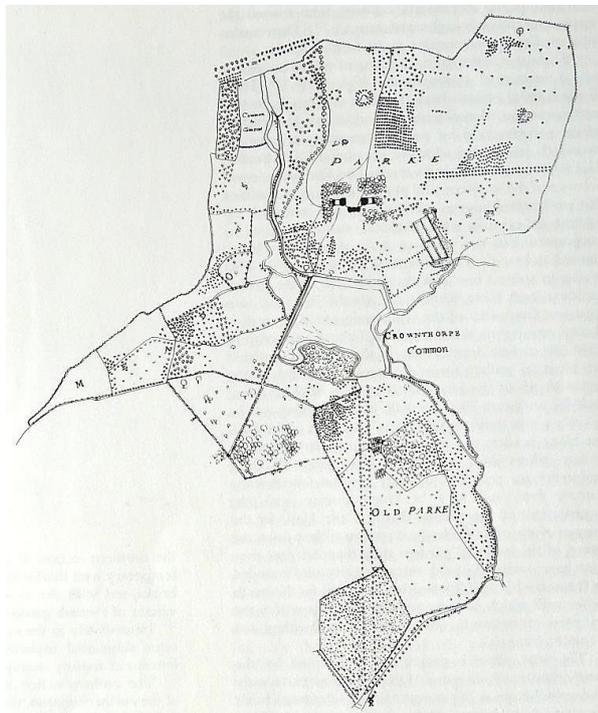
Fig. 1.5. Kimberley Park, Norfolk: a mid-eighteenth-century plan. The 8.5h lake was made by 1739.[17]

Irregular lake:

Fig. 1.6. 1785 plan of Stourhead, Wiltshire. The main lake of 7.5 h was made in 1754.[18]

River-lake:

Fig. 1.7. 1799 Ordnance Survey drawing of Audley End, Hertfordshire. The *c.* 3 h lake was made by 1764. The river-lake is not much wider than the natural river at the beginning and end.

Lakes evolved by several different routes, but before investigating what those routes were, an overview of how lakes were constructed will help in understanding the factors governing how and where they were made.

1.5. Overview of lake construction

In the construction of lakes, one of the essential components is a source of water such as a stream, river or spring, which constantly replenishes it. This is what really distinguishes a lake from a pond, as well as questions of size. It is this constant refilling which means that lakes can usually be much bigger than ponds. It also means that lakes contain water that is flowing, although this is not necessarily apparent at first glance.

A lake is made by damming a water source such as a river. The water accumulates behind the dam – it is 'ponded back'. Because water levels can vary considerably throughout the year, dropping during droughts, or rising dramatically in times of flood, they require measures to control them: sluices. They can be closed to conserve water, and replenish the lake, or opened to allow flood water to escape. They are a vital element of lake construction, often as part of the dam, although the word refers to any mechanism for controlling the water, and they were used, for example, in medieval ponds. One of the greatest dangers for lakes is flood water. If water reaches the top of a dam and pours over, known as overtopping, the current will start to erode the dam itself, and it is likely to be breached, or collapse altogether. Sluices can be of various kinds. The most common type in the early modern period was the barrel sluice. Fig. 1.8 shows a simple sluice construction, but many variations were possible in this basic design – sluices could thus be placed in the middle, or at the ends of dams. The barrel of the sluice (brick tunnel) passed through the dam at right angles to it, and was approximately large enough – around a metre across – to allow a man to crawl through it for maintenance purposes. Incorporating sluices in a
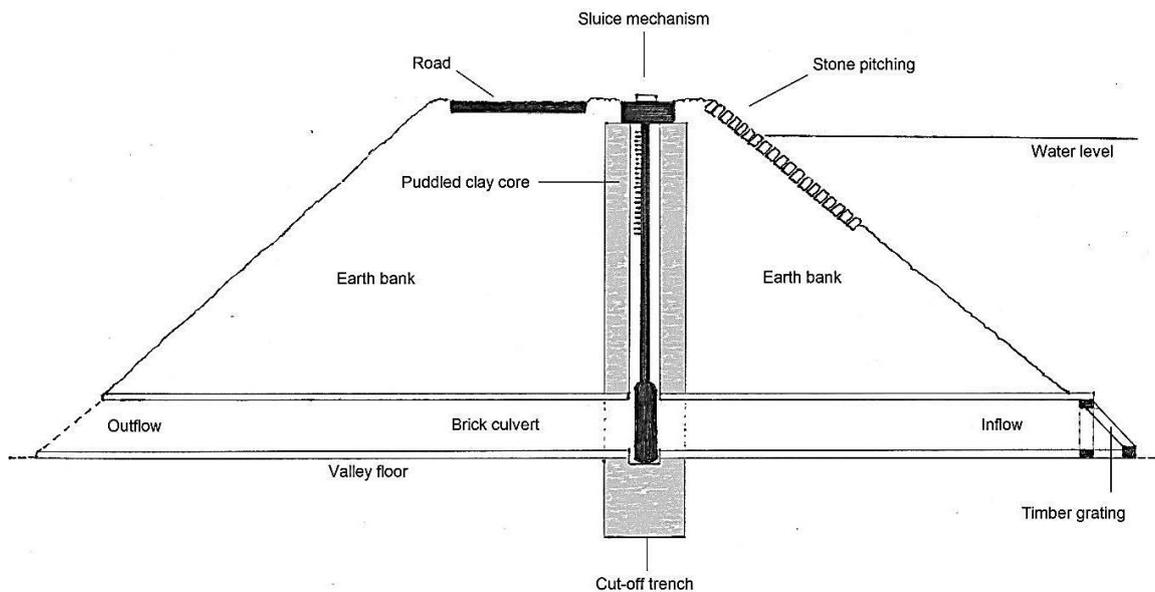
Fig. 1.8. Cross-section of a typical eighteenth-century dam with a barrel sluice. Not to scale.[19]

dam was a delicate matter, for there was a strong potential for water to leak around or under the sluice, with potentially drastic consequences. The lake level might start to drop, or the dam itself might collapse.

Another mechanism for controlling the water was a by-pass channel. This involved making a channel leading from the side of the lake upstream of the dam, round the end of the lake to rejoin the river below the dam. This kind of channel (a leat) was commonly used with mill ponds, where diverting large amounts of water on a daily basis was necessary. A combination of sluices and by-pass channels could be used, or more than one sluice might be incorporated in a dam. The particular form of design was governed by many factors, such as topography and rates of inward flow. By the nineteenth century, open spillways appeared, as dams began to be made of more robust materials than earth. This kind of spillway had a small lower section in the crest of the dam which was designed to allow water to pour over it at times of increased flow, ensuring that the lake did not overtop the main part of the dam.

These basic construction criteria apply to all lakes, both geometric and irregular. However, different types of lake were constructed slightly differently, which had an effect on where they could be made, as well as the costs of making them, and these factors will be examined in this thesis.

1.6. Methodology.

     As textual evidence is not plentiful, the two main modes of investigation used to elucidate the development of lakes will be the examination of maps, both historical and present day, and the examination of images of landscapes, predominantly paintings and engravings. In addition, there is a focus on three counties - Norfolk, Northamptonshire and Wiltshire - although this will not be an exclusive focus, and examples will be drawn from all over England. Data has been collated into two main databases. One comprises a list of examples of lakes, the Landscape Database (Appendix 1), with accompanying information

Garden Name	County	Dating	Dat	Feature1	Featur	Reference	Lake siz
Manorbier	Pembrokesh	Late C12	1186	Fishpond		Creighton p 40, Ger	
Silverstone	Northampto	c. 1200	1200	Fishpond		RCHME N'hants	8.7h / 21.5
Sulby Abbey	Northampto	Med.	1250	Fishpond		Bond p 102. EH	6.7
Henley Manor	Surrey		1343	Fishpond		Harvey p87	
Middleham castle	Yorkshire	Late C15	1470	Fishpond		Creighton p115	
Raglan Castle 2	Monmouth	1550 - 88	1570	Fishpond		T. Churchyard poem	
Newburgh Priory 1	Yorkshire		1605	Fishpond		Map	c. 1-2h
Wingfield Manor	Derbyshire	1700 c.	1700	Fishpond		Harris p 126 paintin	0 .14
Broadwell	Gloucestersl		1712	Fishpond		Atkyns	
Miserden	Gloucestersl		1712	Fishpond	Banqueti	Atkyns	
Shipton Moyne/Est	Gloucestersl		1712	Fishpond		Atkyns	

Table 1. An example of the Landscape Database. Brackets indicate a planned feature.[20]

such as associated landscape features, the designer (if known), and lake size (Table 1). This database can be interrogated; for example, which lakes did William Emes design? Or, which lakes were made in Wiltshire in the nineteenth century? (See Appendix 1.) Because landscapes change over time, multiple entries were numbered so that they appeared in date order when sequenced alphabetically.[21] A second database consists of images of landscapes in chronological order: the Image Database (Appendix 2). These images have been gathered from all possible sources, including landscape paintings hanging in places such as Bowood, Kedleston and Thoresby, as well as reproductions in secondary sources. The chief of these are *The Artist and the Country House* by

John Harris, and Roy Strong's books *The Artist and the Garden* and *The Renaissance Garden in England*.

Maps including estate maps, county maps, tithe maps, Ordnance Survey (OS) drawings and maps (mainly First Edition 6" and present day) will be consulted. The county maps produced by men such as Andrews and Dury, and Eyre and Jefferys towards the end of the eighteenth century form the basis for the county studies. This map-based assessment of lakes has limitations. Whilst estate maps tend to be fairly accurate in their surveying, they were sometimes made to show *planned* improvements, rather than what was actually in place. The early county maps, and the OS drawings could be particularly impressionistic where lakes were concerned. Accuracy often appears to be linked to the importance of the subscriber in the county maps, and some of the early OS surveyors may not have been happy surveying water, as some of their results seem surprisingly inaccurate. The tithe maps of *c.* 1840 were generally very accurate, though quite variable in the amount of information they depicted, and the First Edition OS maps were extremely accurate in relation to water, though with a tendency to label most large bodies of water in parks as fishponds.

These databases, in combination with information from Historic England listings, archival and manuscript sources from both public and private archives, together with publications of primary and secondary material, form the basis for this study of lakes. Use of these databases will enable the development of lakes to be evaluated chronologically, quantitatively and stylistically. This is a completely new approach to the study of a specific form, or element of landscape design.

The dating of lakes is frequently difficult. In the absence of data such as an early estate map, or an early textual reference, there is often no definite information relating to the size or appearance of a lake before the First Edition OS maps, as the county maps of the later eighteenth-century, or the OS drawings of the early nineteenth century, are (as noted) often unreliable as regards smaller lakes, as well as the precise shape of larger lakes. The policy which was adopted was to enter two types of data in the Landscape Database: a likely date or date range in the 'Dating' field, to give a realistic date, and an actual date in

the 'Date' field to enable lakes to be sorted by date. This 'actual' date was arrived at by taking the last known date when a lake did not exist and the first known date when it did exist, and deriving the mid-way point. For example, the 3 h lake at Canon's Ashby does not appear on the Eyre and Jefferys map of Northamptonshire surveyed in 1775, but it does appear on the 1812 OS drawing so a date of 1794 was entered for the 'actual' date, whilst the range, 1775-1812, was entered in the dating field. If other factors operated, the date might be adjusted slightly. For example, the advent of a new owner might also be reflected, failing any other definite information.

Given that maps and paintings are often being used to help date landscape features, another factor which has to be considered is the 'lead' time involved in their production. Eyre and Jefferys conveniently state when their map of Northamptonshire was surveyed and engraved – 1775 and 1779 - but this is by no means common. Similarly, how long did it take for Knyff and Kip to produce their topographical pictures of landscapes in the early 1700s? All available evidence has been considered when using these means of dating lakes. That might consist of information that the artist or surveyor was in the area, possibly at another property, at a relevant time.

The main sources consulted in this thesis are visual rather than textual, taking the form of pictures, plans and maps, or books of engravings such as *Britannia Illustrata* 1707. In the late seventeenth and early eighteenth centuries, the 'bird's eye view', or topographical view, was very popular (Fig. 1.11). This was a view as if from a hot air balloon – or about three-quarters of the way up an imaginary vertical axis (a three-quarter elevation). As the eighteenth century progressed, the viewpoint became generally lower, to around one quarter, and nearer eye level by the end of the century (Figs. 1.9 and 1.10), as can be seen in John Harris's *The Artist and the Country House*. The viewpoint of an image has a considerable impact on how much information about the landscape is conveyed, and what can be determined about lake sizes and shapes, as well as their proximity to the house. A map gives a full plan view of the landscape but little idea of physical topography or landforms. (Maps and surveys rarely included hachuring, and in 1700 the concept of contour lines was still over a hundred years in the future.) The three-quarter bird's-eye view probably owed its

popularity to the way in which it gave a wide-ranging view of the landscape as well as some idea of the topography. This could be represented thus:

Viewer

Ground
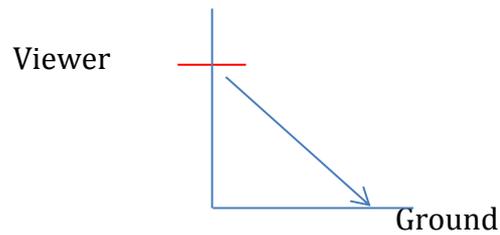
Fig. 1.9. The bird's-eye view, or three-quarter elevation: the viewer is three-quarters of the way up the vertical axis.

Viewer

Ground
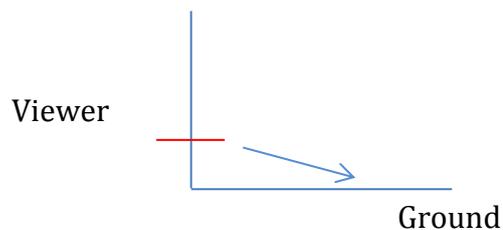
Fig. 1.10. The one-quarter elevation: the viewer is a quarter of the way up the vertical axis.

In a plan view, the viewer is at the top of the vertical axis. The engravings of Knyff and Kip in *Britannia Illustrata* were all bird's-eye views, and this was very much the favoured format for views of landscapes in the later seventeenth century and early 1800s (Fig. 1.11). By the 1760s, bird's-eye views seemed old fashioned. The one-quarter elevation view, as used by Edmund Prideaux in his sketches, for example (Fig. 1.12), eventually became more common. This viewpoint, whilst being much more realistic and intimate to modern eyes,
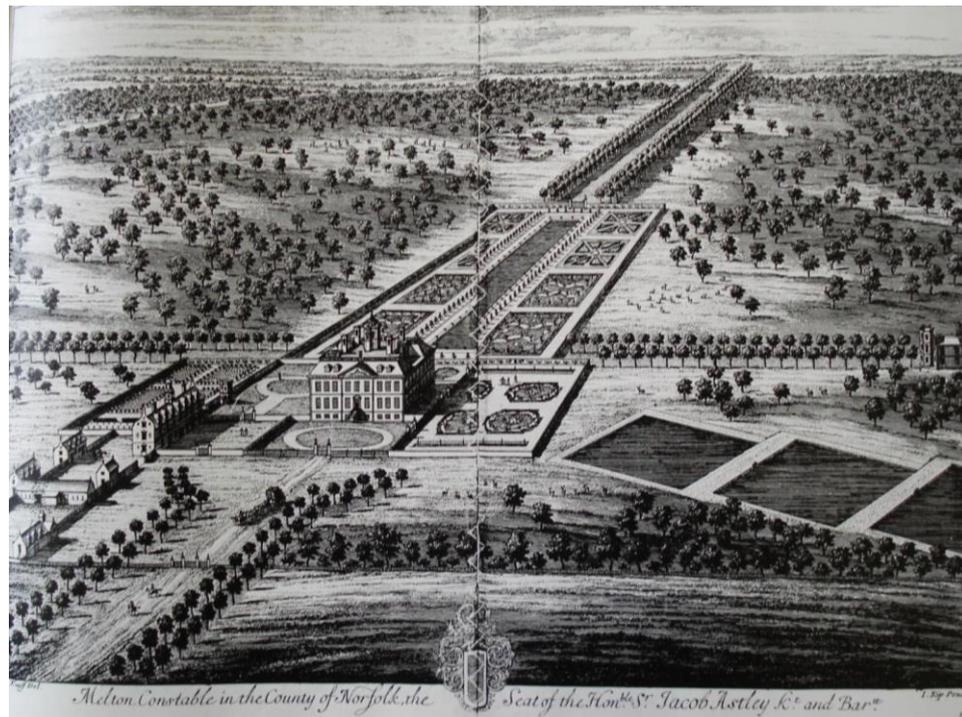
Fig. 1.11. Melton Constable, Norfolk, by Knyff and Kip, *Britannia Illustrata* 1707.

Fig. 1.12. Melton Constable *c.* 1725, by Edmund Prideaux.[22]

incorporated much less information about the landscape as the view could literally not encompass it. Why did views change? The answer may lie in the pivotal relationship between house and landscape: one essential function of houses was to enable the surrounding gardens and landscape to be seen and, in some measure, houses changed according to how those landscapes were best

viewed. Geometric landscapes were best viewed from above, so that the extent and geometric pattern of the design could be fully appreciated. Depictions of houses and landscapes mirrored these requirements. Hence the bird's-eye view was the best way of depicting geometric landscapes. Once this rationale disappeared, landscape views also changed, to reflect the changes in those landscapes.

The four main sources which will be examined to assess water features in the landscapes of the early eighteenth century employed the bird's-eye view extensively: the engravings which Knyff and Kip published in *Britannia Illustrata* in 1707; Sir Robert Atkyns's *The Ancient & Present State of Glostershire,* published in 1712 (Atkyns); Sir Henry Chauncy's *The Historical Antiquities of Hertfordshire*, published in 1700 (Chauncy); and Colen Campbell's *Vitruvius Britannicus* Vol. 3, published in 1725. In spite of how much these illustrations are used by historians today – particularly *Britannia Illustrata* and *Vitruvius Britannicus* – surprisingly little attention has been paid to the details of the ornamental water they show, and an examination of them (in Chapter 2) reveals much information about the landscapes of the early eighteenth century and the areas of ornamental water depicted.

In addition to these four sources, the Image Database was also analysed, consisting mainly of paintings and engravings, but containing some plans, in two parts:

1680 – 1710 – called Database A

1711 – 1730 – called Database B.   (See Appendix II.)

The dates for Database A were chosen because they correspond well with those of Chauncy, *Britannia Illustrata* and Atkyns, in that the landscapes depicted by those sources could have been constructed well before the date of the publication (1707), and 1710 was approximately the date by which those three sources were published, whereas the dates for Database B correlated better with *Vitruvius Britannicus* 1725. By 1730, fashions in landscape design had begun to change more radically.[23] Most of the pictures in Database A show notable residences with extensive landscapes belonging to the wealthy aristocrats who could afford to have such paintings made. A minority show less grand residences, such as Margam Abbey, Glamorgan, Littlecote House,

Wiltshire, Clivedon Court, Somerset, Weald Hall, Essex, places owned by men who were certainly prosperous but not necessarily very rich. In Database B, Prideaux's drawings also show a number of smaller residences, often with virtually no gardens, especially in rural locations, while the rest are largely prestigious landscapes.

Britannia Illustrata 1707 was by far the most significant source in terms of numbers: it contains more than 70 plates drawn by Leonard Knyff and engraved by Johannes Kip, though some of these were views of towns or cities. Many of the places illustrated were great houses or palaces, such as Hampton Court Palace, Chatsworth, Wrest Park, but about half were lesser places at that time such as Londesburgh, Rycote, Althrop and Maddingley. Virtually every county was represented. Various conventions were used in the engraving of the *Britannia Illustrata* views, and very much the same conventions were used by other engravers. Water was usually represented by a shading of horizontal lines, and people fishing, water birds or boats, were depicted on it. People were depicted on the lawns and bowling greens for example to distinguish land, water and shadow clearly. Bridges were also conscientiously used to distinguish canals from shadows cast by lines of trees.

The views in Atkyns (1712) are very similar in quality to those of *Britannia Illustrata*, which is not surprising as Kip drew and engraved them, and form a smaller sample of *c.* 40 plates. They differ from the illustrations in *Britannia Illustrata* in that the scale of landscapes and residences tends to be smaller, Badminton and Dyrham being exceptions. Fewer ornamental water features are depicted, a consequence, perhaps, of the residences being smaller and owned by less wealthy people. The same pictorial conventions were employed as in *Britannia Illustrata.*

Chauncy's (1700) collection of 30 views also consisted of bird's-eye depictions. Unlike *Britannia Illustrata*, and apart from places such as Bushey Park and Aspenden Hall, the gardens and landscapes which are shown are modest in size and scope, with few water features. Jan Drapentier was responsible for them. They tend to encompass only the house and its immediate vicinity, probably because the accompanying gardens were not large. Nearly 60% of the places illustrated do not appear to have any associated man-made

water features. This figure is much lower for *Britannia Illustrata* (18%) and Atkyns (7%). It is possible that the proximity of Hertfordshire to London had already produced a more suburbanised general landscape than in much of the rest of the country – we know that William Cecil 'commuted' between the court in London and his house at Theobalds as early as the late sixteenth century. There was a relatively rapid turnover in owners, perhaps with a corresponding reluctance to invest heavily in the gardens and landscapes.[24]

Vitruvius Britannicus 1725, Vol. 3, contains (in addition to architectural plans and elevations) 16 illustrations of landscapes, mainly of elite residences. Water features were more prominent in this sample than in the sources discussed above. Drawn by Campbell and engraved by H. Hulburgh, it is unlikely that Campbell produced these surveys himself, in contrast to the plans and elevations for the houses, most of which he was involved in designing. It is certain that he never visited Boughton, for instance, although he gives a plan of it, and he ascribes the plan of Blenheim to Vanbrugh.[25] The likelihood is that he wrote to subscribers and designers and asked them for plans of their landscapes.

Databases A and B, extracted from the main Image Database (Appendix 2), consist largely of paintings of houses and landscapes, with a sprinkling of plans and the majority of the views were lower level elevations. Many painters and engravers are represented: Knyff and Kip, Badeslade, Drapentier, Rocque, Nebot, Haytley, Devis, Repton, to name a few. These two databases will be used to analyse the nature of water features in landscapes up to 1730, and how prevalent they were.

The six sources above form the basis for an analysis of what kind of water features existed in landscapes in the period immediately before ornamental lakes appeared, and will help to determine how those features related to the development of lakes. In addition, the landscapes preceding the eighteenth century will also be considered as they contained large bodies of man-made water, albeit in the park, not the gardens. These were moats, mill ponds, and fishponds for breeding fish. These components comprised the waterscapes of the medieval period, and they will be examined first to determine the nature of their influence on subsequent water features. It is

hoped that this process will help to illuminate the origins of ornamental lakes and chart the course of their evolution.

[1] H. Dobrée & G. Webb, eds. *The Complete Works of Sir John Vanbrugh* Vol. 4 (London: The Nonesuch Press, 1928) and Halsband, R. ed. *The Complete Letters of Lady Mary Wortley Montagu* Vols. I-III (Oxford: Oxford University Press, 1965)

[2] C. Taylor, 'Medieval Ornamental Landscapes', *Landscapes,* Vol 1, No. 1, April 2000 pp 38 - 55

[3] In a letter of 11th Feb. 1724 to the 3rd Earl of Carlisle, in H. Dobrée & G. Webb, eds. *The Complete Works of Sir John Vanbrugh* Vol. 4 (London: The Nonesuch Press, 1928) p 156

[4] G. Jackson-Stops *An English Arcadia 1600-1990* (London: National Trust Enterprises, 1991) p 85

[5] Letter of 18th July, 1709, from Vanbrugh, possibly to Lord Ryalton, the Duke of Marlborough's son-in-law. in Dobrée & Webb ibid. p 34-5

[6] BL. MS. Stowe 748, ff. 9-10 quoted in Kerry Downes *Sir John Vanbrugh, A Biography* (London: St. Martin's Press, 1987), p 461

[7] Bodleian Libraries MS. Top. Oxon. A.37

[8] Duchess of Marlborough in a letter to the Duke of Somerset, 1723, BL, Add. 61457 quoted in C. Dalton *Sir John Vanbrugh and the Vitruvian Landscape* (Abingdon: Routledge, 2012) p 115

[9] Some flexibility was used with regard to this size and any body of water which measured 0.9h was also included in the definition. This was because achieving a completely accurate measurement of a piece of water depends on the scale and accuracy of maps being used.

[10] OS map, 2017, scale 1 to 5000

[11] A. Young *A Six Months Tour Through the North of Britain* (London: 1771) p 327 online at https://books.google.co.uk/books?id=QsHAAAAQAAJ&printsec=frontcover&dq=arthur+young+north&hl=en&sa=X&ved=0ahUKEwj9wLHTxt3TAhXlDsAKHYGhDaEQ6AEIKDAB#v=onepage&q=arthur%20young%20north&f=false accessed July 2016

[12] *Oxford English Dictionary* "serpentine adj. 3a" Oxford University Press http://www.oed.com/viewdictionaryentry/Entry/176563

[13] P. Willis *Charles Bridgeman and the English Landscape Garden* (London: A. Zwemmer, 1997) p 96

[14] Ibid. Plate 97a

[15] Ibid. Plate 123, detail

[16] Bodleian Library Gough Collection, ref. MSGD A4 fo.20. Date given in T. Williamson and A. Taigel, 'Some Early Geometric Gardens in Norfolk', *The Journal of Garden History* Vol. 11, Nos. 1 & 2, pp 1-111

[17] Undated mid-eighteenth-century survey by James Nollorth in Williamson and Taigel, ibid., Fig. 27

[18] WSHC ref. 135/4H

[19] Diagram by author

[20] There is a list in Appendix 1 of abbreviations used in the Landscape database

[21] Lakes in some areas (mainly Cheshire) were excluded as they were found to be affected by salt extraction: subsidence could cause lakes to appear.

[22] J. Harris, 'The Prideaux Collection of Topographical Drawings', *Architectural History* Vol. 7 (1964), pp. 17, 19-21, 23-39, 41-108, online at http://www.jstor.org/action/doBasicSearch?Query=raynham+hall&acc=on&wc=on&fc=off accessed 27.5.13

[23] In order to avoid duplication of evidence, views which appeared in more than one source were only counted once so, for example, Badminton, which appeared in *Britannia Illustrata* and Atkyns, was evaluated under *Britannia Illustrata* as the Atkyns view was identical. If two views of the same place showed significantly different water features then they were evaluated separately. This only occurred in the second image database sample (1711-30), in practice.

[24] T. Williamson, personal communication, April 2015

[25] Information relating to Boughton Park was supplied by Crispin Powell, archivist to the Duke of Buccleugh, personal communication, 28.8.2014

2. The Precursors of Lakes.

In order to determine how and why ornamental lakes appeared, it is helpful to look not just at the water features which preceded them, but at the wider context – the landscapes – within which these features were set. The evolution of water features did not rigorously follow broader developments in landscape style, as will be shown, but there was a general relationship between the two. This examination will encompass the aesthetics relating to water features, as well as the technologies which were in use, to assess whether they affected the evolution of lakes in the eighteenth century. Ornamental lakes were a new feature in the eighteenth century, but large bodies of water in the landscape were not: fishponds, moats and millponds populated the medieval landscape, conferring status on their owners. In the medieval period, the emphasis was on function, such as food production or military capability, but by the eighteenth century, the emphasis leaned towards ornament and beauty. This changing relationship between function and ornament is relevant because, as will be shown, it affected both the form and the position of water features.

Oliver Creighton talks of 'elite residences' and this is a useful term in the medieval context, encompassing habitations of royalty, aristocracy, and great magnates, as well as the top echelons of the ecclesiastical world. These elite residences could have designed gardens in the medieval period - herbers, privy gardens, 'queens' gardens - and the concept of design in relation to them is widely accepted. More controversial is the concept (Taylor, Liddiard, Everson *et al*) that medieval landscapes were also being consciously designed, in the sense that we use the word today, rather than being purely about function, such as food production or military power.[1] Taylor cites the fishponds flanking the approaches to the Bishop of Lincoln's palace at Somersham as an example of design in a medieval landscape, pointing out that they could have been located elsewhere.[2] However, 'design' embraces two concepts. One concept is the organising of elements according to a predetermined overview of an area. In this context, perhaps it would be more useful to talk about 'manipulated' landscapes in the medieval period, rather than designed landscapes. Elements such as water, approaches, castles, pleasaunces, were being manipulated in the

landscape to maximise their effect, but without an over-arching view of the landscape as a whole. The second concept is that of visual appeal – aesthetics. Here, the *intention* behind the construction of an element is of primary importance. Fishponds provide a good illustration of how this applies. Large fishponds (*vivaria*) were usually situated in the park in the medieval period. They were functional. They may have seemed beautiful to those people who did see them, but they were not intended to be seen by many people, or by high status visitors. However, if the same fishpond were subsequently to have careful planting associated with it and an access route from the residence, the intention has changed, and being ornamental has become part of its essence. It is the embellishing, or decorating, of the fishpond with planting, plus linking it to the residence, that signifies the change of intention so that the water is no longer purely functional, but has become ornamental, at least in part. It may be the same pond, in the same place, with the same number of fish, but the context has changed. It is being incorporated into an overall view of the landscape. As will be seen below, many water features, especially geometric fishponds, existed at different points on the functional–ornamental spectrum, at different points in time, as intentions changed.

This examination of the water features which were the precursors to lakes will focus on the fishponds, moats and millponds which were the main bodies of water in landscapes prior to lakes. What was their role in the emergence of lakes? In order to answer that question, those elements and the landscapes they occupied will be evaluated.

2.1. Fishponds.

The earliest evidence of fishponds comes from the Roman era, and they were of two main types: large breeding ponds (*vivaria*) and smaller store ponds (*servatoria*).[3] This system of producing freshwater fish was common in royal and monastic establishments, and throughout the medieval period those landscapes contained fishponds, both large and small. Despite the availability of sea fish, freshwater fish was preferred and elaborate ponds were constructed to breed and store fish. Consequently, because of the high costs of production,

freshwater fish was a high status food, with both fish and ponds acting as status symbols: royalty and aristocracy bestowed freshwater fish as gifts.[4] This factor meant that the smaller fishponds were frequently adjacent to the house – famously, in the case of Manorbier, Pembrokeshire - but also in very many other places such as Kenilworth, Warwickshire, and Rhuddlan, Denbighshire.[5] These smaller holding ponds (*servatoria*) were equivalent to refrigerators today. They were often secured in some way to prevent theft, and this was probably a factor in siting them in gardens adjacent to the house.[6] As well as being functional, it is possible that they also had an aesthetic role: this is implied by the seating around a new fishpond in the Queen's Garden made for Eleanor of Castile at Rhuddlan, in the late thirteenth century.[7] The pond was in a turfed courtyard enclosed by staves.[8] This strongly suggests that the pond, as well as storing fish, was appreciated in its own right, as an ornament worth contemplating. Position in relation to the residence must be the guide here: small ponds in service areas were unlikely to have been ornamental whilst those in full view of high status apartments may have had ornamental value as well as conveying status, as at Somersham, Cambridgeshire.[9] The ponds proudly displayed at Margam House,
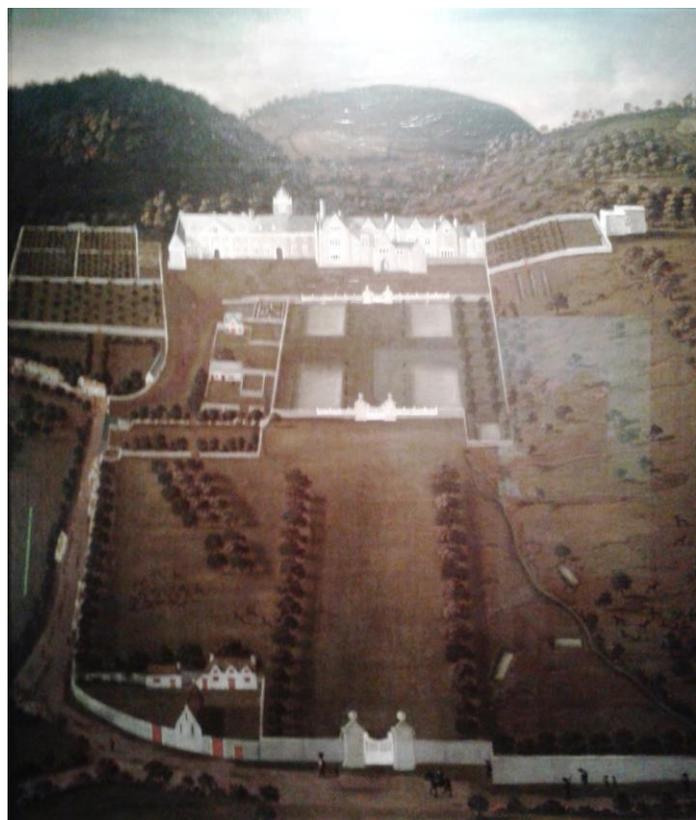
Fig. 2.1. Margam House, Glamorgan, c. 1700.[10]

Glamorgan, *c.* 1700 (Fig. 2.1), indicate how fishponds were evolving from purely functional items into water features which also had an aesthetic value by 1700, protected by ornamental gates.

Smaller ponds for storing fish were constructed by digging a usually rectangular cavity and lining it with clay.[11] A series of ponds was normally required for successful fish production as fish of different ages were kept separately, to ensure they were readily accessible when mature, and to stop larger fish preying on small fry. Roach, bream and carp were some of the commonest types that were kept, along with tench and perch, whilst pike were kept in special ponds because they prey on other fish. Fig. 2.2 illustrates a typical medieval monastic fishpond arrangement.
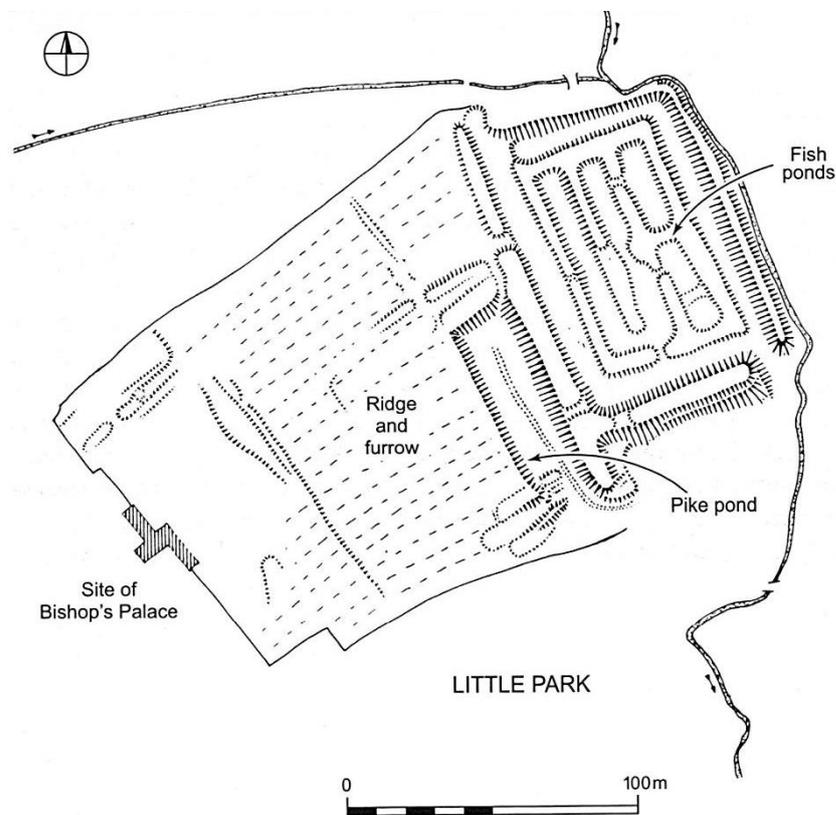
Fig. 2.2. Medieval (fourteenth-century) fishponds adjacent to the Bishop of Lincoln's palace at Lyddington.[12]

Breeding ponds (*vivaria*) were large and often some distance away, in the park. Many were 'contour ponds', created by damming a stream, such as the 300 m long pond of the abbey at Cirencester.[13] Waverley Abbey's pond at Tilford was 5.7 h and Trylpool at Ombersley occupied 3.5 h.[14] As such, they were similar in form and construction to the ornamental lakes which appeared in the

eighteenth century. At Sulby Abbey, Northamptonshire, a massive dam retained a fishpond of possibly 6.7 h (Fig. 2.3)[15] as part of a monastic fish production system.

SULBY ABBEY,
Northants.
(Premonstratensian)
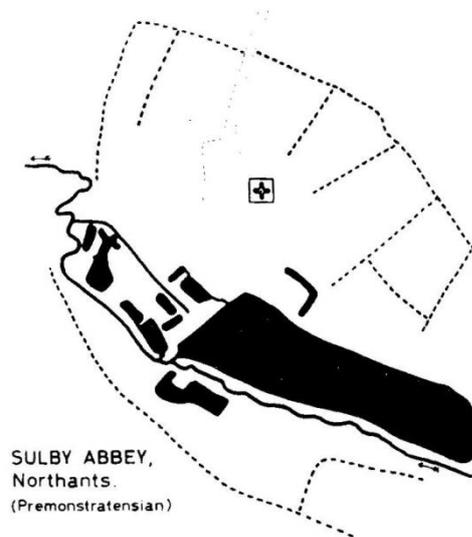
Fig. 2.3. Monastic fishponds at Sulby Abbey, Northamptonshire. The largest is *c.* 6.7 h.[16]

The making of these dams was a skilled job, involving the moving of large amounts of earth, and ramming it very firmly to produce a long dam, triangular in cross-section, wider at the bottom than the top.[17] These were probably all gravity dams: they worked simply because the weight of the earth piled up was sufficient to retain the water.[18] Often these ponds were relatively shallow, to facilitate catching the fish, but some could be very large indeed, and deeper. The Bishop of Winchester's pond at Alresford is a case in point. Made in the flat valley of the Arle in *c.* 1190, it was extremely large (80 h).[19] The dam which retained it was 6 m high, and subsequently carried the Southampton to London road, which crossed marshy land there.[20] As we shall see, elements of these fishponds can be found in the lakes of the eighteenth century: large dams across a valley, with carriageways on the dams. A significant difference between the majority of *vivaria* and ornamental lakes, however, was their relationship with the house. *Vivaria* were normally in the park and frequently not linked with the house in any way or visible from the house, in many instances. Conversely, lakes were often visible from the house, and were linked to it physically, often by an approach drive or other carriageway.[21] Despite these differences, an underlying

similarity remains: both were large bodies of water which was irregular in shape, made by damming a water source, and were stocked with fish.

Sluices then, as in the eighteenth century, were vital components, to enable the control of flood water as well as the draining of pools for catching fish and, periodically, to recondition the pool itself. Recommended by Roger North (1714) and John Taverner (1600), the practice was to drain the pond for a season and plough it, about every five years.[22] Usually, a crop was grown on the site while it was empty. Documentary evidence from the reign of Henry III (1216-72) attests to the existence of specialist 'pondmen': Brother John of Waverley (1247-51) was sent to Darnhall, and other places in Cheshire, as well as further afield (Woodstock), to oversee repairs and works.[23] Other experts of the time were Henry de Lacy and Robert le Parker, who were royal fishermen.[24] Understanding the difficulties involved helps to explain why freshwater fish were a high status commodity, and the sums paid to these men to undertake repairs substantiate this: £40 for the repair of a fishpond at Feckenham, Worcestershire (1203-4), for example, and £20 for blocking up and repairing 'the great stew' of *c.* 4 h for the Bishop of Winchester at Bishop's Waltham, Hampshire (1251-60).[25] Reference to specialists such as this throws some light on the kind of expertise which was relied on to make dams and lakes in succeeding centuries, including the eighteenth (discussed in Chapter 5), and fishponds continued to be important components of food production well into the nineteenth century, as the fifth edition of the Rev. C. Marshall's *A Plain and Easy Introduction to the Knowledge and Practice of Gardening, with hints on Fishponds* 1813, implies. These larger ponds were often located in deer parks and, apart from the fact that this was where the space and water supplies usually were, the deer park acted as a 'security zone', providing a buffer area which protected not just the fish but everything else in the park – deer, game, rabbits, pasture, timber: if you were an unauthorised person inside the park, your intentions were nefarious.[26]

Fish production systems such as these required considerable investment in making the ponds initially, and in their maintenance, not to mention the stocking and care of the fish, all of which were skilled jobs. There was also the issue of having sufficient land for such a system. These factors help to explain why freshwater fish was highly regarded throughout the medieval period, and

why fishponds became symbols of status in elite landscapes. Fish were kept in most areas of water, both in parks and gardens, as will be shown below, and thus water in any form was a status symbol, both in medieval and modern times.

2.2. Moats and Lake-moats.

The other main water features in medieval landscapes were moats. The most familiar form was the defensive moat around a castle, which is the primary focus here. Oliver Rackham states that moats 'began' in *c.* 1150 and were most popular in the thirteenth century, but were out of fashion by 1350.[27] He is talking about primarily defensive, castle moats, though he acknowledges Christopher Taylor's argument that even these moats were predominantly status symbols, rather than solely military features.[28] Moats were also made around monastic establishments and high status residences, in the medieval period, and also around sixteenth and seventeenth century houses.[29] In addition to their functions of defence and deterrence, moats had a number of other advantages. As well as conferring status, they delineated ownership; they were useful for keeping fish, as sewers, for drainage, and to keep out vermin. North makes it clear that moats were stocked with fish: "I am an advocate for Moats … They shall nourish a World of Fish".[30] By the sixteenth century, some had evolved into moated gardens: Lord Burghley's estate of Theobalds (Figs. 2.14 and 2.16) had a moated garden on the site of Cullings Manor, whilst the house and gardens themselves were partially moated.

A variation of the usual moat feature occurred around a number of high status places and consisted of a large, spreading area of water surrounding the building. Bodiam Castle, built in the 1380s by Sir Edward Dalingridge, is a good example (Fig. 2.4). This form has been characterised as a 'lake-moat' for the purposes of this study, as the term usefully describes both the form and the nominal function. This is a new concept, and has not been recognised in the literature to date. Other prominent examples are Leeds Castle, Kent, Caerphilly Castle and Tabley Old Hall, Cheshire. Three places with partial lake-moats were
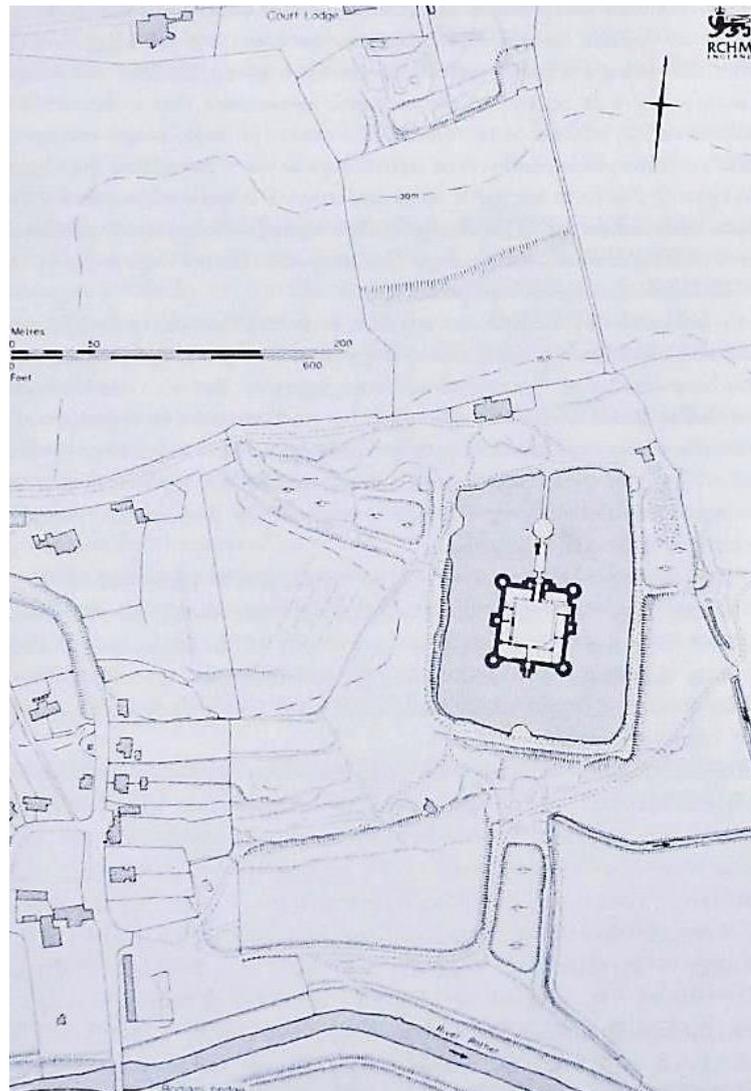
Fig. 2.4. Plan of Bodiam Castle, Sussex, built by Sir Edward Dalingridge in the 1380s.[31]

Kenilworth and Raglan Castles, and Dunham Massey, Cheshire. Creighton discusses the military capabilities of these moats, arguing that they were at least multi-functional, not purely military.[32] Their ability to reflect the castle was also important, and this factor may also relate to eighteenth-century lakes.

The phenomenon of a lake or mere which washed right up to the castle walls, acting as a moat, was relatively uncommon and usually found, unsurprisingly, in conjunction with the most elite residences. Notable examples are:

Kenilworth Warwickshire, *c.* 1125, possibly a thirteenth-century mere,

Framlingham, Suffolk, possibly early thirteenth century,

Leeds Castle, Kent, *c.* 1283,

Caerphilly, Glamorgan, late thirteenth century,

Ravensworth, Yorks, eleventh to fourteenth century,

Scotney Castle, Kent, 1370s,

Nunney, Somerset, 1373 (castle with a mere),

Bodiam, Kent, 1387,

Hertsmonceux, Sussex, 1440s,

Raglan, Monmouthshire, possibly fifteenth century.[33]

Whilst undoubtedly conferring status, and conveying a sense of power, like the castles they surrounded, one under-emphasised aspect in recent literature is that these lake-moats effectively prevented undermining of the walls of castles. Balanced against these military possibilities is the undoubted ability of lake-moats to act as mirrors, reflecting the castle or palace. Despite the reflected image being upside down, the overall effect is of the castle being twice as big as it really is (Fig. 2.5), enhancing the sense of power.

Fig. 2.5. Bodiam Castle, Sussex.[34]

As well as reflecting the castle, lake-moats undoubtedly provided a dramatic approach across the water to the castle itself and, as with fishponds, these aspects have implications for the lakes which emerged in the eighteenth century.

There is compelling evidence that elite landscapes were constructed to maximise the display of symbols of status, beginning with the siting of the castle or ecclesiastical building itself, and with water as a vital component. Creighton argues that at Dunstanburgh, for example, the meres would not have afforded any realistic defensive capability so were primarily ornamental.[35] If elite residences were sited for dramatic effect, then it follows that staged, elaborate approaches were constructed to maximise that effect, frequently flanked by water. At the Bishop of Lincoln's palace of Stow (1180s) a causeway flanked by ponds could have been a staged entrance route, according to Creighton, whilst The Bishop of Ely's palace at Somersham (late twelfth-century), in Cambridgeshire was laid out in a similar way with two very large fishponds flanking an embanked causeway from the village to the palace.[36] Taylor argues that the fishponds, which were of high-status in their own right, were display elements in this landscape, as they could easily have been positioned elsewhere, for example to the south of the moated area, whereas they seem to be enhancing the approach route. What is not disputed here is that the fishponds were being prominently displayed to enhance their owners' status, as well as to provide fish. These two aspects remained important into the early modern period, having implications for the desirability and positioning of ornamental lakes in the eighteenth century, as we shall see. Lake-moats, with a similar role in enhancing the approach, were almost certainly stocked with fish. We have seen from North that ordinary moats were, and C. J. Bond emphasises that monastic moats often served as fishponds.[37]

In the late medieval period, there was a progression in the role of water which is well illustrated by places such as Kenilworth, Caerphilly, and Leeds Castle. Geoffrey de Clinton built the original castle at Kenilworth in *c.* 1125, and possibly the mere. It was certainly enlarged several times in the twelfth century, and formed part of the castle's defences, along with a substantial fishpond to the south-west, and the river to the east (Fig. 2.6).[38] In 1279, the castle and its environs were used for a major tournament, the function of the mere being to increase the status of the owner, according to Robert Liddiard, as well as possibly to indicate military might.[39] By 1417, the mere had evolved again, into
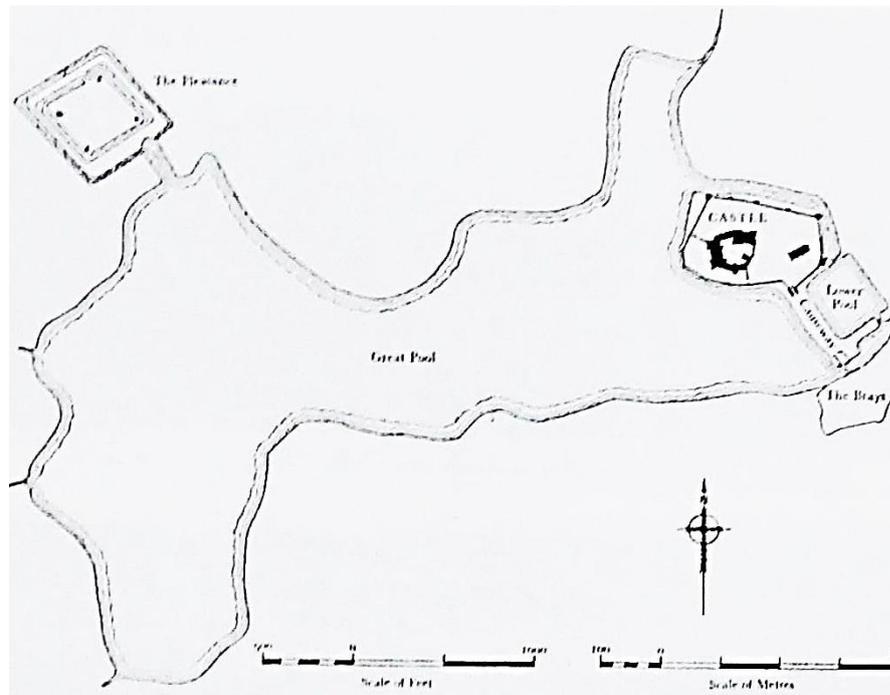
Fig. 2.6. Plan of Kenilworth Castle, Warwickshire, *c.* 1417: the Lower Pool, the Great Pool and the Pleasaunce.[40]

a leisure arena, as Henry V constructed a double moated plesaunce about half a mile from the castle, which was reached by boat – a considerable 'voyage' across the mere. Secluded or exclusive leisure seems to have been the aim, as the four acre enclosure was walled.[41] As the plesaunce was located so as to entail a 'journey' by boat, it seems likely that the experience of the water itself was being deliberately sought, suggesting that in the late medieval period, water was beginning to have an aesthetic role.

The *gloriette* looking over the lake-moat at Leeds Castle, built by Edward I in 1279-88 for Queen Eleanor, also supports the theory that lake-moats were made to be looked at and admired, as Creighton argues. The lack of a serious curtain wall, and the presence of vineyards and extensive fishponds, bear this out.[42] In contrast, Caerphilly Castle (Fig. 2.7) was built in 1272-1307 by Gilbert de Clare, in direct response to the threat of attack from Llewelyn ap Gruffudd. Situated in a valley, it is flanked by two enormous lakes. Whilst its primary function was military impregnability, the castle was also an emphatic statement of status and this message was driven home by the elaborateness of the water defences. Whilst defence was probably the primary concern, the lake-moat

Fig. 2.7. Caerphilly Castle defences.[43]

also reflected the castle, and was almost certainly stocked with fish.

The role of the partial lake-moat at Raglan Castle (Fig. 2.22) is less easy to establish. The castle, with its Great Tower and 'pitched stone' court, was built by the Herberts, later Earls of Pembroke. 'The Great Poole' on the north-west side is of unknown date and it does not appear to have had a military role, though it would have kept the enemy at a distance on one side, but it would have reflected the castle well, and was also stocked with fish.[44] The main entrance, which was probably constructed later by Henry Somerset, the 5th earl (d. 1646), was flanked by fishponds (1.2 h) and included the Red Gate overlooking the bridge over those ponds.[45] These examples emphasise that a large area of water immediately adjacent to an elite residence was highly desirable.

In the sixteenth century, new houses were still being built on existing moated sites, such as Beckley (Oxfordshire), Blickling (Norfolk), Quarrendon (Buckinghamshire) and existing moats were adapted for other functions, such as gardens, fishing platforms, orchards. Cullings Manor at Theobalds (Fig. 2.14) and the moat at Cope's Castle (Fig. 2.25) are examples. It appears that where we have evidence of landscapes being created, or redeveloped, moats were still valued, and were incorporated into them, in contrast to the eighteenth century,

when moats might be filled in, or drained.[46] Moats had a validating role: they conferred authenticity by implying that the owner's family was long established. This conferred status, as in the medieval period, but at one remove, as it were. They also had a delineating role: the gardens, fruit trees or fish contained within were marked as special: if you crossed the moat to reach them, without permission, your intentions were dishonourable. Moats in the late sixteenth and early seventeenth centuries were not regarded just as relics of a bygone age in the landscapes of magnates, but evolved into moated gardens which were valued as secluded areas for high status individuals: by the mid-1620s, James I had created

> an island planted with cherry, plum and other fruit trees while strawberries, primroses and violets were set round about the border of the Pallisadoe at this pond

in the gardens of Theobalds, which he acquired from Robert Cecil in 1607.[47]

2.3. Mills and Millponds.

Mills and millponds were another water element in medieval landscapes and were the preserve of lords of the manor, as Creighton points out:

> The status of the mill as a symbol of lordly authority has long been recognised ... Millponds could also be, in effect, components within designed landscapes: at Nappa Hall [Yorkshire] the pond was at least partly ornamental and designed to be seen from the hall, while the mill was tucked away out of sight downslope.[48]

This elite status of mills is confirmed by John Langdon, who says of the early medieval period, "there does at times seem to have been a genuine belief that no manor was suitably equipped unless it had a mill".[49] Whilst there is a good body of knowledge about mills themselves, the same cannot be said about millponds, and most evidence is map based, or gleaned from the EH listings and short sections in works on mills.

The most common source of power for a watermill is a river or stream, though tide mills were not uncommon in the medieval period.[50] The siting of watermills is very dependent on topography, as Leslie Syson makes clear: "The simplest method of obtaining power, if the site was right, was to use the natural fall of the river or stream."[51] Where the water source was insufficient, such as in a relatively flat area, or where demand for milling was high, it would be necessary to construct a millpond. This would retain a larger amount of water, which could be released as required. In other words, the millpond stored power for use by the miller. He controlled this through the use of sluices and leats; being able to control excess water was vital to avoid damage occurring to the mill wheel, and to nullify fluctuating water-levels.[52] As with fishponds, the basic principles of construction to control the flow of water were the same as in the eighteenth century.

Fig. 2.8. Stokesay Castle, Shropshire, 1883 First Edition 6" OS map.

Stokesay Castle, Shropshire (Fig. 2.8), originally built in the late thirteenth-century by Lawrence of Ludlow, illustrates several interesting

aspects. A millpond (0.1 h) near the castle was supplied thus:

> A leat takes water from the River Onny above the weir at
> Stokesay Bridge to a mill SE of the Castle… A causeway S of the
> castle held back a pond, fed by a stream from the NW, which
> almost certainly supplied the castle moat, and which may also
> have served as a fishpond.[53]

The position of the millpond and fishpond are important here: they are both situated within full view of the castle, which was on a moated platform raised above the surrounding ground.[54] The mill required a long leat to supply it in that position, suggesting this was deliberate. It could have been situated on the main river, and the fishpond could have been located further away in the park. As Oliver Creighton points out, the main approach from Ludlow passed across the dam of the fishpond, illustrating the desire to display the pond as a status symbol, and possibly for its aesthetic impact, as at Nappa Hall.

Whilst millponds were usually small in general, they were clearly valued not just economically but also for the status they conveyed on the owner. As with fishponds, the skill base involved in building and operating them was also carried forward into the early modern period.[55] As will be seen, watermills were also a recurring motif in the waterscape, retaining their status well into the eighteenth century: Cuttle Mill at Rousham, Oxfordshire, was remodelled by William Kent in *c.* 1738 as an eye catcher. Similarly, at Chatsworth, Derbyshire, when the mill and fishponds adjacent to the house were demolished in the eighteenth century, an ornamental mill was then constructed in the gardens.[56] Likewise, at Bowood, Wiltshire, in the 1760s, Brown planned a mill at the north end of the lake, though it was not constructed.

Sulby Abbey helps to illustrate how fishponds and millponds occurred within the same contexts, with implications for ornamental lakes (Figs. 2.3 and 2.9). The proximity of the abbey to the large *vivarium,* as well as the smaller *servatoria* and the probable mill site is significant.[57]
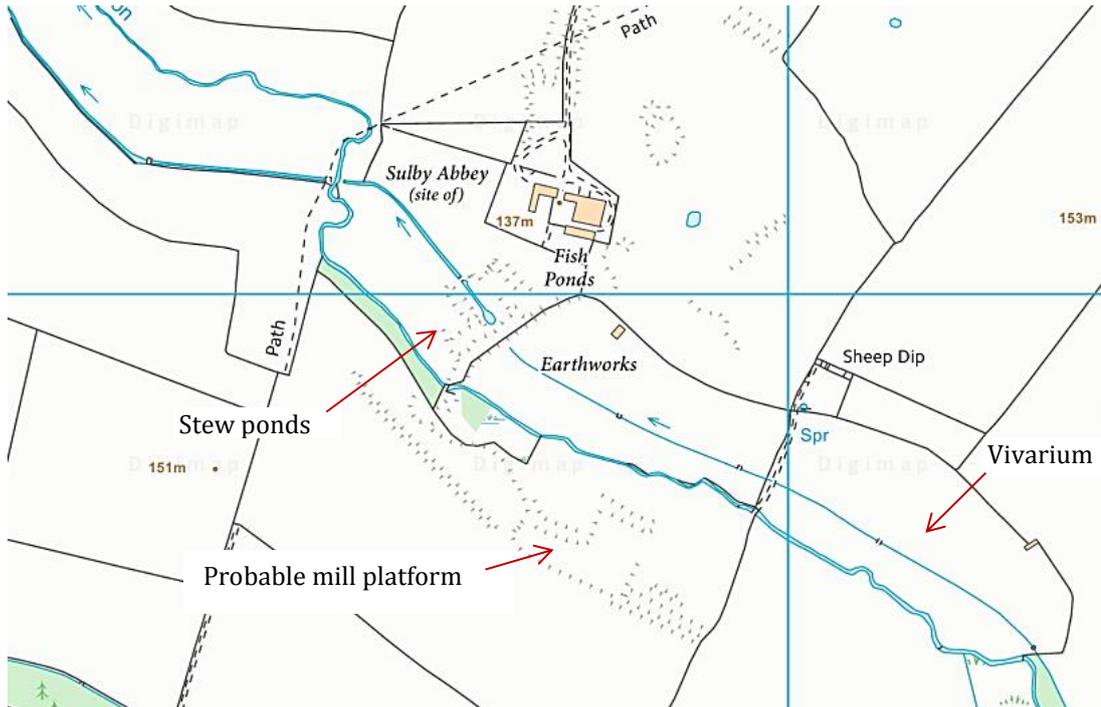
Fig. 2.9 Site of Sulby Abbey, Northamptonshire, with a vivarium of *c.* 6.7 h.

By the early modern period, as will be seen below, moats and mills conferred authenticity at one remove, being symbols of established seigneurity, though fishponds continued to confer status directly. They were still valued for their original function of supplying fresh fish, but by 1600, they were also acquiring a new role: ponds in which to angle for pleasure. These elements became embedded in the 'waterscapes' of the time, and were the antecedents of the ornamental water features of the eighteenth century and beyond. Fishponds in particular provided the technological base which enabled eighteenth-century practitioners to construct large, ornamental lakes. Interestingly, Christopher Currie comments that the sluices installed, possibly by Brown, at North Stoneham were not as good quality as the remaining medieval ones.[58] What this also tells us is that the lake was constructed on the site of existing fishponds, a phenomenon which will be noted throughout the thesis. The extent to which these features had an aesthetic influence will also be explored.

2.4. Ornamental Water in the Tudor Period.

Towards the end of the medieval period, the purposes for building elite residences changed, and so did their dynamics: they demonstrated power, wealth and status, with implied rather than actual military potential. Leisure activities such as boating, fishing, sitting in gardens became more common and this was reflected in the environs.[59] As Roy Strong points out, it was only after the Battle of Bosworth (1485) and the beginnings of the 'Tudor pax' that the arts, including garden making, began to flourish again in England.[60] 'Castle-palaces' began to develop and though these residences might well have parks, with large fishponds, it was the gardens which evolved, rather than the parks. A good example is the 'castle' built by the Duke of Buckingham at Thornbury. There was a fishpond complex in the park, 640 m north-east of the palace. There was also a privy garden, following the example of Henry VII's palace of Richmond (1501).[61] This format was associated with the 'castle-palace' of the first half of the sixteenth century, and was characterised by fountains, usually a single one in the centre. One of the most notable was Henry VIII's tiered

Fig. 2.10. Queen Eleanor's Garden, Winchester: a reconstruction of a medieval garden. The fountain was copied from a 1296 tomb in St. Cross Hospital, Winchester.[62]

fountain at Whitehall, depicted by Wyngaerde (*c.* 1560).[63] Apparently, such fountains were the first specifically ornamental water feature to appear in gardens or landscapes in England.

In the sixteenth century, there were some moves to use water in landscapes in a more conscious, designing way. In the first half of the century, only two people made any impact with water: Cardinal Wolsey and Sir William Knight. There is convincing evidence that Wolsey constructed galleries which deliberately overlooked water at his palaces, notably at The More, Hertfordshire, where he utilised the existing moat and built a gallery linking two parts of it to his house in *c.* 1521.[64] This is apparently the first example of a process - utilising medieval water features – which would continue well into the eighteenth century. The galleries were almost a hallmark of Wolsey's gardens – Esher, York Place (later named Whitehall), and Bridewell. Similarly, either he or Henry VIII placed a gallery looking onto a 'pond garden' at Hampton Court. Also at about this time (1521), Sir William Knight, a priest who had represented Henry abroad, built an Ambulatory (Fig.2.11) at right angles to his house, and facing east across the valley, overlooking the largest of three ponds.[65] Knight

Fig. 2.11. Sir William Knight's Ambulatory, *c.* 1521, built to overlook his fishponds at Horton Court, Gloucestershire.[66]

had spent some years in Italy and the style of the architecture and the positioning of the Ambulatory hints strongly at a harking back to terraces and loggias on Italian hillsides.[67] The suggestion is that Knight was consciously imitating the Italian experience: having a house on a hillside with an impressive

view.[68] Lacking the rugged Italian scenery, fishponds were regarded as sufficiently interesting to be the focus in an English landscape. This is some of the earliest evidence that Italy had an influence on English landscapes, but in general, Henrician gardens did not embrace these views, remaining much more intimate, and displaying their single fountains.

The Italian influence which led Knight to look out over the landscape developed significantly in the late sixteenth century as landscapes began to be embellished and consciously brought into view. However, the ideas of the Renaissance were not adopted wholesale in Britain - climate and morphology made that impossible - but they were influential in two main ways. Firstly, the *perceived* design of Italian gardens opened up the view of the landscape, which in turn, led to a much wider landscape being appraised (see below). In Britain, this was a landscape which included fishponds as well as rivers, moats and mills. Holdenby, perched up on the hill, is a good example (discussed below).

2.4.1. Italian Influence.

The increased awareness of the wider landscape led to a number of gardens being constructed in the later sixteenth century which displayed a consciousness that the landscape adjacent to and surrounding a great residence could be manipulated not only to enhance the setting of the building but also to provide areas for pleasure, relaxation and entertainment, both at an intimate level and also on a grander scale. Water parterres became fashionable in the later part of the century and the 1600s. However, with one possible exception (Raglan), no lakes were made. Rather, there was a realisation that water in a landscape was interesting and visually appealing, that it had valuable aesthetic qualities. In this area, as in others, the impact of the Italian Renaissance often worked through indirect channels. As John Dixon-Hunt points out:

> We should not underestimate the enormous importance which
> the English traveller attached to what he thought were classical
> garden remains or to what, equally loosely, he considered
> modern reconstructions of them. Guidebooks were full of

imaginary views of other famous Roman gardens, like those
belonging to Ovid.[69]

Gardens constructed in the first half of the sixteenth century in France and Italy were beginning to have an impact in England. The gardens at Blois (Louis XII, laid out in 1500-10), Gaillon (Cardinal d'Amboise) and Fontainebleau (Francis I) influenced royal gardens at Richmond, Hampton Court and Whitehall.[70] These gardens themselves were influenced by those of Italy: the Italian designer, Pacello de Mergogliano, laid out Blois for Louis XII. Publications and works by men such as Jacopo Barozzi da Vignola (1507-73), Andrea Palladio (1508-80) and Jacques Androuet Du Cerceau, (1510-84) extended the Italian influence through northern Europe. One effect of Palladio's concepts was that the house and landscape began to be regarded as one unit, and that landscape began to be valued for its visually appealing qualities, not just its productivity. The wider view became important, and this included the rivers, fishponds, mills and moats of the vernacular landscape peculiar to Britain.[71]

As well as Palladio's writings, an engraving by Étienne Dupérac of the Villa d'Este (attributed to Vignola), published in 1573 was influential (Fig. 2.12)
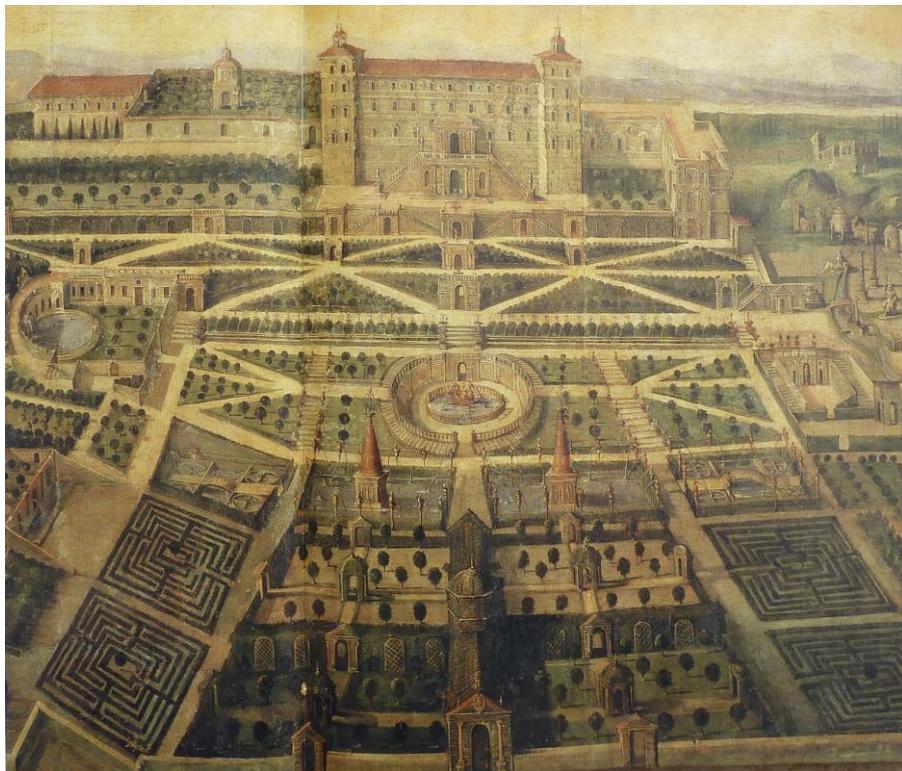
Fig. 2.12. A painting of Villa D'Este, after the 1573 Dupérac engraving.[72]

on the group of gardens which was laid out during Elizabeth's reign, from the 1570s onwards.[73] They moved from being manipulated landscapes with formal courtyard gardens, and the associated background elements such as moats, fishponds and deer parks, to landscapes which embraced the wider view – of those same water features. It is important to note here that lakes did not feature in Italian gardens, although some notable Italian gardens bordered lakes, and lakes are completely absent in English gardens of the period. The influence of the Italian Renaissance was channelled through the talented and powerful men of the era: Leicester, William Cecil, the Earls of Somerset, Thomas Arundel, often via France. The foremost of these gardens were Kenilworth, Theobald's, Burghley, Holdenby, Raglan and Lyveden, Gorhambury, Hatfield, and of those, Theobalds led the way.

Robert Laneham's description of Kenilworth, written in 1575, is well-known. However, his description does stand out dramatically because it is the only one of its kind we have. Consequently, other landscapes seem less important, less vivid, and thus less significant, which may not have been the
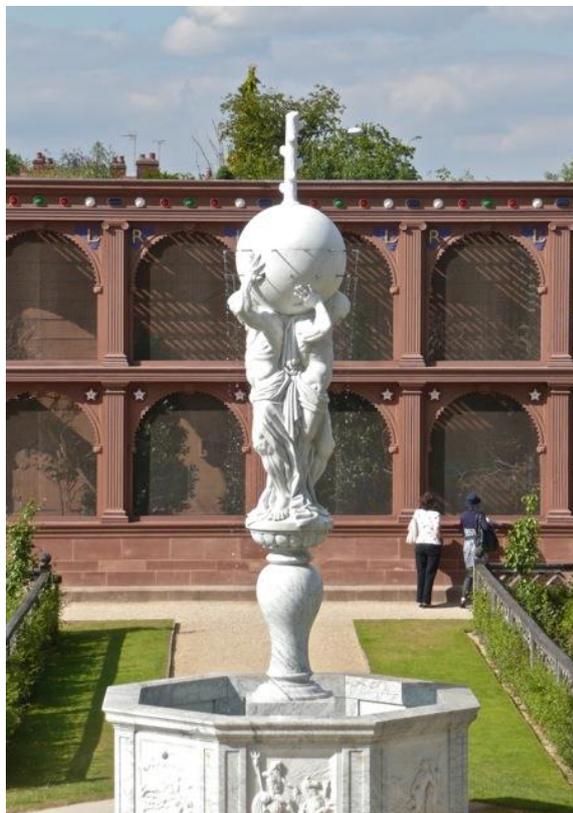
Fig. 2.13 Recreation of the Atlas Fountain at Kenilworth, Warwickshire.[74]

case. Robert Dudley, Earl of Leicester (*c.* 1532-88), Elizabeth I's favourite, created a garden to entertain her in 1570. As well as details of an elaborate fountain (Fig. 2.13), Laneham also describes how Dudley incorporated the mere into his display for Elizabeth.[75] Not only did he have pageants on the water, but also fireworks, viewed from a 600 foot long timber bridge like a "beautiful bracelet" across the northern arm.[76] The bridge also provided a view back to the castle, with its reflections, and we shall see that this ability to look back over water to the residence was to become an important feature in landscapes of the second half of the eighteenth century. The bridge also provided a view over the park, which was

> Beautified with many delectable, fresh, and shaded bowers, arbours, seats and walks, that with great art, cost, and diligence, were very pleasantly appointed.[77]

Leicester's use of his deer park in this way is one step in the process by which deer parks evolved from hunting grounds, food larders and timber stores into ornamental landscape parks.[78] From the description, it is clear that Leicester was redesigning not just the gardens of the castle but also the landscape surrounding it in a very sophisticated way. His use of water for dramatic effect was echoed in 1591 when the Earl of Hertford created a substantial artificial 'lake' at Elvetham, for a day, in order to stage an allegorical water battle for the queen. The use of water for theatricals in this way – pageants and naumachia – marks the beginnings of water being used for leisure activities, as well as its development as an ornamental component of the landscape, a thread which will be revisited in Chapter 4.

Water featured prominently at the new house which William Cecil built for himself at Theobalds (*c.* 1567-98), near Cheshunt. There was a consciousness that water could be used in a variety of ways: as an ornament, for leisure and to impress. Theobalds was on a palatial scale, with elaborate and extensive gardens, and frequently visited by Elizabeth. In 1598, Paul Hentzner described a moat which surrounded the orchard on three sides:

> one goes into the garden encompassed with water large enough for one to have the pleasure of going in a boat and rowing between the shrubs.[79]

There was a fountain which spouted water from concealed pipes onto unwary passers-by (*giochi d'acqua)*, and another which had a little Dutch style ship floating in it, 'complete with canons, flags and sails.'[80] However, it was the way in which Cecil had an overview of the elements in his landscape that was pioneering. He planted a tree-lined way from the south side of his house to link it to the moated garden of Cullings Manor, which he had acquired (Fig. 2.14).

Fig. 2.14. Detail of a map of *c.* 1575 of the manors of Theobalds and Cullings, Hertfordshire. Note Cullings moat (bottom left) with its four quadrants, and the double row of dots on the right of the map, indicating the tree-lined walk planned by Cecil to link his house (off top of map) to his newly acquired landscape. [81]

This, and the very extensive gardens, is evidence of the thinking which regarded the landscape as something integrally linked with the house, and which needed

to be 'married' to it, complemented by the Renaissance concept of loggias, mentioned by contemporary sources such as Hentzner, which linked the house and gardens.[82] He also brought the wider landscape to the attention with fishponds arranged symmetrically, plus an adjacent lodge, and a large square pond with trees or islands (Fig. 2.15).
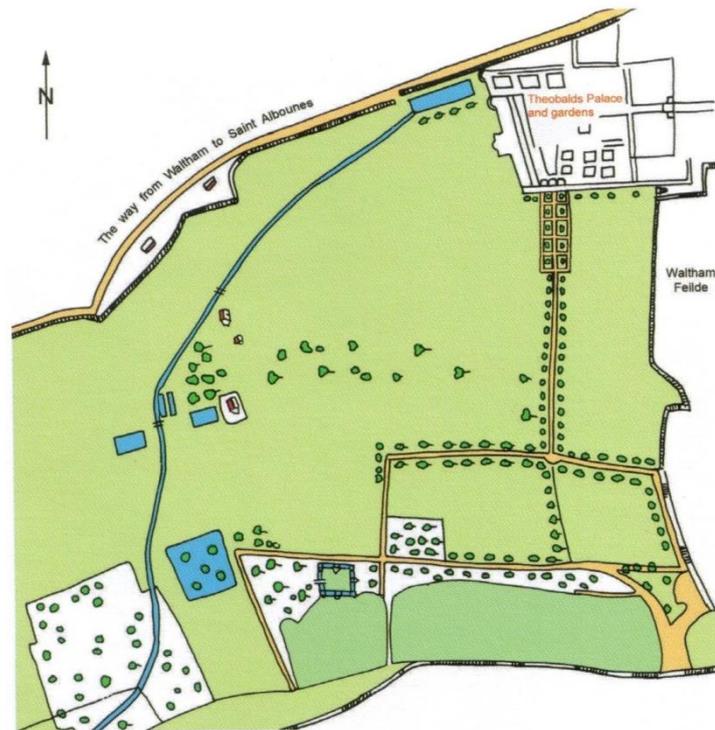
Fig. 2.15. Digitised copy of the 1611 plan of Theobalds by J. Thorpe.[83]

In this he was putting into practice the thinking behind Palladio's design of rural villas, typified by the Villa Rotonda (1552), in which he linked villa and garden through loggia-type porticoes. As Deborah Spring says, "William Cecil tried to create in England for the first time the splendour of Italian villa life, transforming the natural world into a perfected cosmos."[84] Although not exact, it can be seen (Fig. 2.16) that the proportions of the gardens surrounding the house were related to the proportions of the house itself, and Cecil was the first, or one of the first, to implement this new idea.

By 1585, Cecil had been able to construct an approach directly from the London road, demonstrating how he perceived his house and garden as an integral part of the landscape, underpinned by a deliberate symmetry, and relating directly to Palladio's ideas (Fig. 2.16).
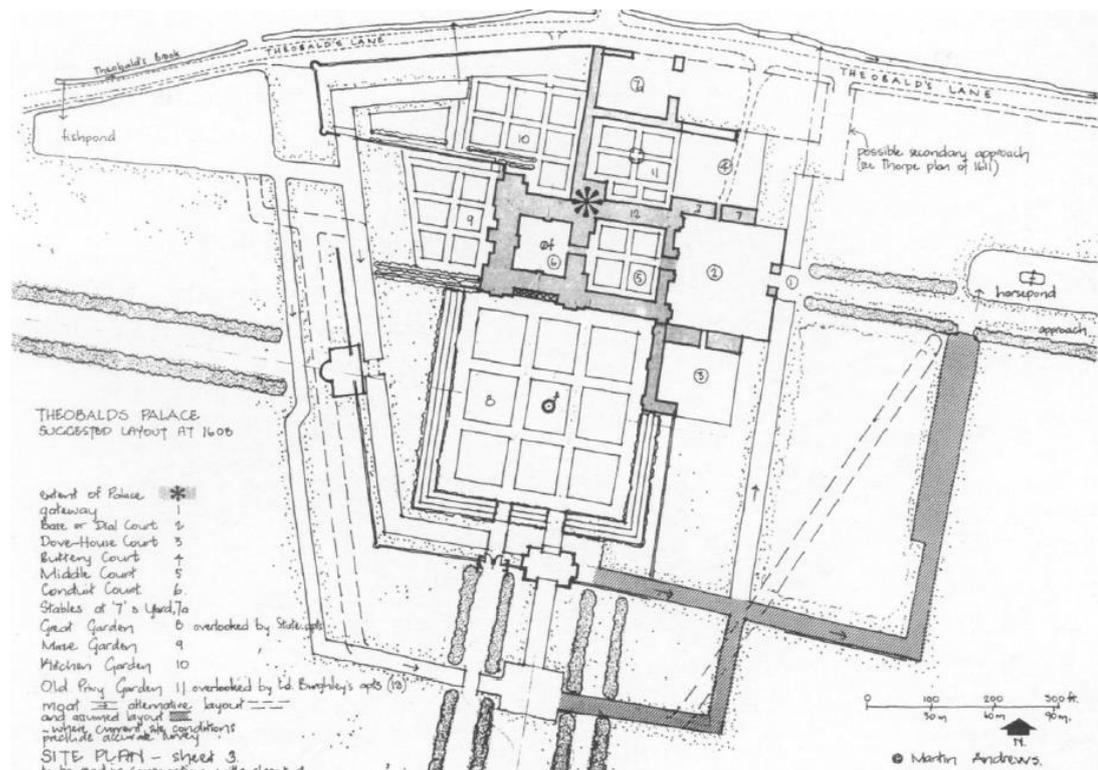
Fig. 2.16. Layout of the gardens of Theobalds based on the Thorpe survey of 1608. The approach from the London road can be seen on the right of the gardens.[85]

There was an axiality in the design, which was to become very common in the designed landscapes of the later seventeenth century, but Theobalds was probably the first example in Britain. The motif of a medieval moat being incorporated into a designed landscape (as opposed to Wolsey's designed gardens) was also innovative, and was part of the transition from 'manipulated' landscapes to 'designed' landscapes which began in late medieval times and was ongoing through the sixteenth and early seventeenth centuries. Moats appear again in landscapes such as Quarrendon and Cope's Castle (see below) and their role was to authenticate these new landscapes.

Baron Waldstein also describes an 'indoor' pool built by Cecil at Theobalds:

> An outstanding feature is a delightful and most beautifully made ornamental pool (at present dry, but previously supplied with water from 2 miles away): it is approached by 24 steps leading up to it. The water was brought up to this height by lead pipes and it flowed into the pool through the mouths of

two serpents. In two of the corners of this pool you can see two wooden water-mills built on a rock, just as if they were on the shores of a river. The roof itself was painted in tempura with appropriate episodes from history, and is very finely vaulted. A space beside the pool houses white marble statues of 12 Roman Emperors.[86]

The inclusion of the two wooden watermills in this pool is fascinating. The context of the pool is clearly classical, with its guardian Roman emperors, yet Cecil has introduced the very vernacular element of the watermills. No doubt this was partly because the mills suited the watery scene – perhaps the wheels turned – but this suggests that Cecil was referring directly to the status conferred by owning mills and wanted to convey connotations of lord the manor and long established 'seigneurity'. Like the fishponds he created and the moats he included in his gardens and landscape, the mills were the adjuncts of old, established lordship, and these features appear to be acting as markers of authenticity. As a 'new man', it is quite possible that Cecil, consciously or otherwise, sought to validate his new 'lordship' in this way. The fishponds also retained their important practical value.

The house and landscape at Holdenby (1580s) are significant, in the first place, because they demonstrate a regard for the wider view of the landscape and an aestheticisation of the fishponds in it, as well as the beginnings of the unifying approach to the house and gardens promulgated by Palladio. Sir Christopher Hatton (*c.* 1540-91), Lord Chancellor to Elizabeth, built a new house on higher ground above the previous medieval manor, overlooking a valley. It is Hatton's positioning of the house and treatment of the fishponds which are of particular interest (Figs. 2.17 and 2.18). He placed his house on a hillside, which he terraced, overlooking the valley with fishponds. By 1587, Hatton had amalgamated the string of ponds in the valley into two large ponds, and added a complex of five rectangular ponds near the church. This tells us two things. Firstly, a 'medieval' fish producing system was installed in a fashionable new landscape at the end of the sixteenth century. Secondly, Hatton was keen to make the *vivaria* prominent features in the landscape. He had sited
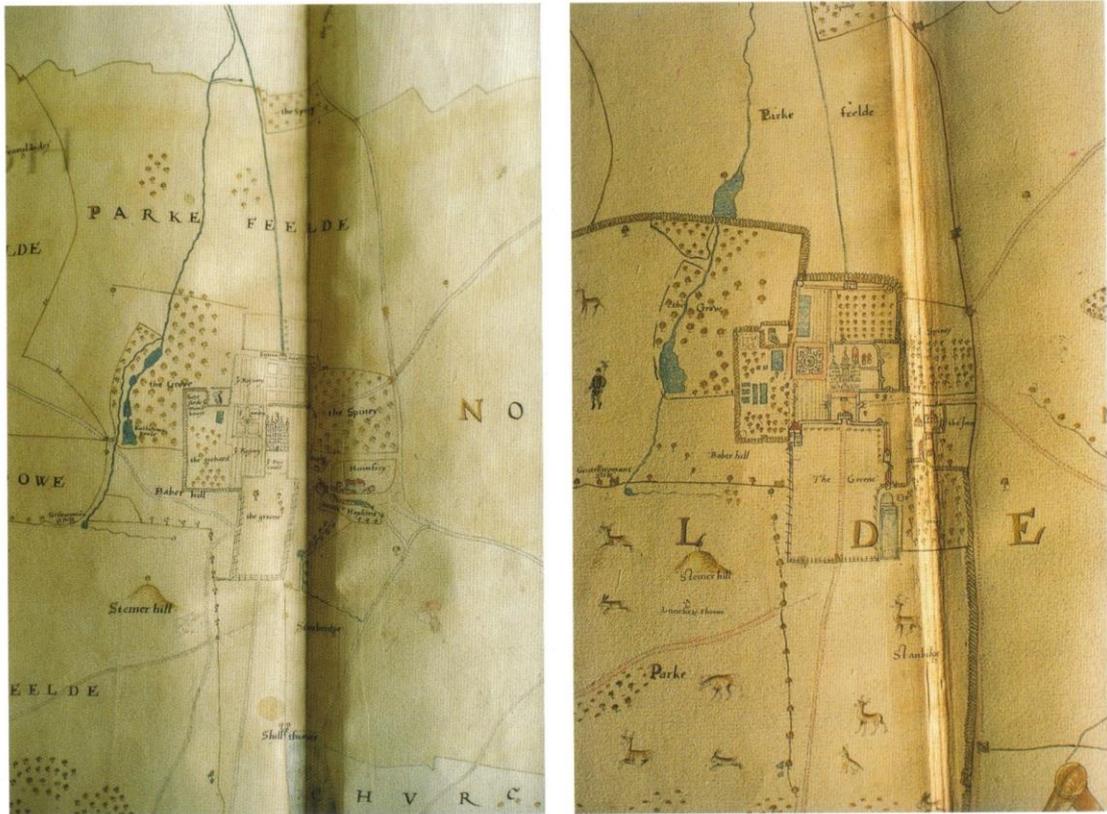
Figs. 2.17 and 2.18. Ralph Treswell's 1580 and 1587 maps of Holdenby Northamptonshire.[87]

his house on the hill to look directly down on them, then increased their size to increase their impact. This suggests that as well as displaying them as status symbols, he also wanted to embellish the landscape he overlooked, to aestheticise it, continuing where Knight had left off at Horton. This English interpretation of an Italian concept (the wider view) employed the watery vernacular elements of the time: fishponds. There is also a point of greater significance here: the accumulating evidence supports the theory that the fishponds of the late sixteenth and early seventeenth centuries in Britain were 'proto-lakes', and that they had a direct bearing on the evolution of eighteenth-century lakes. People wanted houses which looked over large bodies of water. The prominence of Hatton's fishpond in the valley certainly points in this direction.

A second strand is that the role of the fishponds, moats and mills of medieval landscapes began to evolve. As well as continuing to convey status and be productive, they also developed a secondary role as 'authenticators' in

landscapes of the late sixteenth and early seventeenth centuries, particularly where those landscapes were new. 'New men' such as William Cecil, Sir Christopher Hatton or Sir Baptist Hickes, who did not have established landscapes with the symbols of 'seigneurity' such as moats, fishponds and mills, often included them or versions of them, in their new landscapes, either as functioning elements or by association. Cecil acquired the moated site of Cullings to add to his estate; Hickes positioned his new house and garden at Chipping Camden between a probably medieval fishpond and the mill of Berrington.

2.4.2. Water gardens and the Aestheticisation of Water Features.

By *c.* 1600, the concept of water as an aesthetic element was beginning to emerge and Sir Francis Bacon (1561-1626) made a significant contribution to this development in two ways. He created a water-garden at Gorhambury and he wrote a definitive treatise *On Gardens* in 1625. The water-garden at Gorhambury (1600s) is a seminal example of this adaptation of fishponds into an aesthetic water feature. In 1601, Francis inherited Gorhambury from his brother, Anthony. Apart from the intrinsic interest of Bacon's water gardens, with a banqueting house, the most notable aspect is his initial concept and avowed intention. He decided "to give directions of a plott to be made to turn ye pond yard into a place of pleasure, and to speak of them to my Ld. Salisbury."[88] Whilst other fish ponds had undoubtedly undergone similar transformations, Bacon is unambiguously stating what his intention is: the ponds are going to enhance his pleasure in his garden. There is also a sense that he is beginning to design the landscape, not just manipulate it (Fig. 2.19). He is looking at the area as a whole and organising the elements within it coherently. The plan of his estate shows that the water gardens were constructed some way from the main house, presumably because that was where the original fish ponds were, and were linked by a line of trees along the way, of eight species, planted in a repeating pattern.[89] Clearly, part of his aim was to have a detached pleasure
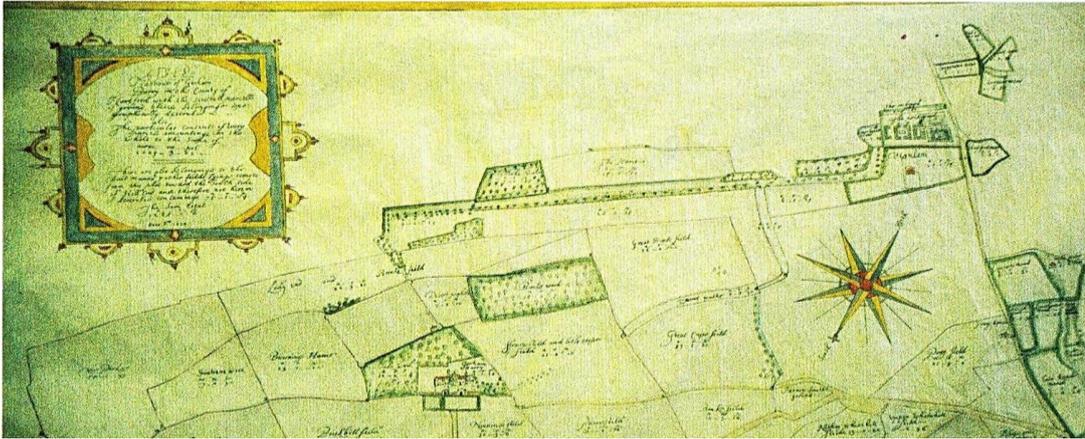
Fig. 2.19. 1634 map of Gorhambury estate, Hertfordshire.[90]

Fig. 2.20. Detail of estate map of Gorhambury, 1634: the 'summer
house' and water-gardens.[91]

garden, with its opportunities for solitude and seclusion, and for travelling
between the different parts of his estate, as Cecil liked to do.[92] It is this linking,
as well as the design of the water-gardens themselves, which shows that Bacon
was taking an overview of his landscape – the beginnings of design - and that
water was a primary consideration. His 'memorandum' of 1608 describes his
intentions for an island surrounded by water with a 'howse' in the middle.[93]
John Aubrey's 1656 description and sketches evoke a lively and colourful

picture of the gardens, the ponds being floored with figures of fishes in coloured pebbles, and on the island in the middle, a banqueting house paved with black and white marble.[94] Bacon's 'summer house' – Verulam - afforded good views of the ponds.

It is important here to take in the significance of what Bacon did: there is unequivocal evidence that he took existing fishponds and made them into a water feature valued primarily for its aesthetic qualities. This may have happened before – at Theobalds, perhaps, or Holdenby, or Beddington - but we simply do not have the sources which state that. Hitherto, the role played by fishponds in the development of ornamental water has not been widely recognised. Christopher Currie began to outline the importance of this, suggesting that fishponds could evolve into ornamental ponds,[95] and Taylor argued that medieval fishponds had an aesthetic role, but this is the point at which it becomes crystal clear that fishponds could evolve into ornamental water features and, as will be explored below, that they were the antecedents of the formal water features of the seventeenth century, and the informal lakes of the eighteenth century. In many instances – Petworth, Stourhead, Burghley - an existing fishpond was altered and became a lake. Tracing the evolution of these features is the key to understanding the evolution of lakes in designed landscapes.

Given the discussion between Robert Cecil and Bacon, it is not surprising that the water-garden which Cecil made at Hatfield in *c.* 1607 (The Dell), had similar elements to Bacon's, being detached, with a central banqueting house (Fig. 2.21). This probable plan of The Dell, shows a complex design of moats and islands, bisected by a stream, with a central banqueting house astride the river, a mill or pump house, and other structures, which have been analysed by Paula Henderson.[96] The prominence of the mill or pump house in the plan, and the lack of a pond or leat, suggests it was ornamental, rather than functional. Like William Cecil's mills in the pool at Theobalds, this mill seems to have a role as an 'authenticator' in a newly laid out landscape, implying a lordship established since medieval times.
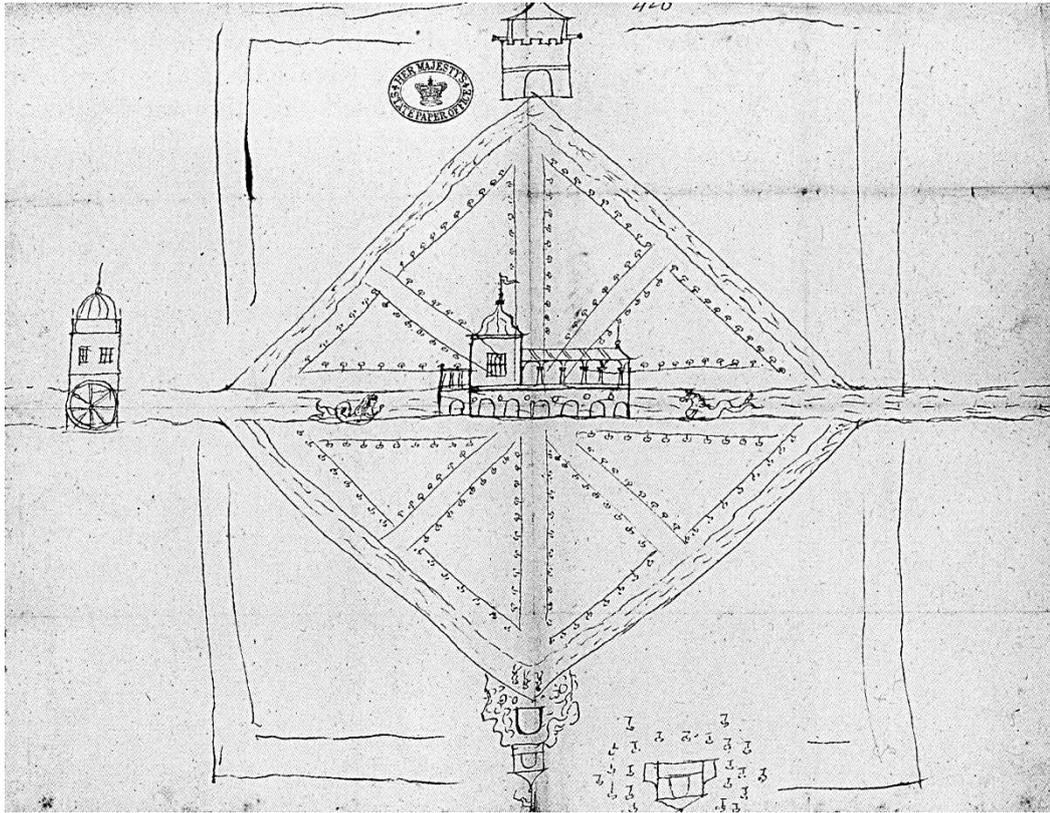
Fig. 2.21. Drawing of a water garden, probably The Dell at Hatfield House, *c.* 1610.[97]

Robert's second water garden was located in The Vineyard, and the noticeable feature here was:

> You have also in those Places where the River enters into and comes out of the Parterre, open sort of Boxes, with Seats round, where you may see a vast Number of Fish pass to and fro in the water, which is exceedingly clear.[98]

Clearly, viewing the river and the fish was important as seats were provided for the purpose. The garden was further embellished with fountains in 1611, by Salmon de Caus, with a cistern to supply them.[99]

Developments at Raglan (1549-89) illustrate how sophisticated the use of water in the landscapes of elite residences was becoming in the late Tudor and early Stuart period. It was the pre-eminent 'court' or palace of Wales,[100] and sophisticated gardens and a water parterre existed, almost certainly created by the 3rd and 4th Earls of Worcester, William and Edward Somerset.[101]

Fig. 2.22. Raglan Castle, Monmouthshire: The Deplorable Mapp of 1652 by Laurence Smythe.[102]

These are illustrated on a map by Laurence Smythe in 1652 (Fig. 2.22).[103] The most noticeable feature is the Great Poole (6.2 h), the date of which is uncertain.[104] The Long Gallery over the chapel, with a large end window, and extensive garden terraces on the north side of the castle, built after 1549 by William Somerset, 3rd Earl of Worcester (1549-89), overlooked the site of the lake, so it is reasonable to suppose that the 'lake-moat' was there at this time, or about to be constructed.[105] This is corroborated by Thomas Churchyard's poem of 1587:

> The curious knots wrought all with edged toole,
> The stately Tower, that looks ore Pond and Poole:
> The fountain trim that runs both day and night,
> Doth yield in showe, a rare and noble sight.[106]

His mention of pond and pool suggests a distinction between fishponds and the lake. The Great Poole was much larger than the usual *vivarium*, requiring two large dams to retain it. It was stocked with fish though, illustrating the multi-functional role of water once again.[107] The ponds flanking the approach (Figs. 2.22 and 2.23) constructed by Henry, the 5th Earl of Worcester (d. 1646), emphasise that fishponds were still regarded as symbols of status in the seventeenth century.

Fig. 2.23. Artist's recreation of the castle and grounds of Raglan. North is towards the left.[108]

William Somerset was Elizabeth's ambassador in Paris (1570-1). It is tempting to surmise that he was aware of Dudley's efforts to secure Elizabeth's favour by making a garden for her and organising a 'progress' through his landscape at Kenilworth, and set out to emulate him by creating an Elizabethan 'castle-palace' and lake similar to Kenilworth. It appears that the owners of Raglan (though which ones is not known) felt that a castle of such status should have an impressive body of water adjacent to it, to put it on a footing with Caerphilly and Kenilworth. The Deplorable Mapp also shows what appears to be

a 300 m bridge across the southern arm of the lake which seems to link the castle to a clover-leaf shaped pool on the other side of the park, but no more is known about this. Possibly it was created to provide a reason to move across the water, with opportunities for looking back and admiring the castle and the adjacent gardens. This has decided echoes of Leicester's 'bracelet' bridge. If so, it serves as a reminder that competitive display amongst the aristocracy was a powerful force which, like medieval castles, had an impact on the landscape, with 'bigger and better' being a driving sentiment.

Fig. 2.24. Detail from the Deplorable Mapp of Raglan, 1652.[109]

The sophisticated water parterre at the northern end of the lake was probably made by Edward Somerset, 4th Earl of Worcester (d. 1628). There was a lozenge shaped 'moat' contained within a 'rectangl' of paths, with a possible summerhouse in the north eastern corner (Fig. 2.24).[110] It was just under a hectare in size (*c.* 2 acres) and the plan of it on the Deplorable Mapp shows the most detailed water parterre known to date. Remains can clearly be seen on the ground today.[111] Aesthetics were important here, whilst the underlying desire to display wealth and status continued to operate. It is also possible that the

parterre facilitated fishing. For the Somersets, designing with water in the landscape was a way of adorning it, but also of stating that they were wealthy and fashionable, and on a par with powerful men such as Leicester and the Cecils. Raglan emphasises the continuing importance of water as a status symbol, and of large areas of water being linked with elite residences. It highlights how large bodies of water, such as *vivaria,* could evolve from primarily functional elements into dual purpose or primarily ornamental bodies of water. This was a thread which extended into the eighteenth century, where we see Lancelot Brown routeing approaches to the house across lakes where possible, and placing lakes prominently in view of the house.

Water-gardens in the early seventeenth century were not just the

Fig. 2.25. 1732 copy of *A Mapp of part of the Manors of Earls Court, Kensington and Abbots, 1694/5* map by E. Bostock Fuller. North is to the right.[112]

preserve of the highest level of society. Those at Chipping Camden (Sir Baptist Hickes), Tackley (Sir John Harborne) and Cope's Castle (Sir Walter Cope, d. 1637) were made by gentry. Both Hickes and Cope adapted existing water

features – fishponds, and mills and moats (Fig. 2.25). Like those at Tackley, the rationale for these ponds seems to be the sport of angling. A tree-lined way extends eastwards from this area, linking up with further ways to the house. As with William Cecil at Cullings, the moat appears to be highly desirable, if not indispensable, for a 'new man' to authenticate the new 'seigneural' landscape which was being created. Possibly, Cope was directly copying the Cecils: in *c.* 1602 Robert sought Cope's advice on water supply in relation to the 'new river' at Theobalds, and Cope would probably have seen that landscape.[113] It is possible that, following Bacon's example, men like Harborne and Cope saw the scope for making, or adapting, a standard fish production system to create a decorative water-garden, as well as using it for angling, in Harborne's case, and to indicate that they were abreast of current fashion.

Although the water-gardens which appeared in the 1600s almost certainly functioned as fishponds, their form was influenced by aesthetic or recreational reasons, which marks out the early seventeenth century from the previous period in terms of water. The intention behind making them was moving closer to the ornamental end of the spectrum. Elite people were also looking for privacy and seclusion when they constructed these gardens. It may be that water-gardens were an evolution of moats in this respect, although, perhaps for the first time, water was being valued specifically for its intrinsic qualities – appearance, sound, changeability. Obviously, it would be unreal to draw a line at 1600 and say that water-gardens appeared after this, but it is difficult to give a conclusive date to any such garden earlier than this. They were largely geometric, often with banqueting houses in which to take refreshments and view them, water (referred to as a moat) surrounding specific areas of garden, and a growing interest in grottoes and 'water plays' - *giochi d'acqua*, as at Enstone, which dates from this time. Loggias connecting houses with gardens also became more common, as did terraces or walkways to view gardens from, Bramshill (1600s) being an example (see below). There came a change of emphasis as well: landscapes were for experiencing, from the loggias and banqueting houses, boating on moats/ canals, walking around to admire their features, and possibly being soaked by the *giochi d'acqua*, rather than primarily viewing them from above, or hunting through the landscape. What is markedly lacking are lakes. It seems that the concept of a lake simply did not occur to

people. If this was because they did not appear in Italian landscapes, it illustrates the strength of Italian influence at this time. Instead, the focus, in many instances, was on the geometric possibilities of adapting fishponds and making water parterres.

At this juncture, it is useful to pause and consider the role of islands in fishponds. (To some extent, water gardens consisted of islands in ponds.) The larger medieval fishponds (*vivaria*) did not tend to have islands, but they were common in the medium sized ponds. Thomas Hale, in 1758, considered that they were useful for catching fish by line, as well as for setting nets.[114] Certainly, they made ponds more accessible to the fisherman, and the convoluted shapes at Tackley and Cope's Castle bear this out. Another consideration was the preference of some fish, carp in particular, for reedy shallows in which to shelter and feed.[115] This question of islands is relevant because they frequently figured in the lakes created in the eighteenth and nineteenth centuries. Why was this? Was it because islands provided a 'destination' for boaters, and an aura of seclusion, or were much more mundane factors at work, such as islands being important for fish and fishing, or being merely useful spoil dumps in the creation of lakes? This discussion will be taken up again later.

In 1625, Sir Francis Bacon produced his essay *On Gardens* in which he recommended a garden for every different time of the year – a garden in three parts: a 'green', an area with fountains, and an area of 'natural wildness'.[116] The significance of his attitude to these is that he is valuing their aesthetic qualities first and foremost. The water must be kept clear (therefore moving) and the bottoms of pools should be decorated to ensure their beauty. The grass to be kept finely shorn to ensure its beauty, foreshadows Brown's style of the eighteenth century. In his over-arching regard for aesthetics, Bacon signals a sea change in attitudes to landscapes: nowhere does he mention productivity, or utilitarian function. Water was to be primarily for ornament and pleasure. The medieval attitude to landscapes had finally been superseded (in Bacon's mind) and landscapes were beginning to be laid out with aesthetics as a guiding principle, rather than being composed of elements manipulated for function and status. The transition began with the dawn of the sixteenth century, and was maturing by the end of Elizabeth's reign. Utilitarianism did gain some

ascendency in the mid-seventeenth century, but this was a conscious choice, driven by ideology, rather than fashion or aesthetics. To some extent, in his *Essay*, Bacon was reflecting the trends of his time: the Italian influence of ornamental ponds and fountains, terraces, statues. His recommendation for dividing the garden into three parts, as well as trying to have different gardens for the different times of year, was much more forward looking. His influence was far-reaching: tri-partite gardens had become fashionable in Britain by the end of the century. He himself may have been influenced by ideas from the Continent as represented in the St. Germain-en-Laye engraving of 1614.[117]

2.5. The Commonwealth, Tree-planting, and the Restoration.

The burgeoning fashion for water-gardens did not survive the travails of the Civil War and the ideological *volte face* of the Interregnum. There was a kind of 'landscape limbo' during the War, and afterwards ostentation of any sort went against the grain of Puritanism. The egalitarian and utilitarian principles of the Puritans resulted in Royalist houses and estates often suffering extensive damage, and estates being sold off, sometimes piecemeal. With no example being set by those governing, and thus no direction of stylistic trends, one result could have been a vibrant flowering of individual tastes and styles among the magnates, the buds of which were appearing in the early seventeenth century. However, there is no evidence of this and the most cogent reason was probably the uncertainty of the times: uncertainty about religion, uncertainty about power and patronage, and therefore wealth. Also, the *mores* of the Puritans did not encompass 'vibrancy' or 'flowering'. What is most noticeable about this mid-century period is how little water featured in the landscapes that were made, as at Wilton, Wiltshire (see below). There is a sense that people maintained existing water features, but were not being innovative in their use of water. This applies to Chatsworth, where fishponds extant in 1617 were maintained unchanged until *c.* 1685.[118]

In architecture, a somewhat sterile minimalist classicism, as propounded by Inigo Jones, predominated.[119] Puritan minimalism was linked with economy, and the desire to boost the country's corn production: the

Commonwealth government was desperate for the country to become a corn exporter.[120] One response was the designs of Samuel Hartlib, in which the underlying principle was to use all the land, including that immediately around the house, in the most productive way possible (Fig. 2.26). The ideas of John Beale and John Evelyn, with their emphasis on orchards and trees, also had an

Fig. 2.26. Samuel Hartlib's Plan of an Ideal garden.[121]

impact in the later part of the century, though water was still a minimal part of the design. At Saye's Court in the 1660s, Evelyn created a garden which owed much to Hartlib's ideas. Men such as Samuel Pepys and Roger North visited it, and it was apparent that Evelyn could practise what he preached in *Sylva* (1664).[122] As Mowl says, "Evelyn was moving estate design on from a dated enthusiasm for hydraulic toys to a layout of trees extending far beyond the mere bounds of a garden."[123] His deliberate emphasis in *Sylva* on the substantial financial rewards of planting extensive woodlands, allied with the wave of French influence spreading across the country via Le Nôtre, can be seen as fundamental to the development of the extensive geometric gardens with long avenues seen throughout Knyff and Kip's *Britannia Illustrata* 1707, and leading

towards an amelioration of the sterile geometry of the French parterre gardens of the court of Louis XIV. Mowl goes on to say of Evelyn:

> As a direct result of his writings, his advice and his royal connections, the deer park which had tended in the past to be a separate fenced enclosure, a larder of live meat a little apart from the main house, became a noble leisure area enclosing the house itself and tied to it visually by both mile-long avenues and large, geometrically laid out plantations to shelter deer.[124]

The importance of this emphasis on tree planting, with plantations becoming increasingly popular towards the end of the century, was that landscapes tended to increase in size as owners wanted to plant more.

Two images highlight developments in the seventeenth century: Wilton in the 1630s, and Longleat, Wiltshire, in *c.* 1682 – 1714 (Figs. 2.27 and 2.29).
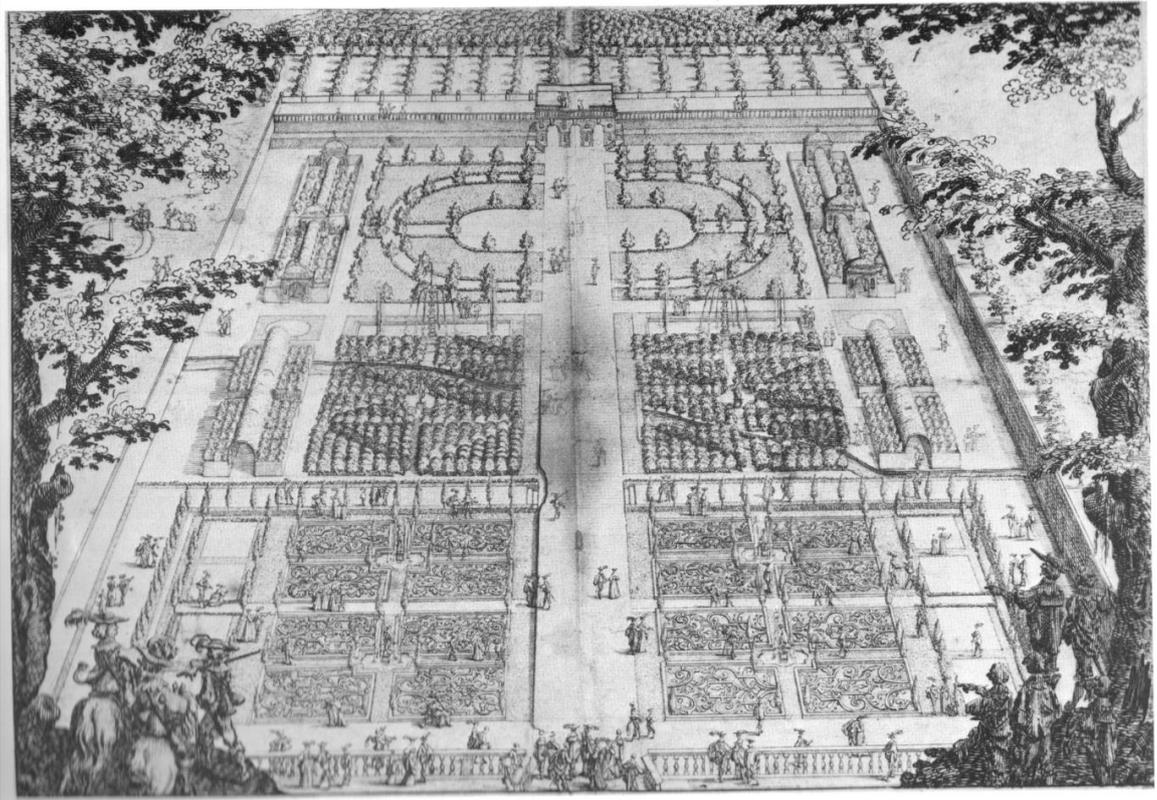
Fig. 2.27. 1630s design for the gardens at Wilton House, Wiltshire, by Isaac de Caus.[125]
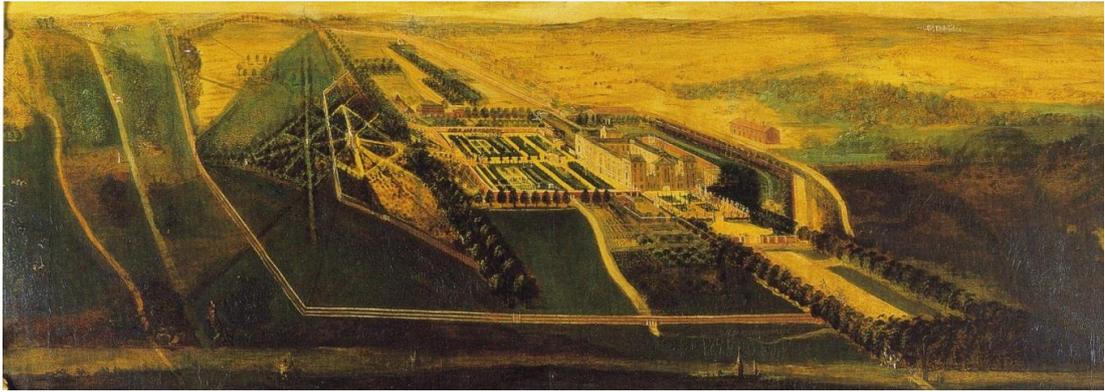
Fig. 2.28. Wilton: a painting by Leonard Knyff, *c.* 1700. North is to the right.[126]
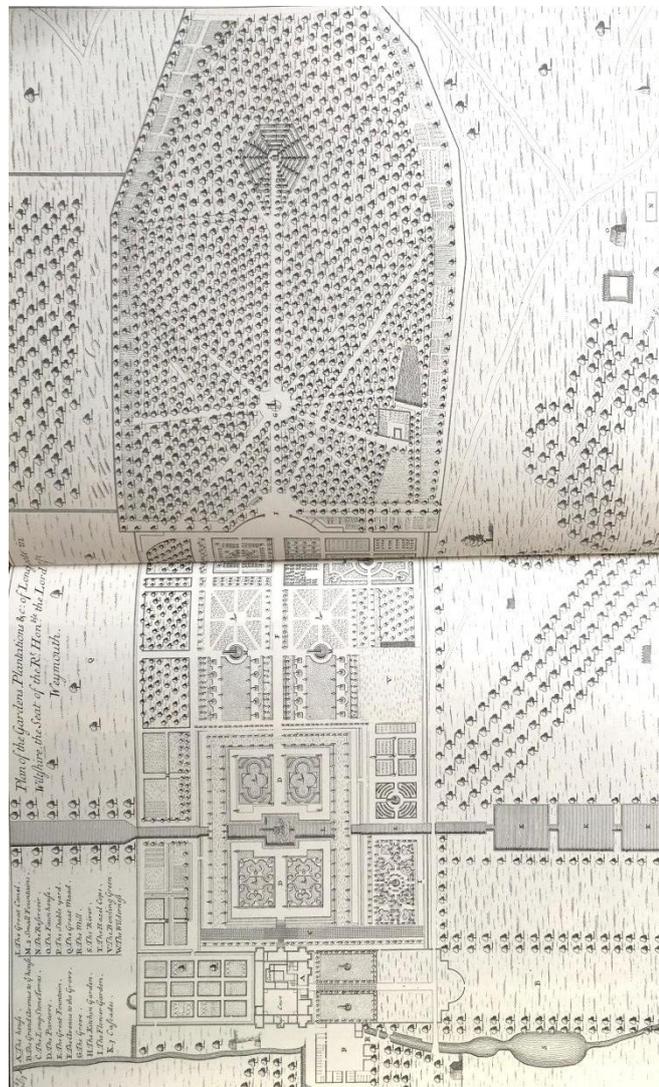
Fig. 2.29. Colen Campbell's 1725 plan of Longleat, Wiltshire. It is essentially the same as Knyff and Kip's 1707 plate in *Britannia Illustrata*.[127]

In the 1630s engraving of Wilton (Fig. 2.27), the River Nadder can just be seen flowing through the middle compartment, which is a wilderness. Normally furthest from the house, the wilderness seems to be here specifically to disguise the river. Isaac de Caus' grotto can be seen at the end of the gardens (top of picture). The vital difference between Wilton and Longleat was that instead of trying to disguise the river flowing through it, the water at Longleat was canalised, with a series of geometric ponds. This treatment of the river marks the decisive change in attitudes to water, and rivers in particular, which occurred in the latter part of the seventeenth century. Rivers began to be put into straitjackets and displayed as canals (ornamental linear water features). Initially, a common design practice in the earlier seventeenth century was to place fountains in ponds at punctuation points in the design, with rivers or ponds adjacent to the gardens to supply the fountains. Later, canals became fashionable features in their own right. The accession of William III in 1688 fostered this fashion; Westbury Court and Grimsthorpe come to mind, and in the early decades of the eighteenth century, moats surrounding residences tended to be altered to give the appearance of canals, Rycote being a good example. Like medieval moats, canals were also used for keeping fish.[128] The Dutch influence of William saw Britain acquiring many more canals, and these can be seen in the illustrations in *Britannia Illustrata*.[129] However, the idea of Dutch gardens in England is a myth, according to David Jacques, royal gardens being the exception.[130]

These images of Wilton and Longleat highlight the increase in tree planting – plantations, groves, wildernesses – mentioned above, which started to occur in the intervening half-century. By *c.* 1700, Wilton does have groves or wildernesses just beyond the tri-partite garden (Fig. 2.28), although these are not on the same scale as at Longleat. The extended area of tree planting beyond the formal gardens there is as large again as the gardens themselves: the designed landscape has doubled in size. At this point, attempts are being made to retain a sense of balance in the overall layout, but there are significant areas of other tree planting adjacent to the gardens. This increase in the scale of designed landscapes was to play a pivotal role in the development of lakes.

2.6. Water Features *c.* 1700.

In *c.* 1700, several sources give us a 'snapshot' of what landscapes were like at that point: Henry Chauncy's *The Historical Antiquities of Hertfordshire* 1700 (Chauncy), *Britannia Illustrata* 1707 by Leonard Knyff and Johannes Kip, Robert Atkyns's *The Ancient and Present State of Glostershire* 1712 (Atkyns), and a later work by Colen Campbell, *Vitruvius Britannicus*, of which Volume III, containing landscape plans, was published in 1725. In addition, Databases A (1680-1710) and B (1711-1730), extracted from the main Image Database, were also used (see Appendix 2).[131]

Before turning to the analysis of the water-features in these sources, it is necessary to discuss the difference between ornamental and functional water features. Firstly, for the purposes of this study, the *intention* behind making a body of water affects its classification as functional or ornamental, as discussed above. Thus, the canal at Dyrham Park, for example, is classified as primarily ornamental because it was made with the aim of ornamenting the landscape, although it was stocked with fish: Switzer states, "In this Canal several Sorts of Fish are confin'd, as Trout, Perch, Carp, Etc. of a very large Size."[132] He also describes the rounded head of the canal, complete with fountain. As we have seen, North recommended that moats should be stocked with fish, especially if they were supplied by a river, whilst William Cecil had a large fishpond at the entrance to Burghley House, and De' Servi's unexecuted plan for Richmond (1611) included an ornate pond labelled 'Peschiera' or fishpond.[133] Similarly, John Whitney, writing in 1700, specifically mentions fish being kept in fountains:

> I have seen your round Fountain in your delightful best Garden, and the stock of Fish therein kept to be always at hand to pleasure your Friends, which is continually stored with *Trouts* and *Carps* of the largest size; I remember also the Oval Fountain in the Kitchen Garden, which is a good Nursery for the younger fry.[134]

Firstly, it appears likely, based on these sources, that most ornamental water features were dual purpose, being stocked with fish, though the primary intention was to ornament the landscape, otherwise ordinary fishponds (*servatoria*) would have been made. It appears that this also applied to lakes, when they came into being: John Lawrence, writing in 1806, says in his section on fishponds,

> Where ponds are within view, and ornamental to the mansion house, a strong bank may be made … on which may be constructed a rialto, or bridge, with one, or any desired number of arches.[135]

A 'pond' which is important enough to warrant a stone bridge, as he suggests, is likely to be large enough to qualify as a lake (according to the criterion in this thesis). He goes on to say,

> Upon an extensive piece of water, an ISLAND naturally formed, and handsomely wooded and planted with shrubs, is a noble addition to the scenery, and the banks afford the most convenient retiring places for the fish.[136]

Secondly, the main function of bodies of water could change over time. At Dyrham Park, the medieval fishponds were subsumed into the formal design by William Blathwaite in the early eighteenth century, becoming ornamental as well as functional, as Currie points out:

> the ponds within the formal gardens, shown on a Kip print of the early eighteenth century, were used to supply edible fish. A list dated 1710 shows not only what fish were kept in these garden ponds but when they would be ready for the table.[137]

By the twentieth century, they had become purely ornamental.

The sources identified earlier were analysed to determine i) how accurate they were in depicting water features, and ii) how prevalent the various water features were.

2.6.1. Accuracy.

Contrary to expectation, depictions of man-made water features in *Britannia Illustrata,* Atkyns, Chauncy and *Vitruvius Britannicus* seem to be generally accurate.[138] A comparison of the water features in the sources with subsequent maps (estate maps, tithe maps, First Edition 6" OS maps) showed that a surprisingly high percentage are recognisable today as those depicted, despite several centuries of silting up or erosion. In *Britannia Illustrata*, for example, there was good evidence, in subsequent maps or on the ground today, that nearly 40% of places had water features which were made much as depicted. Therefore, these sources can largely be relied on to make an assessment of the character and location of water features in early eighteenth-century landscapes.

Because the samples from Chauncy and *Vitruvius Britannicus* are relatively small, those taken from *Britannia Illustrata* and Atkyns are the most representative and therefore the most significant. In general terms, it is still likely that the actual landscapes of the eighteenth century did not look nearly as neat and geometric as their owners seemed to wish: almost certainly the trees, whether in avenues or groves, would not have been growing uniformly, as depicted. It should also be noted that occasionally, views depicted what was planned rather than what existed. As topographical representation and mapping continued to improve in the eighteenth century, it is reasonable to conclude that the later sources can also be considered generally reliable in interpreting the landscape.

2.6.2. Prevalence of different water features.

Examples of the categories of water-features in the analyses were as follows.

Square

Melton Constable

Regular geometric

Badminton

Rectangular
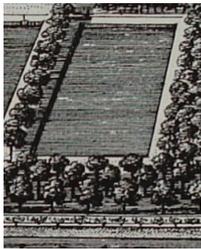
 Rycote

Irregular geometric
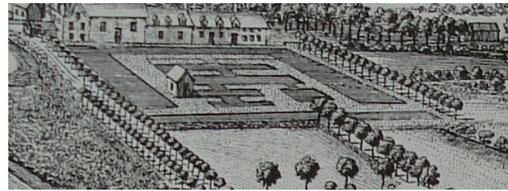
Esher

Geometric pond + fountain
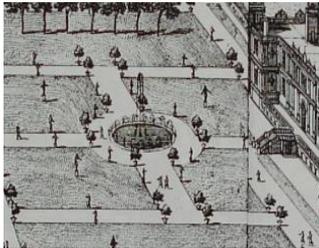
 Wollaton
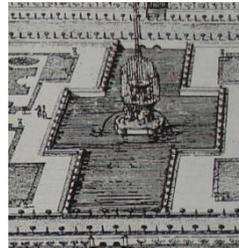
 Longleat

Moat

Althorp

Other
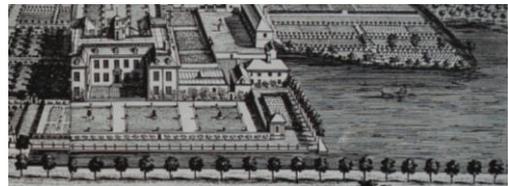
Brightwell

Moated garden
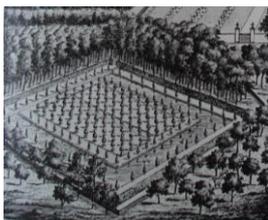
Wimpole
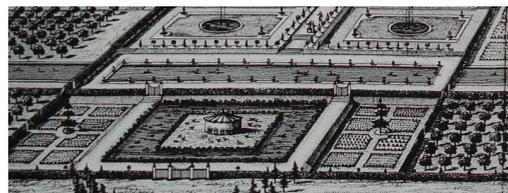
Haigh

Fig. 2.30. Categories used in the analyses of water features.

2.6.3. a) Methodology.

The methodology adopted for analysing the illustrations in the various sources was as follows.

1. The *number* of each type of feature has been recorded, not how many places had that kind of feature.

2. Features were categorised as 'ornamental' if they fitted in with the formal design. If formal planting was associated with a feature, it was deemed to be ornamental even if it was outside the formal design.

3. Features were categorised as 'functional' if they were outside the area of formal design, without formal planting associated with them.

4. The category of 'geometric pond + fountain' was reserved for relatively small ponds.

5. The category of 'other' included features such as a round walled fishpond, cascade, water pavilion, half-moon fishpond, hybrid lake, a significant river etc. A 'significant river' was one which had been incorporated into the designed landscape for ornamental purposes, for example by having an avenue leading to a bridge across it, or a viewing point adjacent to it.

Moated gardens were particularly ambivalent: the moated garden at Wimpole (Fig. 2.30) was classified as ornamental because it is shown in the foreground of the engraving, adjacent to the house, and it is edged with a decorative planting of shrubs. In contrast, the moated garden at Whixley was classified as functional because the planting appeared to be undesigned.

Databases A and B posed problems of their own: generally, views in these pictures are more restricted, either because the subject of the picture is a more intimate one, or because a lower level viewpoint was used and less of a landscape was shown. This tends to mean that fishponds, which were often further out in the landscape, are under-represented in the sample as they occupied subsidiary and marginal locations in the country house landscape. This was the case at Bretby (Fig. 5.9). Evidence suggests they were often present, so presumably were not considered suitable subjects for paintings. This may apply particularly to the later pictures in Database B. Another problem with pictures

with low viewpoints is that it is much harder to determine the actual shape of a body of water.

2.6.3. b) Results.

Because it was by far the largest sample, the results for *Britannia Illustrata* are presented in detail in Table 2.

Shape of Water	Ornamental %	Functional % (mainly fishponds)
Square ponds	25	75
Regular geometric e.g. oval, cross, quadrant ponds	51	49
Irregular geometric ponds	11	89
Rectangular ponds	21	79
Round/oval/geometric pond +fountain (small-scale)	100	0
Moat	0	100
Moated garden	58	42
Canal	100	0
Other	55	45

Table 2. A comparison of the ornamental and functional water features seen in *Britannia Illustrata*.

From these figures it can be seen that ponds which were square or rectangular, or irregularly geometric, were likely to be purely functional fishponds. Small geometric ponds with fountains and canals were primarily decorative.

The incidence of each type of man-made water feature, both ornamental and functional, was analysed for each of the six sources and the results are presented in Tables 3-8 below. The statistics are actual numbers of each feature, *not* how many landscapes which they occur in.

Key to water features analysed:

Total number of features

Functional water features

Ornamental water features
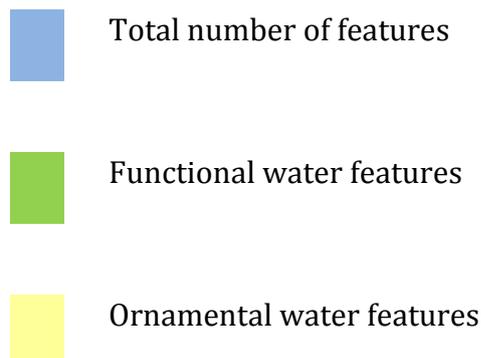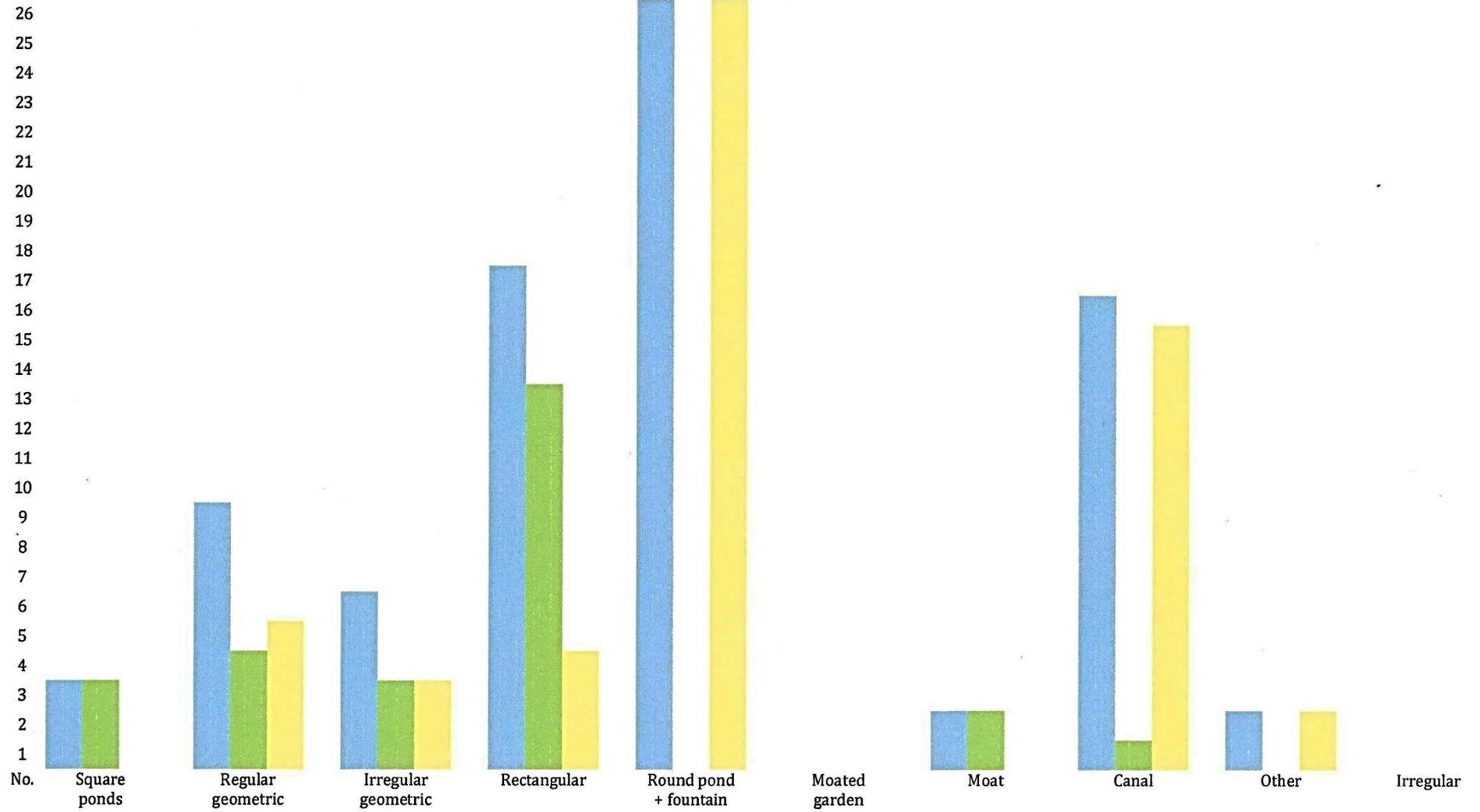
Table 3. Water features in Database A: images 1680-1710, extracted from the main Picture Database.

	10
	9
	8
	7
	6
	5
	4
	3
	2
	1
No.	Square ponds	Regular geometric	Irregular geometric	Rectangular	Round pond + fountain	Moated garden	Moat	Canal	Other	Irregular
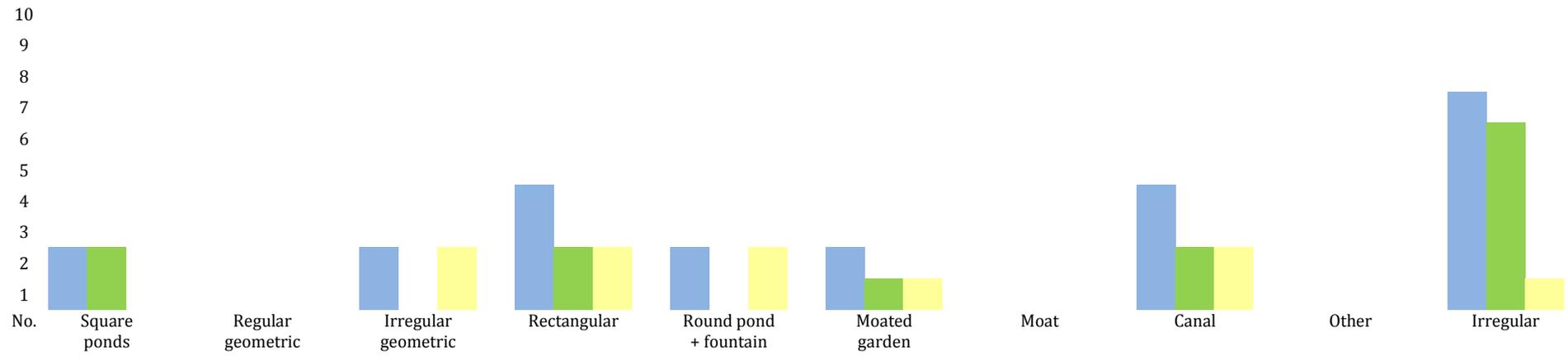
Table 4. Water features in Chauncy's *The Historical Antiquities of Hertfordshire* 1700.
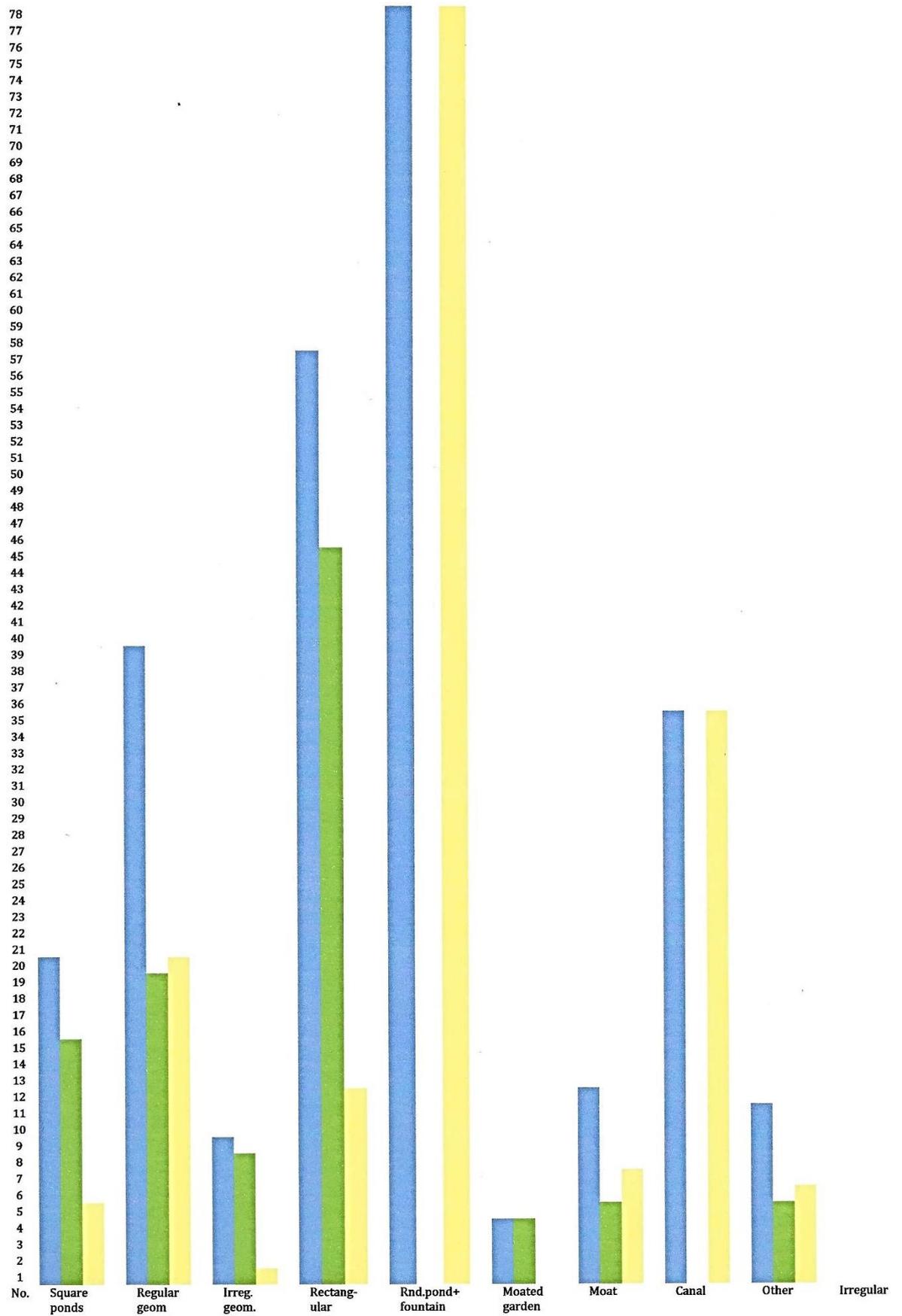
Table 5. Water features in *Britannia Illustrata* 1707.
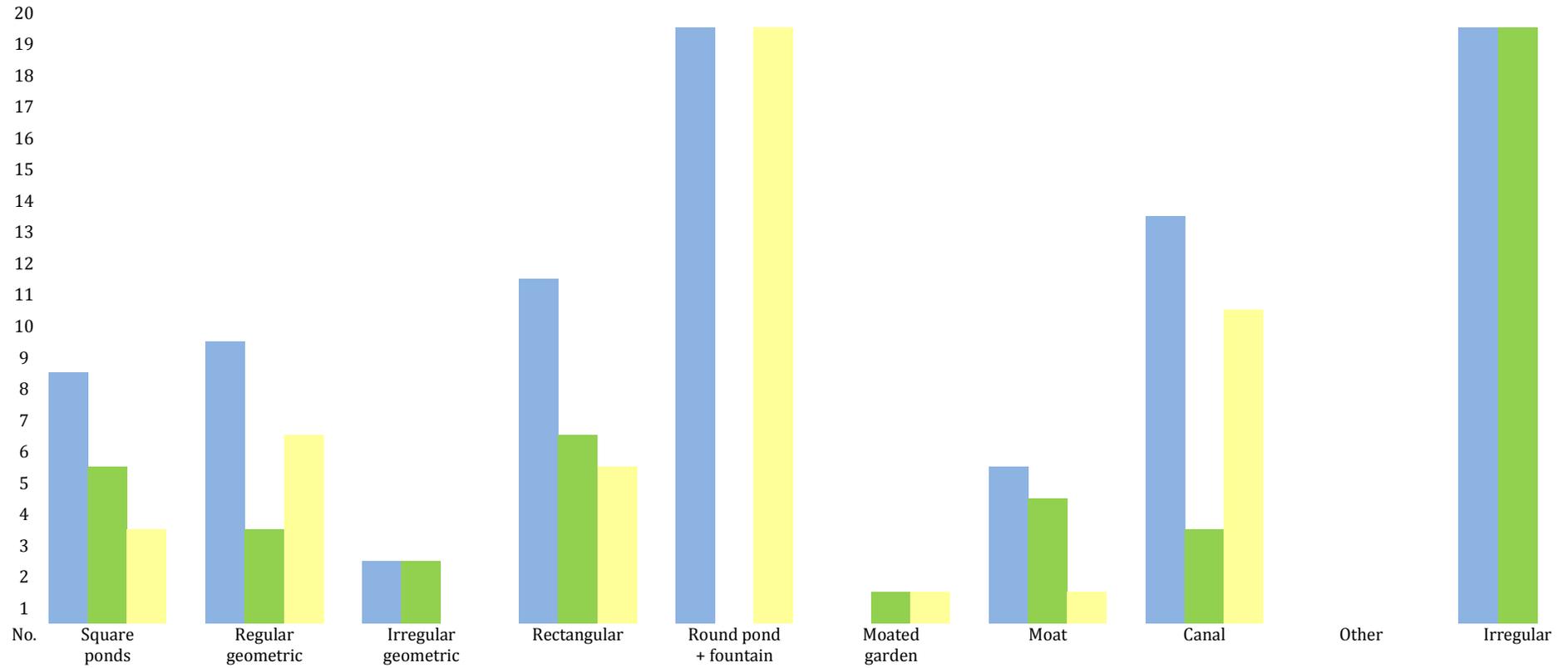
Table 6. Water features in Atkyns's *The Ancient & Present State of Glostershire* 1712.
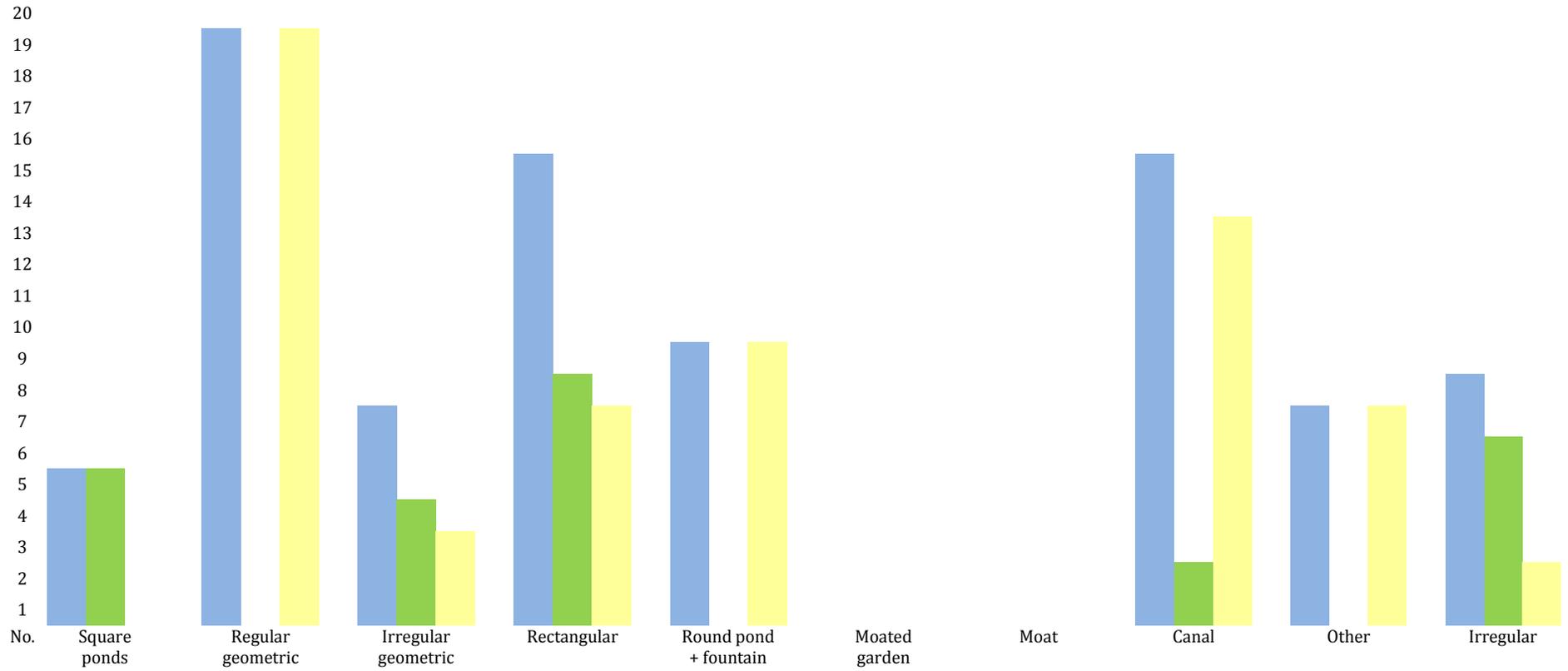
Table 7. Water features in Database B: images 1711-30, extracted from the main Picture Database.
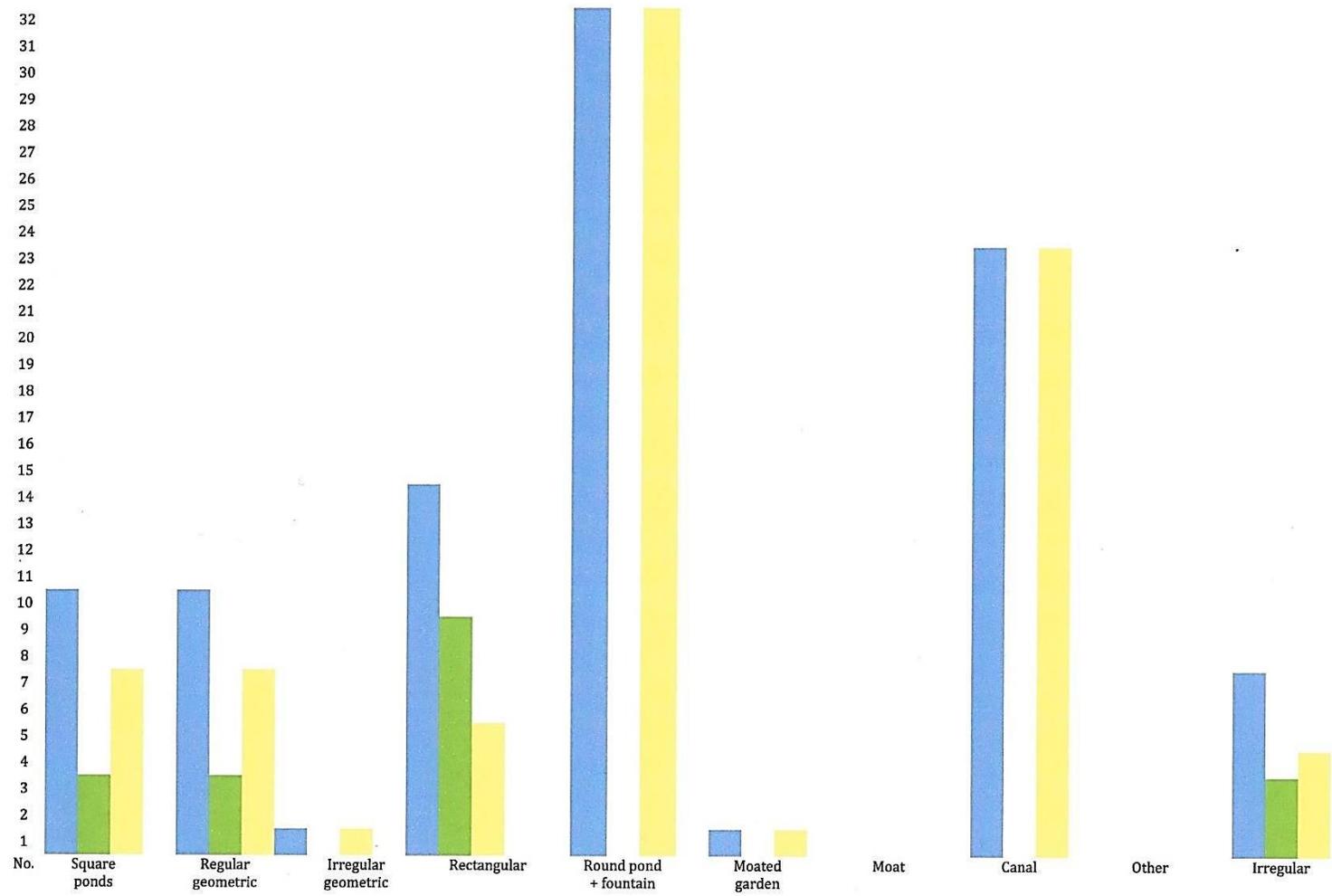
Table 8. Water features in Vitruvius Britannicus 1725.

The results showed that the most numerous feature by far was the small geometric pond + fountain, although they were less common in Chauncy and Atkyns. There was also a significant decline in their numbers by the time that the illustrations analysed in Database B were made, suggesting that the small round pond with a fountain was becoming *passée* by the second and third decades of the eighteenth century. Moats and moated gardens were minority features throughout, and had completely disappeared in Database B. Ornamental canals became more numerous, frequently appearing in Database A and Database B. Features in the 'other' category also increased in popularity. These included geometric *lakes*, and basins of considerable size, cascades, hybrid lakes and an informal pond (Claremont), features which are discussed in more detail in the next chapter.

The conclusions which can be drawn from this analysis are that firstly, where men had the money, they made water features that were as extensive and elaborate as they could, as geometrically as possible. Secondly, any self-respecting gentleman with any aspiration to fashion in his gardens at least had a round pond with a fountain in the early 1700s. Thirdly, ornamental canals were popular, and increased in popularity, throughout the period under consideration (1680-1730). One fact to note is that a surprising number of residences, when identified on today's OS maps, were sited within, or in, the vicinity of moats. Perhaps a more accurate picture of reality in *c.* 1700 is best illustrated by two images of Bowood, a relatively modest house and park in 1720 (Figs. 2.31-2.32). In the painting, the rectangular pond (possibly 0.4 h) is the prominent ornamental water feature and it is shown as completely symmetrical in shape, whereas the estate survey shows it with a wavy edge on the west side. Whilst, in 1763, this could represent a change in fashion and a deliberate softening of the geometry of the water, little else in the landscape backs this up and, as Brown signed a contract with the 2nd Earl of Shelburne in 1762, this is almost certainly the preparatory survey for the work he carried out. The conclusion must be that, in *c.* 1725, Sir Orlando Bridgeman, the then owner, wanted to construct a completely geometric pond, but failed on the west side, where the land started to rise, and more earth needed to be moved.
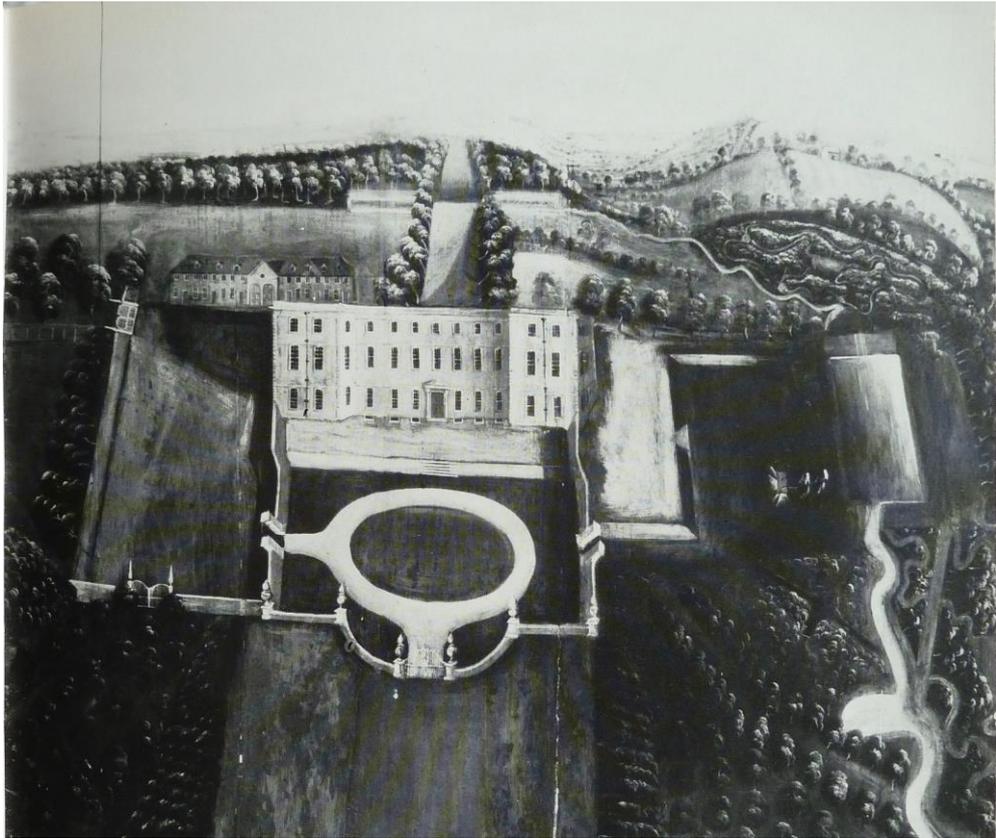
Fig. 2.31. Painting of the house and gardens of Bowood Park, *c.* 1725.[139]
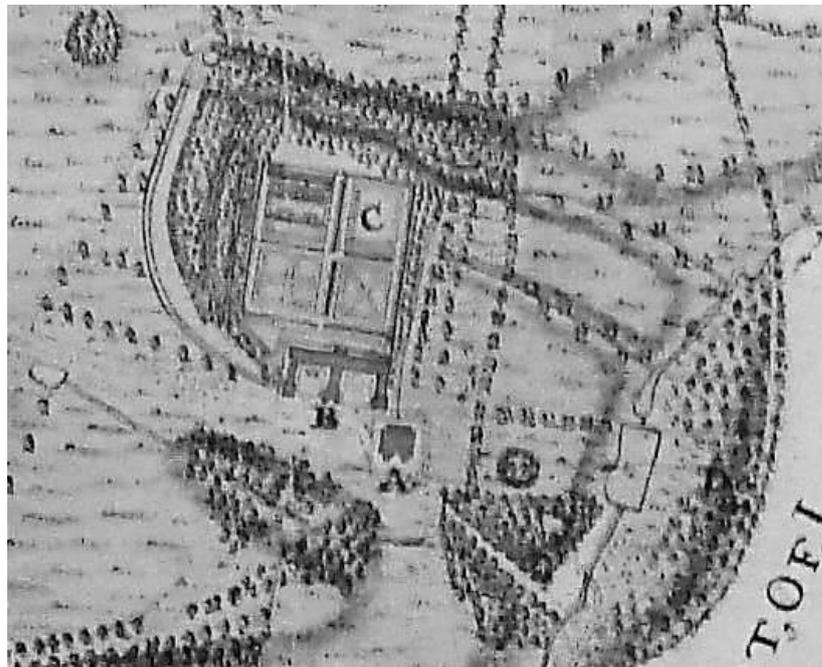
Fig. 2.32. 1763 pre-Brown survey of Bowood estate by John Powell.[140]

2.6.4. Location of Water Features.

The location of water features in landscapes of *c.* 1700 is of interest because it casts light on how important they were to their owners and, perhaps, what their owners aimed to achieve in making them. The premise here is that owners would be keen to display water features which they valued, and to place them in visible positions, especially in relation to the house. One means of assessing their importance is to determine whether they were visible from the house or not and, if so, which rooms they were visible from. Using Badminton as an example to demonstrate the relationship between house and landscape at this time, Mark Girouard talks of,

> A saloon with apartments to either side, long axial vistas
> leading up to the saloon or through the apartments to their
> inner sanctuaries, and the extension of such vistas through the
> surrounding gardens and countryside,[141]

The significant rooms of a house were deemed in this study to be those giving onto the main façades, either of the entrance front or the garden front, though in many instances it was not possible to know this precisely. In the early eighteenth century, the gardens and landscape were viewed from an elevated standpoint, which led to the trend in the 1680s of replacing hipped roofs and dormer windows with half-height windows and a flat roof with a balustrade, to provide a roof walk, as at Thoresby Hall.[142] Lanterns or cupolas were also popular at this time, as the picture of Melton Constable (Fig. 1.12) illustrates. Both balustrades and cupolas enabled landscapes to be viewed from above, though cupolas were often removed in subsequent centuries as they tended to leak.[143] Factors such as the distance from the house and the topography of the landscape also affect visibility, and also trees, or other buildings, might screen features from the house.

The importance of the view from the house, and of water in particular, is cogently illustrated by Vanbrugh's comments on the houses of Blenheim and Kimbolton, which he built or modified. About Blenheim, in a letter, possibly to Lord Ryalton, he says:

> All the most Valluable parts of the Views, lying to the most
> Significant Rooms in the Building ... The Water (where it will
> appear to best Advantage, whether Lake or River) is full in
> View,[144]

Writing about Kimbolton to Lord Manchester, in 1708, he said:

> And the Salon beyond it is Almost as big as the Hall, and looks
> mightily pleasantly Up the Middle of the Garden and Canall,
> wch is now brim full of Water, and looks mighty well;[145]

Vanbrugh's comments spell out that seeing the water from the main rooms of the house was most important, presumably to his clients as well as himself.

With these parameters in mind the sources (Chauncy, *Britannia Illustrata,* Atkyns and *Vitruvius Britannicus)* were examined to determine the visibility of ornamental water features from the house. It was found that the evidence was not really amenable to analysis, largely because of the uncertainty about exactly where the main rooms in a house were. However, some trends have become apparent. In *Britannia Illustrata*, three-quarters of the numerous geometric ponds + fountain were visible from the rooms of a main façade of the house. Geometric water features (for example square or rectangular ponds) were also numerous, and showed a fairly even distribution in terms of visibility – about half being visible and half not. It is likely that this was because many of them had originated as fishponds, though they had been incorporated into the overall design, and had ornamental planting associated with them. Perhaps a third of canals were visible from the main façades, whilst a minority would not have been visible from the house at all. Clearly, positioning a large canal in the optimum place was more difficult than with smaller features, especially if an existing landscape was being adapted. Other features, such as lake-moat, duck decoy, significant river, large basin, did not reveal any particular trend.

Attention was paid to whether ornamental water features were being deliberately used to enhance the approaches to houses, as this was a significant feature of elite medieval landscapes.[146] Only in two places in *Britannia Illustrata* – Temple Newsam and Staunton Harold (Fig. 3.4) – did ornamental water flank the approach to the house. At Temple Newsam, the square ponds in *Britannia*

Fig. 2.33. Temple Newsam, Yorkshire, in *Britannia Illustrata*.

Illustrata have the appearance of fishponds, though with ornamental planting surrounding them, and perhaps dated from when the house was built in the early sixteenth century (Fig. 2.33).[147] This approach, then, might owe its origins to the status conferred by fishponds at that time. Staunton Harold is of a different stamp. The landscape there was laid out in *c.* 1680 by Baron Ferrars, according to the English Heritage listing.   Thus, the approach, carried over the large 'canal' by a brick bridge, was deliberately manipulated to pass over the impressive stretch of water with a full view of the hall. At Chatsworth and Longleat the approach crossed the river or canal relatively close to the house but the water did not flank the approach, although perhaps crossing water in this way is a modified version of that concept. At Eaton Hall, the Grosvenors' Cheshire seat, ornamental water features – a rectangular pond and a moated garden – lay on either side of the approach but were not directly aligned with the house. In *Vitruvius Britannicus*, Campbell does not indicate the approaches to houses in his plans, but there are two examples in Atkyns where the main approach is flanked by ornamental water: Coberley Court and Tortworth. At Coberley, the main approach passes over a large rectangular pond. Very little is

known about this place; the house depicted by Kip no longer stands. Given the immediate proximity of the remains of a medieval village, it would seem that the ponds may well have been medieval fishponds originally and that the house and landscape were probably laid out to maximise the impact of these existing features. Old Court at Tortworth (Fig. 2.34), seat of Matthew Ducie Morton, is similarly elusive. The geometric ponds are staggered on either side of the main approach and create an impressive entrance in Atkyns's engraving.

Fig. 2.34. Tortworth Court, in Atkyns's *Ancient and Present State of Glostershire*, 1712.[148]

At a number of other places illustrated in Atkyns and *Britannia Illustrata,* approaches do cross rivers, canalised rivers and moats, or pass alongside canals and ponds. At Miserden, the approach was carried over the river on a dam which produced a substantial pond on the upstream side. Though not in the six sources examined above, Burley-on-the-Hill is shown in a painting by Tillemans of *c.* 1729 as having the main approach impressively flanked by geometric lakes (Fig. 2.35). Based on the evidence, it must be concluded that although in this period (*c.* 1700) ornamental water did not often directly flank the approaches to

houses, there were often significant bodies of water close by, so that the house and the water would be viewed together.
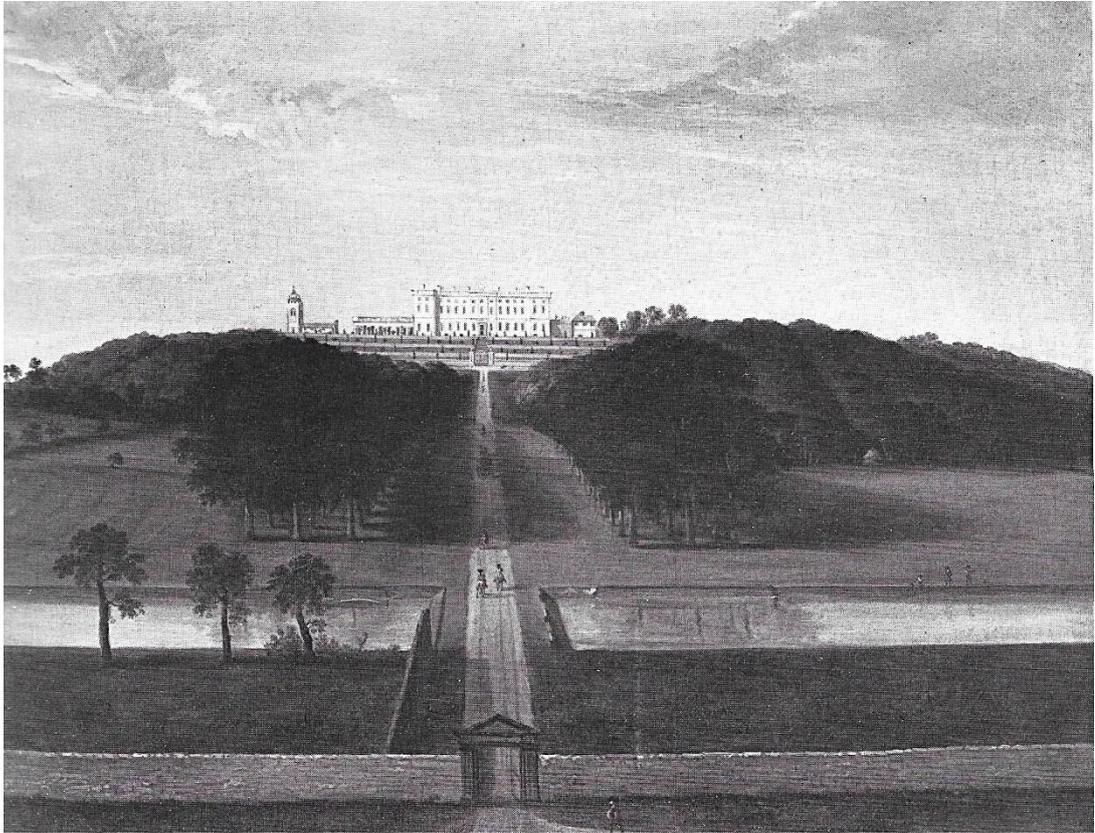
Fig. 2.35. Tillemans' *c.* 1729 painting of Burley-on-the-Hill, Rutland.[149]

In general, this analysis suggests that the large majority of ornamental water features was visible from some rooms of the house at least, a significant number being visible from rooms on a main façade, especially the round pond + fountain. Larger features such as canals tended to be further away, so less immediately visible. It is axiomatic that the larger any feature (water or otherwise) becomes, the less choice there is about where to site it. There was relatively little evidence of water being used to make approaches through formal landscapes to houses more impressive, though there was often water adjacent to them. The fact that water features were presented in the sources as being uniformly geometric suggests that owners took pride in them, wanted them to be geometric and wanted viewers to see that they were.

The significance of this survey of the sources, however, is that it demonstrates that, with perhaps one principal exception, there were no irregular lakes associated with great houses before 1720. Although there was a small number of pieces of ornamental water large enough to be considered as lakes (*c.* 8) before 1720, they were all geometric in shape. That exception was Thoresby Hall, Nottinghamshire, with a likely date of *c.* 1718-19, based on information in the accounts. Thus, a chronological starting point for informal (irregular) ornamental lakes has been established for the first time. It is quite possible, of course, that an earlier example may come to light, but as the next irregular lake to be made was in 1727, at Holkham, it is reasonable to point to the 1720s as the decade when irregular lakes first began to be made. The survey also shows that when we look at representations of water features in *c.* 1700, we can be relatively certain that they are depicting those features largely as they were actually made, and that they accurately portray what intentions were at the time. It also tells us which kinds of water features populated those landscapes, and how prevalent they were.

2.7. Conclusion.

Elements in medieval high-status landscapes such as fishponds (*vivaria*), moats, lake-moats and millponds are relevant to an understanding of the development of ornamental water in various ways. Being associated with elite residences, they conferred status on their owners in the medieval period, not least because water features were expensive to construct, and many people had limited access to good quality water, even for everyday needs. By the sixteenth century these elements were being used to authenticate new landscapes. Either real elements were incorporated, such as Cullings moat at Theobalds, or symbolic elements were used, such as the mill in the Dell water-garden at Hatfield. Fishponds in particular were influential, as the basic construction techniques endured into the early modern period and beyond. The gravity earth dams of *vivaria* were essentially the same as those of ornamental lakes, and both relied on retaining a water source to make them. Often, they were also of a similar size and shape, though being in the park and divorced

from the designed landscape, *vivaria* were much less likely to be visible from the house than the ornamental lakes of the eighteenth century.

Fishponds remained valued production units but also evolved into features valued for their leisure opportunities – angling – and their aesthetic appeal, the latter being extolled by Bacon. The concept of 'designing' a landscape also began to appear in the Tudor era, with the essential principle of arranging elements according to an overview of the landscape. Bacon's views, and the fishponds he converted at Gorhambury, spawned a fashion for water gardens. This creativity with water did not outlast the reign of James I, with water features making a muted reappearance towards the end of the seventeenth century. Influenced by France, the sources, such as *Britannia Illustrata*, give us a view of tightly controlled features fitting in with geometric schemes in the decades around 1700. Many rectangular ponds which had probably originated as fishponds were then incorporated into geometric designs. Possibly, this was part of an increasing tendency in medieval and early-modern times to group things like fishponds, parks and warrens nearer to the mansion, in order to display them all near the residence.[150] The predominant ornamental feature – the round pond + fountain – had been a feature of gardens for virtually two hundred years, but became more widespread. The only innovative feature was the ornamental canal, which began to appear after the Restoration, but became popular after 1688, as the Dutch influence of William III began to increase. Being linear, it fitted neatly into axial landscapes. Campbell's plan of Brome Hall, Suffolk, in *Britannia Illustrata* shows just such an example. An investigation of the sites illustrated in the key sources (*Britannia Illustrata*, Chauncy, Atkyns, *Vitruvius Britannicus*, and Databases A and B) provides evidence that these landscapes were largely constructed as they are depicted, and were highly geometric and regular, and that symmetry was a valued concept. Undoubtedly, the water features illustrated were often re-used in the lakes which began to evolve in the early decades of the eighteenth century, but they themselves often had their antecedents in the older vernacular features, particularly fishponds and moats. The emphasis on tree planting in the later seventeenth century led to designed landscapes starting to increase in size, with implications for symmetry and the role of geometry, which ultimately affected ornamental water, and this theme will be explored in the next chapter.

[1] O. Creighton *Designs Upon the Land: Elite Landscapes of the Middle Ages* (Woodbridge: Boydell Press, 2009) p 78

[2] C. Taylor *Parks and Gardens of Britain: A Landscape History From the Air* (Edinburgh: Edinburgh University Press, 1998) p 30

[3] C. Currie, 'Fishponds as Garden Features, *c.* 1550-1750', *Garden History* Vol. 18, No. 1 (Spring, 1990) p 22

[4] C. Dyer, 'The consumption of fresh-water fish in medieval England' in M. Aston, ed. *Medieval Fish, Fisheries and Fishponds in England* (Oxford: BAR 182, 1988) p 33

[5] J. Carmi Parsons *Eleanor of Castile: Queen and Society in Thirteenth Century England* (London: Macmillan Press, 1994) p 51

[6] Currie, op. cit., p 22

[7] Currie, op. cit., p 22

[8] H. Colvin, gen. ed. *The History of the King's Works* Vol. 1 (HMSO: 1962) p 324 quoted in Creighton, op. cit., p 72

[9] Taylor, op. cit., p 30

[10] National Museum of Wales, Cardiff, ref. NMW A 29925

[11] S. Switzer *An Introduction to a General System of Hydrostaticks & Hydraulics* (London, 1729) Vol. I p 130 online at https://books.google.co.uk/books?id=LH4rAAAAYAAJ&pg=PP11&dq=switzer+introduction&hl=en&sa=X&ved=0ahUKEwidsbm5t93TAhVKJcAKHVFlCd4Q6AEIJjAB#v=onepage&q=switzer%20introduction&f=false accessed May 2013

[12] Hartley, 1983, with additions, in Creighton, op. cit., p117

[13] C. J. Bond, 'Monastic Fisheries' in Aston, op. cit. p 96

[14] Ibid., p 96

[15] Ibid., p 98

[16] Ibid., p 102

[17] R. North *A Discourse on Fish and Fishponds* (London: E. Curll, 1714) pp 4-5 online at https://books.google.co.uk/books?id=Q3BZAAAAYAAJ&printsec=frontcover&dq=editions:Y0jnc9e1O8IC&hl=en&sa=X&ved=0ahUKEwjxj6Dn3tvTAhWlAcAKHfcDBaAQ6AEIIjAA#v=onepage&q&f=false accessed October 2013

[18] The other main type of dam, arch dams, was not widely used until the nineteenth century, and retained water owing to its innate structural strength: N. Smith *A History of Dams* (London: Peter Davies, 1971) p 33

[19] Ibid., p 164

[20] G. M. Binnie *Early Dam Builders in Britain* (London: Thomas Telford, 1987) p 33

[21] To avoid onerous repetition, the word 'lake' is taken to mean an ornamental lake in this thesis, unless otherwise specified.

[22] J. Taverner *Certaine experiments concerning fish and fruite practised by Iohn Taverner, Gentleman* (London: William Ponsonby, 1600) p 24

[23] J. M. Steane, 'The Royal Fishponds of Medieval England' in Aston, op. cit. p 40

[24] Ibid., p 46

[25] Ibid., p 40-41

[26] Dyer, op. cit., p 34

[27] O. Rackham *A History of the Countryside* (London: Phoenix, ed. 2000) p 362

[28] C. Taylor, 'Medieval moats in Cambridgeshire' in *Archaeology and the Landscape* ed. P. J. Fowler (London: John Baker, 1972 pp 237-49 quoted in Rackham, op. cit., p 362

[29] Not only were many people unable to swim, but moats made undermining the walls much more difficult.

[30] North, op. cit., p 25

[31] Image from RCHME, in M. Leslie: 'An English landscape garden before 'The English Landscape Garden'?', *Journal of Garden History* Vol 13, 1993 p 8

[32] Creighton, op. cit., p 81

[33] These places are discussed in Creighton, op. cit.

[34] Image online at www.blogarama.com accessed April 2017

[35] Creighton, op. cit., p 85

[36] Creighton, op. cit., p 64; C. Taylor, 'Somersham Palace, Cambridgeshire: a Medieval Landscape for Pleasure?' in M. Bowden, D. MacKay and P. Topping, eds. *From Caithness to Cornwall: Some Aspects of Field Archaeology* (BAR British Series 209, 1989) p 214

[37] Bond, op. cit., p 99

[38] R. Liddiard *Castles in Context* (Macclesfield: Windgather Press, 2005) p120

[39] Ibid., p120

[40] H. M. Colvin, general editor *The History of the King's Works* Vol. 2 (HMSO: 1963) in Leslie, ibid. p 12

[41] C. Taylor *Parks and Gardens* op.cit. p 34

[42] Creighton, op. cit., p 181

[43] Image online at www.webbaviation.co.uk accessed August 2013

[44] Description of Raglan Castle, 1674 version, ref. FmE 4,5,3(d), Badminton Muniments, courtesy of the Duke of Beaufort

[45] J. R. Kenyon *Raglan Castle* (Cardiff: Cadw; Welsh Historic Monuments, rev. ed. 2003) p 18

[46] North, op. cit., p 27

[47] H. M. Colvin, ed. *The History of the King's Works* Vol. IV, Part II (London: HMSO, 1982) in M. Andrews, 'Theobalds Palace: The Gardens and Park', *Garden History*, Vol. 21, No. 2 (Winter, 1993), p 144

[48] Creighton, op. cit., p 57

[49] J. Langdon *Mills in the Medieval Economy: England 1300-1450* (Oxford: Oxford University Press, 2004) p 16

[50] R. Holt *The Mills of Medieval England* (Oxford: Basil Blackwell, 1988) p 88

[51] L. Syson *The Watermills of Britain* (Newton Abbot: David & Charles, 1980) p 54

[52] Watermills are complex systems, often involving one or more leats, a head race, a tail race, sluices, weirs.

[53] HE listing: Stokesay Castle, Shropshire

[54] The tithe apportionment of 1840 itemises this pond as a fishpond.

[55] Landon, op. cit., pp 303-5

[56] T. Williamson, personal communication, March, 2017

[57] HE listing: Premonstratensian abbey at Sulby Abbey Farm

[58] Currie, op. cit., p 31

[59] Queen Eleanor's fishpond at Rhuddlan has already been mentioned.

[60] R. Strong *The Renaissance Garden in England* (London: Thames & Hudson, 1998) p 22

[61] Ibid. p 23 fn

[62] Hampshire Gardens Trust entry for Queen Eleanor's garden, Winchester, online at http://research.hgt.org.uk/item/queen-eleanors-garden/ accessed June 2017

[63] Strong, op. cit., p 37

[64] A. Rowe, 'Hertfordshire's Lost Water Gardens' fn 6 p55 in D. Spring *Hertfordshire Garden History Vol II* (Hatfield: University of Hertfordshire Press, 2012)

[65] T. Mowl *Historic Gardens of Gloucestershire* (Stroud: Tempus Publishing, 2002) p 24

[66] Ibid., colour plate 3

[67] Ibid., p 25.

[68] Ibid., p 24-5

[69] J. Dixon-Hunt *Garden and Grove: The Italian Renaissance Garden in the English Imagination: 1600-1750* (London: Dent and Sons, 1986) p 18

[70] Strong, op. cit., pp 29-30

[71] Dixon-Hunt, op. cit., p 85

[72] H. Atlee *Italian Gardens* (London: Frances Lincoln, 2006) p 54

[73] Strong, op. cit., p 21

[74] Photograph courtesy of Sandy Haynes

[75] Robert Laneham *Laneham's letter describing the magnificent pageants presented before Kenilworth Castle in 1575* (Philadelphia: Hickman & Hazard, 1822) p 75 accessed online at www.googlebooks.com Feb. 2014

[76] Ibid., p 5

[77] Ibid., p 4

[78] T. Mowl *Gentlemen and Players: Gardeners of the English Landscape* (Stroud: Sutton Publishing, 2000) p 45

[79] Paul Hentzner, *Travels in England during the reign of Queen Elizabeth* quoted by M. Andrews in 'Theobalds Palace: The Gardens and Park', *Garden History*, Vol. 21, No. 2 (Winter, 1993), p 141. Hentzner visited in 1598.

[80] Baron Waldstein, trans. G. W. Groos *The Diary of Baron Waldstein* (London: Thames and Hudson, 1981) p 83:

> "On the way up to the house there is a fountain: a little ship of the type they use in the Netherlands is floating on the water, complete with canons, flags, and sails."

This is apparently the only translation in English of Waldstein's diaries.

[81] MS Gough Drawings a. 3. Fol. 27 reproduced in D. Spring, 'The London Connection', *Hertfordshire Garden History Vol II* (Hatfield: University of Hertfordshire Press, 2012) plate 2.1

[82] Paul Hentzner *Journey into England* p 54-5, in P. Henderson *The Tudor House and Garden* (London: Yale University Press, 2005) p 85

[83] D. Spring, 'Hertfordshire's lost water gardens: 1500-1750' in D. Spring, ed. *Hertfordshire Garden History* Vol II (Hatfield: University of Hertfordshire Press, 2012) Plate 2.2 British Library ref. Cotton MS Aug. I.i.75

[84] D. Spring, 'The London Connection' in Spring, op. cit., p 15

[85] A. Martin, 'Theobalds Palace: The Gardens and Park', *Garden History* Vol. 21, No. 2 (Winter, 1993), pp. 129-149

[86] Waldstein, op. cit., p 87. It is possible that there were 6 steps on each side, assuming it was rectangular.

[87] Maps reproduced in P. Henderson *The Tudor House and Garden* (London: Yale University Press, 2005) p 88

[88] Francis Bacon, quoted in P. Henderson, 'Sir Francis Bacon's Water Gardens at Gorhambury', *Garden History*, Vol. 20, No. 2 (Autumn, 1992), pp. 116-131 fn 24

[89] Spring, 'The London Connection', op. cit., p 13

[90] Henderson, op. cit., p132

[91] Henderson, op. cit., p132

[92] William Cecil was Francis Bacon's uncle by marriage: Markku Peltonen *Oxford Dictionary of National Biography* (Oxford University Press) accessed online at http://www.oxforddnb.com.ueaezproxy.uea.ac.uk:2048/view/article/990?docPos=1 henceforward quoted as 'ODNB online'

[93] Sir Francis Bacon, eds. J. Spedding, J. R. Ellis, & D. D. Heath, *The Works of Francis Bacon: Literary and Professional Works* Vol I 1625 (London: Various, 1861) p 489 quoted in P. Henderson, 'Sir Francis Bacon's Water Gardens at Gorhambury', *Garden History*, Vol. 20, No. 2 (Autumn, 1992), pp. 116-131

[94] J. Aubrey, ref. Bodleian Aubr. MS. 6, fol. 74r quoted in P. Henderson 'Sir Francis Bacon's Water Gardens at Gorhambury', *Garden History* Vol. 20, No. 2 (Autumn, 1992), pp. 116-131

[95] Currie, op. cit., p 26

[96] P. Henderson, 'Sir Francis Bacon's Water Gardens at Gorhambury', *Garden History*, Vol. 20, No. 2 (Autumn, 1992) p 134

[97] Ibid., p 134

[98] Sorbiere *Voyage to England* p 65 quoted in P. Henderson *The Tudor House and Garden* (London: Yale University Press, 2005) p134

[99] Strong, op. cit., p 106

[100] Dylan Foster-Evans, lecture: *Re-interpreting Welsh Literature of the Middle Ages* at the University of Cardiff, Spring 2013

[101] E. H. Whittle, 'The Renaissance Gardens of Raglan Castle', *Garden History* Vol. 17, No. 1, 1989 pp 83-94

[102] Map 1 131/8/3, National Library of Wales, Aberystwyth

[103] MS FmE 4,5,3(d) in Badminton Muniments: Richard Salter's 1844 copy of a Description of The Castle & Grounds of Raglan 'written in 1674'. Courtesy of the Duke of Beaufort. Henry, the 5th Earl, was a staunch Royalist, entertaining Charles I at Raglan several times, and holding the castle in the Civil War, until it was taken by Fairfax in 1646.

[104] If it existed before the sixteenth century it would surely have been mentioned by the praise poets, such as Guto'r Glyn and Tudur Aled, as they went into considerable detail.

[105] Whittle, op. cit., pp 83-94

[106] Thomas Churchyard, quoted in J. R. Kenyon *Raglan Castle* (Cardiff: Cadw: Welsh Historic Monuments, Rev Ed 2003) p 14

[107] MS FmE 4,5,3(d) in Badminton Muniments: Richard Salter's 1844 copy of a Description of The Castle & Grounds of Raglan 'written in 1674'. Courtesy of the Duke of Beaufort

[108] Image by Ivan Lapper in J. R. Kenyon *Raglan Castle* (Cardiff: Cadw: Welsh Historic Monuments, Rev Ed 2003) p 55

[109] Map 1 131/8/3, National Library of Wales, Aberystwyth

[110] Whittle, op. cit., p 90

[111] Whittle, op. cit., p 90

[112] Map reproduced in Allen *et al* 1992, referenced in S. Miller, forthcoming paper *The Ponds or Water Maze: An Early Seventeenth Century Water Garden at Cope Castle in Kensington.*

[113] Ibid.

[114] Thomas Hale *A Compleat Body of Husbandry* Vol II (London: Osborne, Trye & Crowder, 2nd ed. 1758) p 111 online at
https://books.google.co.uk/books?id=XPdEAQAAMAAJ&printsec=frontcover&dq=editions:EpZv SVXfC3MC&hl=en&sa=X&ved=0ahUKEwi9gKC7rYvUAhWlI8AKHW- uBfwQ6AEIKDAB#v=onepage&q&f=false accessed May 2017

[115] Ibid., p 128

[116] Sir Francis Bacon, op. cit., p 489 quoted in P. Henderson, 'Sir Francis Bacon's Water Gardens at Gorhambury', *Garden History*, Vol. 20, No. 2 (Autumn, 1992), pp. 116-131

[117] As illustrated in J. Dixon-Hunt *Garden and Grove: The Italian Renaissance Garden in the English Imagination: 1600-1750* (London: Dent and Sons, 1986) p 146

[118] J. Barnett and T. Williamson *Chatsworth: A Landscape History* (Macclesfield: Windgather Press, 2005) p 59

[119] T. Mowl and B. Earnshaw *Architecture Without Kings: The Rise of Puritan Classicism Under Cromwell* (Manchester: Manchester University Press, 1995) p 63, p 100

[120] T. Mowl, lecture at Bristol University, 17.11.09

[121] T. Mowl *Gentlemen and Players: Gardeners of the English Landscape* (Stroud: Sutton Publishing, 2000) p 13

[122] Ibid., p 44

[123] Ibid., p 45

[124] Ibid., p 45. The evolution of the deer park into leisure arena has been alluded to above in relation to Kenilworth.

[125] Harris, op. cit., p 37

[126] Strong, op. cit., p 191

[127] C. Campbell *Vitruvius Britannicus, or the British Architect* (New York: Dover Publications, 2007) Vol. 2 Pl. 63-4

[128] S. Switzer *Ichnographia Rustica* Vol. 3 (London: 1718) p 118-119 online at
https://books.google.co.uk/books?id=87YgJ9EJjn0C&printsec=frontcover&dq=switzer+ichnogr aphia&hl=en&sa=X&ved=0ahUKEwiY5aGjuN3TAhVBI8AKHbNTDlgQ6AEIIjAA#v=onepage&q=s witzer%20ichnographia&f=false accessed May 2013

[129] D. Jacques & A. J. Van der Horst *The Gardens of William and Mary* (Bromley: Christopher Helm, 1988) p 99

[130] Ibid.

[131] These images can be found in the main Image Database for the dates 1680-1710 and 1711-1730.

[132] Jacques and Horst, op. cit., p 118-119

[133] North op. cit. p 24-5; Waldstein, op. cit., p 111; S. Eiche, 'Prince Henry's Richmond: the Project by Constantino de' Servi', *Apollo* (November, 1998), 10 -14

[134] J. Whitney, *The Genteel Recreation Or, the Pleasure of Angling, A Poem with a Dialogue between Piscator and Corydon* (London: 1700) in 'The Dedication', online at
https://books.google.co.uk/books?id=qvxJAAAAIAAJ&printsec=frontcover&dq=john+whitney& hl=en&sa=X&redir_esc=y#v=onepage&q=john%20whitney&f=false accessed July 2014

[135] J. Lawrence *The Modern Land Steward in which the duties and functions of stewardship are considered and explained…* (London: 2nd ed., 1806) p 314 online at
https://books.google.co.uk/books?id=PYcoAQAAIAAJ&printsec=frontcover&dq=the+modern+la nd+steward&hl=en&sa=X&ved=0ahUKEwiwxZmXgfTTAhWoI8AKHfSjA3sQ6AEIIjAA#v=onepag e&q=the%20modern%20land%20steward&f=false accessed May 2017

[136] Ibid., p 313

[137] E. Dennison and R. Iles, 'Medieval Fishponds in Avon', in M. A. Aston (ed*.), Medieval Fish, Fisheries and Fishponds in England*, BAR, British Series 182 (Oxford, 1988), pp. 205-28; pp. 205-08 quoted in C. Currie, 'Fishponds as Garden Features, *c.* 1550-1750', *Garden History*, Vol. 18, No. 1 (Spring, 1990), pp. 22-46

[138] Even though labour was relatively cheap, making water features would still cost money, and geometric ones would be more expensive to construct than non-geometric features.

[139] Reproduced in J. Cornforth 'Bowood, Wiltshire Revisited – 1', *Country Life* 8th June, 1972

[140] Reproduced in J. Cornforth, 'Bowood, Wiltshire Revisited – III', *Country Life* 7th September, 1972

[141] M. Girouard *Life in the English Country House: A Social and Architectural History* (Harmondsworth: Penguin Books, 1980) p 145

[142] G. Worsley *Classical Architecture in Britain: The Heroic Age* (London: Yale University Press, 1995) p 70

[143] Ibid., p 65

[144] Vanbrugh, in a letter of 18th July 1709, possibly to Lord Ryalton, in H. Dobrée & G. Webb eds. *The Complete Works of Sir John Vanbrugh* Volume 4 (London: The Nonesuch Press, 1928) p 35

[145] Vanbrugh, op. cit., in a letter of 22nd March, 1708, p 19

[146] C. Taylor, 'Somersham Palace, Cambridgeshire: a Medieval Landscape for Pleasure?' in *From Caithness to Cornwall: Some Aspects of Field Archaeology* eds. Bowden, M, MacKay, D. and Topping, P. BAR British Series 209, 1989 p 214

[147] HE listing: Temple Newsam Park and Garden

[148] Tortworth Court, in Atkyns's *The Ancient and Present State of Glostershire* (London: 1712)

[149] Harris, op. cit., p 233

[150] T. Williamson, personal communication, Feb. 2017

3. The Emergence of Lakes: 1700s – 1780s.

To date, a chronological survey of when lakes appeared, and in what number, has never been attempted. This chapter aims to redress this deficiency. In order to establish that chronology, the definition and classification outlined in the Introduction have been used: principally, geometric lakes and irregular lakes, with their various sub-divisions. Whilst it is accepted that this is an artificial classification imposed on bodies of water, it enables a statistical approach to be used, which greatly aids the analysis of how many lakes were made, and when. The story of lakes in the nineteenth century is taken up again in Chapter 6. In this overview of the evolution of lakes, individual designers have not been examined exhaustively. Rather, only people who made a pivotal contribution to the development of lakes, such as Vanbrugh and Brown, have been considered. The discussion of why lakes evolved, and the interpretation of trends, has been reserved for the next chapter.

In the first two decades of the eighteenth century, the concept developed that a *large* body of ornamental water was desirable, primarily for its visual qualities and leisure possibilities. This was a step change in landscape development. Whilst fishponds had existed in landscapes for millennia, sometimes on a very large scale, they were usually located in deer parks, with a few exceptions, not within the immediate vicinity of, and in view of, the mansion, and wanting a large piece of *ornamental* water was a new departure. Initially, this development happened within the context of geometric landscapes at places such as Welford, Boughton and Stowe, in *c.* 1700. These pieces of water still contained fish but their aesthetic role in the design was the primary factor. Unlike the water-gardens of the 1600s, these were large pieces of water, with a prominent role in the overall design of a landscape. Often called a Broad Water or Great Water, the term 'lake' was not used widely until the 1790s, as discussed in the Introduction.

3.1. Geometric Lakes.

These larger bodies of water were themselves initially of geometric form, but were, nevertheless, 'lakes' in the sense that they extended over an area of a hectare or more, and were clearly ornamental in intention. They were included in the designed landscape, and were 'displayed': they were often positioned to catch the eye, and ornamental planting accompanied them (Fig. 3.1), instead of

Garden Name	County	Dating	Dat	Feature1	Reference	Plan / Map	Lake siz
Staunton Harold 1	Leicestershi	c. 1680	1690	Lake geometr	EH, B I, Harris p 121	Pic Knyff c. 1702	1.1
Bredby	Derbyshire	1684-170	1698	Lake geometr	B I, C. Fiennes, 1698	EH entry	2
Welford Park	Berkshire	Late 17C	1700	Lake geometr	Eng Her,own websi	2 Plans	4 0.9
Burley on the Hill	Rutland	By 1701	1701	Lake geometr	Suamarez p 40, EH	Reservoir: 1970s	2 c. each
Seat of W Chaloner	Yorkshire		1707	Lake geometr	B I		1 c
Wanstead Park 1	Essex	By c.1708	1708	Lake geometr	EH Ornamental Wat	fort: early 18C	4
Boughton 1	Northampto	By 1709	1709	Lake geometr	Currie GH art p 28&	Moat not canal??	1 ? Octag.
Warnford Place 1	Wiltshire		1710	Lake geometr	Mowl Wi p76	No EH entry,And &	2
Ditchingham 1	Norfolk	c. 1713	1713	Lake geometr	Williamson Gazette	1713 map NRO	
Gamlingay	Cambridgesl	Beg 1712	1715	Lake geometr	Taylor Arch of Gdns	Mowl p83 plan 180	5
Wimpole 3	Cambridgesl	c. 1721	1721	Lake geometr	Mowl Camb p 27	Plan Bridgeman	2 octagona
Boughton 2	Northampto	1719-20	1723	Lake geometr	Currie GH article	See Crispin's e-ma	2 .4 0 .6
Stowe 2	Buckingham	1720s,30	1724	Lake geometr	Currie article p30	Strong p220, 218 pi	1 (0.8-1.8
Blickling Hall 2	Norfolk	1680s po	1725	Lake geometr	Taigel & W article p	Prideaux	0.9
Oatlands 1	Surrey	c. 1725-3	1735	Lake geometr	EH entry,Strong p 7	Engr. Bartholemev	1, poss.
Stowe 3	Buckingham	By 1735	1735	Lake geometr	J-S plan p 65		3 .9
Castle Hill	Devon	1730s	1738	Lake geometr	Strong p 200	Pic J. Lange 1741	1.4
Althorp 3	Northampto	By 1730s	1738	Lake geometr	EH	Eyre map 1779	(6)
Enville Hall 1	Staffordshir	1746	1746	Lake geometr	c. 1750 estate map	Haynes p 70	1
Hillington Hall 1	Norfolk	By 1756	1756	Lake geometr	Tom Gazetteer	Map 1756 NRO	1.3
Irmingland Hall	Norfolk	Mid 19C?	1850	Lake geometr	OS 1885 1840 tithe		1.2

Table 9. Table of geometric lakes, extracted from the Landscape Database.

being in the further reaches of the park. Most geometric lakes were aligned on axes, either relating to the mansion, or other features in the landscape, though occasionally they were not because of factors such as topography or being adapted from existing features such as fishponds, as perhaps at Staunton Harold. As Table 9 shows, geometric lakes were made before 1700, and it is likely that this figure would be higher, as the dates in the 'Dating' column indicate, if more accurate data were available.
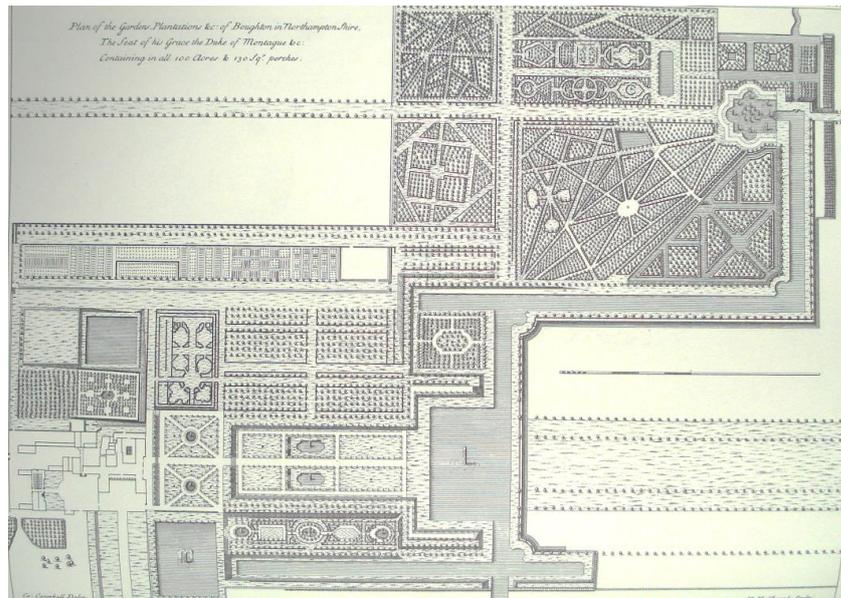
Fig. 3.1 Colen Campbell's plan of Boughton in *Vitruvius Britannicus*, 1725.[1]
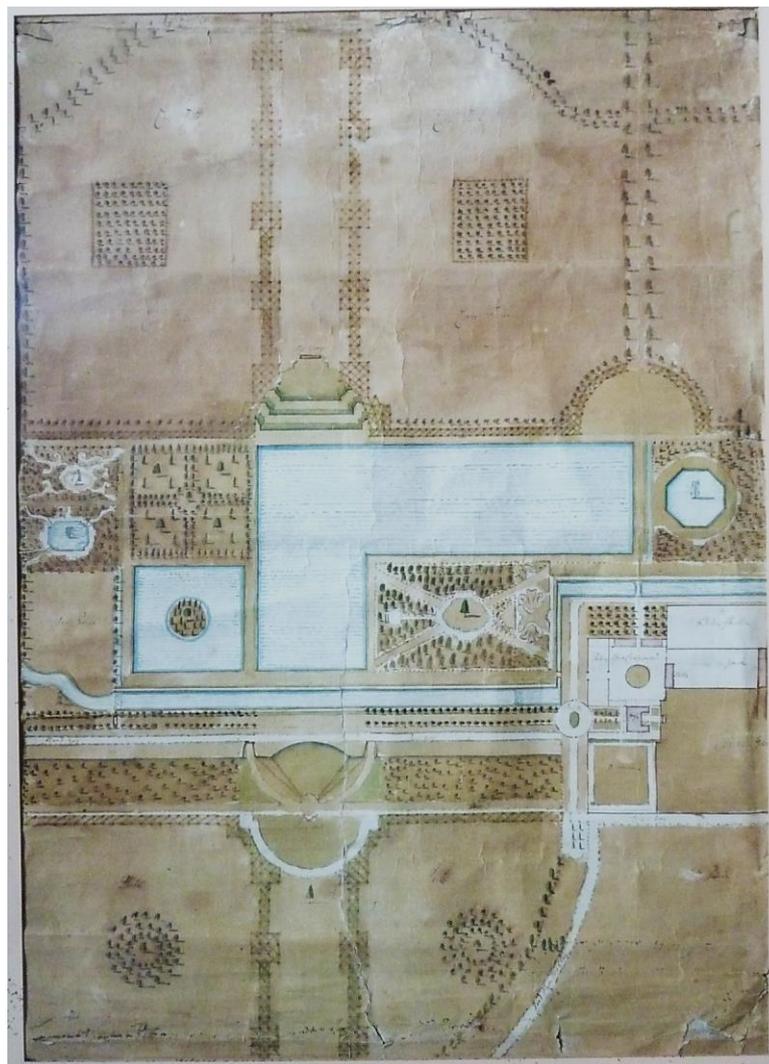
Fig. 3.2 Plan of Welford Park with a pencil label on the frame saying 'Circa 1700'.[2]

Welford, Berkshire (Fig. 3.2), lies along the braided channel of the Lambourn river, so water has always been plentiful. The house is two-thirds down the right hand side of the plan, and the main water features are the L-shaped lake, and an adjacent square pond with a central island, mirrored by a square garden. (Some of these features are extant.) This body of water is flanked by parterres with walks, with other features – the avenue and octagonal pond – aligned on it, and it is clearly ornamental: a semi-geometric lake of *c.* 4 h. The square piece of water is also 0.9 h, so is essentially another geometric lake. The layout at Boughton, Northamptonshire (Fig. 3.1), shows similar characteristics, with adjacent parterre gardens. Here, the main body of water is a geometric lake of 2.4 h. What is noticeable about these two landscapes is that the lakes have been inserted into the design by substituting them for parterres. A 1715 estate survey of Boughton shows this: there is a parterre where the northern part of the lake was subsequently made (*c.* 1720).[3] This was almost the only way to incorporate large pieces of water, other than canals, into formal geometric landscapes without disrupting the geometry. It was only possible in landscapes where the axes extended at right angles, to the house or each other. Other requirements were a fairly flat terrain, a water supply, the wealth to afford making lakes of this size, and a landscape large enough to be able to devote a 'parterre' to water without it looking out of proportion in the design as a whole, or reducing the amount of productive land to an unacceptable extent.

Of the eleven other geometric lakes which were constructed between *c.* 1700 and 1730 (Table 9), two were trapezoidal in shape: Gamlinghay (5.2 h, Fig. 3.3) and Bredby (2 h, Fig. 5.9). Whilst it could be argued that Bredby was basically a fishpond, as it lies outside the main geometric landscape, the island/fountain in the middle, the decorative avenues on either side, and its axial alignment in relation to the rest of the gardens, belie this, or at least suggest this was only a part of its function. At Gamlinghay, the sophisticated geometric lake (made by *c.* 1715) occupies prime position in relation to the house, lying across the main axis from the house through the park, and completely interrupting it.[4] However, from the house, the eye would have travelled across the lake, out into the park, and then along the main vista, as had probably happened before the lake was made. Other geometric lakes were
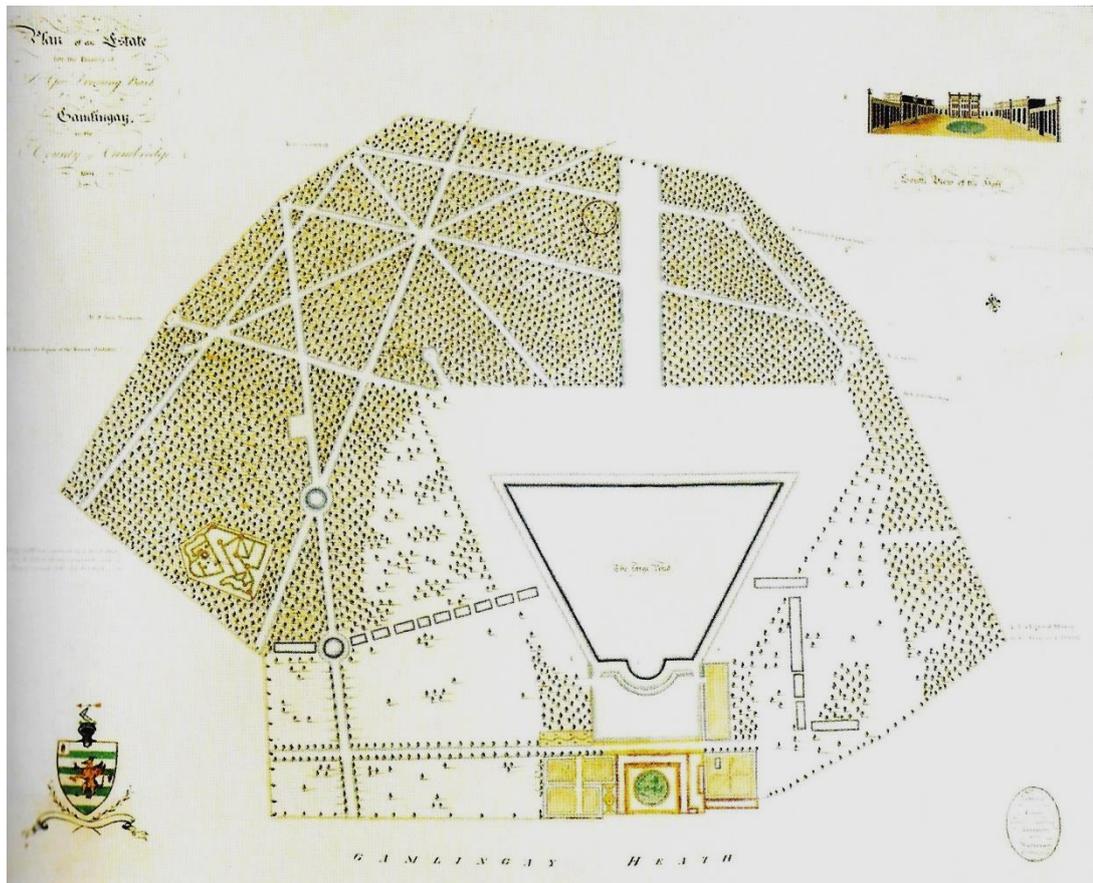
Fig. 3.3. 1801 survey of Gamlinghay Park, Cambridgeshire.[5]

octagonal in shape: Stowe (*c.* 1 h), Wimpole (2.5 h) and Wanstead (4 h). Stowe and Wimpole were at some distance from the house but were also aligned on a direct axis to it. A number of bodies of water included in the database fell below the strict one hectare criterion, but were nevertheless large and prominent features of the landscape. Those at Combs Hall (0.7 h) and Blickling (0.9 h: the Wilderness Pond) were rectangular, whilst the one at Claremont (0.6 h, or 1.5 acres) was round. Like the rectangular pond at Bowood (*c.* 1725, possibly 0.4 h, or 1 acre), the round area of water at Claremont was subsequently the site of a larger body of irregular water.

Of particular note amongst these geometric lakes is Staunton Harold, probably laid out in the 1680s.[6] As depicted in *Britannia Illustrata,* it has numerous geometric ponds, many with fountains, and others, no doubt primarily fishponds, though geometric. What is unusual is the large, rather 'fat' canal (Fig. 3.4). It dwarfs the landscape and covers *c.* 1.1 h, retaining much of its

Fig. 3.4. Staunton Harold, Leicestershire, in *Britannia Illustrata*.[7]

original shape on today's OS map. Whatever its role in fish production, this piece of water has been placed alongside the church and various adjacent ponds have been subjugated to its imperative. There is ornamental planting around it, and the main approach to the house passes directly across it. Whilst its antecedents may well be a medieval fishpond, by 1707 it is primarily ornamental.

It is also interesting to note in relation to geometric lakes, that the replenishing source of water is evident on today's OS maps, confirming their eligibility as lakes, according to the definitions set out in the Introduction. At Wimpole, it is this requirement for a replenishing source which apparently accounts for the 2 h octagonal basin being placed 1.6 km from the house, as that is where the stream is.

3.2. Semi-geometric Lakes.

The semi-geometric lakes which emerged from *c.* 1700–1730 were developments of the geometric lake, and like them, not many survived the changing fashions of the eighteenth century. The main difference between them was that they had straight sides (or arcs) but were not symmetrical. Because

geometric landscapes fell out of fashion, few being made after the 1740s, not many are known, and even fewer are extant. Semi-geometric lakes are of interest because they are evidence that landscapes were changing at this juncture, becoming less symmetrical as well as larger, and the role of lakes in that change will be discussed fully in Chapter 4.

The lakes made at Blenheim (by 1724) and Wolterton (by 1732) were semi-geometric. A sketch of the Blenheim lake by Pierre Jacques Fougeroux in *c.* 1728 (Fig. 3.5) shows a lake of *c.* 3.5 h, with sides composed of straight lines or geometric arcs, giving an overall geometric impression, but an asymmetrical plan view. Stukeley's sketch of 1724 (Fig. 3.6) shows the canal leading from this lake to a circular pond, but not the lake itself clearly. This semi-geometric lake
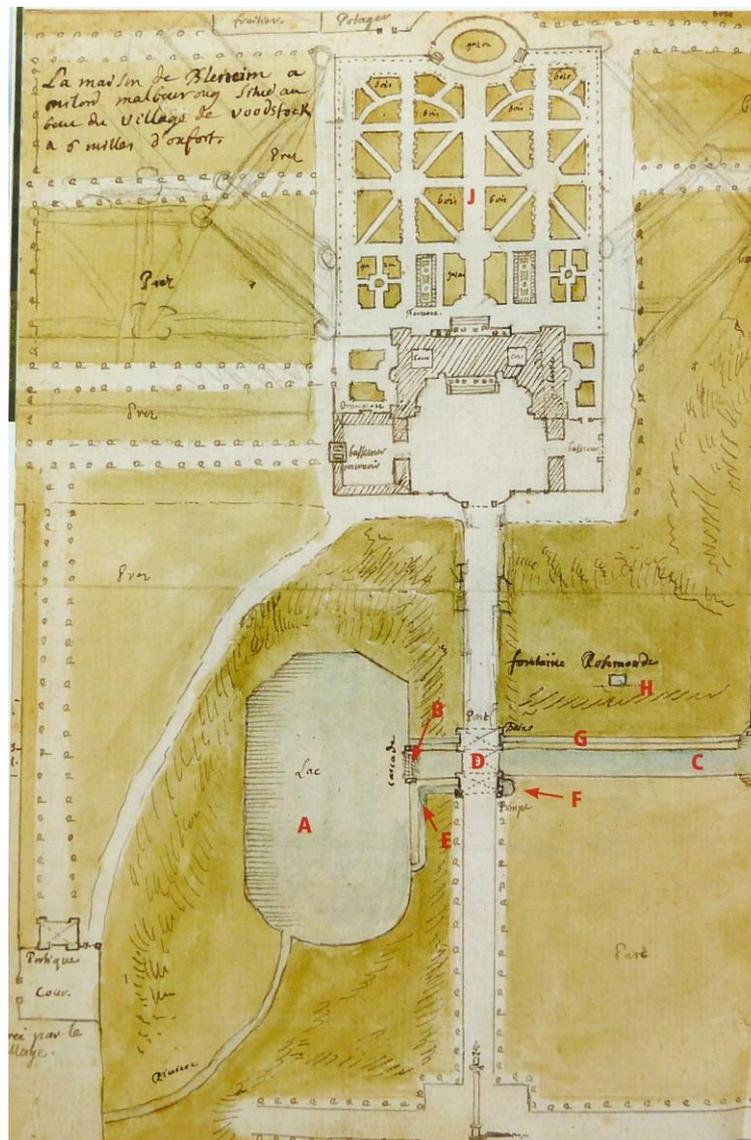
Fig. 3.5. Blenheim Palace: *c.* 1728 sketch by a French visitor, Fougeroux, showing Armstrong's lake of *c.* 3.5 hectares.[8]

Fig. 3.6. William Stukeley's sketch of Blenheim 'Castle', 9th September, 1724.[9]

was created under the eyes of Sarah, 1st Duchess of Marlborough, and the house, *c.* 155 m from the lake, looked down a steep slope at it. As is well-known, Vanbrugh designed the palace and the bridge over the River Glyme, but the disagreement between Vanbrugh and the Duchess led her to turn to Colonel John Armstrong after the Duke's death in 1722. He was responsible for the creation of the semi-geometric lake and the canals leading from it.[10] These were nearing completion in 1725, as Sarah describes in a letter to a friend. The wording of this letter is of particular interest:

> the Lake, Cascade, Slopes above the Bridge are all finish'd and as
> beautifull as can bee imagin'd, the Banks being cover'd with the
> most delightful Verdure; the Canals are also finish'd the whole
> length of the Meadow[11].

This was an early use of the term 'lake', Vanbrugh being possibly the first person to use it in relation to man-made water in his letter about Blenheim in 1709, quoted in the Introduction. In *Vitruvius Britannicus* 1725, Colen Campbell attributed his plan of the landscape at Blenheim to Vanbrugh, and this will be discussed below.

The semi-geometric lake at Wolterton, made *c.* 1727 (Figs. 1.4 and 3.7), shows how these lakes could be adapted to fit into a geometric landscape, and almost certainly they were cheaper to make as they could accommodate the

topography to some extent, rather than the existing earth form having to be modified. It was made for Horatio Walpole, by Charles Bridgeman.[12] The

Fig. 3.7. The semi-geometric lake at Wolterton, Norfolk, OS map, 2017.

interesting point about Wolterton is that it continued the axis extending through the house, although it bent to accommodate the topography. From Fig. 3.7, it can be seen that the rising ground, indicated by the 30 m contour line, constrained the shape of the lake on the eastern side. A stream entering on the western side also influenced the shape. Apart from The Serpentine (discussed below), the nature and extent of Bridgeman's work with large areas of water is uncertain. The basin at Claremont covered 0.6 h, so was a sizable piece of water, but not lake sized. It is interesting to note that Wolterton was angled in a similar way to The Serpentine (begun 1730).

3.3. Irregular Lakes.

Irregular lakes began to be made in the 1720s, as Table 10 shows. The full table can be found in Appendix 1.1. While landscapes were intrinsically

Garden Name	County	Dating	Dat	Feature1	Featur	Reference	Lake siz
(Welbeck Abbey)	Nottingham		1703	Lake irregular	Vanbrugh	Copley letter	16 (40 a)
Thoresby Hall 2	Nottingham	1718-24	1719	Lake irregular		Tillemans pic, 1726	19.5 / 48
Castle Howard 1	Yorkshire	Beg. 172:	1724	Lake irregular	Vanbrugh	1727 Est map Vit. Br	2 .5 prob
(Houghton Hall 1)	Norfolk	1720	1725	Lake irregular		Williamson Gazette	8 .6 (21 pl;
Holkham Hall 1	Norfolk		1727	Lake irregular		Williamson Gazette	8 .3
Londesborough 2	Yorkshire		1729	Lake irregular		Neave & Turn. P 51	4.5
Wentworth 3Wood		1730s	1735	Lake irregular		Dog Kennel Pond: p	
Witley Court 1	Worcestersh	1730s	1735	Lake irregular		EH Front Pool	3.6 When?
Cirencester 2	Gloucestersl		1736	Lake irregular		EH: made by Bathur	3 .2
Claremont 2	Surrey		1737	Lake irregular	Island	Rocque plan, EH	3
Wilton 5	Wiltshire	By 1746	1738	Lake irregular		Mowl GH 44(2) p28	5 .4
Exton Park 2	Rutland	By 1739	1739	Lake irregular			1.2, 1
Painshill 1	Surrey	c.1740	1740	Lake irregular		Symes p 22:	1
Fawsley 1	Northampto		1741	Lake irregular		1779 Eyre's map	10 .0, 2
Wanstead Park 4	Essex	Mid 18C	1745	Lake irregular		Picture, Watts	1.1
Wakefield Lodge	Northampto	c. 1745	1745	Lake irregular	Brown	Binnie p62	8 .6 c
Ditchley Park	Oxfordshire	1740s	1746	Lake irregular		EH: conv. Fpond, ht	1.9
Newstead Abbey 1	Nottingham	in 1740s	1747	Lake irregular		Felus p30, EH	9 .3
Grimsthorpe 3	Lincolnshire		1748	Lake irregular	Grundy	Binnie p 70 Hinde p	16
Newnham Paddox :	Warwickshir		1748	Lake irregular	Brown	Hinde p 29	1.6 = 0.8, v

Table 10. Table showing the chronological beginnings of irregular lakes, extracted from the Landscape Database.

linear, with symmetry as the underlying ethos, it was very difficult to make lakes in them without disturbing those things. Ornamental water basically had to be in the form of canals to be feasible in the design. Exceptional circumstances, such as wealth and topography did enable some geometric lakes to be made, as we have seen at Boughton, Welford and Staunton Harold: either the land was virtually flat, or the patron had enough money to pay for substantial earth moving. However, geometric water usually had to be fairly small, not just because it was expensive to make but because it would not fit easily into the overall design. Once irregular ornamental lakes started to

become fashionable the geometric straitjacket did not fit, and flexibility or unbalancing in landscape design began to increase.

Irregular aspects in garden and landscape features, such as sinuous paths in wildernesses, irregular outlines to plantations, and irregularly shaped ornamental water began to appear in the late 1710s. By the later 1720s irregular elements were becoming increasingly significant, as Badeslade's bird's-eye view of Hamels (Fig. 4.3) illustrates, as well as plans published by Switzer (Fig. 3.8) and Batty Langley. Wildernesses and plantations were familiar
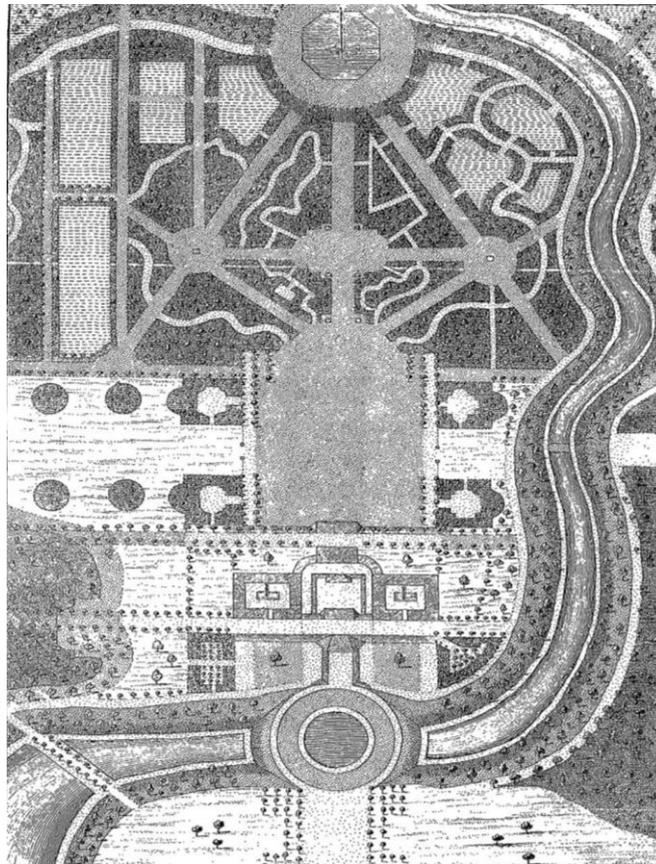
Fig. 3.8. A design for an estate by Stephen Switzer in *Ichnographia Rustica*.[13]

elements, albeit it in the process of changing, but the first truly irregular element to appear was the water. It changed out of all recognition, in size and shape, during this period (1720s-30s), becoming completely irregular - what we would call a 'lake' today.
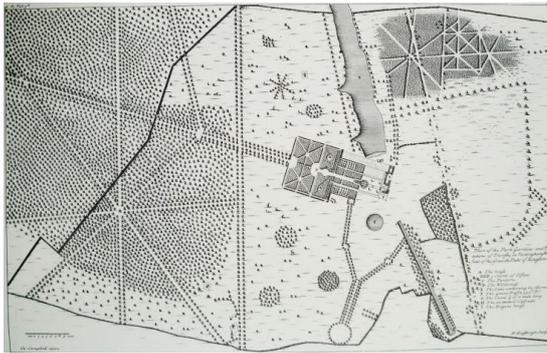
Fig. 3.9. Thoresby, Nottinghamshire, 1725. The lake was made *c.* 1719 (20 h) for the 1st Duke of Kingston.[14]
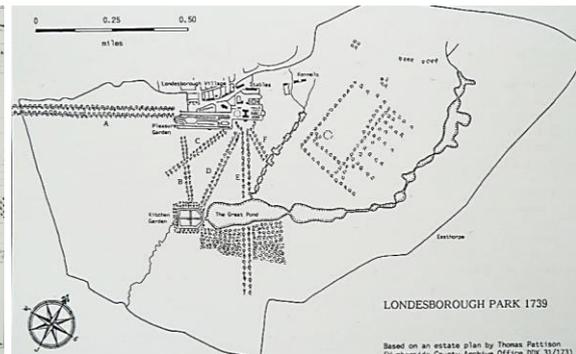
Fig. 3.10. Londesborough, Yorkshire, 1739. The lake (4.5 h) was made in 1728-30 for Lord Burlington.[15]

Fig. 3.11. Castle Howard, Yorkshire, 1727. South Lake (2.5 h) was made in 1724 for the 3rd Earl of Carlisle.[16]
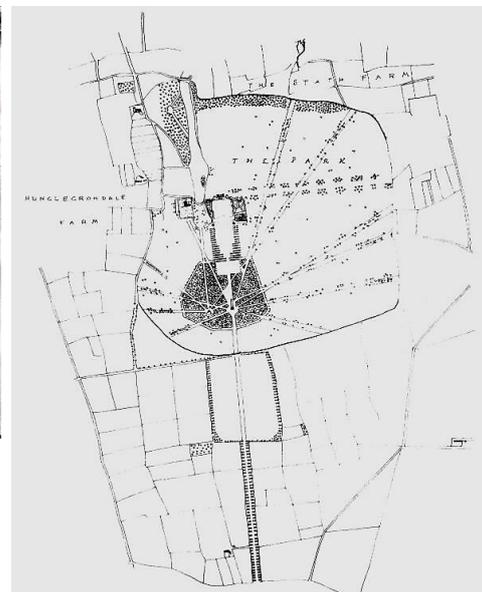
Fig. 3.12. Holkham, Norfolk, 1744-55. The lake (8 h) was made by 1729 for Thomas Coke.[17]

(Larger versions of these maps appear below.)

An examination of the plans of places such as Castle Howard, Holkham, Londesborough and Thoresby Hall, reveals that irregular lakes were made in otherwise geometric landscapes (Figs. 3.9-3.12), which is, perhaps, surprising. Whilst it could appear that these landscapes represented established geometric designs into which forward thinking patrons inserted informal lakes, this was

not the case. In all these cases, the geometric avenues and vistas, or parterres were created at broadly the same time as the irregular pieces of water. At Thoresby, for example, the formal parterres and wildernesses to the south of the house were planted shortly before, or at the same time, as the lake was made.[18] The same can be said of Holkham – a new landscape which Thomas Coke set about creating in the mid-1720s. At Castle Howard (Fig. 3.17), the hybrid lake was being made at the same time as the highly geometric and formal parterres lying to the south of the new house.[19] The lake actually elbows its way into this parterre – wilderness area. The obvious thing to do would have been to line up the western edge of the lake with the eastern edge of the wilderness, thus achieving a much more regular design. However, then the lake would not have been so visible from the house. At Londesborough (Fig. 3.10), Burlington inherited a geometric landscape in 1704, and in the 1720s, he created a formal parterre near the house and extended the southern axis into the wider landscape with a *pate d'oie* and kitchen garden flanked by formal plantations.[20] Into this, he inserted a chain of *irregular* lakes, and a chain of small, semi-geometric ponds. Clearly, these men (Kingston, Carlisle, Coke and Burlington) were happy to put large areas of irregular ornamental water into their largely formal landscapes at this time. In contrast, in 1707, it had not been acceptable, as Staunton Harold and the panoply of landscapes in *Britannia Illustrata* clearly illustrate. Attitudes had changed significantly in two decades. It is also worth noting that in these four landscapes it was also acceptable for large areas of woodland to be irregular in outline. Possibly this was because such areas tended to be very large, as at Thoresby and Castle Howard, and so the lack of geometry was less easily perceived. (Badminton in *c.* 1700 also shows this.) Geometry was imposed on woodland by straight rides and vistas being cut through it. Obviously, this could not be done with water, so it is all the more surprising that these lakes were not geometric in shape. It might be expected that the creator would restrict the size of the lake to one which he could afford to make geometric, which appears to have been the case at Boughton in the 1720s. Thus, the conclusion must be that the irregularity was deliberate.

These landscapes are significant and will be examined in some detail. Thoresby Park in *c.* 1719 demonstrates the increasing scale of landscapes, and the effects it had (Figs. 3.13-3.15). It also represents a pivotal point in the story

of lakes: the first known irregular lake was made there. Evelyn Pierrepont, the 5th Earl of Kingston-upon-Hull (1665-1726), inherited the estate from his father

Fig. 3.13. 1690 estate map of Thoresby Park, Nottinghamshire.[21]

in 1690 (Fig. 3.13). The formal gardens occupied an area of *c.* 7 h, with the River Meden to the west in the park, among trees. A plantation with geometric rides lies to the south. By the time Campbell published his plan in 1725, the park had been considerably extended to the north and significant plantations with
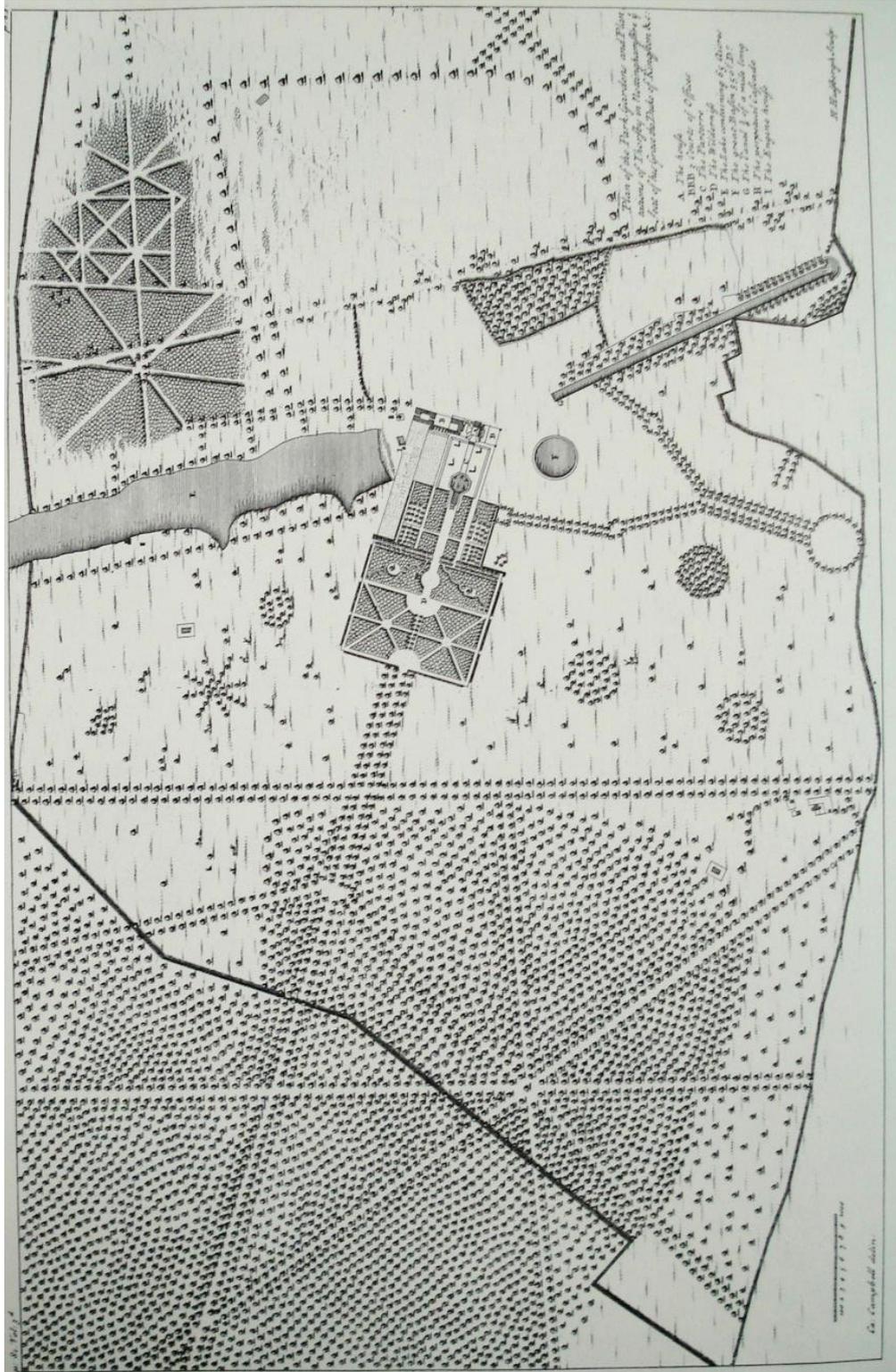
Fig. 3.14. 1725 plan of Thoresby Park in *Vitruvius Britannicus*.[22]

geometric rides made to the south. A new house had been built, designed by Campbell, and the formal gardens extended to cover *c.* 18 h. In these gardens, a formal cascade fed into an octagonal pond facing the house, and the canalised Meden in the gardens was covered over, but reappeared to the east. Into this geometric but unbalanced landscape the large irregular lake has been inserted. That these changes were carried out much as per the Campbell plan can be seen on an estate map of 1738 (Fig. 3.15). To the north-west, the estates of Clumber

Fig. 3.15. 1738 estate map of Thoresby Park, Nottinghamshire.[23]

and Welbeck adjoined Thoresby, and a close examination of this map revealed that the Carburton Forge Dam appears on it (on the left edge of the map). The

Thoresby lake extended just beyond the pale, but was enlarged by *c.* 1750, when it became 25 h (62 acres), very close to the 65 acres mentioned by Campbell on his plan, after more land had been acquired.[24] By 1738, three detached areas with sinuous paths had been created, reminiscent of Langley's plans, and suggestive of Rococo gardens. The area covered by the lake was low-lying and adjacent areas appear today (2015) to be poor-quality, infertile land, which may account for the willingness of the Duke of Kingston to make such a large lake. The scale of this landscape is not easy to grasp from the plans: the distance from the house to the southern end of the formal gardens in 1738 was around 0.8 km (half a mile). Subsequently, Brown drew a plan for Thoresby, and Repton produced a Red Book (Fig. 6.5), with many of his suggestions being implemented. Thoresby is significant for two reasons. It clearly demonstrates the aspects of landscape developments which have been discussed above: the increase in scale of those landscapes, and the unbalancing which was occurring. Secondly, in *c.* 1719, it was the very first irregular lake to be made.[25] The dating is reasonably certain as a Peter Tillemans painting showing the lake, new house and new stables, was delivered to Kingston a week before he died in March, 1726, and estate accounts show a corresponding amount of labour for 'levelling' for the period 1718-19.[26]

Kingston is a man who has attracted very little notice to date but he was one of the foremost men of his time, politically, culturally and socially, and he ranks alongside Burlington and Coke in his influence on the development of lakes. A prominent government member (Privy Councillor and Lord Privy Seal), he was a Whig and supported George I, receiving a dukedom in 1715, and the Garter in 1719.[27] His library shows that he was abreast of current thinking about landscapes: it included copies of Bacon's works, Addison's *Remarks*, Evelyn's *Sylva*, d'Argenville's *Theory and Practice of Gardening*, Le Pautre's *Ornaments for Architecture*, and *Designs for Fountains*, Palladio's I *Quattri Libri*, as well as works by Shaftesbury and Temple.[28] It is not an exaggeration to say that he, along with Carlisle (his close friend) and Coke, set the trend in landscape fashion which led to the emergence of irregular lakes. It is not known who designed his landscape, but it is possible that Vanbrugh had a hand. Kingston, Carlisle and Vanbrugh were all members of the Kit Cat Club, and Vanbrugh mentions Kingston several times in his letters (1703).[29] He

(Vanbrugh) also planned a 40 acre lake at neighbouring Welbeck for the 1st Duke of Newcastle-upon-Tyne (John Holles, d. 1711), who was related to Kingston.[30] Though that lake was not made, Vanbrugh as an inspiration, or designer, at Thoresby is a reasonable possibility.[31] His contribution to landscape design, and lakes in particular, will be discussed fully below.

Holkham was also laid out in the 1720s. Like Carlisle, Thomas Coke had made the Grand Tour, and met William Kent in Italy.[32] He returned in 1718, and in 1727 began making an irregular lake by damming a small river which ran through the park.[33] This was well before construction of a new house began (1734). What is of note is that Coke then laid out a largely geometric landscape, in the general line of the north – south axis of the irregular lake. South of the house, a lawn and basin gave onto a large grassed area bordered by a stepped plantation, leading to Kent's Obelisk Plantation, cut through with rides and vistas, begun in 1729. These axes were carried out into the wider parkland. Again, a landscape was being created with irregular and geometric elements alongside each other. What Coke created was a transitional geometric landscape, which had a Palladian mansion at its centre, a good sprinkling of

Fig. 3.16. Holkham House, Norfolk.

classical buildings, and an irregular lake.

The man who was prominently connected with some of the irregular lakes which appeared in the 1720s was Sir John Vanbrugh. He was the creator of the irregular South Lake at Castle Howard in 1724, as his letter to Carlisle in February attests:

I have the new piece of Water much at heart; I hope 'twill do

well but I doubt there's no certain proof till the dry comes. A

vast deal of Rain has been this way.[34]

He was obviously relieved to hear, in March, that the lake was filling satisfactorily: "The rising of the Water in so hopeful a manner, is indeed a Cordial to me;"[35] Clearly, Vanbrugh was not as confident about lake building as about house building as, on 16th December, 1725, he wrote to Carlisle again: "I am glad I hear of no mischief about your Water under Ray Wood So I hope your Dam holds firm."[36]

Fig. 3.17. Detail of the 1727 estate map of Castle Howard. South Lake.[37]

Fig. 3.18. Castle Howard in *Vitruvius Britannicus* 1725. The lake is absent.[38]

This lake of Vanbrugh's, which was *c.* 2.5 h, completely broke with the geometric tradition in being a most unusual shape. It was generally rectangular, but with a 'frilly' outline. Viewed from the terrace bounding Ray Wood, or from the Temple of the Four Winds, it may well have seemed to have a pleasing irregularity. Certainly, those features provided vantage points from which to look down on

Fig. 3.19. South Lake, Castle Howard, 2016.[39]

the lake. In an aerial view today, (Fig. 3.19) what appears to be part of the original scalloped edge of the lake can be seen on the north side, under water, and on the south-east edge, suggesting that the original lake was constructed much as seen on the 1727 estate map. The outline or margins of this lake have been altered numerous times since then, including being made more formal, possibly in the 1740s, and also the late 1840s.[40] The ground of Ray Wood rises fairly steeply and probably would have afforded views over the lake from some of the paths which wound through it. The design of Ray Wood was remarked on by contemporaries, as Charles Saumarez Smith has pointed out.[41] What he fails to recognise is the importance of the lake. It provided a visual and physical link between the formal wilderness and the perceived informality of Ray Wood. Defoe gives some idea of how contemporaries viewed the landscape, when he visited Castle Howard on his tour (1724-7) through Britain: [Ray Wood] "is as great a wonder in its Kind, as Mr. Aislabie's Park."[42] As at Thoresby, he does not see fit to comment on the lake.

At Castle Howard, Carlisle was one of the first people to include irregular features in his landscape. In the main Image Database, only Moor Park, Surrey (1697), shows similar irregular paths in a garden of an earlier date (Fig. 3.20).

It may be relevant that Carlisle visited Sir William Temple at Moor Park in December, 1697, his (Temple's) essay *Upon the Gardens of Epicurus* having been published in that year.[43] As Saumarez Smith points out, both Temple's actual gardens and his opinions on gardens were predominantly regular and ordered, but both contained noticeably irregular elements: the engagement with Chinese gardens and *sharawadgi* in the *Essay*, and a small garden at Moor Park lying alongside the river, between the formal gardens and the park, which had very
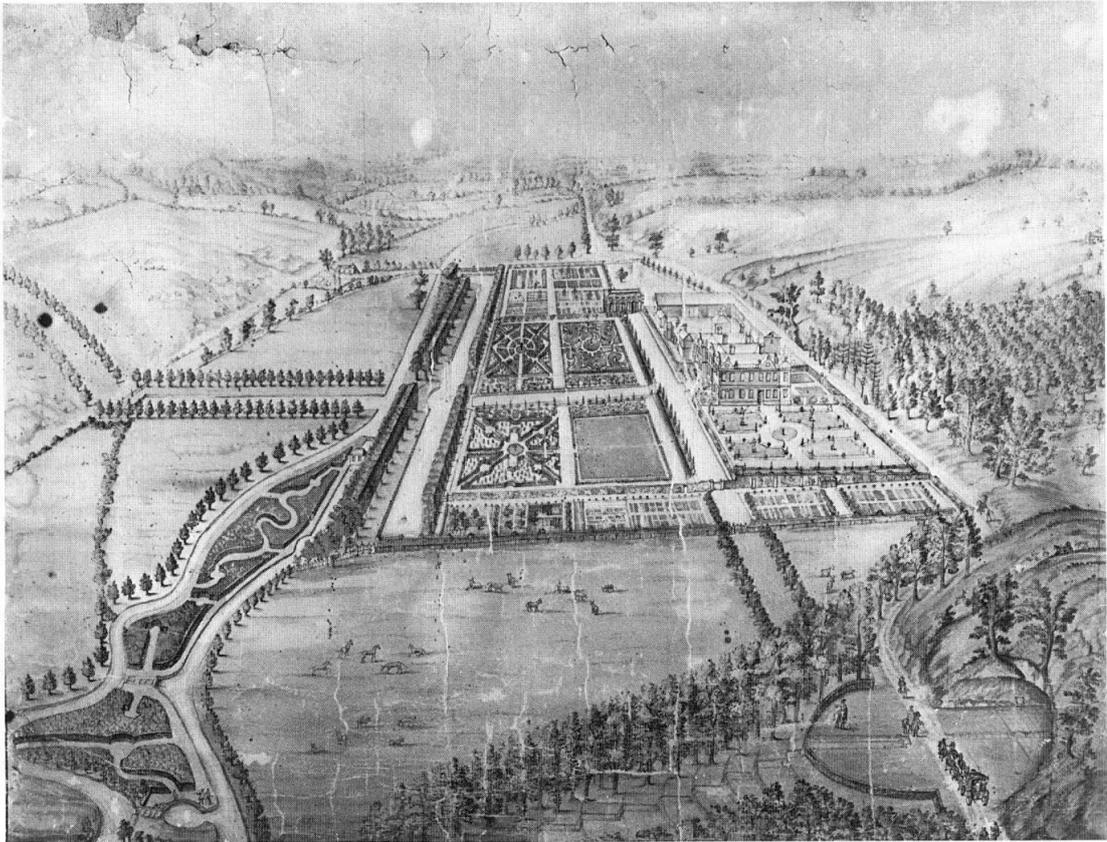
Fig. 3.20. 1697 painting of Moor Park, Surrey.[44]

sinuous paths.[45] Clearly, Carlisle was interested in the irregular aspects of Temple's work. Looking at the date of Carlisle's visit, and the construction of Ray Wood (*c.* 1705-8), we can see a time lag of about ten years between a possible source of inspiration, and accomplishment.

Apart from Castle Howard, what other evidence is there for Vanbrugh designing irregular lakes? He apparently tried to design one in the Glyme valley for the Duke of Marlborough, as Figs. 3.21 and 3.22 show, but was thwarted by Sarah, Duchess of Marlborough.
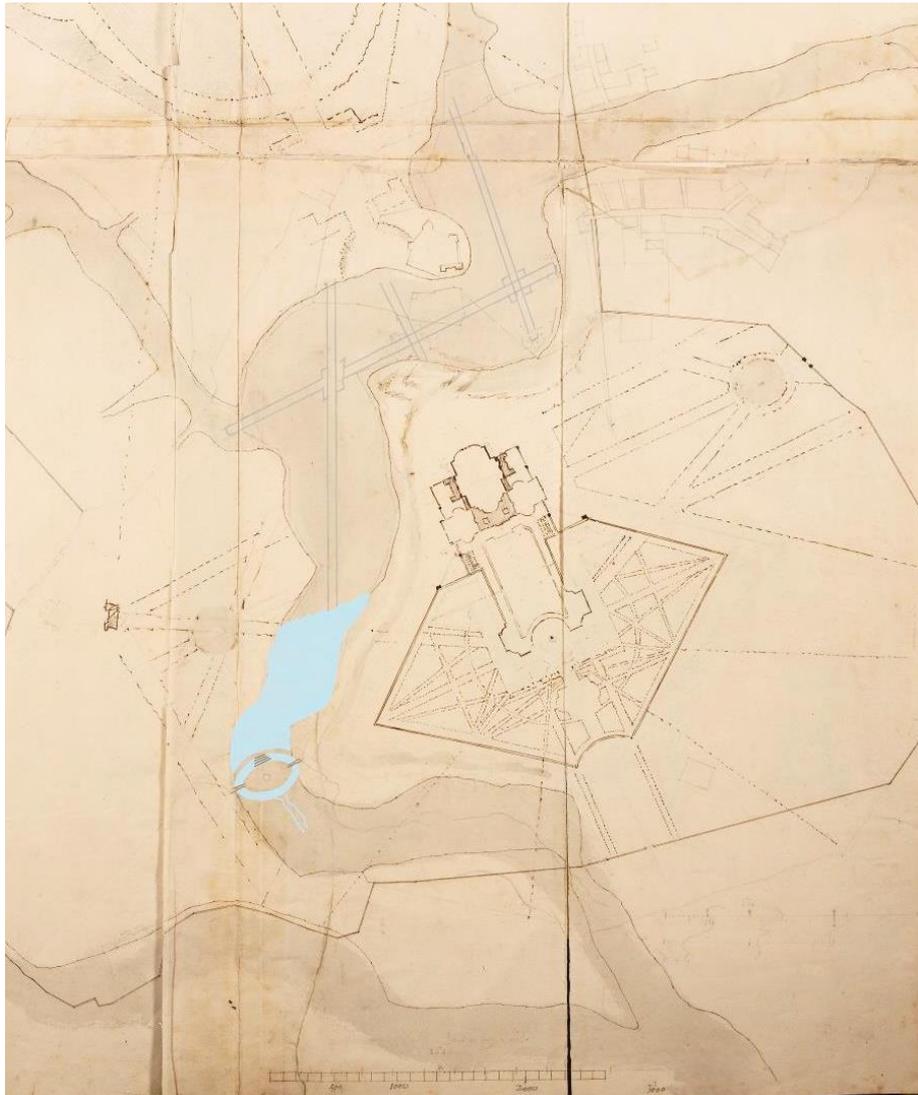
Fig. 3.21. *C.* 1705 (early) Vanbrugh plan of Blenheim. Lake of *c.* 3 h; colour added by author.[46]

Fig. 3.21 shows geometric canals and an irregular lake, possibly with a cascade, pencilled in on the plan. Vanbrugh's bridge is merely indicated in pencil. As Caroline Dalton points out, the later plan (Fig. 3.22) seems to have been drawn in order to show the planned canals and lake in Fig. 3.21 properly, the later one being more formal. Thus, "they must have been part of Vanbrugh's original geometry and not devised by Colonel Armstrong in the 1720s, as has been previously thought."[47] The outline of the bridge can also be seen; the foundation stone was laid in June, 1705.[48] Remains of the Palace of Woodstock are also shown (demolished by *c.* 1719).
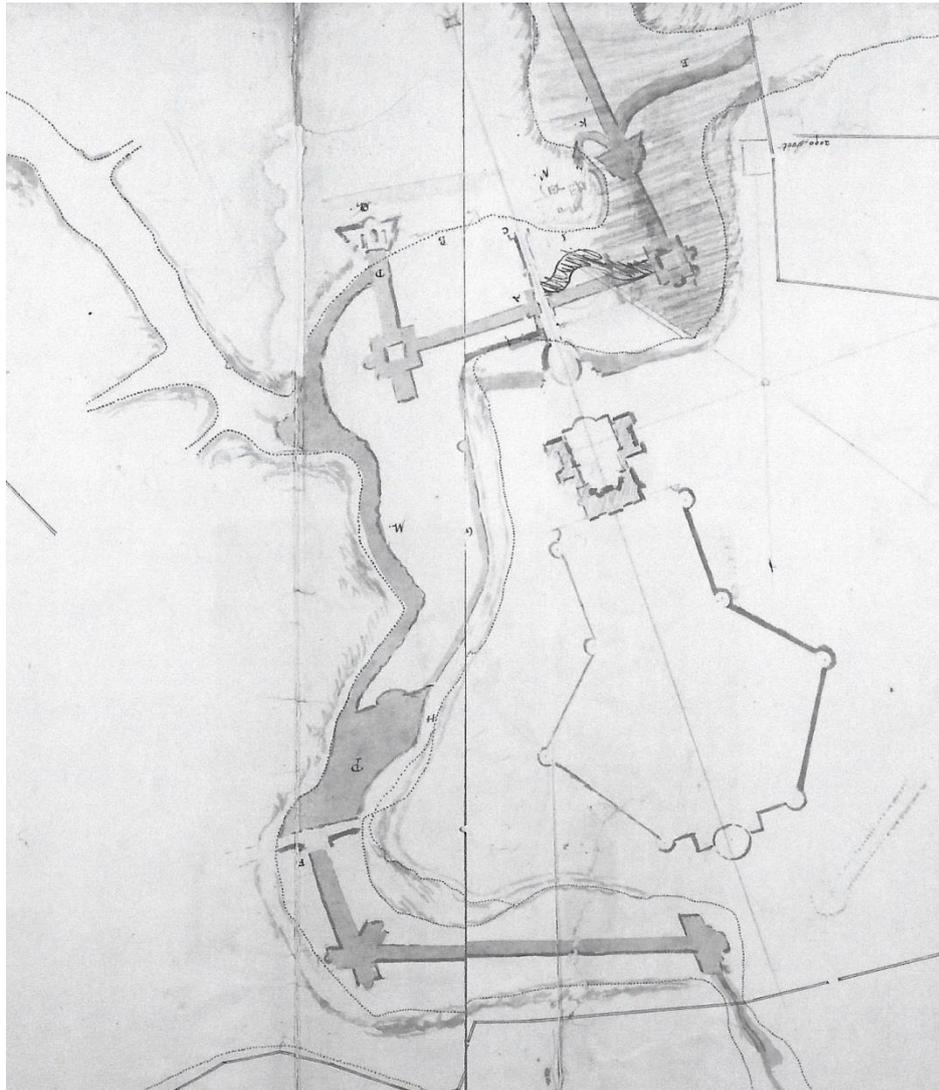
Fig. 3.22. 1705-7 Vanbrugh plan, later than Fig. 3.21.[49]

Fig. 3.22 has more of the appearance of a hybrid lake, suggesting that Vanbrugh modified his original design to make it more palatable to the Marlboroughs. This second plan, shows the more regular lake as part of a series of canals replacing the River Glyme. It is almost as though two hands are at work in this design, as the 'canal' immediately north of the lake is quite informal, whereas the other canals are very formal, and hints at a 'tussle' occurring between patron and designer. Interestingly, at a later date, someone has roughly sketched in a lake to the east of the bridge, approximately where the Duchess had one made in 1724. Presumably, this was Vanbrugh, as it is a similar shape to the eastern lake in Fig. 3.23.
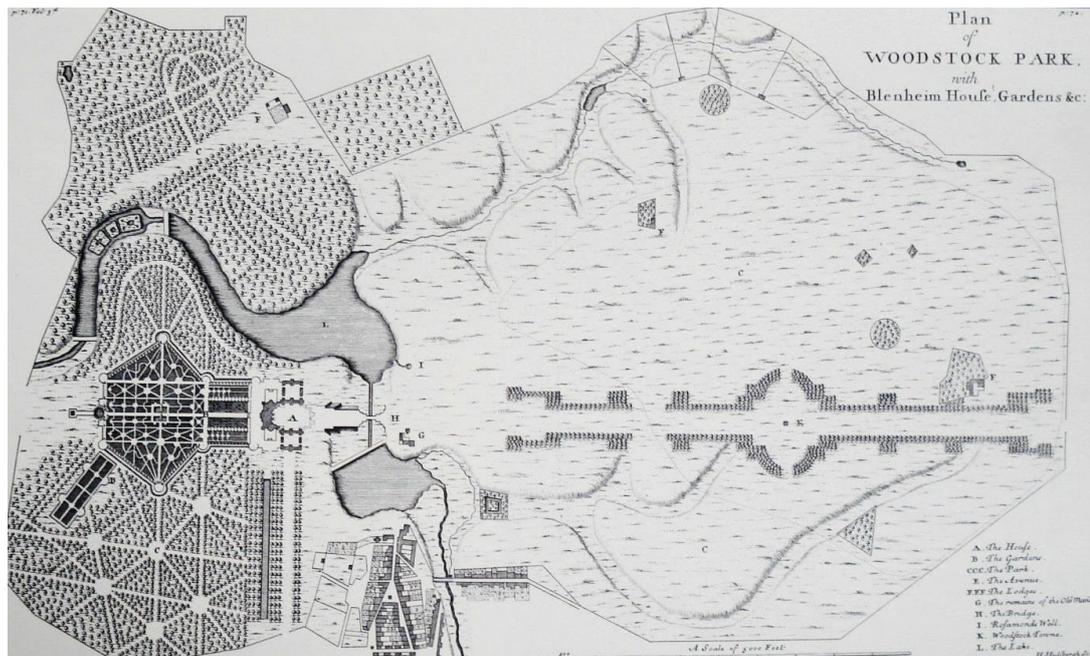
Fig. 3.23. Plan of Blenheim in *Vitruvius Britannicus*, Vol. III, 1725.[50]

Of more significance is the plan of Blenheim (Fig. 3.23) which Campbell attributed to Vanbrugh. In his description of the plates of Blenheim in Vol. 1 (1715), Campbell emphasises his debt to Vanbrugh, saying:

> I present the Curious with all the Plans and Elevations, by the particular direction of *Sir John Vanbrugh*, who gave the Designs of this Magnificent Palace ... most generously assisting me with his Original Drawings, and most carefully correcting all the plates as they advanced [...] Here are noble Gardens; a stately Bridge, with an Arch 100 Foot in Diameter[51].

The two irregular lakes are most striking, pre-dating Brown's lake (47 h) by almost 50 years. The plan testifies to Vanbrugh's precocious vision, and demonstrates that he was a pioneer of the concept of a man-made lake as we think of it today: an irregular lake. The planned lake at Welbeck (16 h), and his possible influence at Thoresby (20 h), seem much more plausible in this light. An important point to note is that while in general Vanbrugh planned his irregular lakes in the context of a geometric landscape, albeit one which was becoming unbalanced, in his design for a lake at Blenheim and his intention to retain the ruins of Woodstock Manor, he embraced concepts which did not become widely popular in landscape design for another 50 to 80 years: irregular

lakes, and the Picturesque. He undoubtedly sowed the seed of the concept of irregular ornamental water in the top echelons of society, and it began to bear fruit in the 1720s and '30s.

Vanbrugh's early use of the word 'lake' in his plans and letters to patrons – the word appears on the plan above – undoubtedly helped to introduce the word and, more importantly, the concept. Use of the term 'lake' to mean man-made ornamental water was unusual until the 1750s, and then it was not widely used, although some such as Switzer, Stukeley, the Duchess of Marlborough (all connected with Blenheim), and Pope, began to use the term from the 1720s.[52] It is relevant to note that Defoe, in his *A Tour Through the Whole Island of Great Britain by a Gentleman,* written in the 1720s but published in 1742, consistently referred to lakes as 'a great piece of water' or 'a noble piece of water' except when he was describing the water at Stowe, Grimsthorpe, Newstead Abbey and Blenheim, and at these places he refers to 'lakes'. It is surely no coincidence that these were places belonging to great men of the time – the *cognoscenti* – and it is likely that it was the owners who used these terms rather than being Defoe's own inspiration.

Londesborough reflects, possibly, the ambitions in terms of water which Burlington did not have the space or suitable topography to attempt to realise at Chiswick. He did not start to develop this landscape until the 1720s, probably creating the lake and string of informal ponds in 1728-30.[53] Not a great deal is
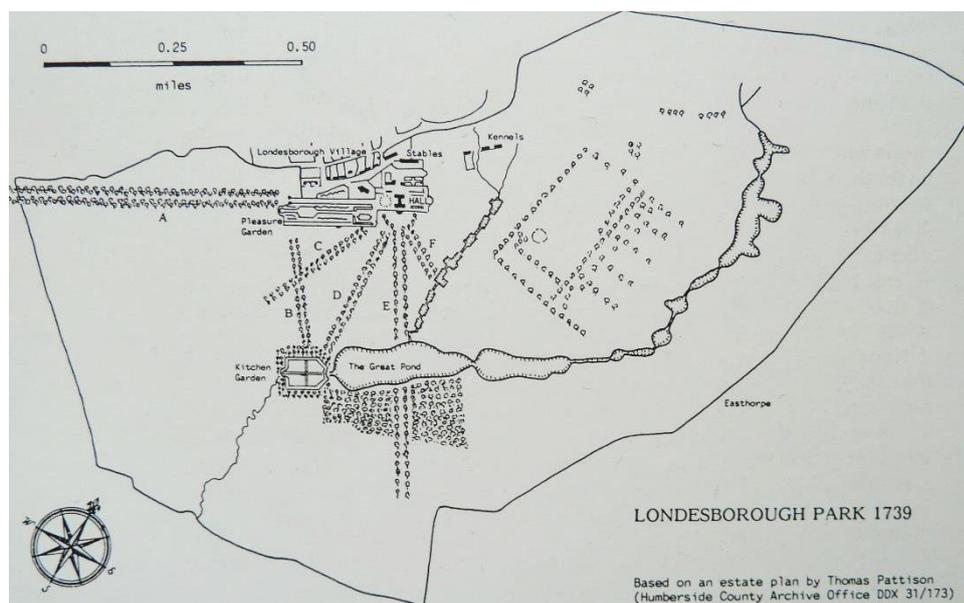
Fig. 3.24. 1739 estate survey of Londesborough Park.[54]

known about his work with water there other than the features shown on the estate survey (Fig. 3.24). Like the previous three examples, it is noticeable that formal and informal elements are juxtaposed. The formal gardens adjacent to the house contained sinuous paths which are not present in the illustration in *Britannia Illustrata*, and it may be assumed that Burlington introduced this form, as he used it extensively at Chiswick.[55] He appears to have retained the avenues and *pate d'oie*, and created the irregular lake almost to complement it.

It is notable that the irregular lakes which began to appear in the 1720s had irregular though straight-sided plantations adjacent to them. Like the plantations, the ornamental water was becoming larger. It was in the park, where the constraints of 'garden' did not apply but, as the positions of the lakes at Thoresby, Castle Howard and Holkham show, it was not isolated in the park, as fishponds had often been, but was relatively close to the house. It is as if the lake was forming a link between the formality of the house and gardens and the informality of the park – a concept which may have applied to the activities in them as well as their physical organisation. It may well be that women were beginning, at this time, to use parks more extensively than they had before. Information on this subject is very scanty before the middle of the eighteenth century. If women were beginning to participate in activities in parks, a closer relationship between gardens and parks would have been an advantage, a theme which is discussed in Chapter 4. However, cause and effect are difficult to determine precisely.

The juxtaposition of geometric landscape elements with irregular lakes continued in the 1730s. Chiswick House, a landscape laid out by Lord Burlington in the 1720s and '30s, latterly with the aid of Kent, captures this phase of transitional geometric landscapes admirably. It was dominated by axes radiating in various directions, with triangular and rectangular gardens dissected by twining, irregular paths. The various buildings – the house and temple, the obelisk – were classical in style, tending to emphasise the geometry, as did the geometric ponds, but the treatment of the river shows Burlington's attempts to create irregularity and informality, which perhaps appear stilted to modern eyes in Roque's engraving of 1736. Like The Serpentine in Hyde Park, it was viewed by contemporaries as a radical departure from the straight-sided

canals of the first two decades of the eighteenth century.[56] The cascade which Burlington and Kent created after 1736 is in line with the move towards greater informality which gained hold in the middle of the century.

Claremont in the 1730s likewise encapsulates the transitional geometric
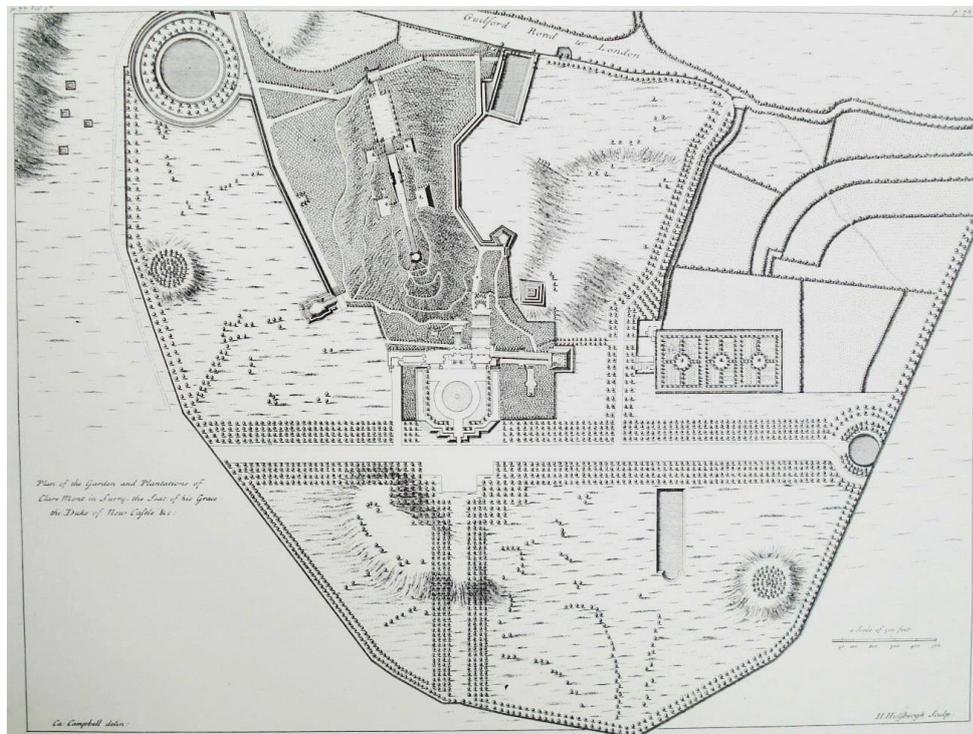
Fig. 3.25. Plan of Claremont, Surrey, in *Vitruvius Britannicus* 1725.[57]
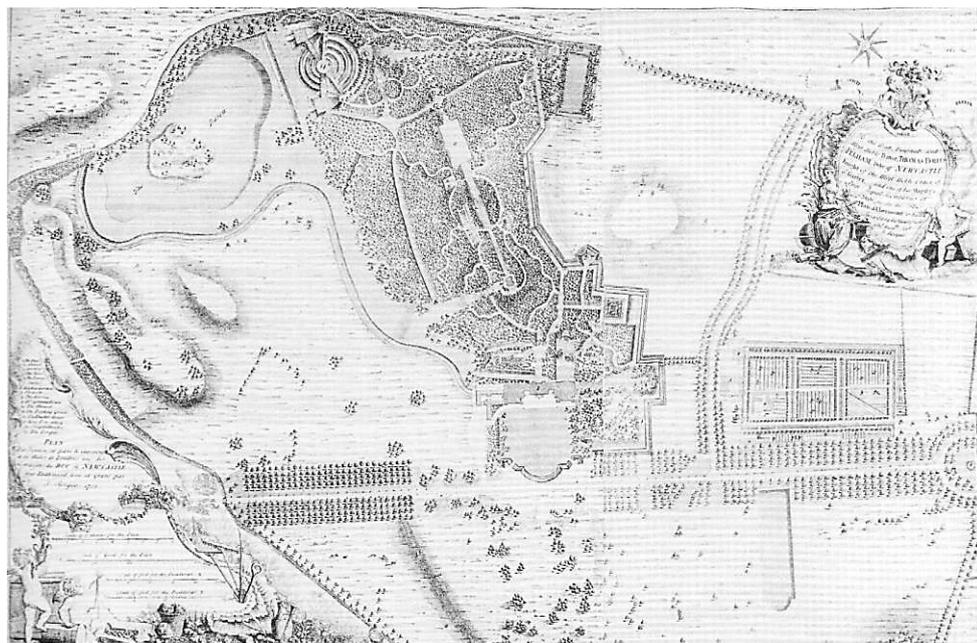
Fig. 3.26. Plan of Claremont by Rocque, 1737.[58]

phase. Originally fashioned by Vanbrugh for Thomas Pelham-Holles, Earl of Clare, later Duke of Newcastle, a predominantly geometric layout was imposed on the topography, as illustrated by Campbell (Fig. 3.25). The water is geometric, including the round basin, as is the tree planting. Only the serpentine paths ascending the hill behind the house break the geometric mould. By the time Rocque made his engraving in 1736, the most noticeable change was that the basin had been made into an irregular lake (*c.* 3 h) by Kent, and graced with an island (Fig. 3.26). Kent, unlike Brown, did not make any large bodies of water, although he adapted several.[59] A comparison of Rocque's plan shows a strong resemblance to the upper right quadrant of Castell's (Fig. 4.7), discussed in Chapter 4, although the water is not as irregular.

3.4. Serpentines.

A parallel thread in the development of ornamental water was a feature which could be described as a serpentine canal. The word 'serpentine' has been used in the twentieth century to denote a narrow, winding irregular lake, or one with a 'hooked tail' like the one made at Holkham by William Emes in *c.* 1784, but this was not what contemporaries meant by the term. In the eighteenth century, 'serpentine' was usually followed by 'river' and often denoted a canal composed of geometric arcs: a serpentine canal, which was essentially a geometric construction. That Bridgeman had this idea as early as 1729, is illustrated in his plan for Sherborne (Fig. 3.27), showing a serpentine canal, which Mowl implies was actually carried out, although possibly not executed until 1743.[60]

Queen Caroline's lakes – the Long Water and The Serpentine - which together are referred to as The Serpentine today (*c.* 16 h), were made by Bridgeman in 1730-31.[61] They were novel because of their lack of symmetry, the slight informality of The Serpentine itself, and the angles which they incorporated, deriving from the original string of ponds from which the Long Water was formed, shown in Rocque's 1736 engraving of London (Fig. 1.2).

Fig. 3.27. Bridgeman's 1729 plan for New Park, Sherborne, Dorset.[62]
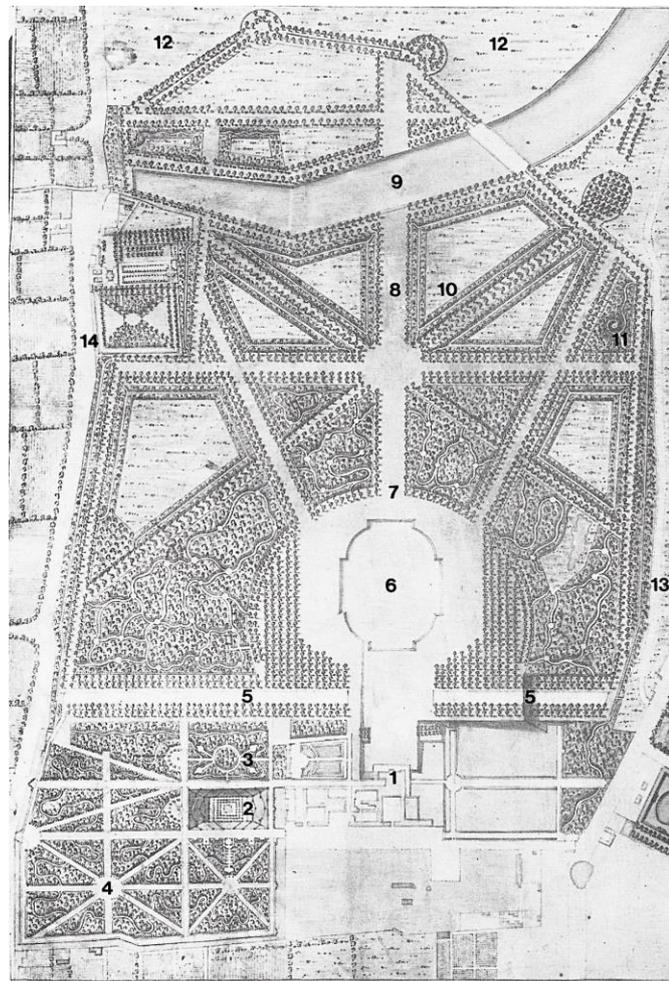
98 Kensington Gardens and Hyde Park. Plan. Drawing by Bridgeman (attrib.). HEH, ST MAP 147.

KEY: 1 Palace; 2 Old Gravel Pit; 3 Old Mount; 4 Wilderness; 5 Broad Walk; 6 Round Pond; 7 Great Bow; 8 Front Walk; 9 Serpentine; 10 Site of Queen's Temple; 11 Mount and Summer House; 12 Hyde Park; 13 King's Old Road (Lamp Road/Rotten Row); 14 Oxford (Bayswater) Road

Fig. 3.28. *C.* 1738 Plan of Kensington Gardens and Hyde Park, attributed to Bridgeman.[63]

Within Kensington Gardens, the Long Water was geometric and Bridgeman maintained the formality of the gardens in that area. Where the water was in the park, he made it slightly informal, mirroring the less formal character of that part of the park, although the plan attributed to him (Fig. 3.28) shows a more formal arc to The Serpentine. Two factors made it very unusual: the angle in the canal and its considerable size (*c.* 16 h altogether). The impact of this design was that it gave royal approval to what was seen as a signal departure from the norm for formal water.

Rocque's map of *The Environs of London* 1745, shows a very similar configuration of water at Wanstead, Essex (Fig. 3.29). This water is very similar
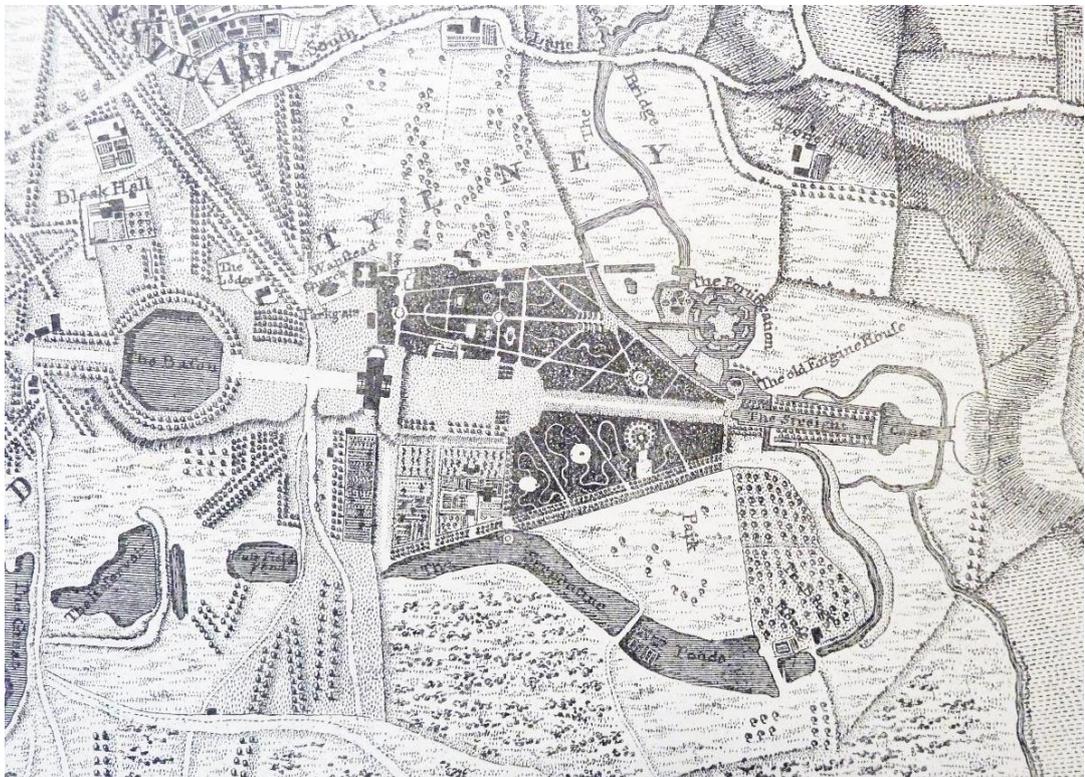
Fig. 3.29. Rocque's 1745 map of Wanstead.[64]

to The Serpentine, being labelled 'Serpentine Ponds', and was also made from existing geometric ponds, shown on a Rocque engraving of 1735. This suggests the angle of the canal was carefully constructed, and that it was the angled nature of the canal/ponds which was being showcased. It is noticeable that the northern edge has been lined up along an axis of the gardens.

Whilst examples of serpentine canals are not numerous, more are coming to light. A slightly curved canal made at Holkham in *c.* 1743, almost certainly by Kent, linking the basin south of the house with the lake, may be an example, but was not typical of this phenomenon.[65] Badminton and Longleat are another manifestation of the serpentine canal. The water at Longleat appears on an estate survey of 1747 (Fig. 3.30), the two lakes being composed of strictly parallel geometric arcs. In fact, they are geometric lakes, and the larger one was

Fig. 3.30. 1747 map of Longleat, Wiltshire, by John Ladd.[66]

on a similar scale to The Serpentine itself. The 2nd Viscount Weymouth was almost certainly inspired by Queen Caroline's. His lakes were nearing completion in 1736, as part of a two year transformation of the landscape there. He was appointed as Ranger of Hyde Park in 1739, suggesting a familiarity with developments there, and a yacht was bought for Longleat in 1736; two had been bought in 1731 for the Royal Family to use on the Serpentine.[67] Similar in form to the one at Longleat, the canal at Badminton appears on an estate survey of 1750 by Robert Whittlesay (Fig. 3.31), and is symmetrically geometric.
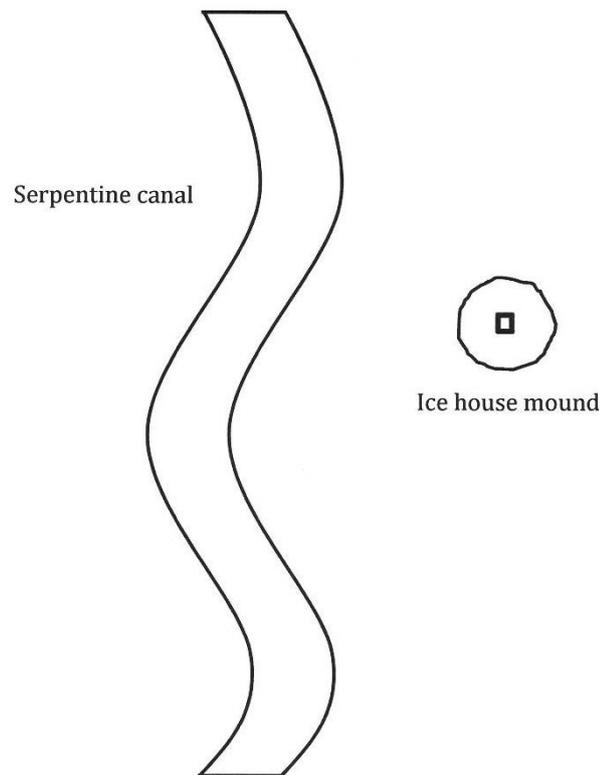
Fig. 3.31. Diagram of the serpentine canal on a 1750 Badminton estate survey by Robert Whittlesey.

There is little evidence that the term 'serpentine' was much used by contemporaries to describe ornamental water, other than to signify The Serpentine itself: "Next Monday they begin upon The Serpentine River and Royal Mansion in Hyde Park." as described in *The London Journal* of 26th September, 1730.[68] One early use was by Francis Blomefield, who used 'serpentine' in relation to Kimberley in 1739:

> the piece of water which … is there said to contain 12 or 14
> acres, is now extended into a noble lake of about 28 acres [11
> h], which seems to environ a large wood or carr on its west
> side; rendering its appearance to the house much more grand
> and delightful; the rivulet that ran on its east side is now made
> a *serpentine river*, laid out in a neat manner[69].

His use of 'lake' is also a relatively early use of the term. Another early use of 'serpentine river' is in a letter from Mrs. Elizabeth Robinson of December, 1743,

about Mr. Haytley's painting of the Brockmans' new landscape at Beachborough Manor, Kent (Figs. 4.12 and 4.13) She says,

> all that is to be put into a Picture painted by Mr. Haytley. he [Mr. Brockman] wants some better name than that of a pond for his water which puzzles him very much for he fears it is too small to call a Serpentine River;[70]
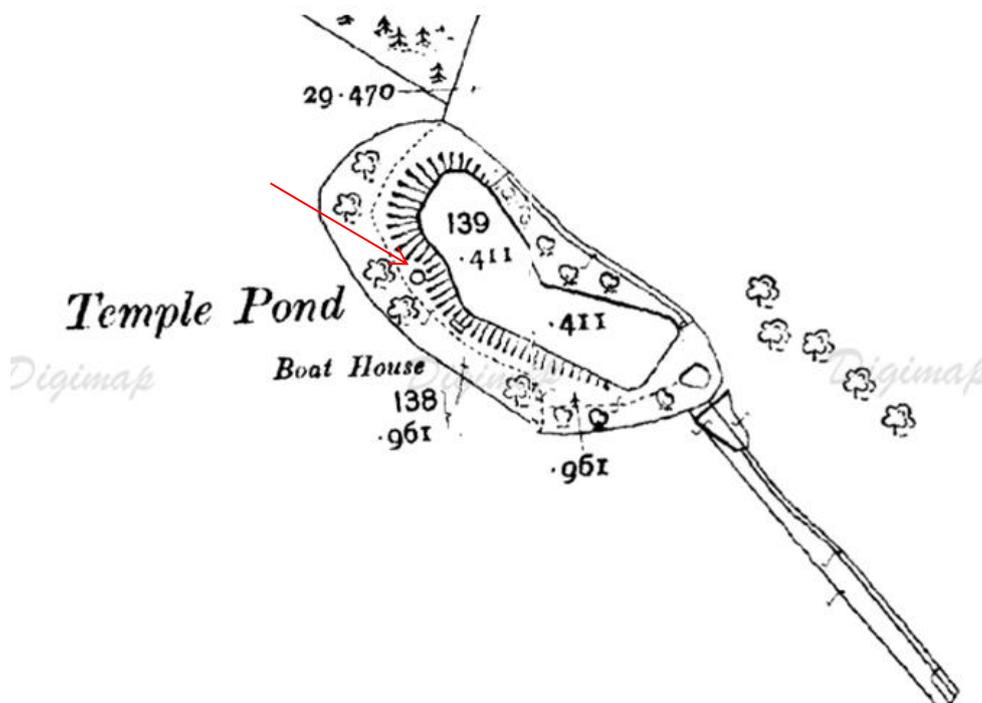
Fig. 3.32. 1907 6" OS map of Beachborough, Kent. Note the round structure on the western side, which is likely to be the temple shown in the painting.

The Brockman quandary about a 'Serpentine River' suggests that informed and fashionable people were well aware of the lake created by Queen Caroline even before Rocque published his map (1746). The actual shape of the Beachborough pond (0.17 h) is also reminiscent of the Serpentine, albeit in miniature, as Mr. Brockman was aware. What is typical of both is the angle, which also appears at Wanstead, and this suggests that contemporaries were still thinking very much in terms of geometric water, the novelty being that the straight canal had been given a 'bend'. According to the OED, it is 1824 before anyone uses 'serpentine' in a conceptual sense to describe ornamental water: J. C. Loudon, in his

Encyclopaedia of Gardening says "Those wavy serpentine canals ... are never mistaken for natural scenes."[71] The word does not appear on any maps, other than Rocque's, as far as can be ascertained.

Despite the popularity today of the term 'serpentine lake', this was not a term used in the eighteenth century. People talked of 'serpentine ponds' and 'serpentine rivers' (which usually meant something 'canal-like'), Young being the only person to refer to a 'serpentine lake', at Ditchley, Oxfordshire (Fig. 3.33).[72] The hook at the west end of this irregular lake presumably reminded

Fig. 3.33. Lake at Ditchley, Oxfordshire, made in the 1740s, First Edition 6" OS map.

him of the bend in the Serpentine itself, or possibly Wanstead. The OED entry for 'serpentine' gives an interesting quotation from George Eliot in 1853: "I am hoping for a row ... on the Serpentine, which is really almost as good as a lake."[73] This suggests that she regards The Serpentine as too circumscribed, or too geometric, to be regarded as a real lake. The term only seems to gain currency after 1948, when Christopher Hussey used it: "The most famous Serpentine Lake, that in Hyde Park", tying it again to The Serpentine.[74] It is probable that the emergence of serpentine canals was a phenomenon which was parallel with the sinuous walks in wildernesses that were becoming popular in the 1730s, and which can be seen in Fig. 3.26 (Claremont) and Fig. 3.15 (Thoresby). Switzer had published plans incorporating these (Fig. 3.8) in *Ichnographia Rustica* 1718, as did Batty Langley in *New Principles of Gardening* in 1728. Although these walks are characterised by their sinuous informality, perhaps contemporaries felt that the serpentine canal was the watery equivalent. Although the fashion for these canals does not appear to have outlived the

1740s, they are significant because, despite being essentially geometric, they indicate that people were looking at ornamental water in a different way to the previous era, reinforcing the concept that it was acceptable to be innovative with water. It is important to note, however, that there does not appear to be any direct link between serpentine canals and irregular lakes. These angled canals were a dead end in terms of lake evolution.

3.5. Chronology of Lake Numbers.

By the 1740s, the concept of an ornamental lake had become established,
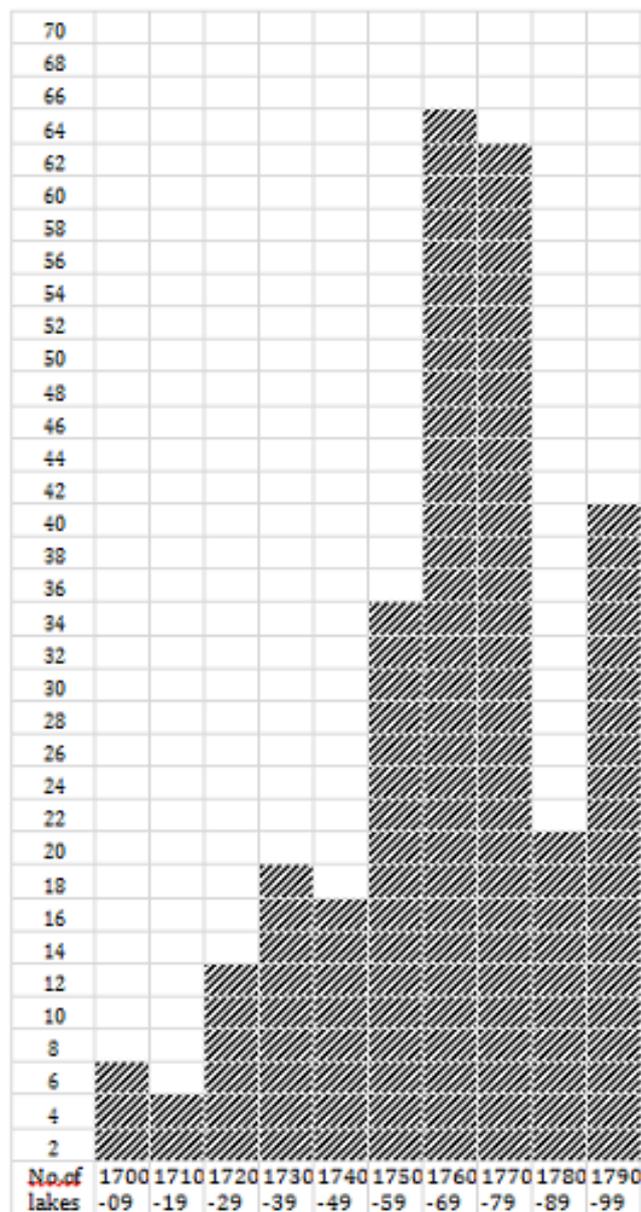
Table 11. Graph of lake numbers (all types), 1700-1799.

and an increasing number of lakes was being made. The systematic analysis of the maps and documents reveals clearly that numbers began to increase in the 1730s, with irregular lakes starting to become popular in the 1740s (Table 11). As the graph shows, lake numbers peaked in the 1760s – '70s. In this survey, geometric lakes which were made irregular were considered to be new but irregular lakes which were altered or increased in size were not considered to

No. of lakes	1700 -09	1710 -19	1720 -29	1730 -39	1740 -49	1750 -59	1760 -69	1770 -79	1780 -89	1790 -99
60										
58										
56										
54									54	
52										
50								48		
48										
46										
44										
42										
40										
38										
36										
34										
32										32
30										
28						28				
26										
24										
22										
20										
18										
16									16	
14										
12										
10					10					
8										
6				6						
4										
2		2	2							
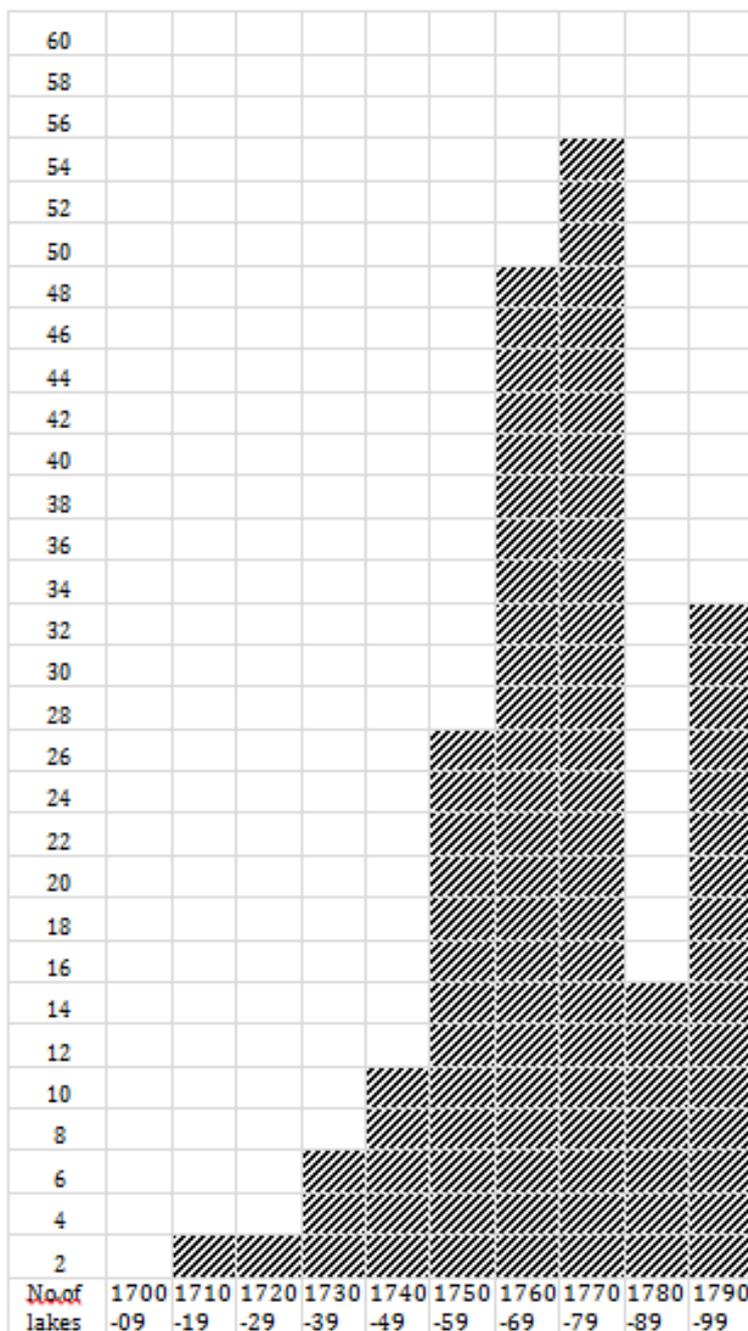
Table 12. Graph of irregular lakes only, 1700-1799.

be new. Thus, a lake which was made by Brown, but was altered by Repton, was counted once. It is interesting to note that even though the period 1780-99 includes the county maps which were generally made in the last two decades of the century, there is still a significant dip in numbers in the 1780s before they began to rise again. This is also mirrored in a fall in Acts of Enclosure in that decade.[75] The costs of the war in America and the Napoleonic Wars may have been a factor, with the implicit impact on the economy. The general trend shown by this graph is clear: from a very low point in the first two decades of the eighteenth century, numbers peaked in the 1760s and '70s, and then started to fall. Table 12 shows that numbers of irregular lakes were very similar to those in Table 11 for the decades 1750 -1799. This indicates that the majority of lakes made in that period were irregular lakes. Table 13 gives useful information on the chronology and sizes of irregular lakes, but new data will undoubtedly come to light, regarding both new lakes and new dates. This is not the complete list of the irregular lakes in this survey (see Appendix 1), but it gives an indication of when they started to be made, and the varying sizes. As we can see, only a handful of irregular lakes was made before the 1740s (Tables 12 and 13). Lake sizes in the eighteenth century (Table 29) generally varied from 1 h to 25 h or more. Two things are immediately noticeable about the list in Table 13. Firstly, many lakes were made by unknown people. It can only be conjectured that owners employed their own men, or local experts to make these lakes, and that further attributions will be made in the future. Secondly, of the known lake-makers, Lancelot 'Capability' Brown's name is predominant.

Garden Name	Owner / Other	County	Dating	Dat	Feature1	Featur	Reference	Plan / Map	Lake siz
Oatlands 2	9th E of Lincoln/D of N	Surrey	1740s	1749	Lake irregular		Strong Art. Gdn. P 7	pic A. Devis 1750-1	5
Virginia Water 2		Surrey		1749	Lake irregular	Flitcroft,	Flitcroft 1749 plan&	Jacques p 119. See	47-55
Newstead Abbey 2	5th Ld Byron (6th=poe	Nottingham	Mid 18C	1750	Lake irregular		Poet Byron inher 17	in 1798	6
Arley Hall		Cheshire	By 1750?	1750	Lake irregular		EH, Foster article	OS 1876	8 .1
Wimborne, St. Gile	Earls of Shaftesbury	Dorset	By 1750	1750	Lake irregular		EH, Pococke 1754		2.8
(Wallington)	J. Paine bridge 1755	Northumber	1750 c.	1750	Lake irregular		J-S p 79 plan	Not implemented	
Wroxton 2	Francis North, Ld. Guil	Oxfordshire	c. 1750	1750	Lake irregular		Plan. Batey & Lamb	c. 1750 Francis Boo	2.5
Farnborough Hall 1	William Holbech	Warwickshir	Mid 18C	1750	Lake irregular		EH entry,OS map 18		2.3
Fonthill 1 House /	Alderman Beckford	Wiltshire	c. 1745	1750	Lake irregular		Mowl Wi p88, OS 18		18
Packington	Ld Guernsey, 3rd E of	Warwickshir		1751	Lake irregular	Brown	EH, Hinde p 46	Brown plans, c.175	6.5, 9
Calke Abbey 2		Derbyshire		1752	Lake irregular		EH. No tithe		1.2
Stowe 4	Rich Grenville, Earl Te	Buckingham	1751-3	1753	Lake irregular		Geo. Bickham plan	Plan 1753 in Robin	4 .5 3.8
Croome Court	6th E of Coventry	Worcestersh	c. 1753	1753	Lake irregular	Brown	Hinde p41		7
Edgcott Park	Rich Chauncy	Northampto	1740s	1754	Lake irregular		By W Jones.1779 Ey	Br Listed Buildings	3 .5
Shadwell Court 1	John Buxton II	Norfolk		1754	Lake irregular		EH. No tithe map	for the lake area.	13.7
Stourhead 2	Henry Hoare II 1705-8	Wiltshire	1750s	1754	Lake irregular	Flitcroft,	EH. Flitcroft did dan	OS 1808, Binnie p6	7.5 2
Well Hall, W Vale	Samuel Dashwood & \	Lincolnshire	Aft. 1729	1755	Lake irregular		EH . Orig. 2	geom. lakes?	1.8, 0.9
Heythrop Hall 2		Oxfordshire	1750s	1755	Lake irregular		EH. T. Archer assoc.	with site	1, 0.7
Painshill 2	Charles Hamilton	Surrey	1738-73	1755	Lake irregular		Symes P p65: mostl	Pic Will. Woollett	1.4
Blagdon Hall 2		Northumber	c. 1755?	1755	Lake irregular	Richardsc	Harris p 126 paintin	1755 Richardson pl	1.5
Sherborne	6th Ld. Digby	Dorset	1753 c.	1755	Lake irregular	Brown	EH. Binnie p66: late		17.5
Kelmarsh		Northampto	1750s	1755	Lake irregular		Spooner: thesis,181	Not shown on Eyre	1 .9
Welbeck Abbey 3	2nd D of Portland d17	Nottingham	1748-56	1756	Lake irregular	Richardsc	EH, Mrs. Delaney 17		4
Longleat 4	Brown contracts 1757-	Wiltshire	c. 1757	1757	Lake irregular	Brown	Br. contracts 1757-6	Dam: 4.87m high	7.8 or 10.2
Shardeloes	William Drake	Buckingham	Beg. 175	1757	Lake irregular	Richmon	Rocque Map 1761	Ref: D. Bown's doc	13
Petworth House 3	2nd E of Egremont	Sussex		1757	Lake irregular	Brown	Binnie p 62	1756 2nd lake	6, 3
Sudbury Hall 2		Derbyshire	1751-65	1758	Lake irregular		J-S p 131: Pococke		7
Wotton 1 Underwo	Grenvilles (of Stowe)	Buckingham	1757-60	1759	Lake irregular	Brown	EH, Hinde p72	Felus p30	15
Kew Gardens	George III, Q Charlott	Middlesex		1759	Lake irregular		Strong p 255. Pagod	Wilson pic, 1762	2.4 1: poi
Stourhead 3		Wiltshire	1754-79	1760	Lake irregular		Woodbridge, engr.		2
Tabley House 2/Oal	Sir Peter Byrne Leyces	Cheshire	1740s po	1760	Lake irregular		Pic. R. Wilson c. 176		(20)
Chillington	Thos Giffard d 1776	Staffordshir	By 1761	1760	Lake irregular	Brown	Brown lake, Mowl	Staffs p168. Not sh	29 .0
Kiddington	Sir Edward Mostyn	Oxfordshire	1750s?	1760	Lake irregular	Brown	EH entry,OS map 18		1.5
Wimbledon 3 Park	Earl Spencer	Surrey	c. 1760	1760	Lake irregular	Brown			8.8 (12 EH)
Haveringland Hall 2	Herne	Norfolk	c. 1760	1760	Lake irregular		Williamson Gazette	Map c. 1760	0.8
Lamorbey Pk	Near Sidcup	Kent	Mid 18C	1760	Lake irregular		EH	North lake mid 18(	2 (0.9+1)
Stowe 5		Buckingham	c. 1760	1760	Lake irregular		Lake pavilions mov		4.5, 3.8
Tortworth 2/Cromh	Baron Morton?:1763-7	Gloucestersl	c. 1760?	1760	Lake irregular		EH & Parks & Gs UK	1839,& '40 tithe m:	5.9, 1 Gall
Witham 2 The Hern	William Beckford	Somerset	By 1761?	1761	Lake irregular		Pattison p59	Vit. Brit. Vol 5	1 .8
Castle Ashby 1	Charles, 7th Earl Comp	Northampto		1761	Lake irregular	Brown	Eyre map 1779, Eh	Brown plan, paym	3.3 (4.2 as

Table 13. A sample of irregular lakes, by date. This is a continuation of the sample in Table 1, extracted from the Landscape Database. Brackets indicate lakes planned but not made.

Irregular lakes bore the greatest resemblance to the *vivaria* of Roman and medieval times, and in numerous cases fashionable ornamental lakes were

made in the eighteenth century by extending existing fishponds. Stourhead, Petworth and Blickling come to mind. The progression at Stourhead is
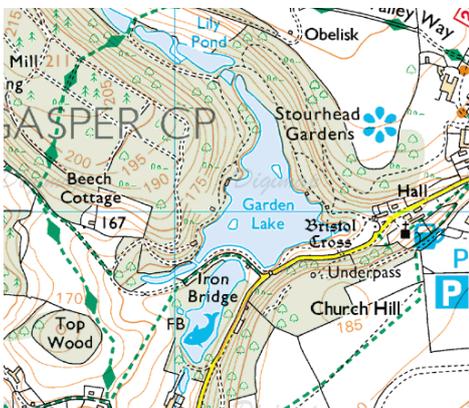
Fig. 3.34. 2016 OS map of Stourhead.
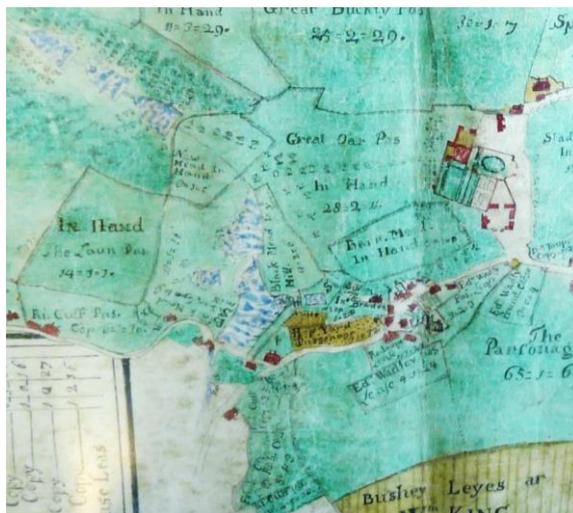
Fig. 3.35. 1722 estate map.[76]

Fig. 3.36. 1785 estate map. [77]

Fig. 3.37. 1792 painting of the lake bottom.[78]

particularly clear. Fig. 3.35 shows the fishponds in the valley when Henry Hoare I bought the property in 1717, and the 1792 painting shows the rectangular pond he made (just below Flora's Temple), and the original grotto and pond, both of which were flooded when the lake was made in 1754. It is quite clear, from Figs. 3.35 and 3.36, that the earlier fishponds formed the basis for the ornamental lakes made by Henry Hoare II.

3.6. Lancelot Brown.

The basic facts relating to Lancelot 'Capability' Brown are well known: born in Northumberland in 1716, he died Lord of the Manor of Fenstanton in 1783, having designed or part-designed some 250 landscapes, mainly for the aristocracy or the well to do. His commissions ranged throughout England, with a handful in Wales, and were characterised by lakes, often crossed by approach drives, perimeter belts and circuit drives, tree clumps, and smooth, uncluttered lawns surrounding the house.

In spite of recent work, by Fiona Cowell for example, highlighting the importance of his contemporaries, Brown merits a section to himself because of what he achieved in making lakes in the eighteenth century. When he began adult life, the concept of a lake – a large, ornamental and *irregular* piece of water – barely existed. By the mid-1740s, when he was working for Lord Cobham, Brown was making irregular lakes for Cobham's friends. These were men such as Lord Denbigh of Newnham Paddox (lake, 1748), the Duke of Grafton at Wakefield Lodge (lake, *c.* 1745), Lord Brooke, later 1st Earl of Warwick (Warwick Castle, lake *c.* 1751), Lord Coventry (Croome Court, lake *c.* 1753).[79] These lakes were of various sizes, from 1 to 8.6 h, with Wakefield Lodge being the biggest, so Brown was engaging in substantial lake building even in this early stage of his career. This raises the question of how he acquired this engineering expertise, to which there is no clear answer, although it may have been at Grimsthorpe, Lincolnshire.[80] Possibly, he engaged a local dam-building expert but no evidence of that has come to light in the places where he worked, though this may well be due to lack of evidence.[81] Once he had set up his own practice in 1751, after Cobham's death, his workload increased and he had made about a dozen lakes by the end of the decade. In all, Brown had made over 70 lakes by the time he died in 1783, and this was out of a total of *c.* 215 lakes made by then - approximately one third of the lakes made in his lifetime. It may be claimed that in some instances, he merely altered an existing piece of water. That was certainly true, but in many instances he increased the size of the water and significantly remodelled it, effectively producing something new.

Brown may not have been particularly innovative in the sense that there were other people (Woods, Richmond, Emes) making landscape parks, and in

the sense that parks were not new features – deer parks had existed for centuries.[82] However, in other ways, he was an innovator. He extended the concept of 'garden' into the whole park, and he designed landscapes on a much larger scale than most other people, because his clients were the foremost people of the land.[83] He also popularised a new way of experiencing the landscape – by moving rapidly around it by carriage or horse - meaning that large areas could be seen at once, not just narrow vistas. He was particularly original in the way he manipulated the landscape, especially the approach drives, to make the house the focus of attention, and he 'manicured' the land surrounding major features (house, lake) to set them off (see below).[84] However, it was his use of water that was the most innovative.

3.6.1. A context for lakes

As is well known, Brown worked for Lord Cobham from 1741–50, where he encountered two vital aspects: the ha-ha introduced by Bridgeman, according to Walpole, and the deformalized gardens designed by Kent.[85] Brown absorbed these aspects into his own designs and this led to his new approach of blending the gardens with the park. He treated them as a whole: there was no *obvious* demarcation between the gardens around the house and the park. The informal ornamental water was the element which linked the two and unified them into a holistic design. The lake tended to be large and it was viewed *in* the park, especially on the approaches, as well as from the house, making the link between house and park. The ha-ha was the key to this unification. As well as designing the garden area within the ha-ha, Brown also planted alongside carriage drives in the park, planted clumps and individual trees in the park, and broke up hard edges of existing tree planting with thinning and new planting. Along rides and drives Brown planted among others Lombardy poplars, weeping willows, and cedars of Lebanon. The cedars are long-lived trees, and are those which have survived until today.[86] Brown's plan for Kimberley

Fig. 3.38. Detail of Brown's second plan for Kimberley, dated 1778. North is at the bottom.[87]

Fig. 3.39. Detail of Fig. 3.37.[88]

illustrates this clearly (Fig. 3.38). As well as providing a pleasure ground (out of sight, bottom left), the exotic planting is evident along the carriage drives/ rides/ paths crossing and circling the lake, and winding through the woodland (Fig. 3.39). Kimberley is a late example of Brown's work, but this concern with tree planting is evident in his landscape planning from the beginning, as can be seen in his first sketch for Packington, Warwickshire, of *c.* 1750 (Fig. 3.40). We
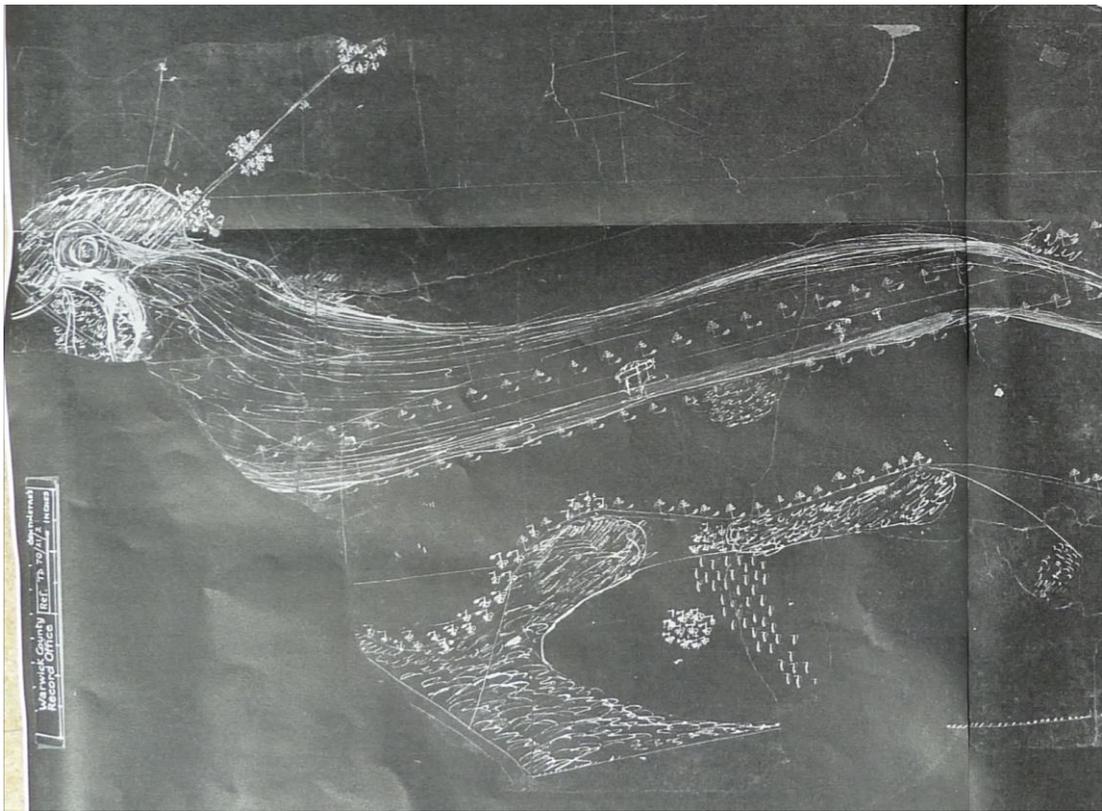
Fig. 3.40. Detail of Brown's sketch plan for Packington, Warwickshire, of

c. 1750.[89]

can see that Brown has clearly differentiated between deciduous and evergreen trees, and that the carriage drives are largely lined with deciduous trees. There is a group of conifers in the lower right quadrant of Fig. 3.40, whilst deciduous clumps line the drive in the upper left. Brown is planning to put in a lake in place of the existing avenue, making the water carry the eye to and from the house instead of the avenue. On his 1751 plan for Packington, Brown indicates the planting around the cascade – Cedars of Lebanon – in this elevation (Fig. 3.41). It shows Brown using exotic species in the middle of the park, as opposed
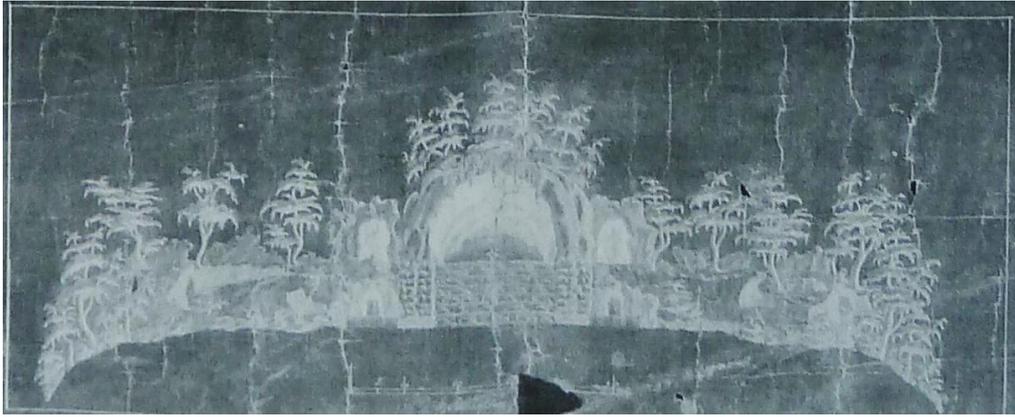
Fig. 3.41. Brown's design for a cascade at Packington, 1751.[90]

to the pleasure grounds and near the house. This suggests that Brown, and his clients, are beginning to regard the whole landscape, centred around the lake, as an extended area for leisure pursuits such as carriage driving, riding, walking perhaps, with destinations for those activities – a view from a bridge or seat, a cascade to admire, a lake to boat on (note the boat on the lake in Fig. 3.40) - a concept which Mowl has likened to a Disneyland of the eighteenth century.[91] Leisure as a factor in the creation of lakes is discussed in Chapter 4.

A second factor in Brown's treatment of the landscape was that because he mainly worked for the richest and most prestigious clients their estates were large, which gave him the scope for making large pieces of water, routeing approach drives and including circuit drives. Because he 'cornered the market' of these clients, other improvers such as Richard Woods had less scope for their designs, as they worked with fewer and generally smaller landscapes.[92] Brown's designs offered the ability to experience the park three-dimensionally, to follow circuits round it, with opportunities for varying prospects, including varying views of the house as mentioned. In many cases, other designers were addressing only one part of a landscape, as was the case with Richard Woods's work at Cannon Hall, Yorkshire. Perhaps only Nathaniel Richmond designed on a similar scale: Beeston St. Lawrence (1773-7) was *c.* 172 h, and Stoke Park was *c.* 153 h. Erlestoke Park by William Emes was *c.* 259 h. Neither designer routinely dealt with these extensive landscapes though. Working on the large scale meant that Brown was able to make lakes of significant size, and to place them pre-eminently in the landscape. Why did he have the opportunity to do this from the beginning of his career? The answer can only be surmised. He had

a very influential patron in Lord Cobham, who clearly had confidence in Brown as he allowed him to work for other influential men, as mentioned. However, that alone would not have been sufficient if Brown had not been an able man in many spheres: surveying, landscape and architectural design, horticulture, drainage, water engineering. Had any of his lakes failed in the 1740s, it is unlikely that many other large commissions would have followed. Also, he was undoubtedly a good business man. He had the acumen to set up a 'design and build' business, plus good personnel skills, which enabled him to capitalise on the excellent client contacts which he had. With few exceptions, Dickens of Branches, Suffolk, being one, we do not hear of him falling out with rich clients, unlike Vanbrugh, or of problems with his foremen, though that may be due to lack of information.[93] He also seems to have possessed a good appreciation of just what the 'capabilities' of the land were and the ability to match them to his clients' expectations and pockets. No mean skill.

3.6.2. A new focus: house and lake

A hallmark of Brown's landscapes was the way he focussed on the house from the park, often with the lake as a foil, thus reversing the previous rationale of the house at the centre of the landscape, with axes radiating from it, as Girouard describes at Badminton.[94] He carefully orchestrated the approach through the park, and ensured that there were views of the house across the lakes he made. With his curving approaches and circuit drives, Brown then displayed the whole landscape, with a particular focus on the house and the water, carefully choreographing glimpses of lake or house between trees. Trees would be planted, hills flattened (as at Bowood), water created in order to give tantalising glimpses of the house as the visitor or owner approached, with final impressive views, often over water, of the house itself. We can see Brown aiming to do exactly this at Packington in 1751 (Fig. 3.45). He wanted to route the main approach to the house (from the south) north-eastwards over the cascade, then north-westwards to the house. This would have given glimpses of the lake and house as the visitor entered the park, then hidden that view and passed on through denser (possibly evergreen) woodland to the drama of the

cascade, and then emerged from these trees to a full view of the house. Clearly, this was not favoured by Lord Guernsey as, in the key to the plan, Brown has written "The great Road, which would in my opinion be much better turned." It seems from this that Lord Guernsey favoured a direct approach from the park entrance, over the lake to the house. Brown's plan indicates a bridge at that point, and it appears that owner and designer were arguing over this, as OS maps today and in 1886 show a track of some kind (Fig. 3.42) on that direct route. However,
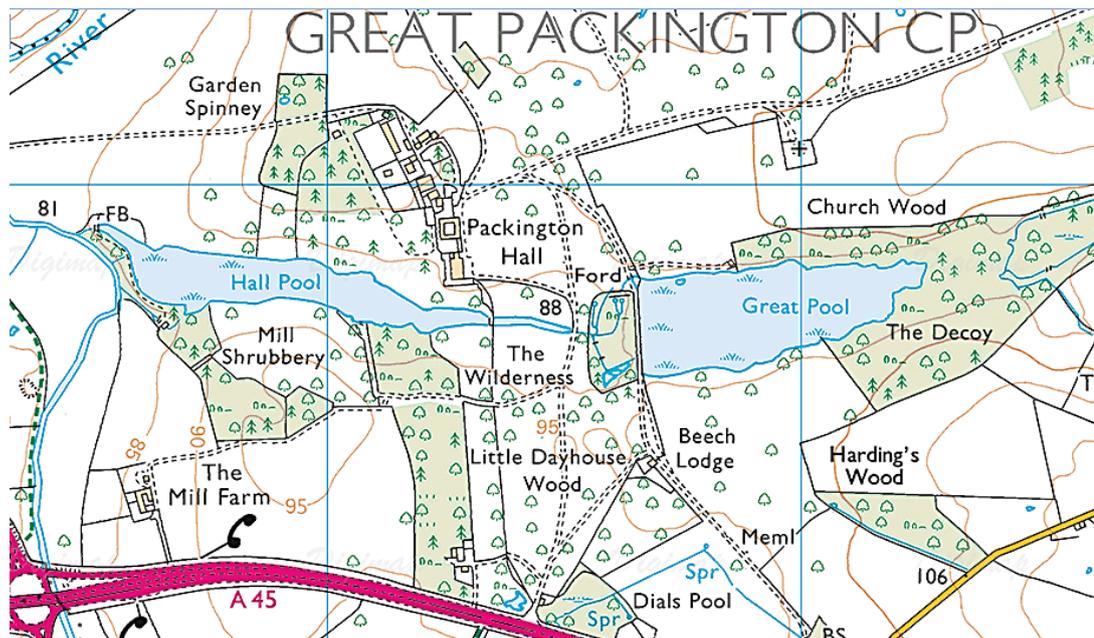
Fig. 3.42. Packington Park, Warwickshire, OS map, 2016.

Brown seems to have prevailed, as there is still an approach evident today on the line of his planned route. It is noteworthy that he could take issue with the owner in this way, and hope to prevail; he did not have the great weight of fame on his side at this early stage of his career. He did have a remit for designing a large part of the landscape, which was not often the case for his contemporaries. When Woods did have a remit for more of the landscape as at Cannon Hall (1760s) and Wardour Castle (1760s), his approach drives were much more direct (Cannon Hall) and not accompanied by the subtle manipulation of tree planting to choreograph the views (Figs. 3.43 and 3.44).

(Too damaged to see)

N

Deer Park

F

G

D

E

C

B

A

Q
P
O

Deer Park

Great
Pond

N

M

H?

Pond Grove

L

South
Hill

K

A The Cold bath
B The Boat house
C The Stone bridge
D The Ice house
E The Cascades
F A Palladian bridge
G A Chinese temple
H A Lodge
I The Decoy pond
K A Grotto
L A Gothic belvedere
M A Doric alcove
N A Subterraneous passage
O The Green house & menaziry house at Back
P The two light Tempels out of the Castle garden
Q An Ionic temple
R An obelisque

0   metres   50

Figs. 3.43 and 3.44. Wardour Castle, Wiltshire: Woods's plan, 1764 (above) and
Brown's plan (below), 1775.[95]

As well as noting Woods's less subtle perimeter planting and the absence of trees to soften the edges of blocks of woodland, it is also evident that Brown planned to increase the size and extent of the lake which the house would have overlooked, thus increasing its impact.

Brown's inspiration of putting in perimeter carriage drives enabled people to use the new light carriages (phaetons) to see the landscape. This facilitated movement through the landscape, offering changing views, as is well-known, but it also meant that larger areas of the park could be seen in one go, rather than offering constricted views along narrow vistas. Importantly, this meant that varied views of the lake were possible. There was an opening out of the visual effect of the park, and the house, and it was the irregularity and informality of Brown's designs which led to those views being unpredictable and surprising, unlike the geometric vistas of old. This can be seen even in Brown's second design of 1751 for Packington (Fig. 3.45). The carriage drive follows the edge of the perimeter belt (bottom left of plan), then winds through a denser area of woodland, with the choice of going north and across the cascade, or continuing east around the park, with views down to the lake, and on to 'My Lady's Lodge'. This sinuous treatment of perimeter drives and conscious manipulation of approach drives, both with informal planting to enhance and control views, was widely used by Brown in his designs to give maximum impact to views of the water, and of the house across the water. The centrality of the view back to the house was new, and a stable ingredient in Brown's designs from the 1750s.[96] Wherever possible, Brown would route the main approach drive over water, as at Packington, Bowood, Chatsworth, Burghley, Shortgrove, or alongside it if that was not possible: Croome, Blenheim. This was very much akin to the medieval phenomenon of approaches to elite residences being flanked by water and, in subsequent centuries, looking down over fishponds. The underlying rationale remained the same: to impress the visitor and confer status, whilst the superficial rationale had changed: lakes were made, and positioned prominently, for their visual qualities, although they were probably also stocked with fish in most instances.[97]
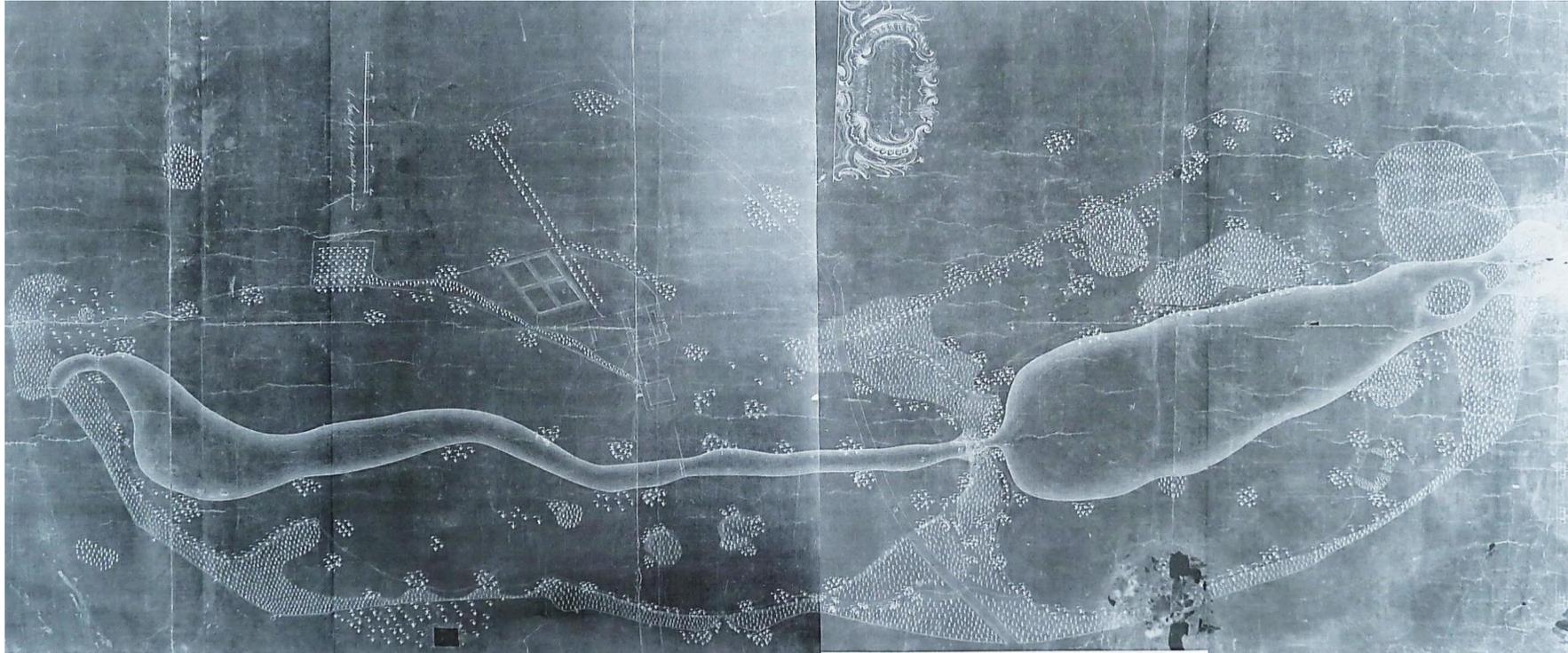
1	House	8	Gatehouse	15	Cascade design
2	Courts	9	Gatehouse design	16	The Lake
3	Kitchen Garden	10	Oler Plantation	17	My Lady's Lodge
4	Seats Firs Chasse?	11	Bridge	18	My Lady's Lodge design
5	Wooden Bridge	12	Bridge design	19	A Seat
6	A Mill	13	The Great Road	20	The Church
7	A Seat	14	Cascade	21	?
23	Gravel Paths in Firs Garden			22	?

Fig. 3.45. Brown's 1751 plan of Packington, Warwickshire.

3.6.3. Manicuring the setting

It is tempting to say that it is the water which marks out Brown's landscapes from others. In fact, something much more subtle was of equal importance: the key to his landscapes is the levelling work he did and this is what makes them instantly recognisable. It had great impact on the house, but also on the lake, as the smooth, uncluttered banks emphasised the visual qualities of the water. Contracts at Bowood and Longleat show that Brown did a great deal of levelling of land sloping down to the lakes he created, as well as in other parts of the park. This had great impact: it changed the landscape near the house from a bitty, compartmentalised area into a homogeneous area, integrally linked with the park, and usually a lake. This simplification of the landscape had the effect of making both the house and the lake very prominent. He moved all the extraneous 'offices', kitchen gardens and stables away from the house, to leave it uncluttered, and did extensive earth-moving to make the land around it look as though it was completely natural and undisturbed. It was a vast change. Exactly how he did this can be seen in his contracts of 1757 and 1758 with Viscount Weymouth at Longleat. As well as altering the sharp turns of the 'serpentine Water' (the serpentine canal adjacent to the east front of the house), Brown was

> To lay the two Canals next the serpentine Water into one, and to lower the Surface of them so much as to make the Surface of them have a natural, correspondent, Level, with the Ground on each Side of it

and:

> To begin at the Hall Door and to give a proper Levell to the Ground from it to High Wood, through where the Mill stood and from High Wood down to the Water which was altered last year.[99]

This is part of what he achieved:

Fig. 3.46. Longleat, Wiltshire: High Wood is *c.* 50m behind the viewer; the hall door is just up the steps.

Fig. 3.47. Longleat: the hall door and steps are just out of sight to the left of the picture. The angle of slope is *c.* 5.5˚.

The profile Brown created with his earth moving and levelling can be seen behind the right-hand fountain, where the viewer is looking across the 'two Canals' mentioned above. The angle of the slope is *c.* 5.5˚. As intended, he has created a 'natural, correspondent level' between the ponds and the surrounding

Figs. 3.48 and 3.49 Brown's fishponds at Longleat.

ground. Almost exactly the same angle of gradient (*c.* 6.5˚) can be seen in the landscaping around the chain of fishponds which Brown created adjacent to his new kitchen garden, 900m from the house. It must be stressed that this is not a scientific way of measuring angles but a subjective way of comparing what the slopes look like. This work is also mentioned in the contract. A similar gradient can be seen at Bowood, where the angle of slopes varies from *c.* 6.5˚ – 7.5˚. Fig. 3.50 shows the 'lawn' dropping down from the house to the lake, and the extensive drains put in by Brown. His contract with the Earl of Shelburne, dated 10th August, 1762, makes clear how carefully graded these slopes were:

> To Level, Drain, alter, Plant, and sow with Grass seeds all the
> Ground on the South Front, down to the Water.[100]

Fig. 3.50. Bowood, Wiltshire, from the east side of the lake.

Fig. 3.51. An adjacent view of Bowood from the east.

Again, the contract is quite specific:

> To level all the Ground between the Kitchen Garden [immediately north of the house] and the Water, and also to Drain, plant, and sow with Grass seeds all such Parts as shall be thought Necessary to be in Grass making the Whole compleat.[101]

This is exactly what can be seen in Fig. 3.51: the gently graded grass sloping down from behind the walled kitchen garden to the water. The 6th Article in the contract deals with the opposite side of the lake, from the dam southwards, which was also to be levelled. Planting was to be done (grass?), trees and bushes were to be removed "as shall be thought proper" and a sandy walk made along the length to connect across the dam with the one coming from the house, "in the best Direction for Shade and Prospect". This walk was significant as it provided views back to the house across the water, as Figs. 3.50 and 3.51 show.

This 'uncluttering' of the landscape and extensive levelling work was an aspect of Brown's design present in his early work, as his contract at Petworth, with the Earl of Egremont in 1753, shows:

> To reduce the Terraces & shorten them: so as to give the Ground on which they stand a natural Form, making it correspond properly with the Park & Level on Front of the House.[102]

This is one of the clearest, direct references to Brown removing residual formal elements around the house. Although this was not always the case in the 1750s[103], he did often succeed in persuading owners to accept his minimalist alternative, as at Trentham, Staffordshire.[104] Why he was so successful at doing so is an interesting question. Probably, it was a reflection of how influential his patron, Cobham, was on the formation of 'taste' in landscape making. Stowe had been a landscape about moral improvement, which the Patriots such as Cobham and Dormer favoured, almost incidentally shaped in an 'arcadian' form. Brown's landscapes, however, were about personal responses. His designs took the concept of a sylvan landscape and developed it in a completely new direction.

The aim was to create something of beauty for its own sake, not for its message. To this end, he manicured the land around significant features such as the house and lake, and presented the house rather like a jewel on a velvet bed, ideally viewed across water.

Another innovatory aspect of Brown's 'lawns' was his use of Dutch Clover (*Trifolium repens*) as well as grass seed in the mixture. This had two important advantages. The clover remained green throughout the winter[105], tolerating frost well, making the lawns attractive even in winter, and they considerably enhanced the nutritious value of the lawns if the owner wanted to graze them. This would have applied to the area on either side of the pools at Longleat that Brown made (Fig. 3.46) for example. Other advantages of this white clover, with its smaller leaves than forage varieties, were its ability to spread quickly and its low habit of growth, making it a good choice for a lawn.[106] As far as is known, Brown was the first person to do this in a *designed* landscape.[107] This three pronged approach – levelling, draining, grass planting – formed the bones of a Brown landscape from the beginning. These items appear in contract after contract, which is why Brown's landscapes are so recognisable, and may well be why many have been allowed to endure for so long.

3.6.4. Manipulation of water.

It was Brown's use of ornamental water, however, which shows the most originality and had the greatest impact, and there are several aspects to this. He extensively manipulated the water, which was often on several different levels, yet succeeded in making it look completely 'natural' and like one lake. He also used, and probably invented, the river-lake to enable him to provide a lake in untoward situations, or where money was limited. His lakes were often directly in view of the house, and they appeared larger and more interesting than they actually were because he concealed the ends. These elements were present in his designs early in his career, as we have seen with his plan for Packington.

Because Brown's lakes appeared to be so natural, it is tempting to think that he decided where to build the dam and roughly how big the lake would be,

and commenced building, allowing the water to fill the valley and form an irregular lake. In fact, the evidence suggests that Brown was very careful to ascertain just how high the water would be, and where it would extend to. His staking out of the landscape is nearly as well-known as his legendary remark about its 'capabilities'. In fact, as Hinde points out, Brown was meticulous about measurements.[108] At Blenheim, Brown had to work out how high the dam (in the form of a cascade) needed to be in order to flood Vanbrugh's bridge to the desired height, even though the bridge and dam were out of sight of each other.[109] Clearly, the process was to talk to the client whilst walking over the landscape, and to put stakes in to signify the extent of the water and the various levels, with ground to be made up or excavated. Brown's contract with Lord Weymouth (Longleat) refers to this:

> to repair the Head and to plant and alter it [the water] according to the Idea talked on with Lord Weymouth and also to lengthen it across the Fosse and the Road according to the Stakes put in for that Purpose and to make the Cascade proposed there and to plant the same.[110]

One possibility is that at a critical point in the landscape, such as Vanbrugh's bridge, Brown and the owner would discuss how high the owner wanted the water to be. A stake would be planted to record that on one side of the valley, and another one mirroring it on the other. Then, they would walk, following that level (or contour) along the valley, planting stakes, until a reasonable site for a dam was reached, depending on factors such as the width of the valley and the feasibility of building a dam there, plus whatever was known about the underlying rocks, soils and springs.[111] It is likely that the owner would have some idea of these latter factors. It is also likely that the owner would already have some idea of how much land he was prepared to take out of production, and that Brown was apprised of that information from the outset. This was a basic process which others would have used, not just Brown. Having sketched out an outline, as it were, Brown would then have had to make many decisions, based on the water sources and soil types that he found, what kind of dam construction to use, whether subsidiary dams were necessary to create sufficient depths of water in various places, whether digging out was necessary.

We have seen Brown doing exactly that with the chain of ponds at Longleat, raising the dam of one and lowering the end of the next pond in order to make one larger pool out of the two. The fact that Brown adapted or extended existing pools does not belittle his achievements. Working with an existing water source was sound practice: at least it was known that the ground would hold water there, and how reliable the water supply was. As the lake was being filled, adjustments might be needed and were probably commonplace, especially in connection with any bridges being built, and especially in the context of Brown's detailed attention to the angle of slopes.

It was his ability as a water engineer that was one of the keys to Brown's success. He had to be able to dam rivers and channel water successfully to make lakes. (Exactly how lakes were made is discussed in Chapter 5.) It is possible that he spent some weeks in Lincolnshire, possibly in 1738-9, with the Duke of Ancaster at Grimsthorpe.[112] If so, it is also possible that he encountered John Grundy (1719-83) of Spalding who was working there. Known for his engineering work in the Fens, and as a founder member of the Smeatonian Society[113], Grundy was at home with designing and building dams, using the clay core method with a cut off trench (Fig. 1.8) at Grimsthorpe and it is clear from this, and Richard Woods's instructions for Cusworth, as well as a diagram for the dam at Bowood, that this was the accepted method used at the time (discussed in detail below).

There are no definite plans of the dams Brown built, although there is a plan of the dam at Bowood in the muniments there.[114] Fig. 1.8 is an interpretation of Brown's dam for the main lake at Petworth (1755), based on field investigations and the contract with Lord Egremont, as well as the Bowood diagram.[115] It indicates that Brown was well abreast of contemporary construction techniques. Despite this, he still had problems with various lakes leaking, as at Bowood in 1768, where part of the dam started to move downhill.[116] Plans for dams, including Lord Ducie's dam at Tortworth, giving outline proportions, had been sent to Lord Shelburne in November, 1765, before Brown made the lake at Bowood, but we do not know if he used them, nor do we know who solved the problem in 1768.[117] Possibly he called in the kind of specialist alluded to in Chapter 5.

At Harewood in 1777, Brown experienced another problem: the water ran out as fast as it ran in when the 'plug' [sluice] in the dam was closed. That dam had to be completely opened up and the clay core was found to be leaking.[118] This problem of dams leaking when they were first made – we have seen how concerned Vanbrugh was about his dam at Castle Howard – was clearly not uncommon, and Brown does not seem to have been unduly concerned when it happened, though evidence is slender.[119] The fact that Brown completed contracts for lakes for so many clients illustrates that he was not just a fashionable landscape designer but also successful as a water engineer. Had his lakes not held water, he would not have been employed by so many people.

For reasons of natural topography, Brown did not always manage to position his lakes in direct view of the house – Melton Constable and Wimpole are places where he did not - but in many instances he did. As we have seen with Wardour Castle, Brown's plan was to increase the size of the lake to bring it directly into view from the house. Another significant way in which Brown was able to provide a 'lake' directly in view of the house was by creating a river-lake. This ingenious solution depended on the house being situated next to a river, of course. A river-lake was a reasonably straight-forward way of making a lake, and is discussed in detail in Chapter 5. Generally, weirs were used to pond water back, making the river wider and giving the appearance of a lake. Unlike serpentine canals, which were geometric and imposed on the topography, river-lakes were irregular and, on suitable sites, involved fewer topographical changes. It appears, from the available evidence, that Brown was the first person to make a lake in this way, possibly at Latimer, Buckinghamshire, in the late 1750s, but definitely for Lord Dacre at Belhus (Fig. 3.52). The intention of making a lake out of the river is clearly demonstrated by Lord Dacre, writing to Sanderson Miller about Belhus, in 1761:

> I have a number of expenses on me this year and yet I doubt whether I shall have prudence enough to abstain from meddling with my water in the lower part of the park; ... I know that that coarse meadow and moory sided canal might be converted into a very pleasing scene: And Brown is of the same

opinion: we now have another scheme; it is to make it in the river stile instead of the lake.[120]
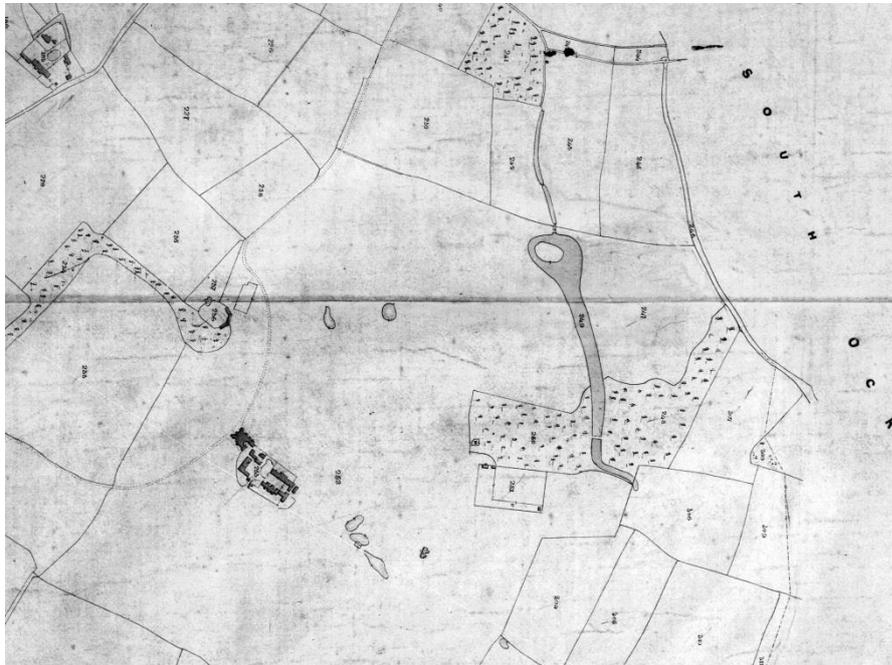
Fig. 3.52. Belhus Park, Essex, 1839 tithe map. Richard Woods modified the ends in 1770.

Several interesting points emerge from this letter. It sheds light on the process of making lakes: Dacre is clearly in discussion with Brown about how to make a lake on the site. There is also a suggestion that the land in question was not of great value (financially or aesthetically) as it was marshy, and that a lake would improve it. More importantly, it pin-points the concept that a river could be made to fulfil the role of a lake – it could be made to look like a lake. Lastly, it is implied that a river-lake was cheaper to make, and Lord Dacre's letter is useful evidence that this was the way in which contemporaries were thinking. A river-lake used an established water course, so obviated the necessity for a great amount of expensive earth moving; it did not involve dams which might give rise to problems, and took a smaller area out of production. Brown made about a dozen river-lakes out of perhaps 23 river-lakes (Table 25) which were made in the second half of the eighteenth century. Two are well-known: Chatsworth and Audley End. Chatsworth is discussed in Chapter 5, but it is worth pointing

out that, as Williamson has said, the Paine bridge over the river-lake provides the perfect view of the house: Brown created the lake over which to put the bridge, and angled the approach drive to create the maximum impact view of the house across the water.[121] At Audley End, and also a little further south at Shortgrove, Brown widened the River Cam to produce river-lakes for Baron Braybrooke and the Earl of Thomond respectively (Figs. 3.53 and 3.54). At

Fig. 3.53. Brown's 1753 plan for
Audley End.[122]

Fig. 3.54. 1839 Tithe map,
Shortgrove Park.

Shortgrove, one weir appears to have been sufficient to pond back the Cam and produce a similar lake to Audley End. In both places, minimal work was entailed to produce the river-lake because of the gentle gradient of the river – it drops *c.* 8 m in 4 km – so that any ponding back would produce a significant widening of the river.

A significant part of Brown's skill with water was the way in which he created large and impressive looking lakes almost regardless of the terrain. There were two key elements to this: i) he disguised the ends of the lakes, with

planting and by making the lake end just out of sight, as is well known, and ii) he created 'split-level' lakes which appeared as one lake, by disguising 'the joins'. The extent to which Brown did this is not easy to evaluate in a map-based survey, as the changes in level are frequently not significant enough to be indicated on maps. However, an examination of factors such as topography, the shape of lakes, the use of weirs and 'bridge-dams', plus known sites, makes it possible to make a provisional assessment. Where a bridge crossing a lake coincides with a contour line and a 'pinched' shape to the lake, for example, it suggests a change in level, with the bridge placed at that point to disguise it, as well as to make use of the dam or weir to cross the lake. On the available evidence, Brown appears to be the first person to do this in the making of lakes. Of course, fishponds had been made in series dropping down the course of a valley for centuries, but no attempt to link them aesthetically had been made. Geometric ponds and lakes were also made in a series sometimes, as at Dyrham Park, but there was no intention of disguising the ends in order to create an illusion of one large piece of water. This only occurred when lakes became informal. This strategy of masking the 'join' between two lakes was important because it allowed a much greater degree of flexibility in the construction of lakes, which Brown took full advantage of. He was able to create what appeared to be a lake in places where there was not enough room for one, or to make a two pieces of water appear continuous and therefore more impressive for a client. Prior Park, just outside Bath, where Brown produced a plan for Ralph Allen, illustrates the way this worked (Figs. 3.55 and 3.56). In a narrow, deep valley, what were probably originally medieval fishponds have been made into two ponds of *c.* 0.7 h each, or a split-level lake.[123] As the map shows, the dam dividing them has been shaped to mirror the shape of the lower pond, and the illusion of a larger piece of water was very successfully created, as the photograph illustrates. It should be noted that, despite the plan, there is no evidence that Brown actually worked at Prior Park, though perhaps his plan was influential.

Fig. 3.55. Prior Park, near Bath.
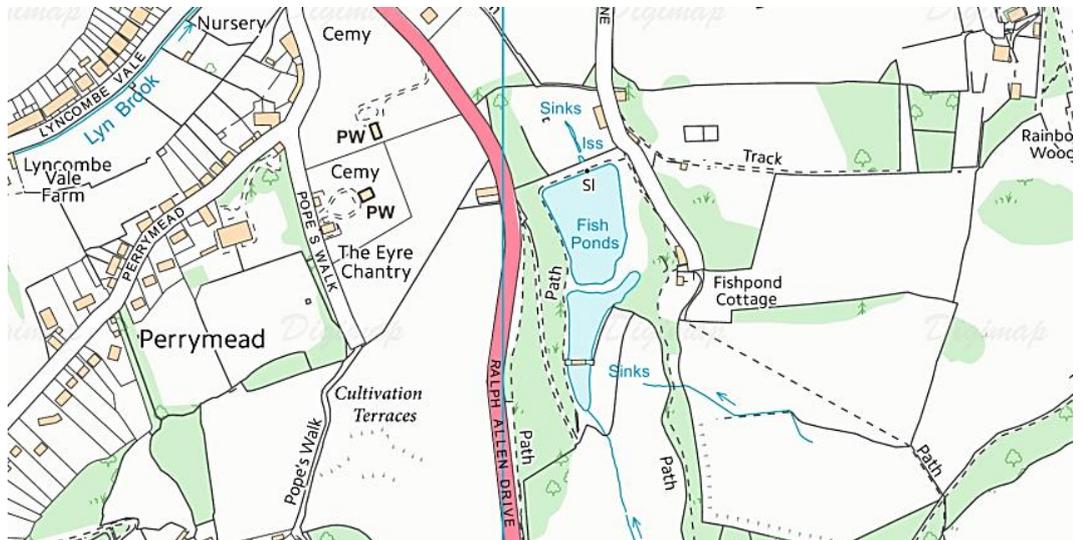
Fig. 3.56. Prior Park, Somerset, OS map, 2017.

A second way in which Brown disguised different levels of water may have been learnt at Stowe. A tour round the Stowe landscape reveals calm, uncluttered, gently sloping banks down to lakes. The main lakes were still

geometric when Brown was there, but the 'lakes' (irregular ponds) of the Elysian Fields had been made (Figs. 3.57 and 3.58). Bridgeman's plan of Stowe,

Figs. 3.57 and 3.58. Lakes in the Elysian Fields, Stowe, Buckinghamshire.

of *c.* 1735, indicates that the area of the Temple of Ancient Virtue was largely a clear lawn then, as in Fig. 3.57.[124] The Shell Bridge in the Elysian Fields (Fig. 3.58) clearly appears to be a bridge over a lake, whereas it is actually disguising a dam and a change in level.[125] It is a scaled up version of this bridge which Brown used at Wotton, Buckinghamshire, to disguise a change in level between The Warrells lake and the informal canal which he constructed in the late 1750s

Fig. 3.59. The Five Arch Bridge, Wotton, Buckinghamshire.

(Fig. 3.59), connecting The Warrells and The Lake. During significantly wet weather, water does flow through the central upper arches from the informal canal beyond. Remains of a sluice gate to control water levels remain in the

central lower arch; this has been replaced, probably in the mid-nineteenth century, by an open spillway. The Five Arch Bridge does not attempt to deceive the viewer about the change in level but it is so dramatic that it does just that, by distracting the person walking round it, who finds that the water apparently resumes its course. Whateley, in his *Observations*, came to the same conclusion:

> out of it [The Warrells lake] issue two small streams, winding towards a large river, which they are seen to approach, and supposed to join. A real junction is however impossible, from the difference of levels; but the terminations are so artfully concealed, that the deception is never suspected; and when known, is not easily explained.[126]

Brown's work with water at Wotton is highly complex and, at a technical level, is extremely competent. The landscape is low lying and undulating at best, formed from underlying mudstones, with the house on a low ridge of interbedded limestone and mudstone (Oakley Member), and a few small streams. Brown created *c.* 22 h of water out of this unpromising area, including an informal canal which linked the two large lakes (Fig. 3.60). The system basically works

Fig. 3.60. Supply inlet for the lakes, Wotton, Buckinghamshire, OS map, 2016.

Fig. 3.61. Open spillway in The Warrells' dam at Wotton, Buckinghamshire.

like an enormous bath, with the water supply coming in about halfway along the canal. It fills up the 'bath', and overflows in both directions, north and south. The water 'flows' in either direction, depending on the wind.[127] Currently, the overflows/control points are open spillways in the centres of the dams at either end of the system, but these are almost certainly nineteenth or twentieth century, and have replaced sluices within the dams (Fig. 3.61).[128]

As Thomas Whateley says in his description, the circuit followed by the visitor works powerfully on the senses, with views back to the house across water at several points, glimpses or views of buildings in the landscape, or bridges across the water. His analysis of the landscape is very insightful. His comments on the island – Grotto Island – which marks the transition between the canal and The Lake are particularly relevant:

> for an island near the conflux, dividing the breadth, and concealing the end of the lake, moderates for some way the space; and permitting it to expand but by, raises an idea of greatness, from uncertainty accompanied with increase. The reality does not disappoint the expectation; and the island, which is the point of view, is itself equal to the scene; it is large, and high above the lake; the ground is irregularly broken;

thickets hang on the sides; and towards the top is placed an
Ionic portico.[129]

Brown used two other islands in his design to mask the ends of the lakes: one in the western arm of The Warrells, and one in the far north of The Lake.

Many of the things Whateley says in *Observations* 1770 regarding the successful treatment of water could have been taken from Brown's landscapes: turning the end of a lake out of sight to make it appear to continue, as at Bowood, or planting around the end of it for the same reason, using an island to mask a junction, or make a lake look bigger, planting naturally alongside a river-like piece of water in "a just imitation of cultivated nature".[130] As *Observations* was published in 1770, it is reasonable to conclude that Brown's plans largely pre-date Whateley's ideas, and that Whateley's conclusions were based on, or at least influenced by, Brown's landscapes. His publication of them may also have promoted Brown's work among clients. In one respect, Whateley may have had a particular influence: the use of islands in lakes increased towards the end of the eighteenth century, and this may be ascribed to Whateley's analysis of how they increased the apparent size of lakes, if used circumspectly. Holkham is a case in point. An island was made in the southern part of the lake by the mid-eighteenth century. Towards the end of the century, two more islands were made at the northern end, probably in 1784-5 when William Emes added the 'hook' there. Similarly, the group of three islands in The Lake at Wotton was made in the late eighteenth century (after 1789), one of their functions being to act as a duck decoy.[131]

Brown's treatment of the water at Wotton is notable because of the level of difficulty involved. As at Croome, he created a lake on an unpromising site.[132] In places which were less challenging – less flat, with a better water supply – Brown made use of a 'bridge-dam' to conceal a drop in level and make two lakes appear to be one. Figs. 3.62 and 3.63 illustrate how this works. Fig. 3.62 shows the filter pond which Brown constructed at Bowood, which has prevented the main lake from silting up since it was made.[133] This necessitated a significant change in level between the two lakes, and Brown provided decorative side channels to cope with any flood water, similar in principle to the one at Wotton. As we have seen, Brown probably absorbed this idea from the Shell Bridge at

Stowe, but he then developed it into a structure which carried a drive. This appears to be the primary reason for the bridge in Fig. 3.62, whereas actually, the main reason for the bridge-dam being in that place was to create this subsidiary lake. This gave Brown much more flexibility in designing his lakes: as well as creating the illusion of one large lake, it also took less land out of production, and Brown could juggle the requirements of topography, water retention and approach drives (or other carriageways) to give the best result.

Fig. 3.62. Bridge-dam at Bowood, upper side.

Fig. 3.63. Lower side of the same bridge-dam.

This is one of the answers to the question of how Brown so frequently managed to achieve spectacular views of the house across water as the visitor approached. Instead of making one enormous lake, he linked smaller pieces of water together, giving him more flexibility with siting the water, and creating the illusion of one lake. The bridge-dam was a very successful new technique in the mid-eighteenth century, possibly invented by Brown, and he took full advantage of it. The viewer is either walking across on the bridge, and sees water on either side, or is walking alongside the lake and becomes distracted by the cascading water on the downstream side. In either case, the fact of the difference in water level does not obtrude on the consciousness. If Brown had not used these interim dams at Bowood, he would have had to make a much bigger dam at the north end of the valley (it is *c.* 4m high) to create a lake which stretched so far south (Fig. 3.64) and, as well as being a much more challenging dam to construct, the lake itself would have filled the valley and reached up to the walls of the house. Clark's Hill, which rises behind the trees in Fig. 3.62, was lowered by Brown; the main approach is behind it at this point.[134] Why the hill was lowered is a mystery, unless it was to create a suitably flat area for *al fresco* entertainments whilst looking up the lake and back to the house (Fig. 3.65). It did not create views from other points, such as the approach drive.
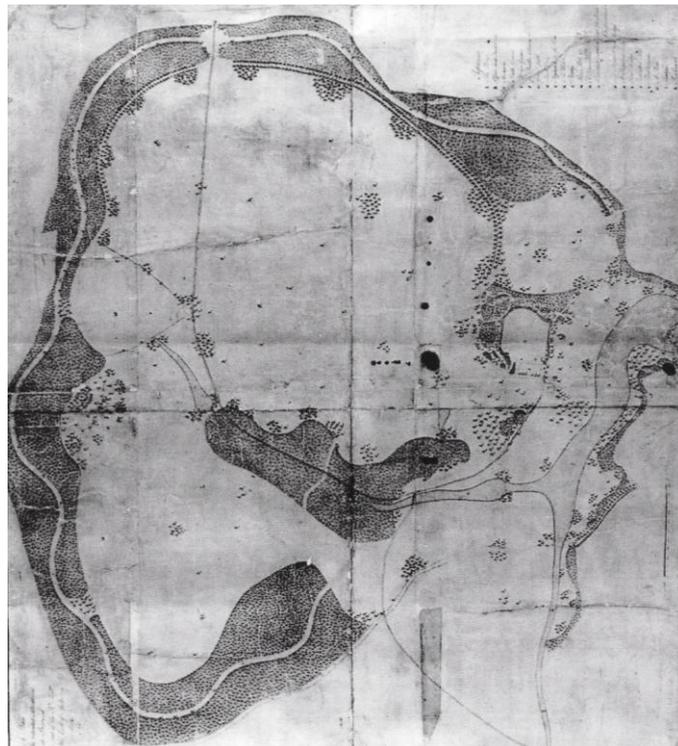
Fig. 3.64. Brown's 1763 plan for Bowood, Wiltshire.[135]

Fig. 3.65. View from Clark's Hill back to the house and lake at Bowood. The star marks the site of the original house, demolished in 1955.[136]

3.6.5. Two major lakes: Trentham and Blenheim

Brown carried out many prominent commissions and a number have already been referred to, but the lakes at Trentham and Blenheim should also be mentioned, both of them being very large. At Trentham, Brown signed a contract with the 2nd Earl Gower, and constructed a 27 h lake as part of the
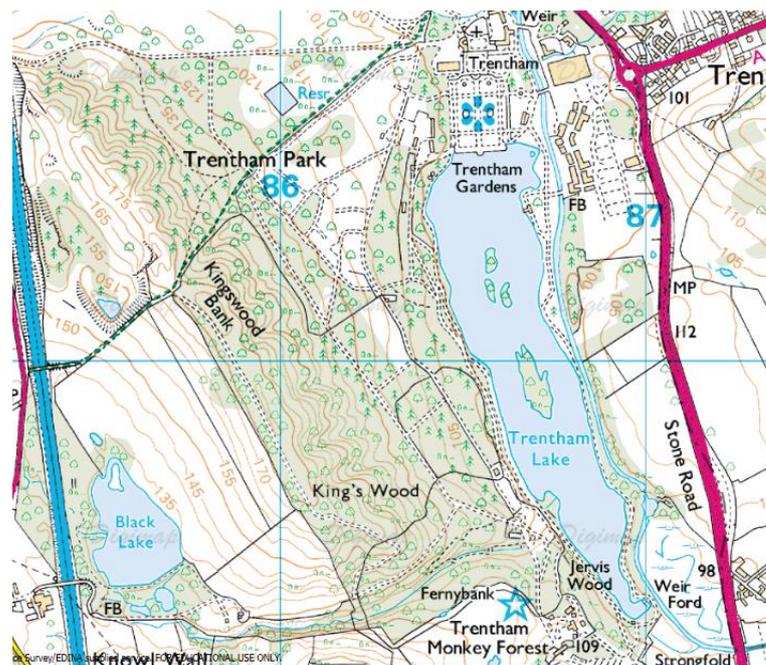
Fig. 3.66. The lake at Trentham, much as Brown planned it, OS map, 2016.

works (Fig. 3.66). Originally, a fishpond dating back at least to the sixteenth century occupied the area just north-west of the present formal gardens.[137] By the early 1700s, the area south of the house had been drained and two 'canals' constructed, one of which was quite lopsided (Fig. 3.67), though intended to be geometric, according to an early 1700s plan. In this low-lying, marshy area,

Fig. 3.67. 1727 'Coppy Map' of Trentham. The house is just off the top right corner.[138]

Brown incorporated the two existing pieces of water into a vast irregular lake extending southwards, following the western edge of the higher land, marked largely by the woodland, and re-routed the river.[139] He also created an island on the site of the previous causeway (Fig. 3.68).
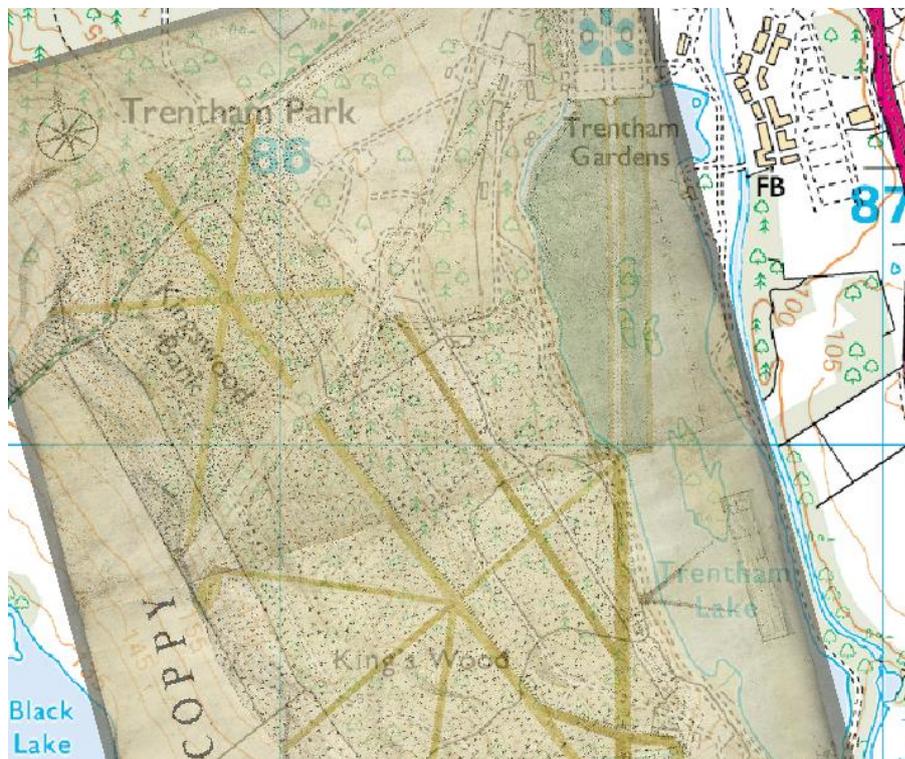
Fig. 3.68. The 1727 Coppy Map georeferenced to the OS map, 2016, showing how closely Brown's lake follows the original water.

As mentioned above, working with a proven water source was good practice, and many of Brown's lakes were re-workings of existing ponds or canals. This applied to all of his 'top ten' lakes:

Date circa	Place	Lake size (h)
1753	Croome	7
1757	Petworth	6
1757	Longleat	8
1759	Wotton Underwood	15
1761	Trentham	27
1761	Castle Ashby	3
1766	Bowood	14
1767	Blenheim	47
1770	Compton Verney	13
1780	Burghley	4.5

Table 14. Brown's 'top ten' lakes.

In some cases, the existing pond was relatively small, as at Bowood, and at others, relatively large, as at Compton Verney and Blenheim. From the point of view of the lake, two things stand out about Brown's work at Blenheim: his ability to persuade Marlborough to flood Vanbrugh's bridge, and the Lince dam. Boydell's views of Armstrong's water-works hint at why he was successful, as
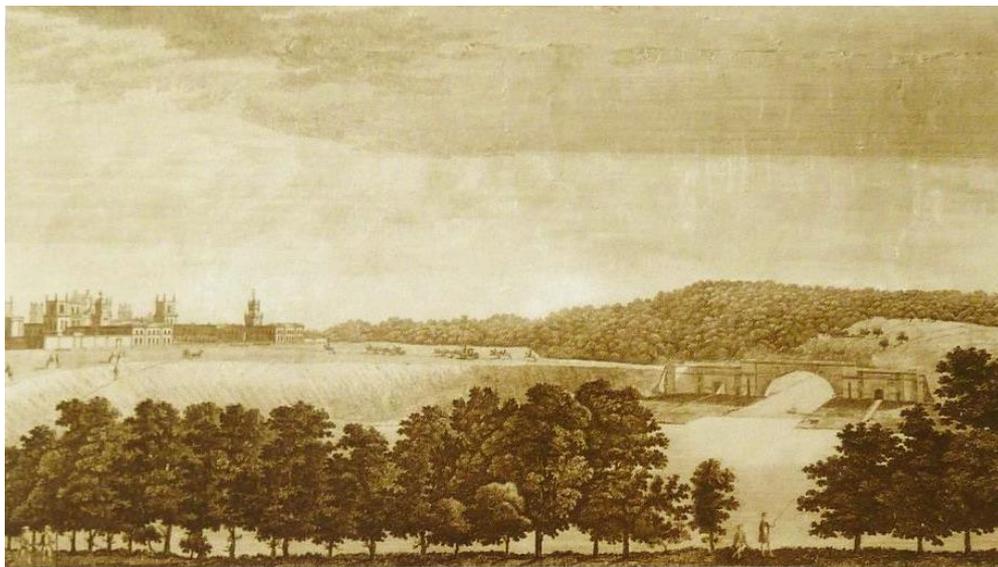
Fig. 3.69. Boydell's 1752 view of Blenheim from the north-east.[140]

Fig. 3.70. Boydell's 1752 view of Blenheim from the south-west.[141]

the palace appears stranded above the water (Figs. 3.69 and 3.70). The Lince dam, which Brown built to canalise the River Glyme and create an imposing river-lake in the park, to replace the stream, was 900 m long. Building a dam of

that length, which time has proved to be successful, was a considerable technological achievement.

Whilst discussion may continue about how pioneering Brown's landscapes were, the nature of his work with water is outstanding and impressive. The way in which he consistently produced significant lakes out of muddy streams at places like Croome and Wotton, and managed to position lakes in full view of existing house sites, as at Burghley and Petworth, or to create the impression of larger areas of water using split-level ponds or lakes, as at Castle Ashby, marks him out from his contemporaries, and commands admiration. He had the skills and confidence to undertake and successfully complete some truly pioneering projects, like Blenheim, and his use of river-lakes was significantly innovative, enabling him to create satisfactory lakes where there were limiting factors such as topography (Audley End) or money (Belhus). The irregular lake was the most significant feature of the English Landscape, and Brown was a master in the creation of lakes.

3.7. Other Improvers.

Although, on the basis of the samples looked at, Brown made about a third of the lakes created in the eighteenth century, which partly accounts for his pre-eminent position as a lake maker, about 70% of lakes in the eighteenth century were made by other people; *c.* 10% were made by other known designers and *c.* 60% by unknown improvers - possibly the owners themselves.[142] The other improvers or lake makers were men such as Henry Flitcroft (1697-1769), John Grundy (1719-83), Francis Richardson (active 1748-60), Nathaniel Richmond (1732-84), Richard Woods (1715-93), William Emes (1729/30-1803) and Thomas White (1736-1811). (Repton will be considered in Chapter 6.) The following information has been extracted from the Landscape Database (Tables 15-18).

Garden Name	County	Dating	Dat	Feature1	Feature2	Featur	Reference	Lake siz
Blagdon Hall 2	Northumber	c. 1755?	1755	Lake irregular			Richardso	Harris p 126 paintin	1 .5
Welbeck Abbey 3	Nottingham	1748-56	1756	Lake irregular	Lake irregula	Richardso	EH, Mrs. Delaney 17	4
Atherton Hall	Lancashire	1759+	1765	Lake irregular			Richardso	Jacques p 72. No tit	10 c.

Table 15. Lakes by Francis Richardson, extracted from the Landscape Database.

Garden Name	County	Dating	Dat	Feature1	Feature2	Featur	Reference	Lake siz
Shardeloes	Buckingham	Beg. 175	1757	Lake irregular			Richmond	Rocque Map 1761	13
Stoke Park, Stoke P	Buckingham		1762	Lake irregular	Lake irregula	Richmond	Williamson/Brown	2, 1.7
Danson Park, Bexle	Kent	Beg. '63	1763	Lake irregular			Richmond	D. Brown thesis	8
Himley Hall 1	Staffordshir		1770	Lake irregular	Cascade		Richmond	Williamson/Brown	1.5, 0.7, 1
Beeston 1 St. Lawre	Norfolk	1773-7	1777	Lake irregular			Richmond	Williamson Gazette	3.7

Table 16. Lakes by Nathaniel Richmond, extracted from the Landscape Database.

Garden Name	County	Dating	Dat	Feature1	Feature2	Featur	Reference	Lake siz
Cannon Hall	Yorkshire	1760-5	1763	Lake irregular	Lake irregula	Woods, R	Cowell p185	2.8
(Goldsborough)	Yorkshire		1764	Lake irregular		Woods, R	Cowell p117	Ponds
Cusworth	Yorkshire		1764	Lake irregular	Cascade infor	Woods, R	Binnie p66 1847 tith	1.1,0.3,0.7
Belhus Park 2	Essex		1770	Lake altered		Woods, R	OS & GH gazetteer	1.9
Boreham House	Essex		1771	Pond River-lal		Woods, R	Cowell	0.3
Brocket Hall 3	Hertfordshir	1772-4	1773	Lake altered	Bridge weir	Woods, R	Cowell p183,Rowe,	8 .5
Wivenhoe	Essex	Beg. 177	1777	Lake irregular	Bridge dam	Woods, R	Cowell p236	1.1
Wardour Castle 3	Wiltshire	1770s?	1778	Lake irregular	Lake irregula	Woods, R	Hinde p163, Mowl p	2 .4 2.4
Hare Hall		c. 1780	1780	No water		Woods, R	Cowell	N W
Audley End 4	Essex		1781	Cascade form;	Bridge classic	Woods, R	Cowell p177	N W
Copford Hall	Essex		1784	Cascade form;	Pond geomet	Woods, R	Cowell p189, Mako	N W

Table 17. Lakes by Richard Woods, extracted from the Landscape Database.

Garden Name	County	Dating	Dat	Feature1	Feature2	Featur	Reference	Lake siz
Keele Hall 1	Staffordshir	1768-70	1769	Ponds			Emes, Wi	EH: enlarged ponds	
Cholmondeley Cast	Cheshire		1777	Plantation rou		Emes, Wi	EH &	
(Dudmaston 2)	Shropshire		1777	Lake hybrid	Lake hybrid	Emes, Wi	J-S p 105 plan	
Badger Hall/ Badge	Shropshire	c. 1780	1780	Lake River-lak	Boathouse	Emes, Wi	1837 tithe. P&G UK	1.5, 0.8
Hawkstone Park	Shropshire	1783-7	1787	Lake irregular			Emes, Wi	Jacques p 116. No ti	19.5
Radbourne Hall	Derbyshire		1790	Lake irregular			Emes, Wi	Emes survey: DRO	1
Erlestoke	Wiltshire	By 1808	1790	Lake irregular			Emes, Wi	1786 Emes plan Jaco	4 .1
Locko Park 1	Derbyshire		1792	Lake hybrid		Emes, Wi	Emes plan: DRO	4
Chippenham Pk 2	Cambridges	1792-180	1800	Lake irregular			Emes, Wi	Mowl Camb p 140	2 .9

Table 18. Lakes by William Emes, extracted from the Landscape Database.

Of these men, only Richardson, Richmond, Woods and Emes are known to have designed more than one or two lakes, the focus being on 'new' lakes, rather than tweaking existing ones. It must be noted that this statement is based on current evidence (2017), and more lakes made by these men, as well as others, may well come to light. Richardson appears to have made a lake of *c.* 4 h at Welbeck for the 2nd Duke of Portland, though when the other lakes there were made is not known. We have seen that possibly Vanbrugh planned a substantial one (16 h) there in 1703. Stephen Wright is connected with the large lake (it is currently *c.* 42 h) at Clumber Park, designing the bridge for the Duke of Newcastle in *c.* 1774.[143] Both these estates are adjacent to Thoresby, and lie in valleys suitable for making large irregular lakes.

That virtually every self-respecting 'improver' was confident enough to make a lake is illustrated by the irregular lake constructed for the Duke of Cumberland and extended for George IV: Virginia Water (*c.* 56 h today). Henry Flitcroft senior made the original lake for the Duke in the early 1750s, the biggest ornamental lake of the eighteenth century, being even bigger than Blenheim (47 h).[144] In addition, "A grotto was included in the rockwork of the 1754 dam".[145] Perhaps this was over-ambitious as the dam was overtopped in 1768. Eventually (1797), a new dam was built further east, by Thomas Sandby, increasing the size of the lake, and he incorporated a new cascade into the dam, made from massive boulders.[146]

3.7.1. Richard Woods

Amongst the somewhat lesser known improvers, Richard Woods appears to have been relatively prolific in lake-making (six lakes), though his lakes were generally small, being of 1 – 3 h, and often involved modifying existing lakes or enlarging ponds, as at Brocket Hall.[147] There, in the 1770s, he re-shaped and extended the existing lake, creating a wide river-lake using a series of weirs. One of these was a bridge-weir, designed by James Paine (Fig. 3.71). This is remarkably similar to the bridge-weir designed by Robert Adam for Kedleston in 1764 but built in *c.* 1771 (Fig. 5.19)[148] and is reminiscent of, though more

Fig. 3.71. James Paine's bridge at Brocket Park, Hertfordshire, 1772-4.[149]

elegant than, Brown's at Bowood. This use of weirs by Woods (and Adams/Emes at Kedleston) illustrates how relatively easy it was to create a satisfactory lake - one that was big enough to impress – in a valley which was fairly flat. In all three places, the main approach was carried by a bridge-weir, giving views and the sound of falling water, sometimes with a glimpse or view of the house. Where land was more undulating or hilly, dams would be required rather than weirs, and these could also be disguised, as bridges. By the later 1760s and 1770s, this format had become popular and reflects the common approaches to landscape design by the various improvers.

In general, Woods would not be regarded as a significant maker of lakes or a designer of large landscapes as he was largely associated with improvements or modifications to existing landscapes and pleasure grounds.[150] He was involved with only about six landscapes of over 100 acres (40 h) and:

> If they wanted a setting for a new house rather than an entire park, Woods might well have had the reputation as the leading designer in that sphere.[151]

His reputation was for designing pleasure grounds, rather than whole landscapes. This was the case at Wardour Castle, Wiltshire, where, although Woods submitted a comprehensive plan (Fig. 3.43), only parts were implemented: the series of lakes in the north westerly part of the park. (Brown's plans suffered a similar fate.) At Cusworth, Woods created a new lake, of *c.* 1 h, with two subsidiary pieces of water (*c.* 1762), amounting to *c.* 2 h overall. His diagram for field drains makes it clear that he was aware of the importance of draining the adjacent boggy ground, and of sculpting the land into pleasing 'soft swells' where stakes were set for that purpose, as well as:

> in forming the mount you'l use all your engineowitty [ingenuity] to give the ground as much variety and life as possible by rowling and waveing it about in the manner I described to you[152].

Though not working on the same scale at Cusworth as Brown was at Bowood, Woods is clearly aware of the prevailing fashion for smooth, undulating turf. Whether he would have achieved a similar result at Wardour with his large planned lake in full view of the house as Brown did at Bowood we will never know. Unlike Brown though, he separated the house at Cusworth from the lake with a Hanging Lawn, which was something Brown would have avoided. Cowell also makes it clear that Woods was particularly concerned that the lakes would be visible from house, and from various walks and seats:

> having leavel'd and formed the water line next the park, you must then … cut down four other pateron lines [limes?] and let them be so shaped as to let you see the edge of the water from the house[153]

Similar levelling of the lawn was specified by him at Wivenhoe in order to ensure the water would be seen from the house (Fig. 3.72). Woods's work illustrates that there was a uniformity about what clients wanted their

Fig. 3.72. 1816 painting of Wivenhoe Park, Essex, by Constable.[154]

landscapes to be like in the mid-eighteenth century: a (large) piece of water visible from the house, with smooth lawns going down to it, and further opportunities to view it from walks, drives around the park and, most importantly, when approaching the house along the main drive.

3.7.2. Nathaniel Richmond

Nathaniel Richmond (1732-93), another 'improver' working at much the same time as Brown and Woods, made five lakes, on current evidence, but one of these was substantial: Danson Park (8 h), although it is likely that he also made the 13 h lake at Shardeloes (begun in 1757) for William Drake, to replace a canal and ponds.[155] He had some experience of working with Brown, at Warwick Castle and Moor Park, Hertfordshire, in the early 1760s.[156] There is a slight question mark over Richmond's lake-making. His designs, as David Brown points out, often feature a 'curlicue' shape to the dam (Fig. 3.73), but this made the dam unnecessarily complicated.[157] Earth dams were very basic structures,

Fig. 3.73. Nathaniel Richmond's 1763 proposal (attributed) for Danson Park, Kent. North is at the top.[158]

and not highly stable; it would certainly be unwise to over-complicate the significant end of a lake in this way. In fact, it seems likely that these dams were not constructed as shown on the plan, as at both Danson and Shardeloes, subsequent maps show much straighter, conventional dams (Figs. 3.74 and 3.75). This indicates that either Richmond produced more pared down and rational plans for construction, or that someone else was in charge of making the lakes. The 'curlicues' at the ends of his dams appear to be merely a kind of 'signature' element in his plans, perhaps to impress clients.

Fig. 3.74. 1799 OS drawing of Danson Park, Kent.
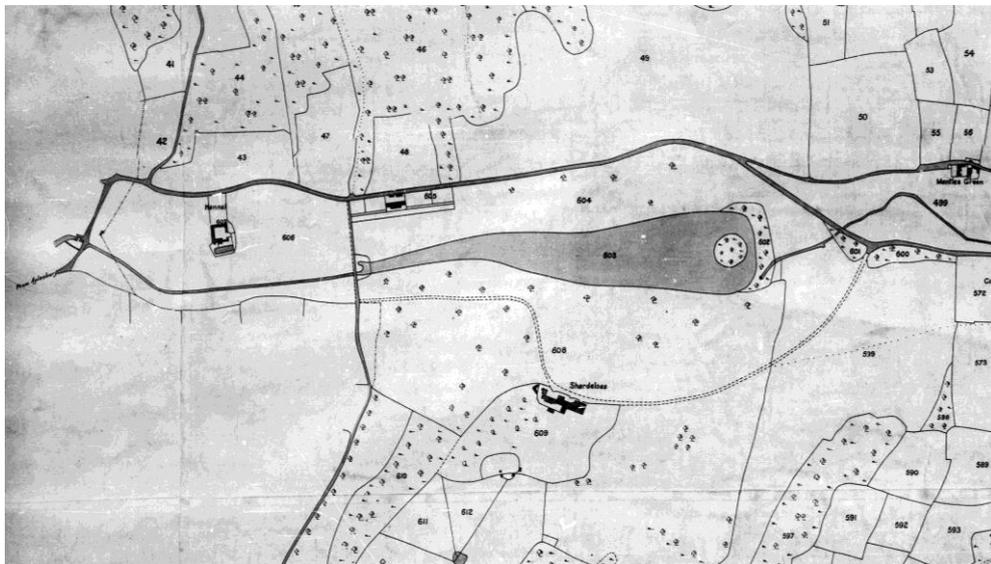
Fig. 3.75. 1837 tithe map of Shardeloes, Buckinghamshire.

3.7.3. William Emes.

In contrast to the men discussed above, William Emes was a more notable lake-maker. He first comes to notice as head gardener at Kedleston in

1758, where he is attributed with designing the lake (Fig. 3.76), which was then implemented by Robert Adam, who managed to oust Emes completely.[159] The style certainly belongs to Emes, as a comparison with his 1786 plan for

Fig. 3.76. 1764 Ingman plan of Kedleston Park, Derbyshire.[160]

 Erlestoke shows (Fig. 3.78). Drawn by George Ingman, the Kedleston plan may well be a composite effort as the northern part of the long circuit walk is very much like Adam's plan for a shorter one drawn in 1759.[161] Whether by Emes or Adam, the plan has the requisite ingredients of lake, lawns, hills, clumps, perimeter planting and an approach drive crossing the water. A glance at today's OS map of the 13 h river-lake shows that it was made almost exactly as planned - using four weirs to pond the water back, and Adam's elegant bridge-weir.

Emes, like his contemporaries, modified existing water as well as creating new pieces. Woods added the fashionable serpentine ends to Brown's river-lake for Lord Dacre at Belhus, and Emes did likewise for Coke at Holkham in the 1780s. Unlike most of his contemporaries, except Brown, Emes was responsible for some sizable lakes: Erlestoke (4 h), Hawkstone Park (Hawk

Lake, 19 h and Menagerie Lake, 2.5 h) and Locko Park (4 h). Emes was working for Sir Richard Hill at Hawkstone in the mid-1780s and both lakes he made there were slim, sinuous lakes.[162] The larger, Hawk Lake, was very much like a contour canal in construction, with a dam 1.3 miles long on the downhill side. The design for Locko Park, which Emes produced in 1792, appears to conform to the Brownian blue print of house looking down on the lake and approach drive crossing the water, but with Emes's rather square perimeter planting, which can also be seen in his plan of 1786 for Erlestoke (Fig. 3.78). What is different about Locko is the squarish, hybrid lake. The Historic England entry mentions, "Various drawings of stretches of water amongst estate papers appear to be alternative designs for the shape and outline of The Lake", and it may be that Emes was not particularly happy with this uncharacteristic shape.[163] Usually, as Jacques has commented, Emes's lakes tapered elegantly away and curved into woodland.[164] Perhaps he was constrained by his client's wishes: a river-lake of the Kedleston variety would not have reflected the house satisfactorily (and does not do so at Kedleston), but Emes's lake at Locko does (Fig 3.77).

Fig. 3.77. Locko Park, Derbyshire.[165]

The most complete picture of Emes's design style emerges from his work at Erlestoke. The series of maps which has survived – before, during and after – makes it particularly valuable because not only can we see what Emes planned, but we can also see what was implemented and this tells us a lot about what was fashionable in lake design towards the end of the eighteenth century, *after* Brown. The *c.* 1782 parish map (Fig. 3.79) shows a small park with a house on
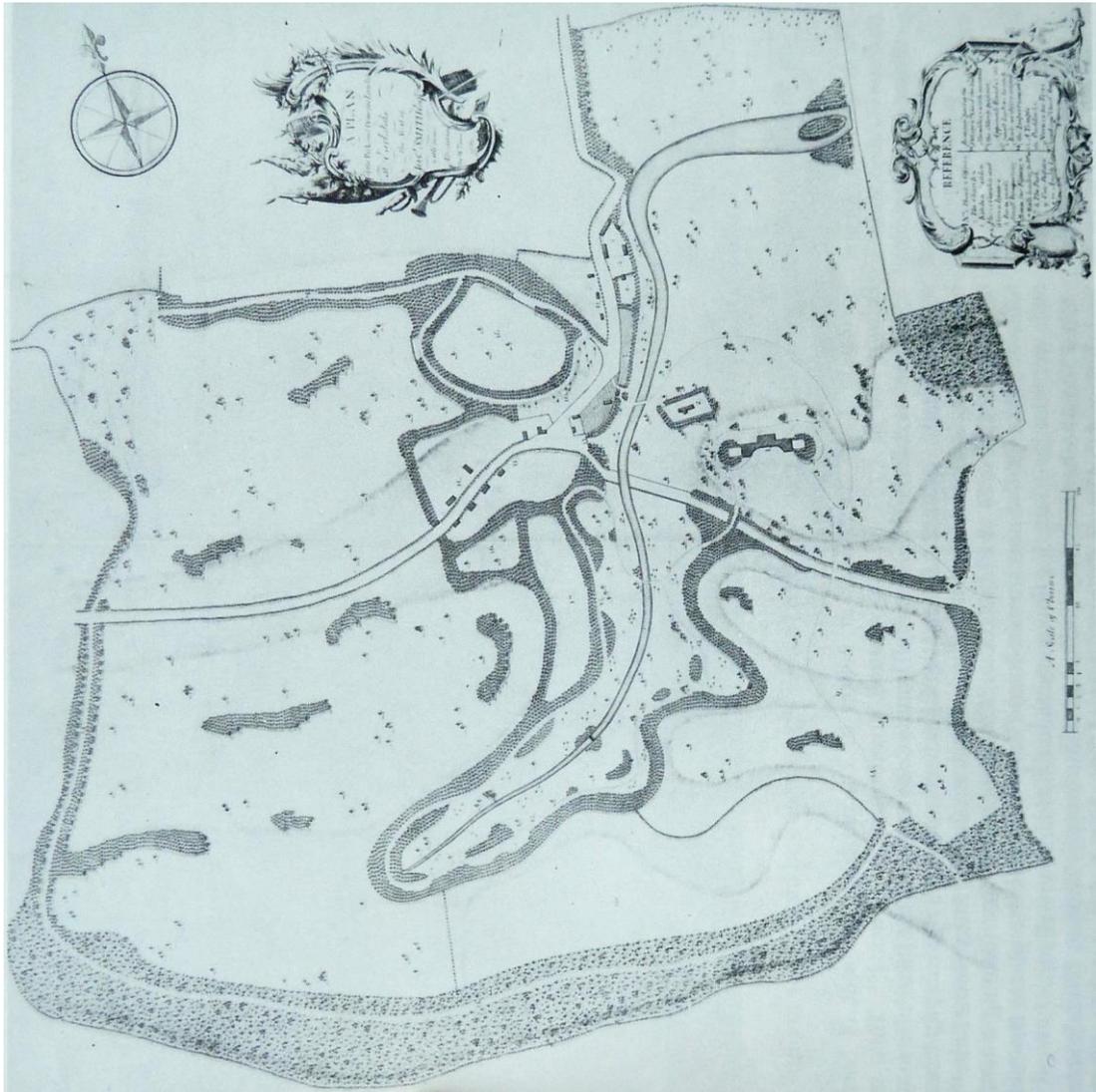
Fig. 3.78. 1786 plan of Erlestoke Park, Wiltshire, by William Emes.[166]
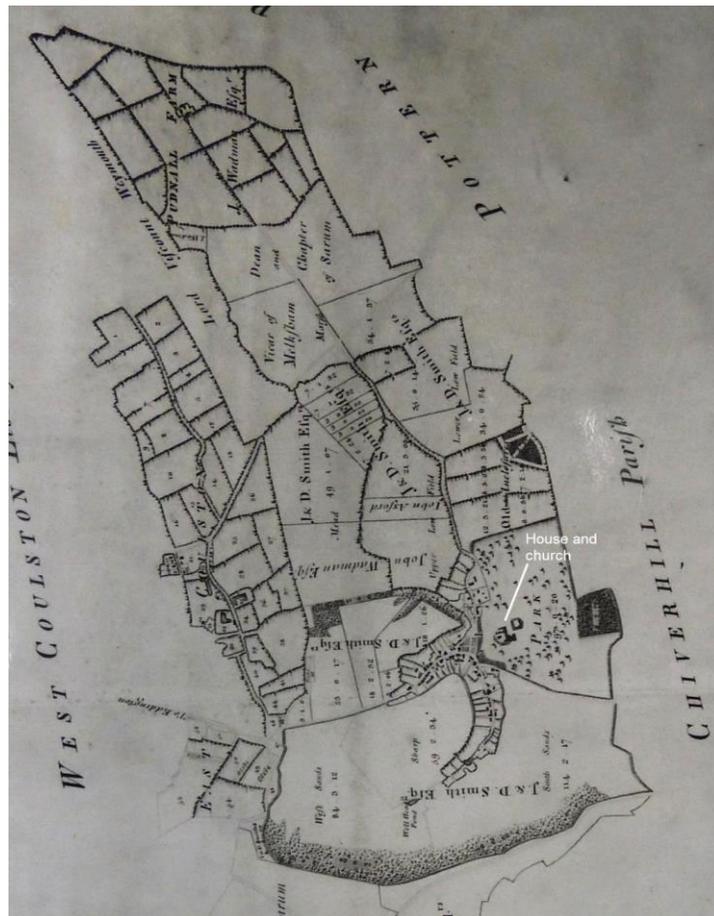
Fig. 3.79. *c.* 1782 map of Erlestoke parish, Wiltshire.[167]

the low land, and a village street extending south of today's main road, with two village ponds. Joshua Smith built a new house on the high ground to the south-east and commissioned Emes to redesign the landscape.[168] Emes's plan (Fig. 3.78) shows that he intended to convert a stream and the ponds into a long, sinuous lake of *c.* 4 h. Tree planting, adapted from a previous formal plantation, would mask the dam at the head of the lake, and woods wrap around the tail end. Emes depicted this lake as one continuous piece of water, but the ground falling from south to north dictated that this should be constructed in several pieces, with 'seven cascades', as John Britton remarked.[169] Wooded walks bordered the southern half of the lake on the plan, with at least two crossing points. The northern part of the lake was made in flat, marshy ground, necessitating minimal work in forming embankments and the low dam. A 'Small Banqueting Room for Fishing', which Emes had tucked away near the farmyards, appeared in a much more prominent (and useful) position alongside the lake, near the lowest cascade or weir, by 1825.

Fig. 3.80. 1825 estate map of Erlestoke Park, Wiltshire.[170]

Almost all the wooded areas on the parish map were incorporated by Emes into his plan, and modified or extended by him (Fig. 3.78). Of two main approach drives planned by Emes, one from the east simply entered the park and went straight to the house, though probably giving a view from this high ground over the park and lake. The westerly approach crossed the lake on a three arched bridge and went through the park before ascending to the house. Perhaps this was the reason for moving the church in the 1880s: it would have obscured the view of the house whilst crossing the lake. "A Ride or drive around the Improvements", going southwards from the house providing a complete circuit of the park on the high ground, was implemented as planned. Emes differed from Brown here: there was no apparent thinning of trees to facilitate views over the estate.

Joshua Smith (died 1819), the owner of Erlestoke, was a local MP and a rich man, though not a member of the aristocracy, and he clearly regarded William Emes as a suitable improver to design his new estate.[171] He obviously approved of the design whole-heartedly as he implemented it very faithfully, presumably feeling that it had every modern feature – circuit drives, lake, cascades, fishing pavilion, garden 'temple', greenhouse, detached kitchen garden, not to mention the park itself. This 'three dimensional' view of Erlestoke tells us a lot about prevailing fashions in *c.* 1790. The 'Brownian' formula, which Emes implemented, of park with perimeter planting, clumps, lake, and approach drive over water was still desired and the elongated, irregular lake was still
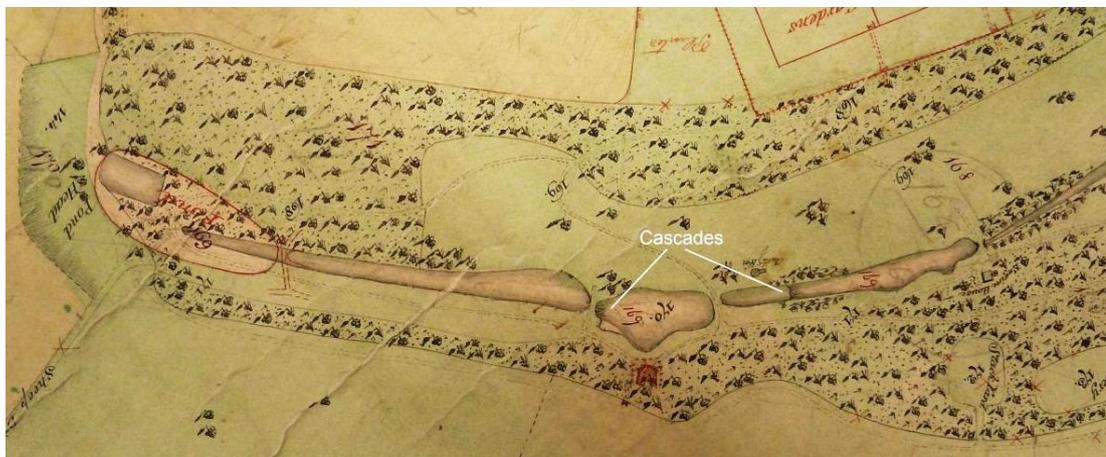
Fig. 3.81. Detail of the 1825 plan of Erlestoke Park indicating the cascades.

Planned alterations are indicated in red.[172]

fashionable. The southern part of the lake had parallel sheltering belts of mixed deciduous trees and conifers, with some denser planting at the tails of ponds, and by a possible cascade. However, the planting was not as subtle or varied as Brown's, as illustrated in the Kimberley plan (Fig. 3.39) and, apart from the conifers, there is no indication of any specimen trees. What this adds up to is a formulaic landscape design, albeit a high quality one. What is original though is the sinuous design of the lake, which is the epitome of Emes's style.

3.8. Conclusion.

The main thrust of this chapter has been to establish a chronology of the evolution of lakes, something which has not been attempted before. For contemporaries, the concept of a man-made *lake* did not exist at the beginning of the eighteenth century. However, it has been established that large areas of ornamental water were starting to become popular then, and these were characterised in this thesis as geometric lakes. Generally, they were not very large, owing to the expense of making them, and of fitting these basically square elements into linear designs. The first 'lake' was made at Thoresby in *c.* 1719, and this informal type was characterised as an irregular lake. Lake numbers started to increase in the 1730s and peaked in the 1760s and '70s, with different forms such as hybrid lakes and river-lakes emerging.

To date, the accepted thinking about lakes is that their evolution was driven by landscape style and, more specifically, the rise of the 'naturalistic' style under Kent, Brown and their contemporaries. This was not the case. Instead, irregular lakes developed first, and landscapes changed around them. The results of this investigation show that men like Kingston, Carlisle, Coke, and Burlington were happy to plan geometric landscapes and put irregular lakes into them. However, their desire for large, irregular bodies of ornamental water was to have a significant impact on the geometric landscape style.

In the first half of the century, it was the owners of great estates who drove the evolution and creation of lakes, aided by Vanbrugh, who designed some significant buildings. His ideas about ornamental water and early plans for irregular lakes pre-dated Brown's by several decades. By *c.* 1750, 'improvers' were emerging, such as Brown, Richmond, Woods and Emes, to implement the 'landscape style' for a wider circle of clients, some of whom were of lower social rank. Brown was pre-eminent, not least because of the numbers of landscapes he designed. His approach to creating lakes was innovative, enabling him frequently to place them in front of the house, making house and lake the pivotal part of the landscape. He also stamped his style on house surroundings, creating a Brown 'marque' of house, smooth lawns and lake. His successful commercial operation ensured that his design style became widespread, and

widely desired. A further conclusion is that other designers, such as Richmond, Woods and Emes were also successful in much the same style, but they did not make many lakes compared with Brown, although they had the technical competence to do so. What also emerges is that many lakes were made by unknown people, probably owners working with their gardeners and estate labour. It is possible there was a significant body of skilled men, probably at local level, who could make dams for large ponds and lakes but if so, we simply do not know who they were. More research is required to shed light on this area. No names have emerged from this enquiry and if there were men at national level who were dam making experts for ornamental lakes, there would almost certainly be references to them, especially in instances where dams leaked or burst; Lord Shelburne, for example, would have called in such an expert when his dam at Bowood gave persistent trouble, a problem which Brown took two years to resolve.[173]

Much has been said about approaches being manipulated by Brown and his contemporaries to pass over lakes, or give carefully controlled glimpses of water, or provide views of the house across the water. In the wider context, this use of water is reminiscent of fishponds or lake-moats being used to enhance approaches to elite establishments or to convey status in the medieval era. It emphasises that, although the form of the water features may have changed to some extent, water itself remained a very high status element. Irregular lakes, which were much like *vivaria* in their form, were a new facet of the same concern to demonstrate wealth and status by placing water near the house and the approaches.

Up to *c.* 1790, designers, including Brown, were largely following the consensus of what constituted a desirable landscape: 'natural' looking contours, 'natural' looking water, clumps and perimeter tree cover to control views, and to provide seclusion and a sense of ownership. In the 1790s, this was beginning to seem *passé* and the ideas of Price and Knight were beginning to influence opinions, as was Repton's practice, the two being largely opposed, and this will be explored in Chapter 6.

[1] Campbell *Vitruvius* op. cit., Vol. III, Plate 73-74

[2] Plan of Welford Park with a pencil label on the frame saying 'Circa 1700', courtesy of Mr. and Mrs. James Puxley

[3] 1715 survey of Boughton in John Cornforth, 'The History of the Boughton Landscape' *Country Life* 11th March, 1971, Fig. 3

[4] T. Mowl & M. Mako *Historic Gardens of Cambridgeshire* (Bristol: Redcliffe Press, 2009) p 83

[5] 1801 survey of Gamlinghay Park, Cambridgeshire, in Mowl & Mako, ibid., p 83

[6] EH listing: Staunton Harold Park and Garden

[7] L. Knyff & J. Kip, editors J. Harris and G. Jackson-Stops *Britannia Illustrata (Nouveau Theatre de Grande Bretagne,* 1708) (Bungay: Paradigm Press, 1984) Plate 43

[8] J. Bapasola *The Finest View in England: The Landscape and Gardens at Blenheim Palace* (Oxford: Blenheim Palace, 2009) p 36

[9] Ibid., p 37

[10] Ibid., p 35

[11] From *Letters of Sarah Duchess of Marlborough at Madresfield Court*, 1875, ref. 166 quoted in Bapasola, ibid., p 37

[12] T. Williamson, 'The archaeology of the landscape park' in BAR British Series 268 (1998), pp 72-80. It is supplied by two small streams.

[13] S. Switzer *Ichnographia* op. cit., Vol. I, plate opposite p 322

[14] Campbell *Vitruvius* op. cit., Vol. III, Plate 81-2

[15] Diagram in D. Neave & D. Turnbull *Landscaped Parks and Gardens of East Yorkshire* (Bridlington: Georgian Society for East Yorkshire, 1992) p 51, from a 1739 plan by Thomas Patterson, Humberside Record Office, DDX/31 173

[16] 1727 estate survey, ref. CH/P1/4, Castle Howard archives

[17] 1744-55 estate survey of Holkham Hall, Norfolk Record Office, ref. MS 21127 A (2 maps).

[18] Information extrapolated from accounts for Thoresby Hall, Manvers Archive, at University of Nottingham, Manuscripts and Special Collections, ref. Ma 4287 1719-20

[19] J. Vanbrugh: letter to Lord Carlisle, 20th Feb., 1721 in H. Dobrée, & G. Webb, eds. *The Complete Works of Sir John Vanbrugh Volume 4* (London: The Nonesuch Press, 1928) p 129

[20] Neave & Turnbull, op. cit., p 50

[21] University of Nottingham, Special Collections, ref. Ma 4 P 19

[22] Campbell *Vitruvius* Vol. III, op. cit., Plate 81-2

[23] University of Nottingham, Special Collections, ref. Ma 4 P 20

[24] Bishop Richard Pococke *Travels Through England* ed. James Joel Cartwright, (London?: Camden Society, 1888) Vol. 42 p 73, online at https://archive.org/stream/travelsthroughe01cartgoog#page/n14/mode/2up/ accessed January 2015

[25] There is always the caveat that subsequent research may uncover an earlier lake.

[26] University of Nottingham, Manuscripts and Special Collections, ref. Ma 4283 1718-19

[27] Evelyn Pierrepont, 1st Duke of Kingston, by G. F. R. Barker, revised by M. E. Clayton ODNB online accessed December 2014

[28] University Library, Cambridge, ref. Munby.bb.2. Published in 1726, the catalogue of his library was the first printed in English of a personal library.

[29] Dobrée & Webb, op. cit., p 8

[30] K. Downes *Sir John Vanbrugh, A Biography* (London, 1987), p 461

[31] There is even the possibility that Copley's informant mistook Welbeck for Thoresby: when initially constructed, Thoresby lake was c. 48 acres.

[32] C. W. James *Chief Justice Coke: His Family and Descendants at Holkham* (London: Country Life, 1929) pp 187, 202

[33] The lake became more irregular in the 1730s, with the addition of an island in the southern part: T. Williamson, personal communication, November 2016

[34] Dobrée & Webb, op. cit., p 156

[35] Dobrée & Webb, op. cit., p 156, p 158

[36] Dobrée & Webb, op. cit., pp 156, 171. This is also one of the earliest uses of the word 'dam'. The usual word was 'head'.

[37] Detail of 1727 estate survey, ref. CH/P1/4, Castle Howard archives

[38] Campbell *Vitruvius* op. cit., Vol. III, Plate 5-6

[39] Bing Maps online at https://www.bing.com/mapspreview?setmkt=en-gb accessed November 2016

[40] As illustrated by the 1744 estate map of Castle Howard, ref. P1/11, and the First Edition 6" OS map, surveyed in 1852-3.

[41] C. Saumarez Smith *The Building of Castle Howard* (London: Random House, 1997) p 128

[42] D. Defoe *A Tour Through the Whole Island of Great Britain by a Gentleman 1742* Vol. 3 p 181 online at http://books.google.co.uk/books?id=CUgVAAAAQAAJ&printsec=frontcover&dq=defoe+tour&hl=en&sa=X&ei=xL1QVKT1BMKBPebVgagB&ved=0CDMQ6AewAw#v=onepage&q=defoe%20tour&f=false accessed Oct. 2014

[43] Saumarez Smith, op. cit., p 128

[44] J. Harris *The Artist and the Country House* (London: Philip Wilson Publishers, 1979) p 116

[45] J. Swift, ed. *The Works of Sir William Temple in Two Volumes*, including *'Upon the Gardens of Epicurus'* (London: Round et al, 1731) p 170 online at https://books.google.co.uk/books?id=sPUhAQAAMAAJ&pg=PP11&dq=sir+william+temple&hl=en&sa=X&ved=0ahUKEwj3i9XXm8nTAhXLBsAKHY3ICDY4FBDoAQhHMAc#v=onepage&q=sir%20william%20temple&f=false accessed January 2015

[46] Bodleian Libraries MS. Top. Oxon. A.37

[47] C. Dalton *Sir John Vanbrugh and the Vitruvian Landscape* (Routledge: Abingdon, 2012) p 107

[48] Bapasola, op. cit., p 16

[49] Bodleian Libraries MS. Top. Oxon. A.37

[50] Campbell *Vitruvius* op. cit., Vol. III, Plates 71-2

[51] C. Campbell *Vitruvius Britannicus* Vol. I (London, 1715) p 5

[52] Switzer was employed at Blenheim on the construction of the bridge, in 1707-8. Bapasola, op. cit., p 28

[53] D. Neave & D. Turnbull, op. cit., p 50

[54] Ibid., p 51

[55] Ibid., p 50

[56] Defoe described it as a 'Serpentine River': Tour Through the Whole Island of Great Britain Vol. II, 1748 p 168, online at https://books.google.co.uk/books?id=HSgJAAAAQAAJ&printsec=frontcover&dq=editions:F1bY1G52glsC&hl=en&sa=X&redir_esc=y#v=onepage&q=169&f=false accessed August 2016

[57] Campbell *Vitruvius* op. cit., Vol. III, Plates 77-8

[58] J. Badeslade *et al, Vitruvius Brittannicus. Second Series, Volume the Fourth* 1739, (New York: Dover Publications, 2009) Plates 19-23

[59] Opinions are divided about what Kent was responsible for in connection with water at Holkham, C. Hiskey (archivist at Holkham) and T. Williamson having opposing views.

[60] T. Mowl *Historic Gardens of Gloucestershire* (Stroud: Tempus Publishing, 2002) p 64

[61] P. Willis *Charles Bridgeman and the English Landscape Garden* (London: A. Zwemmer, 1997) p 96

[62] Mowl, *Gloucs.*, op. cit., p 64

[63] Willis, op. cit., Plate 98

[64] Extract from Rocque's survey of London, 1745, Cambridge University Library Special Collections, ref. Atlas 2.74.2

[65] T. Williamson, personal communication, March 2017

[66] T. Mowl *Historic Gardens of Wiltshire* (Stroud: Tempus Publishing, 2004) Plate 8

[67] T. Mowl 'Rococo and Later Landscaping at Longleat', *Garden History* Vol 21, no. 1 (Summer, 1995) p 59; the *London Journal* 1st May, 1731, quoted in H. Colvin, general editor *The History of the King's Works* Vol. 5 1660-1782 (London: HMSO, 1976)

[68] *Oxford English Dictionary* "serpentine adj. 3a", *London Journl.* 26 Sept. 2/3, (Oxford University Press) online at http://www.oed.com/viewdictionaryentry/Entry/ accessed March 2017, henceforward quoted as 'OED online'

[69] F. Blomefield *An Essay Towards A Topographical History of the County of Norfolk* Vol. 2 (London: W. Miller, 1805) 539 http://www.british-history.ac.uk/topographical-hist-norfolk/vol2/pp535-539 18.12.16

[70] Letter from Mrs. Robinson to her daughter, Elizabeth Montagu, 28th December, 1743, quoted in Harris, op. cit., p 220

[71] J. C. Loudon *Encyclopaedia of Gardening* (ed. 2) in OED online, "serpentine iii. iv", accessed September 2014

[72] Arthur Young *A Six Month Tour Through the North of England*, Vol. 3, 1774 (London: Various, 1774) p 327

[73] OED online, "serpentine n. 10c", accessed April 2017

[74] OED online, "serpentine adj. 3a", accessed April 2017

[75] M. Turner *English Parliamentary Enclosure* (Folkstone: Wm. Dawson and Sons, 1980) p 142

[76] WSHC ref. 383/316

[77] WSHC ref. 135/4

[78] Devizes Museum, Wiltshire, ref. 908

[79] The EH listing gives varying dates for Kiddington: *c.* 1740 or 1760s for Brown's lake there.

[80] S. Shields *Moving Heaven and Earth: Capability Brown's Gift of Landscape* (London: Unicorn Publishing, 2016) p 29-30

[81] People mentioned in accounts are not necessarily designated with a specific function, such as dam builder. However, given the importance of this job, it seems likely that a man specialising in dams would be mentioned as such.

[82] T. Williamson, personal communication, September 2015.

[83] D. Brown & T. Williamson *Lancelot Brown and the Capability Men: Landscape Revolution in the Eighteenth Century* (London: Reaktion Books, 2016) p 101

[84] Ibid., p 95

[85] T. Hinde *Capability Brown: The Story of a Master Gardener* (London: Century Hutchinson, 1986 p 20

[86] T. Williamson, personal communication, September 2015.

[87] Brown & Williamson, op. cit., p 106

[88] Photograph, T. Williamson

[89] Warwick County Record Office, ref. Z0293(L)

[90] Warwick County Record Office, ref. Z143L

[91] T. Mowl & B. Earnshaw *An Insular Rococo: Architecture, Politics and Society in Ireland and England, 1710-1770* p 49

[92] T. Williamson, personal communication, October 2015

[93] Hinde, op. cit., p 97

[94] M. Girouard *Life in the English Country House: A Social and Architectural History* (Harmondsworth: Penguin Books, 1980) p 145

[95] Figs. 3.42 and 3.43 in F. Cowell *Richard Woods (1715-1793): Master of the Pleasure Garden* (Woodbridge, Suffolk: Boydell Press, 2009) p 107

[96] Brown & Williamson, op. cit., p 116

[97] J. Lawrence *The Modern Land Steward in which the duties and functions of stewardship are considered and explained…* (London: 2nd ed. 1806) p 314 online at https://books.google.co.uk/books?id=PYcoAQAAIAAJ&printsec=frontcover&dq=the+modern+land+steward&hl=en&sa=X&ved=0ahUKEwiwxZmXgfTTAhWoI8AKHfSjA3sQ6AEIIjAA#v=onepage&q=the%20modern%20land%20steward&f=false accessed May 2017

[98] Warwick County Record Office, ref. Z143L

[99] L. Brown's contracts with Viscount Weymouth, 10th October, 1757, November, 1758, ref. Thynne Papers, Box XXX, vol. LXXVII

[100] L. Brown's contract for work at Bowood with 2nd Earl of Shelburne of 10th August, 1763, Bowood Muniments, Box VI (a), by kind permission of the Marquis of Lansdowne

[101] Ibid.

[102] Brown's contract for Lord Egremont at Petworth, dated 1st May, 1753, West Sussex Record Office, ref. PHA 6623

[103] Brown & Williamson, op. cit., p 78

[104] T. Mowl & D. Barre *The Historic Gardens of England: Staffordshire* (Bristol: Redcliffe Press, 2007) p 172, Fig. 76

[105] William Blake, farmer, personal communication, October 2015

[106] As J. Phibbs points out, clover for forage had been used by great estates in crop rotations since the late seventeenth century: J. Phibbs, 'The use of plants in eighteenth century gardens', *Garden History* Vol. 38: 1 (2010), fn. 68

[107] There is no mention of this practice by Switzer or Batty Langley, or George Mason in *An Essay on Design in Gardening* 1768

[108] Savernake Archives, WSHC, Ailesbury, 1300/1910–3266 given in Hinde, op. cit., p 112

[109] Hinde, op. cit., p 120

[110] L. Brown's contract of 10th October, 1757, with Lord Weymouth of Longleat, ref. Thynne Papers, Box XXX, Vol. LXXVII

[111] In fact, Lawrence alludes to a similar process in his book, op. cit., pp 315-6

[112] J. Brown *Lancelot 'Capability' Brown: The Omnipotent Magician* 1716 – 1783 p 36

[113] G. M. Binnie *Early Dam Builders in Britain* (London: Thomas Telford, 1987) p 67

[114] In conjunction with letters referring to a problem with the dam at Bowood, it can be safely assumed that this plan represents the dam built by/under Brown.

[115] Hinde, op. cit., p 51

[116] Bowood Muniments, ref. Box 5 (x) (c), by kind permission of the Marquis of Lansdowne

[117] 1765, 10th November, Letter from Sir Will. Codrington to Lord Shelburne, re Ld, Ducie's Plans, MS 1 No. 17, Bowood Muniments, by kind permission of the Marquis of Lansdowne

[118] Binnie, op. cit., p 65

[119] 1768, 28th May, letter from Henry Merewether to Lord Shelburne regarding the dam, Bowood Muniments, ref. Box 5 (x) (c) by kind permission of the Marquis of Lansdowne

[120] Lilian Dickins and M. Stanton eds. *An Eighteenth Century Correspondence* 1910, p 416 quoted in T. Hinde *Capability Brown: The Story of a Master Gardener* (London: Century Hutchinson, 1986) p 59

[121] T. Williamson, lecture to the Norfolk Gardens Trust, 26.9.2015

[122] R. Turner *Capability Brown and the Eighteenth-Century Landscape* (Chichester: Phillimore & Co., 1999, 2nd ed.) p 97

[123] EH listing: Prior Park and Garden, Somerset

[124] G. Jackson-Stops *An English Arcadia 1600-1990* (London: National Trust Enterprises, 1991) p 65

[125] This is an 1879 reconstruction: G. Clarke *et al, Stowe Landscape Gardens: A Comprehensive Guide* (Swindon: National Trust Enterprises, 1997, rev. 2005) p 31

[126] T. Whateley *Observations on Modern Gardening* (London: T. Payne, 2nd. ed., 1770) p 85 online at https://books.google.co.uk/books?id=HooCAAAAYAAJ&printsec=frontcover&dq=observations+on+modern+gardening+2nd+edition&hl=en&sa=X&ved=0ahUKEwiA85-Gr9vTAhWSOsAKHUafCH4Q6AEIIjAA#v=onepage&q=observations%20on%20modern%20gardening%202nd%20edition&f=false accessed July 20104

[127] Michael Harrison, estate manager: personal communication, 14.10.15

[128] 'By-lead' or 'by-wash' (or 'spillway', the American term) is given a date of 1885 in the OED online, "by-lead *n c.* (a) (ii) ", accessed May 2017. In addition, the brickwork in Fig. 3.60 looks modern.

[129] Whateley, op. cit., p 85

[130] Whateley, op. cit., p 74

[131] Michael Harrison, estate manager, personal communication, 14.10.15: letter from the 1st Duke of Buckingham and Chandos regarding the state of the net tunnels for the duck decoy.

[132] Mowl has pointed out that Phipps made a 'New River' at Croome before Brown worked there: *Historic Gardens of Worcestershire* (Stroud: Tempus Publishing, 2006) p 46. This appears to be a canal-like piece of water, according to the Doherty map of Croome of *c.* 1751.

[133] The filter pond was dredged for the first time in *c.* 2014, according to the Marquis of Lansdowne.

[134] Letter from Lancelot Brown to Lord Shelburne, 13th December, 1768, Bowood Muniments, ref. Box VI item d, by kind permission of the Marquis of Lansdowne

[135] J. Cornforth, 'The Making of the Bowood Landscape', *Country Life* 7th September, 1972

[136] Photograph, Catherine McEvoy Photography

[137] A large 'poole' is present on a 1599 estate map in Staffordshire Record Office, ref. D593-H-3-339

[138] 1727 'Coppy' Map, Staffordshire Record Office, ref. D593.H.13.37

[139] Mowl & Barre, op. cit., p 61

[140] Bapasola, op. cit., p 39

[141] Bapasola, op. cit., p 39

[142] Statistics extracted from the Landscape Database

[143] EH listing: Clumber Park and Garden

[144] Lady Shelburne's diary, 13th May, 1766 (Vol. III, p 57), by kind permission of the Marquis of Lansdowne

[145] EH listing: Virginia Water Park and Garden

[146] J. Jacques *Georgian Gardens: The Reign of Nature* (London: B. T. Batsford, 1983) p 119

[147] Cowell, op. cit., p 121-2

[148] EH listing: Kedleston Park and Garden

[149] Online image at http://www.whtimes.co.uk/news/landmark-brocket-hall-bridge-on-english-heritage-at-risk-register-1-1537123 accessed April 2017

[150] Cowell, op. cit., p 40

[151] Cowell, op. cit., p 183

[152] Richard Woods's Memorandum 5 quoted in Cowell, op. cit., p 113

[153] Richard Woods's Memorandum 3 quoted in Cowell, op. cit., p 112

[154] R. Strong *The Artist & the Garden* (London: Yale University Press, 2000)p 260

[155] Letter, Charles Lyttleton to George Lyttleton, 3rd August, 1757, refers to 'a very extensive lake being form'd', Bucks. R. O., D/DR/ 2, and Britton and Brayley, *The Beauties of England and Wales*, vol.1, (London 1801) p. 361 quoted by D. Brown in *Shardeloes,* unpublished PhD thesis for UEA

[156] Brown & Williamson, op. cit., p 117

[157] Brown & Williamson, op. cit., p 144

[158] Image supplied by D. Brown

[159] O. Garnett *Kedleston Hall* (Swindon: National Trust Enterprises, 1999, rev. 2009) p 30

[160] Ibid. p 31

[161] Sketch plan by R. Adam in G. Jackson-Stops, op. cit., p 97

[162] EH listing: Hawkstone Park and Garden, and Jacques, op. cit., p 116

[163] EH listing: Locko Park Park and Garden

[164] Jacques, op. cit., p 116

[165] Image online at https://www.google.co.uk/search?q=locko+park+plan&client=firefox-b&source=lnms&tbm=isch&sa=X&ved=0ahUKEwjL5bPbkvbQAhUM6CYKHaseA-AQ_AUICCgB&biw=1366&bih=611#imgrc=bWpYwT4X7FXm6M%3A accessed January 2017

[166] WSHC ref. X6/96

[167] WSHC ref. X6/95

[168] Jacques, op. cit., p 116

[169] John Britton *Beauties of Wiltshire* Vol. 2, 1801, p 203 online at https://books.google.co.uk/books?id=dYpKAAAAYAAJ&printsec=frontcover&dq=editions:AdDWBu8ZbZkC&hl=en&sa=X&ved=0ahUKEwiPqMnooovUAhXhDsAKHRLECoMQ6AEILjAC#v=onepage&q&f=false accessed January 2017

[170] WSHC ref. 1553/92

[171] VCH, *A History of the County of Wiltshire: Volume 8, Warminster, Westbury and Whorwellsdown Hundreds* (London, 1965) p 84. Smith was brother to Drummond Smith, of Tring Park, given in D. Le Faye, editor *Jane Austen's Letters* (Oxford: Oxford University Press, 4th ed., 2011) pp 572-3

[172] Detail of WSHC ref. X6/96

[173] Quoted in Hinde, op. cit., p 86

4. Why Lakes Emerged.

Lakes as we normally think of them are extensive bodies of water which are irregular in form, and the question of why they emerged as a wholly new landscape feature in the first half of the eighteenth century is an interesting though complex one, to which there is no straight-forward answer. Several strands are relevant, though. One of the key elements was the increasing scale of landscapes. Another was the influence of Italy and the Grand Tour. Linked to this was the role played by paintings, which had often been painted in the seventeenth century. A fourth strand was the development of leisure activities in parks, and the part played by women in those activities.

4.1. 'Unbalancing' of Landscapes.

Wildernesses and plantations were familiar elements, which were in the process of changing in the early eighteenth century. Although these elements were becoming less symmetrical, the first truly irregular element to appear was the irregular lake, made possible to a large extent by the 'unbalancing' of landscapes. This is contrary to the widespread assumption that landscapes became informal in the mid-eighteenth century, and that ornamental water became irregular to fit in with that change of style. The water changed out of all recognition, in size and shape, in the 1720s-'30s. While landscapes were intrinsically linear, with symmetry as the underlying ethos, it was very difficult to fit lakes – even geometric lakes - into them without disturbing those things. Ornamental water basically had to be in the form of canals to fit into linear, geometric landscapes. Figs. 4.1 and 4.2 illustrate this well. The ornamental canals at Belton in the early eighteenth century fit easily into the geometric design, whereas the lakes, made by c. 1750, would not have fitted into that at all, and were made further out in the landscape. Exceptional circumstances, such as wealth and topography, did enable some geometric lakes to be made, as we have
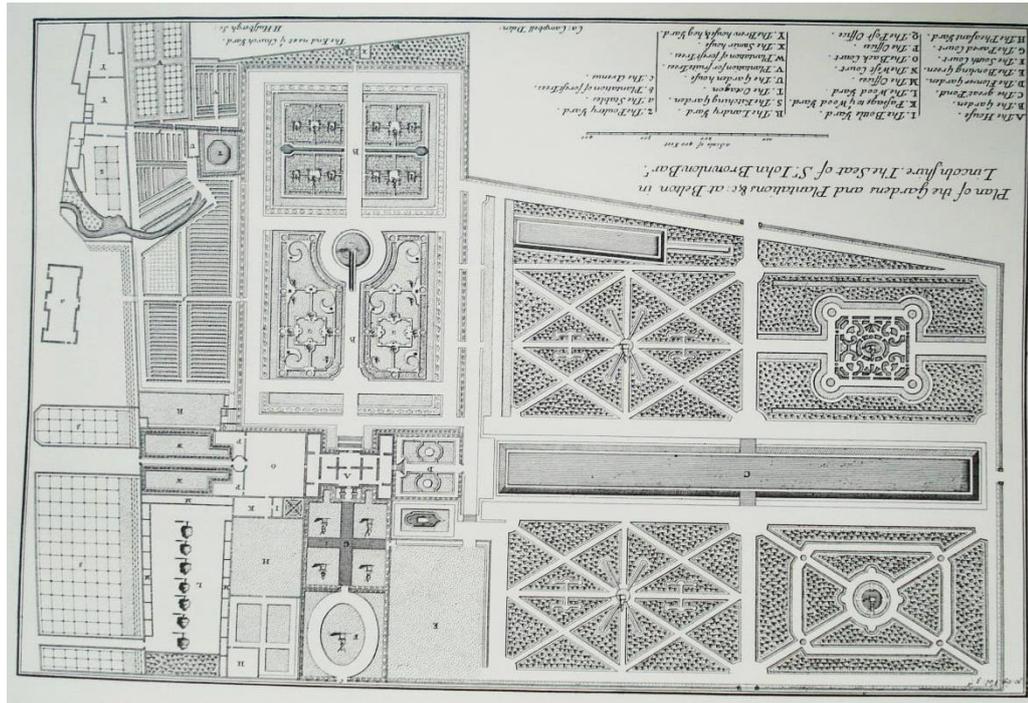
Fig. 4.1. Belton House, Lincolnshire, in *Vitruvius Britannicus*, 1725.[1]
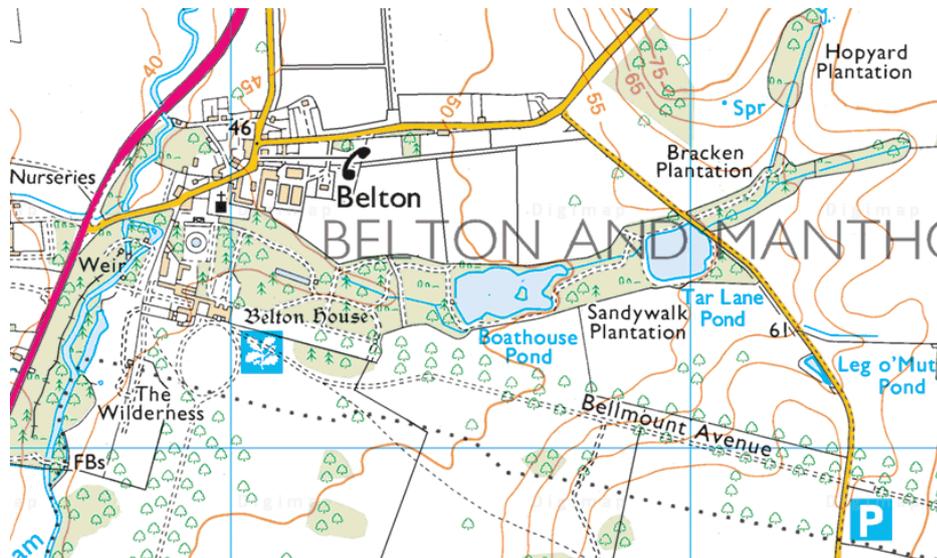
Fig. 4.2. Belton, Lincolnshire, OS map, 2016.

seen at Boughton, Welford and Staunton Harold, but geometric water features usually had to be fairly small, not just because they were expensive to make but because they would not fit easily into the overall design. Replacing at least one parterre was usually the only way, and this was not a common occurrence. Once straitjacket began to loosen, and it became easier, psychologically as well as

physically, to fit lakes into the scheme of design. By *c.* 1720, the degree of asymmetry and unbalancing in landscapes was increasing, as we have seen at
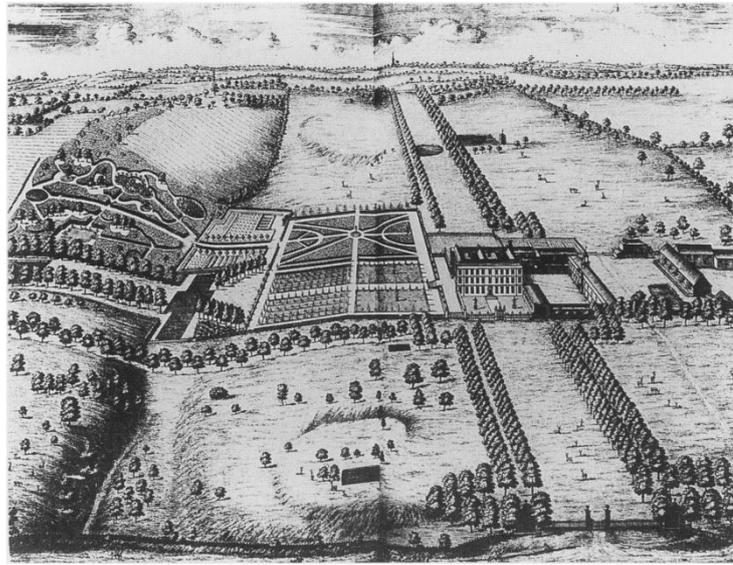
Fig. 4.3. Badeslade's engraving of Hamels, Hertfordshire, 1722.[2]

places like Thoresby. These designs were still geometric in character and axial, but strict symmetry was being relinquished and the central axis was less dominant, with marginal elements developing. One such marginal element at Hamels (Fig. 4.3) was the garden with serpentine paths, which appears to have Rococo elements, being detached from the house and a sub-set, as it were, of the main gardens. Plantations especially tended to become much larger. Though still geometric, they were no longer symmetrical in shape. As size increased, it became impossible to maintain symmetry or even balance in the design, and landscapes became 'unbalanced'. This process had begun with Le Nôtre's work at Versaille, and reached England in the early years of the eighteenth century, as images in *Britannia Illustrata* of places such as Grimsthorpe, Cashiobury, New Park (Surrey) and Longleat show. Balance in the design might still be aimed at, but even this became difficult to achieve in very large landscapes. This 'unbalancing' was increased by the advent of irregular aspects such as sinuous paths in wildernesses and irregular outlines of plantations. These sinuosities began to appear as early as the 1710s, and by the mid-1720s often occupied most of the garden (Fig. 3.8).[3] Wildernesses were also increasing in size, as at Badminton and Chatsworth, with the possibility that this may have been linked to maintenance, as they were perhaps less onerous to maintain than parterres.[4]

The value of the timber made large plantations attractive, which was a significant factor for many owners. Cirencester Park illustrates this process well. It was perhaps one of the most well-known of Alexander Pope's projects, with Lord Bathurst (1684-1775, inherited in 1704). As Mowl points out, Bathurst planted the timber as a valuable crop.[5] Pope corresponded with and stayed with Bathurst from 1718 onwards, the two minds sparking off each other to produce a vast forest landscape interspersed with buildings (Fig. 4.4), including Alfred's Hall, the "earliest recorded Gothick garden building in the country" (1722-32).[6] Bathurst's natural inclination for straight avenues was modified by Pope's inclination for winding paths and informality. These were introduced in various parts of the park, notably in the 1730s, when a Rococo style layout was introduced near the house and along the then northern boundary of the park, as shown in Samuel Rudder's map of 1779.[7] Rococo gardens, often at the margins of landscapes, were typical of these transitional geometric landscapes, and contributed to further 'unbalancing'. By the mid-1730s, Cirencester was just such a landscape, with an irregular lake (*c.* 3.2 h) south west of the house by 1736. However, unlike Thoresby and Holkham, it was not planned as such, but had evolved from a largely geometric landscape as the owner responded to changing fashions.[8]

Cirencester, like Thoresby, was a large landscape: the main axis, from the house to the western edge of the park, was 7 kilometres (4½ miles) long. It is clear how the scale affected the symmetry or balance of the landscape, areas being added piecemeal over Bathurst's long lifetime. The 'unbalancing' made it all the easier to develop different areas in different styles and 'allowed' the incorporation of the irregular lake in the 1730s, as these lakes became increasingly *de rigueur* for fashionable landowners. It is important to recognise how revolutionary this development was. Up until then, ornamental water equated with geometry, something obviously fashioned by man.

Fig. 4.4. Rudder's 1779 plans of Cirencester Park, Gloucestershire. The house is on the extreme right side of this image. The lake was made in the 1730s.[9]

One result of water being larger was that it tended to be irregular in form, for the reasons discussed above. Whilst it was possible to maintain an idea of geometry in irregular shaped plantations by cutting linear rides and vistas through them, this could not be done with water; there was no way of disguising its irregularity. Also, the larger a landscape element was, the more difficult it was to fit it into a design. There were far fewer choices about where to put it. In particular, a lake would have to be made where the water source was (see Chapter 5). Also to some extent, in the 1720s, irregular water features *had* to be big to justify their irregularity: a small, irregular pond would simply have looked unfinished or out of place (a fishpond) in the context of a largely geometric landscape. As such, irregular lakes were the drivers of change once the scale of landscapes started to increase. It became too difficult to maintain geometry, or even symmetry, with large pieces of water, and attitudes to gardens and landscapes were also beginning to change.

This theory is borne out by the chronology of irregular lakes. As we have seen,   there were only a handful of lakes of any kind in the 1720s, and numbers showed a significant increase by the 1750s. By mid-century, fashion had changed and new landscapes were being laid out in an irregular and informal style, as at Stourhead and Painshill, whilst many older landscapes were being updated, for example Longleat and Petworth. Once landscape design had caught up with the evolution in ornamental water, the number of lakes increased rapidly, peaking in the 1760s and '70s.

4.2. Italy and the Grand Tour.

It was men like Kingston, Carlisle and Coke who made the first lakes in these large, 'unbalanced' landscapes, with Vanbrugh exerting a significant influence, but these men alone were not responsible for the sea-change in ornamental water. The influence of the Grand Tour and Italy has to be taken into account. With the ending of the War of the Spanish Succession in 1713, Continental travel became feasible again, and so did the Grand Tour. As is well-known, it was regarded as an important part of a young gentleman's education and, whilst many undoubtedly went through the motions of acquiring a cultural

education, others like Coke and Burlington took it seriously. There were several routes to Italy, and a popular one was via Mt. Cenis, with its glacial lake, which was taken by Coke (1713-18), as well as men like Joseph Addison and Thomas Nugent.[10] The views, the buildings, the paintings, all had an impact on the landscapes they laid out when they returned, and of specific importance was the combination of villas adjacent to lakes which they saw, a combination which men such as Coke were keen to imitate.

Coke travelled extensively in Italy, atypically applying himself studiously to Italian, Latin and Greek, diligently studying architecture, collecting books to establish a good library on his return, and buying pictures, probably from Kent in 1714, who formed a strong connection with him.[11] He had a deep interest in all cultural aspects of the classical world, spending a month in Vicenza in 1714, the birthplace of Palladio. On his return to England, Coke began laying out a new landscape at Holkham, as discussed in Chapter 3. It seems to have been a mixture of elements which he saw on his Grand Tour: the natural lakes with forested mountain slopes of the Alps, the Palladian buildings of Italy, reinforced by Claudian depictions of classical scenes in 'natural' landscapes.

Like Burlington, Coke apparently wanted to re-live a Palladian dream, putting his knowledge of architecture to work in the house, probably designed by himself, Kent and Burlington. That Coke had a deep interest in the design of his landscape is demonstrated by this extract from a poem written by him:

Here Kent and I are planting Clumps

Not minding when our Monarch Rumps

Or what Sir Robert's doing ...

Contented I enjoy my home,

Design a Temple, Build a Dome,

Or raise an Obelisk[12].

Coke's comments, in a letter to Lord Burlington in November, 1736, on the dullness of geometric gardens, echo Pope's criticism of their predictability:

But to think of those damned dull walks at Jo. Windhams, those
cold and insipid straight walks which would make the Signor

sick, which even Mr. Pope himself could not by description enliven,[13]

C. W. James, who quotes this letter, identifies the 'Signor' as Kent. These two quotations tell us several important things about Coke: he obviously wanted to move away from what he saw as the stultifying geometry of 'straight walks', and presumably felt that he had achieved this in his landscape, despite the straightness of the vistas within the plantations and the geometry of the 'hippodrome' to the south of the house. Secondly, they reinforce the idea that Kent was a guiding hand in the matter of landscape design, presumably promoting clumps, but deferring to Coke's desire for vistas. Possibly, he also created an island in the lake, and a 'serpentine water' (1743) to link the lake and the basin.[14] Thirdly, the poem makes clear that for Coke, architectural structures in the landscape were important, perhaps mirroring in his mind what he had seen in Italy: a 'natural' landscape interspersed with classical buildings.

Coke's conception of the landscape at Holkham seems to have been a mixture of elements which he saw on his Grand Tour: the natural lakes bordered by forested mountain slopes of the Alps, the Palladian buildings of Italy, reinforced by Claudian depictions of classical scenes in 'natural' landscapes. Whilst, by no stretch of the imagination can Holkham be considered mountainous, the plantation along the north-west side of the lake, with vistas aligned on the lake, may have represented those forested slopes. Meanwhile, the opposing bank shelves sharply enough down to the water to appear steep. The plantation finishes halfway along that western bank, allowing an imposing view from rising ground back to the house, echoing the houses and villas which Coke saw bordering the Swiss and Italian lakes.

One of the 'spin offs' of the Grand Tour was the art work which men brought back with them, either originals or copies, both of which spawned many engravings. The artists commonly mentioned in this connection are Claude Lorrain, Nicholas Poussin, Salvator Rosa and Gaspar Dughet, who all painted in the seventeenth century, mainly in Italy, and the gentlemen and aristocrats who made the Tour would have been well aware of them. Coke, despite his youth – he was 15 when he embarked in 1713 - bought many art works, including Claude Lorrain paintings.[15] Holkham was one of the first three non-geometric

lakes to be made – the other two were Thoresby and Londesborough - and although the landscape of Norfolk is nothing like Italy, it seems that in Coke's mind, water of an irregular nature was linked to the Palladian concept. It is no coincidence that in Lorrain's paintings, 'natural' water with adjacent classical structures is a common theme (Fig. 4.5) and that Coke was an enthusiastic collector of Lorrain's paintings.

Fig. 4.5. Coke's paintings at Holkham: four are by Claude, and the fifth (top right) is by Vernet.

The significance of the landscape paintings these men brought back from Italy lies in what they depicted: often quite rural scenery, with water of some sort – a river, the sea, a port - often in the middle distance, plus classical looking buildings. There does appear to be a link between this formula in the paintings and the landscapes which these men made on their return. Although Kingston did not have any classical garden buildings, as far as we know, and Walpole did not have a lake at Houghton, many of the notable landscapes of the 1720s–'40s did have a classical house or classical garden buildings adjacent to a lake. Initially, the water might be somewhat hybrid or geometric, as at Castle Howard, or Studley Royal, or Claremont, or Stowe, but by the 1750s most of these places had irregular lakes to complement their classical architecture and, as with the paintings, the earlier lakes were often not immediately in the foreground.

Henry Hoare 'the Magnificent' was another on whom the Grand Tour had a significant impact, and one of the most celebrated examples of the influence of paintings on landscapes is Stourhead. Kenneth Woodbridge ties the landscape development to Hoare's possession of Italian pictures, especially Claude, Poussin and Dughet. Henry Hoare, who owned two large landscapes by Dughet, said himself, "the View of the Bridge, Village & Church altogether will be a Charm[in]g Gasp[ar]d picture at the end of that Water."[16] (Fig. 4.6)   The

Fig. 4.6. The Temple of Flora and Palladian Bridge, Stourhead.

influence of Italian paintings should not be overstated, though it was undoubtedly significant at Stourhead. However, in conjunction with the Grand Tour, and experiences of the Italian lakes, perhaps they served to embed those experiences, and acted as visual reference points for the returned tourist when laying out or improving the landscape. Perhaps more importantly, once the lake had been made, and the classical buildings erected, whether house or temple, they served as evidence to visitors of the owner's cultural knowledge and awareness of fashion, at the same time authenticating both. Whilst by no means all men returning from the Tour gleaned as many benefits from it as Coke and Hoare, it did produce a common knowledge of 'classical' landscapes, which many gentlemen could 'read' in the muted interpretations back home. The diaries and accounts of Tours also contributed to this.

Joseph Addison was a pivotal figure in this respect. He travelled in both Italy and Switzerland (1700-02) and, whilst Italian travels are frequently commented on today, the impact of Switzerland has been noted much less in relation to eighteenth-century travellers. His descriptions of his travels in *Remarks* may hold the key to developments in the landscapes of these men in the early decades of the eighteenth century.[17] He spent five days sailing around Lake Geneva, noting the prospects of woods, vineyards, meadows and corn-fields which bordered it, and at the Carthusian convent at Ripaille on the lake shore, he made this observation:

> They have a large forest cut out into walks, that are extremely thick and gloomy, and very suitable to the genius of the inhabitants. There are vistas in it of great length, that terminate upon the lake.[18]

This is very similar in concept to the vistas in the plantations alongside the lakes at Thoresby, Londesborough and Holkham (Figs. 3.9-3.12), as these terminate on the water. Addison commented a number of times on the Swiss and Italian lakes:

> There is nothing in the natural face of Italy that is more delightful to the traveller, than the several lakes which are dispersed up and down the many breaks and hollows of the Alps and Apennines.[19]

He also sailed on Lake Constance, as well as visiting Lake Albano, a natural lake near Rome, linking his travels with those of Horace:

> In our return from Jensano [Gensano] to Albano, we passed through La Ricca, the Aricia of the ancients, Horace's first stage from Rome to Brundisi. There is nothing at Albano so remarkable as the prospect from the Capuchin's garden, which for the extent and variety of pleasing incidents is, I think, the most delightful one that I ever saw. It takes in the whole Campania and terminates in a full view of the Mediterranean. You have a sight at the same time of the Alban lake, which lies just by in an oval figure of about seven miles round, and, by reason of the continued circuit of high mountains that encompass it, looks like the area of some vast amphitheatre. This, together with the several green hills and naked rocks within the neighbourhood, makes the most agreeable confusion imaginable.[20]

Significantly Addison is, unconsciously or otherwise, linking gardens with views over large bodies of water.

It is difficult to avoid the conclusion that Carlisle, Coke, Burlington (and probably Kingston), having travelled in Italy as Addison did, and seen very much what he had seen, were spurred on by his *Remarks* to try to recreate something of what they had seen and experienced. This would also go some way towards explaining the increase in the size of ornamental water which was taking place, and perhaps the increase in the popularity of boating as a leisure activity (discussed below)*.* These men copied the classical buildings they saw, re-inventing them as garden buildings or Palladian mansions, and it seems reasonable to suggest that they did likewise with elements of the landscapes they travelled through, specifically the natural lakes.

Addison was particularly influential because, as well as having a voice for his ideas in *The Spectator*, he also, like Vanbrugh, moved among these men as a near equal, being a member of the Kit Cat Club, and later an MP. Writing in *The Tatler* and *The Spectator* in 1710-11, he admired the beauties of wild landscapes such as he had seen in the Alps on his Grand Tour (1700-02).[21] In addition to the

opinions implied in his *Remarks*, Addison's ideology encompassed the concept that gardens should be freed from constraints, according to Dixon Hunt and Willis: "Just as England itself is happily spared the absolutism of French politics, its gardens should also be cleared of the ordered and fiercely prescriptive designs that mirror it."[22] This *laissez faire* attitude complemented the relatively untamed scenes he had encountered in the Alps.

In his piece in *The Spectator* of 12th April, 1711, cast in the form of a dream, Addison describes an idyllic garden in Leonora's country seat. It had grottoes, woods, bowers, and murmuring springs "collected into a beautiful Lake, that is inhabited by a Couple of swans, and empties itself by a little Rivulet which runs through a green Meadow".[23] Whilst it is unlikely that Addison was directly advocating the making of irregular lakes here, he promulgated the beauty of wild, irregular landscapes:

> There is something more bold and masterly in the rough, careless Strokes of Nature, than in the nice Touches and Embellishments of Art. The Beauties of the most stately Garden or Palace lie in a narrow Compass, the Imagination immediately runs them over, and requires something else to gratifie her; but, in the wide Fields of Nature, the Sight wanders up and down without Confinement, and is fed with an infinite variety of Images, without any Stint or Number.[24]

It is also in this letter that he introduces the concept of treating the whole estate as a garden: "But why may not a whole Estate be thrown into a kind of Garden by frequent Plantations, that may turn as much to the Profit, as to the Pleasure of the Owner?"[25] Switzer subsequently took this up and termed it 'rural and extensive gardening'.[26] In his writings, Addison mentions Chinese ideas of garden-making – *sharawadgi* - and was much against topiary. These were nascent concepts in the 1710s and early '20s, but men such as Vanbrugh, Carlisle, Marlborough, Newcastle, Burlington, Manchester, Coke, Walpole and Kingston would have been aware of them; many would have visited Italy and seen the landscapes Addison referred to at first hand.[27]

Another influential work was Castell's *Villas of the Ancients Illustrated* 1728. Sponsored by Burlington, it was an attempt to reconstruct the gardens

and landscapes which the Younger Pliny wrote about; again, Italy was the inspiration. As Dixon Hunt and Willis point out:

> Castell's reconstructed plans enforce his written commentary in suggesting the happy juxtaposition of two sorts of garden styles that characterised both Roman villas and such English estates as Stowe at the time Castell was writing. [28]
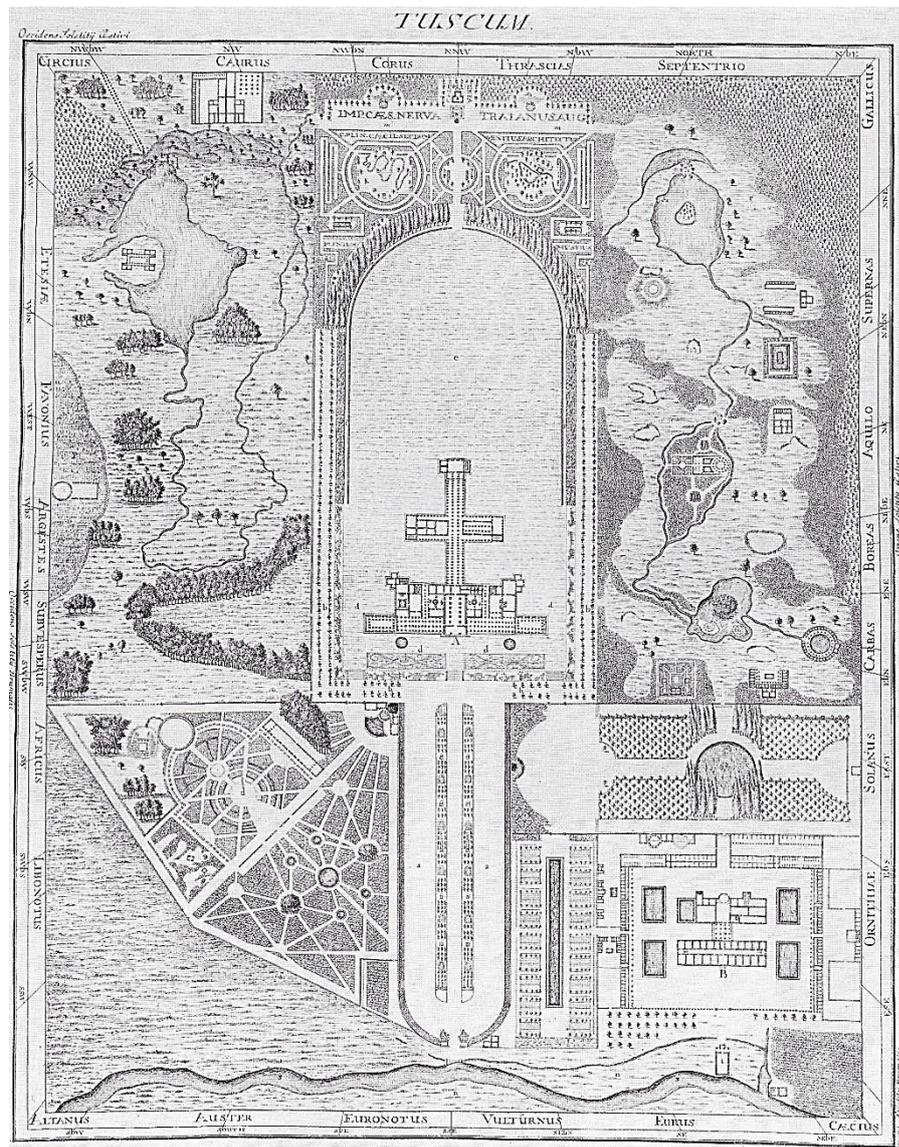
Fig. 4.7. A reconstruction of Pliny's Tuscum Villa by Castell, 1728.[29]

What is noticeable in Castell's Tuscum Villa plan (Fig. 4.7) is the juxtaposition of the house, adjacent formal gardens and service area with the informality and irregularity of the rest of the estate. It is very much in accordance with what we have seen occurring in the transitional geometric landscapes of the 1720s; it is

the water which is noticeably irregular, although there are several formal water features which are smaller. Both Thoresby and Holkham conform to this 'formula'. There are also several detached gardens in Castell's plan, both formal and informal, within the informal part of the landscape. Both appear to be surrounded by water, and are suggestive of Rococo gardens, with their irregular elements, separation from the main house, and suggestion of intimacy. Also of note is the informal nature of the woodland which consists of sinuous outlines
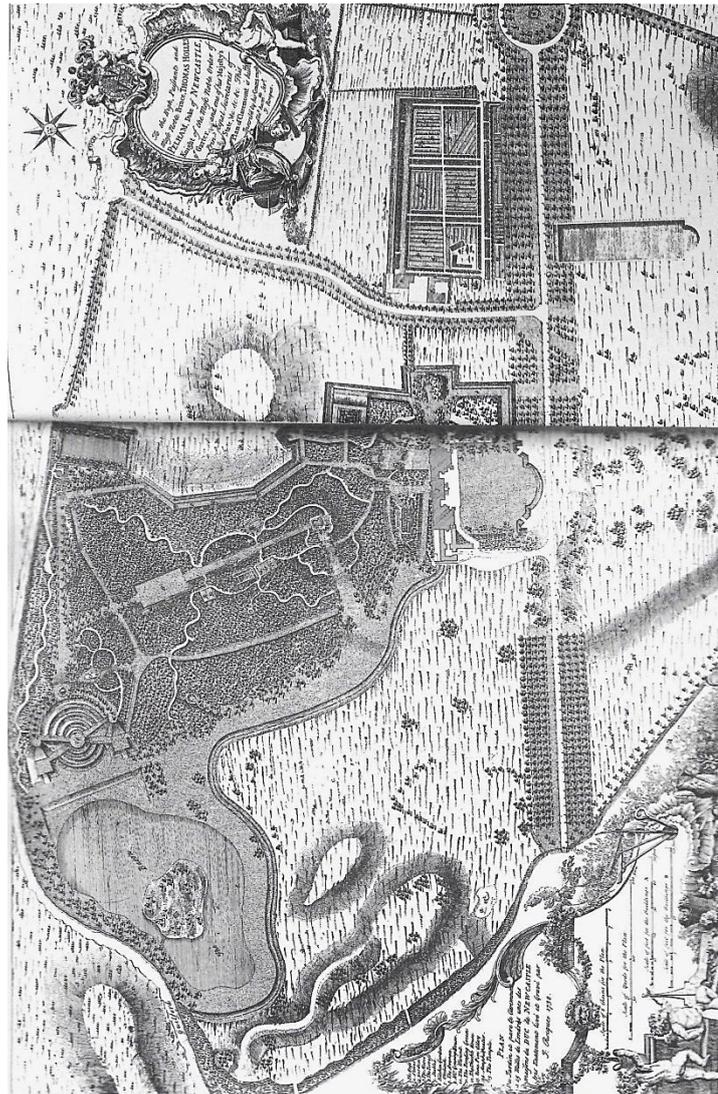
Fig. 4.8. 1738 Rocque engraving of Claremont, Surrey.[30]

and clumps, and brings Kent and Brown to mind. As mentioned in Chapter 3, Rocque's 1737 plan of Claremont bears a strong similarity to the upper right quadrant of Castell's, though the water is not as irregular (Fig. 4.8).

Whilst Burlington was trying to ensure that his buildings and landscapes were conforming to the Palladianism which was his preferred version of what he had seen in Italy, Castell, abetted by Kent, was feeding him irregularity (water and woodland) in the guise of the villa concept: house and gardens embedded in the surrounding (productive) landscape. Whilst Chiswick certainly was not productive, its context being urban, Londesborough, with its chain of fishponds and kitchen garden, was much more so, and its lake (*c.* 1729) was noticeably irregular (Fig. 3.10). By linking this interpretation of landscape with Pliny, Castell undoubtedly popularised the developing Palladianism favoured by Burlington (his patron) and formed perceptions of what Classical landscapes were like. In doing this, Burlington and Castell were effectively validating their view of what landscapes should be like.

The writings of men such as Pope, Switzer and Batty Langley, who fostered the concept of irregularity in their works, may also have affected attitudes to landscape style more generally between 1700 and 1730. Langley's texts made much of the beauty of irregularity but this was not generally reflected in the designs he produced in *New Principles of Gardening* in 1728. These were still geometric in character, although cut through with many wiggly paths. Though they may have had some influence, as did Switzer's, they do not account for the changes which were happening in the 1720s and '30s. As early as 1713, Pope (1688–1744) was writing about "the amiable Simplicity of unadorned Nature, that spreads over the Mind a more noble sort of Tranquillity, and a loftier sensation of Pleasure, than can be raised from the nicer Scenes of Art."[31] He favoured landscapes which he *perceived* as not having been shaped by man in any way: 'unadorned Nature'. In his letter to Martha Blount of *c.* 1724, his description of a visit to Sherborne Castle makes his concern with irregularity plain:

> The Gardens are so Irregular, that tis very hard to give an exact idea of 'em but by a Plan. Their beauty rises from this Irregularity, for not only the Several parts of the Garden itself make the better Contraste by these sudden Rises, Falls, and Turns of Ground; but the Views about it are let in, & hang over the Walls, in very different figures and aspects.[32]

Here, Pope is admiring the accidents of topography, as the gardens themselves were still formal at that time. His *Epistle to Lord Burlington* in 1731 was an exposition of what was desirable in garden design, and cogently expressed concepts which had emerged in his own writings, as well as those of others, in the preceding two decades (Addison, Switzer, Langley, Castell). Irregularity and the beauty of Nature (unspoiled by man), plus the sterility of topiary, were the key ideas. Dixon Hunt and Willis say:

> Pope exercised a doubly strong influence over the course of garden history: by his published pronouncements and his private example. His own gardens at Twickenham were justly famous during his lifetime.[33] (See Fig. 4.9).
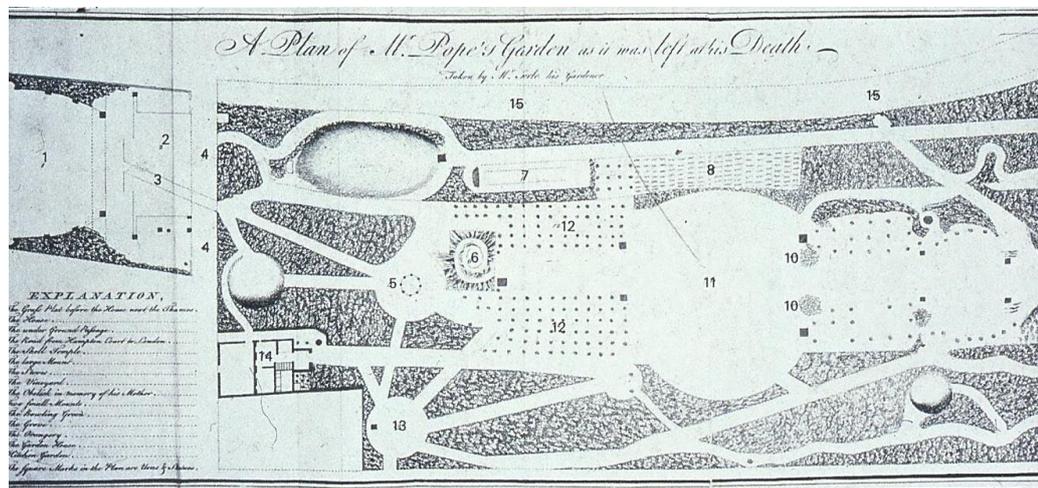
Fig. 4.9. Pope's garden at Twickenham, 1745.[34]

However, this may be overstating the case. His own garden evolved over 20 years and may have been as much a response to new trends as the maker of them. In comparison with other landscapes discussed, it was small, and it did not have any ornamental water (apart from in the grotto, eventually). Interestingly, the Thames formed the prospect on the other side of the house. What may have been of greater influence was the visit of Father Matteo Ripa to London early in 1724, and the presentation to George II of 36 plates of the Chinese palace gardens at Jehol.[35] It is known that Burlington owned a copy, and the preoccupation with 'Chinese' features – boats, buildings and winding paths – which emerged in the 1720s and '30s may have been a stronger catalyst than Pope's writings.

The Grand Tour continued to be popular, although many travellers, including Richard Pococke, who travelled in Europe in the 1730s and '40s, either just listed the lakes they saw, without comment, or merely included their dimensions. However, the antiquary Thomas Nugent (*c.* 1700–1772), who published his *The Grand Tour* in 1749 (so presumably travelled in the middle to late 1740s) was more expansive. Whilst his description of Lake Albano possibly relied heavily on Addison's, his comments on Lake Geneva are more original. After mentioning the particularly large trout, he goes on to say:

> The city has three or four small frigates with sails and oars, in which they often entertain princes upon the lake … Travellers generally divert themselves here with fishing.[36]

He also commented on the glacial Mt. Cenis Lake at the top of the pass which Grand Tourists used *en route* between Lyons and Turin:

> there is a pretty large lake near the road, formed by the melted snow; in the middle of this lake the king of *Sardinia* has a handsome house for his diversion.[37]

Clearly, the lake as a setting for the house was noteworthy, and he responds in a similarly positive way to the 'charming' position of Annecy alongside its lake, the town,

> receiving different embellishments from the lakes, rivers, plains and hillocks, and high mountains, walks and country-houses that encompass the city.[38]

Likewise, he notes the gardens of Isola Bella and Isola Madre in Lake Maggiore.

It is widely accepted, from the evidence of the paintings they brought back, the houses they built and the classical garden buildings they erected, that men were significantly influenced by their experiences of the Grand Tour. On this basis, it can also be argued that the natural lakes they saw in the Alps and in Italy influenced their attitudes to ornamental water from the second decade of the eighteenth century, especially as travel on the Continent became easier again with the end of the war in 1713.

4.3. Landscapes and Gender.

Whilst such stylistic interpretations are important, the way in which landscapes were used also had an impact on the development of lakes. As we have seen, irregular lakes were in the park in the 1720s, as at Thoresby, Castle Howard and Holkham, but they were not isolated in the park, as fishponds had tended to be. They were relatively close, forming a link between the gardens and the park, and were often placed obliquely in relation to the house. This linking of park and gardens with a lake was reinforced by Brown, and his contemporaries, as he positioned the lake prominently in relation to the house and the approaches, and used the ha ha to obscure the demarcation between park and gardens. This is relevant to the use of the park by women.

It is well-known that men used parks for riding, hunting, field sports and angling, but it may well be that, in the early eighteenth century, women were beginning to use parks more extensively than they had before, though information is fragmentary before the middle of the century. In *A Discourse*, North talks of angling as a suitable entertainment for women, which would also encourage them to go out of doors, and he mentions the pleasures of boating for young people, and as a family entertainment.[39] If women were beginning to participate in activities in parks, a closer relationship between gardens and parks would have been an advantage.

The family at Thoresby provides some of the clearest evidence of how women, and men, used parks in the early eighteenth century. The painting by Peter Tillemans (1726), shows the Duke shooting gamebirds (Fig. 4.10).[40]

Fig. 4.10. 1726 Painting of Thoresby Park by Pieter Tillemans.[41]

Fig. 4.11. Detail of the 1726 painting of Thoresby by Tillemans.

People are also enjoying the lake in three boats and a closer examination shows that some of them are women (Fig. 4.11). Two of the boats are craft of the type described as shallops by Felus, with a small rowing boat in attendance.[42] The boat on the left has several men in it, whilst the one on the right (Fig. 4.10) has

four women, seated under a red awning, and two men, being rowed by four more men, with a fifth in attendance, so a reasonably large, elegant craft. This is a pleasure party of some size, suggesting the entertainment of visitors as well as family. The painting is apparently the earliest evidence of women boating for pleasure, and could almost have been composed in answer to North's recommendations:

> Or if the Female Part are so grave, to decline that Course of Life
> [going out visiting], must they always be within? Or if they stir
> out, have nothing but mere Air to invite them?[43]

It appears that the large lake at Thoresby was made with the aim of providing sport and for the entertainment of visitors and family.

Very little is known about the use of the park by women in the early eighteenth century, and this picture of women boating is one of the few pieces of direct evidence of their activities. Lady Mary Wortley Montagu (Kingston's daughter) provides some of the earliest evidence (to date) of women hunting on horseback: in a letter of 1711, she says:

> I've had a general Hunting Day last Tuesday, where we had 20
> Ladys well dressed and mounted, and more Men. The Day was
> concluded with a Ball. I rid and danc'd with a view to
> Exercise,[44]

This is clearly a normal pursuit for her and her friends, and presumably took place in the parks of her father and his friends, and possibly the open countryside.[45] In 1725, she mentions that she is stag hunting in Richmond Park with the Prince of Wales.[46] Queen Anne was known to hunt, in a specially built chaise (she was too fat to ride); she had wide tracks cut through Windsor Forest to enable her to do so, and Pope deplored, in *The Guardian* of 1713, that the knife was handed to 'ladies of quality' to cut the cornered deer's throat.[47] Likewise, Sophia Western hunts in *Tom Jones* (1749).[48] As discussed above, angling was popular with men as a recreation from the beginning of the seventeenth century at least, but there is evidence that women were beginning to become involved: in a picture of Chiswick by Rysbrack (*c.* 1730), a woman is possibly being taught the art, and several mid-century paintings by Robins and

	1700-09	1710-19	1720-29	1730-39	1740-49	1750-59	1760-69	1770-79	1780-89	1790-99	1800-09	1810-19
Hunting in carriage*												
Driving*												
Riding												
Portrait×												
Boating												
Relaxing					1 angling	1 angling	2 angling					reading
Walking								12				

Key: numbers of pictures

1
2
3
4
5
6
7
8
9
10 · 10+

Table 19. Table of pictures showing women active outdoors (excluding women walking or standing within formal gardens).

Data extracted from the Image Database.

* A distinction was made between women driving in parks and women apparently hunting in carriages.

× Woman having her portrait painted.

Haytley show women and children angling (Fig. 4.12). This is indicative of a developing interest of women in outdoor pursuits, which increased later in the eighteenth century, as Table 19 indicates. This analysis is predicated on the premise that the format and content of paintings (both landscapes and portraits) follows fashion; it does not dictate fashion. For example, paintings did not usually depict women in the wider landscape unless it was actually acceptable for them to be there, so they did not depict women boating unless (until) it was acceptable for them to do so. It reveals three main trends. Firstly women were not routinely portrayed outside gardens until the 1730s, other than an occasional woman riding. From the 1740s, women began to have their portraits painted outside the formal garden, in the wider landscape, sometimes 'relaxing', for example talking, using a telescope, drawing and angling. Secondly, women begin to appear in boats relatively often from the 1730s onwards. This continued to be a popular activity, judging by the accounts of it at Wrest in the 1760s and 1790s (see below), but in the paintings it is often not possible to determine the gender of people in distant boats. Thirdly, a small number of pictures show women driving across country in landscapes, in light carriages, often drawn by six horses, in the 1730s and '40s. By the 1750s, this activity appears to have ceased. This suggests that women wanted more access to the wider landscape and its activities – one woman in a carriage at Dogmersfield appears to be part of a hunt – and that carriage drives may have developed in response to this.

The Image Database does not provide a finely tuned statistical analysis, but rather an indication of trends, and it is clear that women were beginning to engage with the landscape beyond the formal gardens, and specifically lakes, by the third decade of the eighteenth century. At Holkham, the gravel walk or carriage drive was not laid down until 1801-3 so until then the further reaches of the park were basically accessible only to more intrepid women.[49] However, the lake provided easy access by boat to the further shore, enabling women to disembark and walk up the slope to appreciate the 'reverse' view of the house.

By the mid-eighteenth century, walking or driving around parks, especially lakes, had become popular and landscapes began to be laid out with circuit walks and drives, including the lake if there was one, as at Stourhead and Kedleston in the 1750s. As improvements in carriage technology occurred

(better suspension), carriage drives through the landscape became *de rigueur*.[50] The landscape, and lakes in particular, began to be experienced in quite new ways. No longer were they looked down upon and appreciated from a distance, or from selected viewpoints, such as from a roof terrace or along a vista. They were experienced directly: the size and shape of lakes, as well as their sound and texture, were experienced at close quarters, especially if on foot, and the view the water presented was ever changing, elements which can be seen in Brown's plan for Packington (Fig. 3.45). This contributed significantly to the increasing popularity of lakes. Planting around them, as well as the shaping of the lakes themselves, became very important, as these factors enabled views to be constructed to entertain and surprise. As Felus suggests, there was an almost cinematic quality to these drives, as views - of the water, or a temple on a nearby rise - were revealed and then concealed by careful planting alongside lakes.[51] The placing of buildings and monuments or structures of various kinds enhanced views and also provided further interest in the form of destinations. These landscapes developed in the 1730s and '40s, and were subsequently described by historians as Arcadian because of their classically inspired buildings. Stourhead is an archetypal example, having an irregular lake (1754), circuit walks, a carriage drive and numerous buildings and structures in the Classical style. One aspect of garden buildings which Kate Felus draws attention to is their function as a retreat from visitors and servants.[52] Stowe and Stourhead were both well provided with them. This was not a new concept: William Cecil built a lodge near his new ponds at Theobalds so that he could spend time undisturbed.[53]

This phenomenon of classical buildings in a landscape, probably reached by carriage, is well illustrated by Beachborough Hall. Figs. 4.12 and 4.13 show the lake, as painted by Edward Haytley in 1745, although the water there was not a lake, according to the definition above, as it was only *c.* 0.17 h (0.4 a). However, these two paintings show an interesting array of activities. In Fig. 4.12, ladies are angling as well as painting or sketching the scene, which includes a small classical 'temple'. The second picture shows a family group, including a gentleman with a telescope, presumably looking at the distant shipping off the coast in the background. Also of interest are the boat in the foreground, and the two men netting the lake for fish, which confirms what

Fig. 4.12. Beachborough Hall, Kent, by Edward Haytley, 1745.[54]

Fig. 4.13. Beachborough Hall, by Edward Haytley, 1745.[55]

	1670-79	1680-89	1690-99	1700-09	1710-19	1720-29	1730-39	1740-49	1750-59	1760-69	1770-79	1780-89	1790-99	1800-09	1810-19
Sports															
Hunting															
Driving															
Riding															
Portrait ×															
Boating															
Relaxing															
Walking in park											14				
Walking in gardens															

Key: numbers of pictures

	1
	2
	3
	4
	5
	6
	7
	8
	9
10	10+

Table 20. Table showing pictures of men's activities in gardens and parks, extracted from the Image Database.

The sports were cricket and bowls, apart from one painting of men skating.

× Man having his portrait painted.

Switzer says about fish being kept in ornamental lakes and pools.[56] We have also seen North extolling the benefits of healthy, outdoor exercise, and also that angling kept young men away from card playing and similar pursuits. Looking at the evidence as a whole, it must be concluded that providing entertainment was one of the main sociological factors in the development of lakes.

Table 20 throws light on the activities of men in parks. As previously stated, the premise here is that paintings followed fashion; they did not make it, although once established, they may have popularised certain fashions. Also, the majority of paintings in the database do not show any people, so have not been included. Though this table, together with Table 19, is obviously not a complete catalogue of all paintings of the era, it does suggest trends, and up to *c.* 1720, both men and women were largely portrayed walking in the gardens. By the mid-eighteenth century, this had been replaced by walking in the park. From the 1720s onwards, boating (see below) for both sexes was becoming popular, and by the 1740s, activities in parks were becoming more diverse, including walking by the lake, drawing or painting, being portrayed in the park, either as families or as individuals, and playing cricket. It is likely that men continued to ride and hunt just as much, but were less often depicted doing so. A note of caution should be sounded here: when the Image Database was being compiled, the focus was on landscapes with water. Also, the number of images of landscapes began to decline towards the end of the eighteenth century, and 'portraits' of gardens and plants became popular by the mid-nineteenth century, so it is less easy to pinpoint activities in parks from then on.

The evidence discussed above points in the direction of an increase in the popularity of lakes as movement around the landscape in circuits increased. The lake itself provided a focal point for such circuits, whether they were walks or drives, and this is exemplified by Stourhead, where such a circuit was largely in place by 1779.[57] Even in places where circuit walks were not made, the lake provided changing views from different vantage points, and a sense of focus in the landscape.

4.4. Boating.

It is boating for pleasure which is of the greatest significance here. Clearly, it would be a more amenable activity for women if the lake was relatively near the house, rather than the further reaches of the park. Size was also a factor. Felus suggests that the desire for boating led to an increase in the size of lakes.[58] She was talking about naumachia, which became particularly popular in the 1740s, but although they are undoubtedly relevant, Kingston's painting (1726) and the increasing numbers of boats on lakes in paintings from this time onwards (Table 21) are evidence that this factor began to operate about 20 years earlier. John Whitney's comments, in 1700, indicate that it may have begun even earlier. Talking about a pond at 'Sundridg' (Kent) of 300 by 100 feet, he says,

> then in the middle of the Pond a most delightful *Summer* House
> to go to by Boat, twelve foot long and ten foot broad, with a
> Fountain in the middle, where the Water plays in sundry
> Figures;[59]

Felus also draws attention to the importance of boating as a social activity to entertain family and guests, and this echoes Nugent's comments above about the way in which princes visiting Geneva were entertained in boats on the Lake in 1749.[60] We have seen that two yachts were bought for the Royal Family once the Serpentine was completed in 1731, and that Viscount Weymouth ordered one in 1736.[61] Boats of considerable size were commissioned for use on lakes at Stowe, Wrest Park and Newstead Abbey. They were used for the pleasure of sailing on the lake, and there is some evidence that canals increased in size at Wrest, and that larger lakes were created, in order to facilitate boating, which has been discussed in relation to Thoresby. As well as in Haytley's painting, boats appear in numerous other pictures of the eighteenth century, one of earliest being a topographical painting of Wingfield Manor in *c.* 1700, where the water was *c.* 0.4 h, or nearly an acre. It shows a large house looking down on a geometric shaped pond with a boat on it, possibly with a mast. The pond was almost certainly a fishpond, but its central position in the painting, and the women in the boat, suggest it is in the process of evolving into a piece of water which was as much ornamental as functional. Up to *c.* 1720, very few landscapes

Name	County	Date of image	Artist	Lake date	Lake size: h	Type of lake	Boats (No. of)
Bayhall	Kent	1680 s	Siberechts	1680 s	0.4	Geom. pond	Rowing
Wingfield Manor	Derbys.	1700 c.	T. Smith	1700 c	0.1 ?	Pond (fish?)	Rowing
Blagdon Hall	Northumb.	1705 c.	T. Smith attr.	1705 by	0.7	Geom. pond	Rowing
Thoresby Hall	Notts.	1705 c.	Knyff	1705 c	0.4 ?	Canal	Rowing
Brightwel	Suffolk	1707	Knyff & Kip	1707 by	Pond	Semi-geom.	Rowing
Crewe Hall	Cheshire	1710 c.	Unattrib.	1710 c	Pond	Geom. pond	Rowing
Coberley	Gloucs.	1712	Knyff & Kip	1712	0.4		Rowing 2
Claremont	Surrey	1725 c.	Unattrib.	1723	0.6	Geom. pond	Rowing
Thoresby Hall	Notts.	1726	Tillemans	1719	19.5	Irreg. lake	Rowing 3, men, women
Stowe	Bucking-hamshire	1733	Rigaud	1733	3.9	Semi-geom. lake	Sailing Rowing, 2
Unidentified	Hampshire	1733	in Harris?	1733 ?	?	Canal	Rowing
Wrest	Beds.	1735	Rocque	1730	1.5 ?	Canals	Rowing, 2
Chiswick	Surrey	1736	Rocque	1732	1.8	Hybrid lake	Sailing? rowing
Oatlands	Surrey	1737	Rocque	1732 c	1 ?	Canal	Rowing
Hartwell	Bucks.	1738	Nebot	1732 c	Pond	Canals	Punt
Rushton	N'hants.	1741	Winstanley	1741 by	?	Canal	Rowing
Beachborough	Kent	1745	Haytley	1745	0.17	Semi-geom. pond	Rowing
Haigh Hall	Lancashire	1746	Haytley	1745 c	Pond	Canal	Rowing, men, women
Copped Hall	Norfolk	1746	Lambert & Francis	1746 by	0.3?	Irreg. pond?	Rowing, man, woman
Stanway	Gloucs.	1748	(In Harris)	1748 ?	0.6 ?	Semi-geom.pond	Rowing
Studley Royal	Yorkshire	1750 s	Unattrib.	1728	2 ?	Semi-geom. lake	Sailing
Staunton Harold	Leicester-shire	1750 ?	(In Harris)	1763	3.6	Irreg. lake	Rowing
Boynton Hall	Yorkshire	1751	Arthur Devis	1750 c	0.4	River-lake	Sailing
West Wycombe	Bucks.	1752	Hannan	1749	4.5	Hybrid lake	Sailing, rowing
Wroxton	Oxon.	1755	F. Booth	1750 c.	2.5	Irreg. lake	Sailing
Wilton	Wiltshire	1759	Wilson	1745	5.4	Irreg. lake	Rowing, 2
Kew Gardens	Middlesex	1759	?	1759	2.4	Irreg. lake	Rowing
Painshill	Surrey	1760	Woollett	1755 c	1.4 c.	Irreg. lake	Rowing
Tabley House	Cheshire	1765 c.	Wilson	1760 c	20 c.	Irreg. lake	Rowing
Enville Hall	Staffs.	1769	Barber engr.	1753	1	Hybrid lake	Sailing
Forcett Park	Yorkshire	1770 c.	G. Cuitt	1770 c	7.5	Irreg. lake	Rowing
Newstead Abbey	Notts.	1772	Sandby?	1747 c	9.3	Irreg. lake	Sailing, 2
Stourhead	Wiltshire	1775	Bamfylde	1754	7.5	Irreg. lake	Rowing
Easton Neston	N'hants.	1778	H. Pugh	1778?	1.2	River-lake	Rowing
Wolterton	Norfolk	1779	Repton	1732	4	Semi-geom. lake	Rowing
Melton Constable	Norfolk	1779	?	1764	7	Irreg. lake	Sailing
Ranston	Dorset	1779	Hearne	1764 c	1.1	River-lake	Rowing
Sandbeck	Yorkshire	1779	Hodges	1767	5.6	Lake irreg.	Sailing
Syon House	Middlesex	1779		1767 c	2.2	Serp. lake	Sailing
Ostlerley Park	Middlesex	1779	Watts	1768 c	7.6	Serp. lake	Sailing
Luton Hoo	Herts.	1779	Watts	1769	13	Serp. lake	Rowing
Heveningham	Suffolk	1779	Malton	1770	5	Irreg. lake	Sailing
Lyme Hall	Cheshire	1779	Nates	1779 c.	0.6	Irreg. pond	Rowing
Kedleston	Derbys.	1780 c.		1770 c	13.7	Serp. lake	Sailing
Brocket Hall	Herts.	1787	Sandby	1773	8.5	River-lake	Rowing, 4
Somerhill Pk	Kent	1810 c.	Turner	1795-9	2.7	Irreg. lake	Sailing
Tabley House	Cheshire	1808	Turner	1795 ?	20	Irreg. lake	Sailing 4
Petworth	Sussex	1809	Turner	1757	6	Irreg. lake	Sailing 2
Wivenhoe	Essex	1816	Constable	1777	1.1	Irreg. lake	Rowing

Table 21. Table of pictures showing boats on lakes, extracted from the Image

Database, by date of painting.

Yellow = hybrid or irregular lake.

depicted showed ornamental water large enough to be a lake (Table 21). This changed in the 1720s, as can be seen in the many landscape paintings which show significantly large ornamental water (a canal for example, or geometric pond). Up to *c.* 1730, few pictures showed boats on these pieces of water, but from the 1750s approximately half with water did depict boats.

Images showing:	Pre-1700	1700s	1710s	1720s	1730s	1740s	1750s	1760s	1770s		1780s	1790s
No water	3	47	24	18	7	5	5	5	Watts 39	1	2	3
Water, no boats	7	68	25	38	12	10	12	5	26	2	5	1
Water + boats	2	4	1	3	7	4	10	10	21	1	3	1
Totals	12	119	50	59	26	19	27	20	86	4	10	5

Table 22. Analysis of the number of landscape pictures relating to water and boating, extracted from the main Image Database. The 1770s included many engravings by Watts which were often unrealistic 'portraits' of houses (highlighted in yellow).

This strongly suggests that boating was not a significant leisure activity in the first half of the century. As Tables 22 and 23 show, there is a strong correlation between the increasing size of lakes and the depiction of boats. (The Watts engravings have not been included in this calculation as they were very formulaic and not to be heavily relied on.)

Date	1700s	1710s	1720s	1730s	1740s	1750s	1760s	1770s	1780s	1790s
Average size, h	0.5	0.4 (19.5)	1.3	2.4	3.4	3	7.5	5.4	0	11

Table 23. Average size of lakes in Table 21, by decade. There were only two images in the 1710s, and the figure in brackets is Thoresby lake.

In the second half of the eighteenth century, many more images depicted boats, and the ornamental water became larger, and irregular in shape. These facts

suggest that boating was one of the driving factors in the emergence and subsequent popularity of lakes.

Boating as a high-status activity was noted at Thoresby, where Kingston was an early innovator. His example was followed by other aristocrats from the 1720s onwards, notably at places like Studley Royal, Wrest, Chiswick and Stowe. As Felus points out, the boats at Stowe were elaborate and numerous.[62] Fig. 4.14 shows a galley of a similar design to the barge which Kent designed for

Fig. 4.14. 1733 view from the head of the lake at Stowe, by Rigaud.[63]

Frederick, Prince of Wales, in 1732, but with a sail. This boat was of significant size, requiring a crew, and capable of carrying a number of people. It was spacious enough to carry provisions – picnics – and possibly musicians as well, the covered poop providing shelter from sun or rain. This activity occurred on the Eleven Acre Lake and Rigaud's view shows,

> there was enough water to pick up some speed and, therefore, add to the enjoyment. Two barrel-vaulted boathouses survive at the east end of the lake on either side of the cascade, which flows down from the higher Octagon Lake. These would probably have housed smaller rowing skiffs, or smaller sailing boats with removable masts. There seems to have been little or no boating on the Octagon Lake, which, certainly in its earlier, formal phase, would have been too small for anything other than rowing.[64]

A 'Kanooe' is mentioned in the accounts at Stowe in the 1730s, but the 'ship' does not appear until 1750. This may well be the 'man of war' illustrated by George Bickham (Fig. 4.16).[65] This certainly accords with the trend suggested by the paintings (Table 20) in the Image Database: from the 1750s, the majority of boats depicted have sails. In this survey, all types of water were included (apart from rivers), regardless of size or of function. It is worth noting, however, that until the 1750s twice as many places illustrated with water did not have boats as those which did (Table 21).[66] Also, the large majority of the places with boats were elite residences, which confirms the theory that boating on your own water was a high status activity. One of the later pictures of a boat on water, with a nearby house, is an engraving published in 1787 of a picture by Paul Sandby of Brocket Hall.[67] This was a Chinese boat built for Sir Benjamin Truman at a cost of £300, which emphasises the importance attached to boating, as well as illustrating the popularity of the 'Chinese' style.

That boating as a recreation prompted the development of lakes, and led to an increase in the size of ornamental water, is vividly illustrated by the activities of Jemima, Marchioness of Bedford, at Wrest. She inherited a landscape of formal canals from her grandfather in 1740, and by 1748 had commissioned Thomas Wright to 'serpentine the end of the peripheral canal, bringing it into the ground to join the Lady's Canal'.[68] This, together with her commissioning Brown to make the water at Wrest less formal in *c.* 1760, and her purchase of a galley type boat strongly support this theory (Fig. 4.15). The inspiration for this 'Chinese' boat may well have come to Jemima from her brother-in-law, Admiral Anson, at Shugborough, who advised her on the best type of boat to have – a galley because it could be rowed and also have sails, and it could be lavishly decorated.[69] Felus also makes the point that a number of Chinese boats complemented Chinoiserie summerhouses or temples: at Shugborough, and the Duke of Cumberland's at Virginia Water.[70]
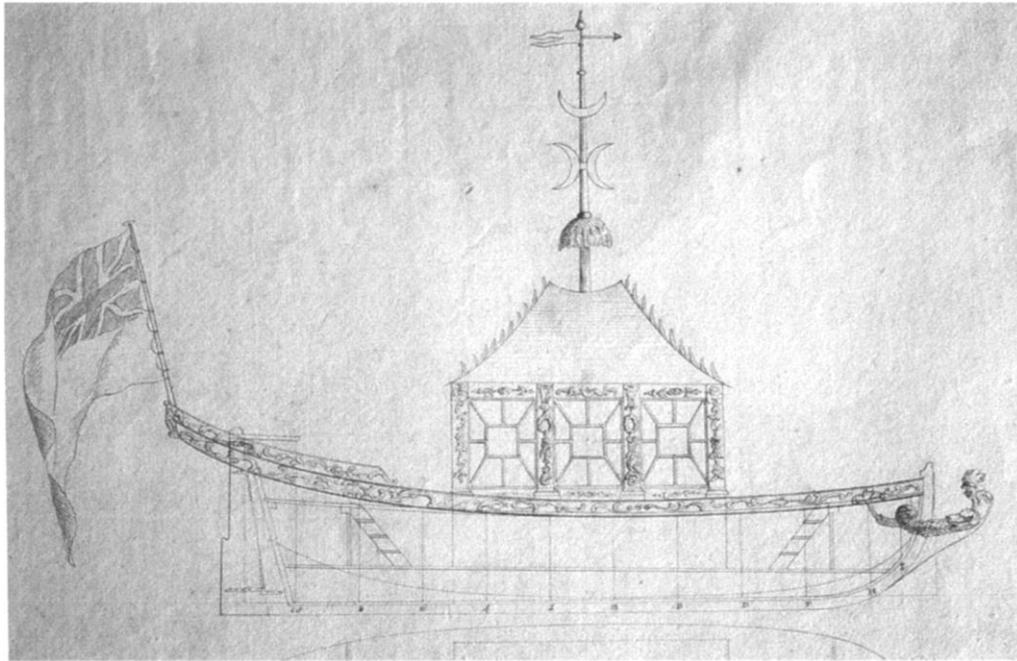
Fig. 4.15. Scaled design for a boat at Wrest Park, Bedfordshire.[71]

Jemima provides further evidence of the pivotal role of lakes in recreation in the later part of the eighteenth century: her daughter, Amabel, describes the launching and maiden voyage of the Chinese boat in 1766, and a grandson, Thomas, Lord Grantham, does likewise in 1790, though little is known about that boat. Both parties obviously enjoyed themselves considerably:

> Having passed every straight & doubled every cape without the least accident, & being arrived at the open sea behind the pavilion, we landed under a clump (which I should have called a Wood) & left the vessel to proceed to its moorings ...,[72]

and

> Grandmama has got a great boat which we saw launched on Monday; it was afterwards brought to the bank we all have been aboard of her and fished in her. The men that got her out of the house were a great while a doing it.[73]

The boats at Stowe were also used in the evening entertainment, as part of the stage-set which was centred on Kent's Grotto, often having musicians in them. Presumably, these were smaller craft, whereas the 'ship,' decorated with lights and containing the musicians, was stationed at the further end of the Canal in 1764, as part of the evening entertainment for Princess Amelia.[74] The

'ship' at Stowe (Fig. 4.16), described in the Benton Seeley guidebook as a 'Model Man of War in all her Rigging', was laid up during the winter, as accounts in the 1750s and '60s testify, whilst the smaller boats were stored in various summer houses and temples.[75] Ships of this size were not common, as the lakes on which to sail them had to be large. Lord Bute had a similar ship at Luton Hoo.[76] This was on an irregular lake of *c.* 13 h, which was a substantial size, though rather narrow. Francis Dashwood also had a ship with two masts on his lake at West

Fig. 4.16. The three masted ship on the Eleven Acre Lake at Stowe, 1753.[77]

Wycombe.[78] Again, this was a lake of reasonable size – 4.6 h. Being a hybrid lake, it was roughly rectangular in its overall shape, and more suited to sailing than Bute's lake. The 5th Lord Byron (not the poet) expanded the Upper Lake at Newstead Abbey in the 1740s. It was also more suited to sailing, being an irregular lake of *c.* 9.3 h, which was more spreading than Luton Hoo. He had at least two sailing boats and indulged in naumachia, going as far as to build fortifications on the lake shore from which to fire guns. Naumachia were

enjoyed at Wotton, the second seat of the Grenvilles and, as Felus says, "Its vast extent and the firm evidence of the battery begs the question of whether its scale was determined by the desire to play such aquatic games."[79] Sir Francis Dashwood certainly engaged in mock battles on his lake at West Wycombe, one of his captains being slightly injured in one such battle. The cumulative evidence of images and texts suggests that the pursuits such as pleasure trips, angling, and naumachia led to canals and lakes being enlarged, and was probably also a factor influencing their construction in the first place, from the 1730s onwards, gaining momentum in the 1750s and '60s. The fact that Bute was having a ship constructed - a first rate man of war - whilst Brown was creating the lake at Luton Hoo in 1766 also supports the theory that lakes were made or enlarged for this purpose.[80]

One of the last pictures of boats in the Image Database is Constable's painting of Wivenhoe, 1816 (Fig. 3.72). As noted above, pictures of houses in landscapes declined in numbers towards the end of the eighteenth century, so less information is available from this source. However, it seems that the passion for rowing or sailing still endured: in 1811 Jane Austen describes a pleasure party in *Sense and Sensibility* in which a sail on a noble piece of water

> was to form a great part of the morning's amusement; cold provisions were to be taken, open carriages only employed, and everything conducted in the usual style of a complete party of pleasure[81]

and, as we have seen above, George Eliot was looking forward to a row on the Serpentine in 1853.

4.5. Lakes as Status Symbols.

Whilst the way in which parks were being used was changing, there was continuity in the form and function of water in parks. The irregular lakes which emerged were similar in shape and construction to the *vivaria* found in landscapes since Roman times and, like them, were stocked with fish. However, as noted above, *vivaria* tended to be located at some distance in the park, whereas irregular lakes were often located nearer the house. In many instances,

fishponds (*vivaria* and *servatoria*) were enlarged and modified to become lakes. Stourhead, Petworth and Badminton come to mind, those at Badminton being *servatoria* originally.

Another form of continuity was the status which water conferred, and this was also a factor in the emergence of lakes. The desire to display ornamental water appears to have been as strong in the eighteenth century as in the medieval period, merely the ostensible function changed: features such as fishponds and moats conferred status throughout the period considered, and fishponds remained high status features well into the eighteenth century. Just as fishponds conferred status on the owner, so did irregular lakes, though not directly because of the freshwater fish, which was not as valuable as in the medieval period, but because of the message they conveyed about the wealth of the owner, as someone who could afford not only the cost of making a lake but who could also afford to devote a large area of land to less than maximum productivity.

The desire to display these status symbols – lakes – led to them occupying a more prominent position in the landscape in the second half of the eighteenth century. With the ha ha being used to blend the gardens into the park, it became much easier to site the lake in view of the house, making it a more prominent element in the landscape. This created good opportunities to view the lake from the house, as well as to view the house from the park across the water. By the second half of the century, views of the lake, as well as the house, on the approach drives were being contrived – very reminiscent of the flanking fishponds of the Bishop of Ely at Somersham in the twelfth century. Paine's bridge over the Brown's river-lake at Chatsworth is a good example (Fig. 4.17), and this was a device which Brown used frequently. The Lion Bridge at Burghley, and the (original) approach at Bowood are further examples.

Fig. 4.17. Chatsworth, Derbyshire, with Paine's bridge in the foreground.[82]

These factors help to explain the increasingly prominent position of lakes from the 1740s onwards. In the early decades of the eighteenth century, lakes had frequently been positioned obliquely in relation to the house. This changed in the middle of the century, and placing the water in front of the house where possible became more common (Table 24).

No.	1690s	1690s	1700s	1700s	1710s	1710s	1720s	1720s	1730s	1730s	1740s	1740s	1750s	1750s	1760s	1760s

Key: Lake was positioned obliquely in relation to the house.

Lake was positioned in front of a main house façade (entrance front or garden).
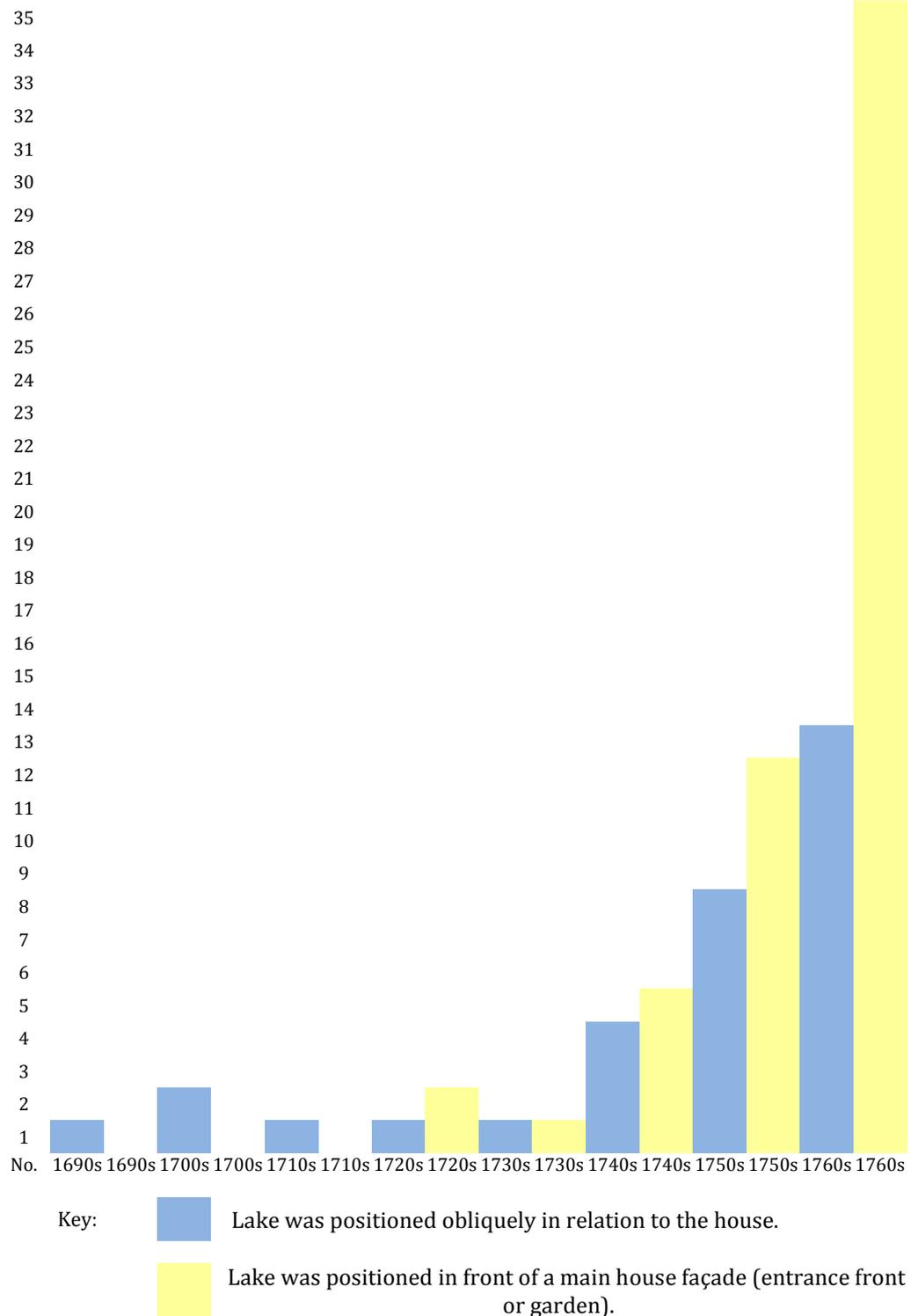
Table 24. Graph of house position in relation to lake, 1690-1769 inclusive. Distances varied.

As well as displaying the lake more prominently, being positioned in front of the house also enabled the lake to better reflect the house: an important factor in the second half of the eighteenth century. The effect was to enhance the image

of the house (Fig. 4.18) and double its impact, just as lake-moats had done with castles. Garden buildings were similarly enhanced by being reflected in lakes,

Fig. 4.18. Blenheim Palace, Oxfordshire.[83]

and this was particularly valuable where the house itself was not reflected, as at Studley Royal and Stourhead (Fig. 4.19). There, the Pantheon, a substantial

Fig. 4.19. The Stone Bridge and Pantheon, Stourhead, Wiltshire.[84]

building, was constructed at a similar time as the lake, and fulfils the role of 'house', to some extent, being fully reflected in the lake. That this reflective element of lakes was a significant factor in their rising popularity in the second half of the eighteenth century is borne out by the many 'portraits' of houses in landscapes which showed the house reflected in the lake, even if this was not possible in reality. The images published by Watts in 1779 frequently show the house reflected in the lake, sometimes even when it was impossible, as at Corsham Court. The height of the house above the lake was the significant factor in creating a reflection, and at Corsham, the lake is quite some distance from the house (400 m) and is also at a similar level to it. As well as the aesthetic attractions of buildings reflected in lakes, the enhanced (double) image also emphasised the status of the owner, as only the wealthy could afford to make lakes, or had the space (parks) in which to make them.

4.6. Conclusion.

In summary, the reasons for the emergence and evolution of irregular lakes are varied and complex. Although the different threads have been considered separately, these were actually interdependent, and woven together to produce the significant novelty of the ornamental lake. One factor which was conducive to this change was the political events of 1713-15. Men became free of the worry of war, as the Treaty of Utrecht put an end to the fighting in Europe. The death of Louis XIV saw the end of French domination in political and cultural affairs, and the death of Queen Anne ushered in regime change, with a new focus, in Britain. Whilst these factors did not have a direct bearing on the emergence of lakes, the changing cultural ambience did. French fashion in garden and landscape design began to seem increasingly like a sterile geometry of 'straight walks'.[85] People were receptive to new concepts and ideas, and this change in taste was fostered by men like Addison, Pope and Burlington. It led them to view their experiences on the Grand Tour, and the lakes, mountains and gardens they saw on the Continent, in a new light. Burlington sponsored Castell to research the gardens of Antiquity, and Halifax did likewise to enable Addison to travel on the Continent and write about what he saw.

There is no doubt that Grand Tourists were impressed with the Alpine lakes, and the villas and gardens bordering them. This, linked to the prevailing interest in Palladian concepts, and the remains of Antiquity which the tourists saw, led to a wish to replicate, in some measure, at home the landscapes they had seen on their travels. Only the elite could afford to do this, but they took the concept of large, irregular water and began to make 'lakes' in their landscapes, often with classical houses or garden buildings nearby. They were copying the natural, geographical lakes which they had seen. The bond of common experience which the Grand Tour provided cemented these concepts, and meant that these landscapes could be 'read' by any educated gentleman. Paintings of 'similar' scenes, often by Lorrain or Dughet, were brought back and reinforced the bond, with the added advantage that they displayed the owner's cultural sophistication.

Irregular lakes were a significant factor in precipitating the dissolution of the geometric landscape, as they did not fit easily into a geometric design, and geometry in landscapes began to dissolve. This is a new interpretation of landscape history as, to date, it has been assumed that irregular lakes followed fashion, and appeared after landscape style had become irregular. The chronology of lake development established in Chapter 3 clearly shows that irregular lakes were made in new geometric landscapes. The desire for large, irregular lakes was a primary factor in the dissolution of those landscapes, along with the increasing scale, which led to them becoming 'unbalanced'. Once this happened, it was much easier to fit an irregular lake into the design of the landscape, and this accelerated the move away from geometry, towards irregularity in landscapes generally. In these bigger landscapes, lakes also needed to be bigger to make an impact, and it was correspondingly difficult to fit them into geometric layouts.

The desire for leisure activities, particularly boating, made lakes increasingly popular, and was in part responsible for them increasing in size as the century progressed, with the increase in the depictions of boats, particularly sailing boats, being marked. The desire on the part of women to be involved with these activities may have spurred on the increasing popularity of lakes, and influenced them being positioned nearer to the house, rather than more

distantly in the park, as this made them more accessible to women, and the rest of the family.

Lastly, as in medieval times, there was a desire to display water, making it visible from the house, and as visitors approached the house. Initially, lakes 'intruded' from the park and were generally positioned obliquely to the house. By the second half of the eighteenth century, the usual formula was to have the lake in front of the house where possible, and to route approaches through the park across the lake at some point, ideally giving views of the house across the water. Further carriage drives or walks aimed to do likewise. We should also remember that in the elite mind large bodies of water were linked with deer parks and, being like medieval *vivaria*, lakes conferred status. It was necessary to be wealthy to make one, and it was necessary to have a large estate in order to make a large lake. Linked to the connotations of wealth and status was the wish to see the house reflected in the lake. This was perhaps the ultimate status symbol, along with a yacht or several, as it doubled the impact of the house, and often signalled that a renowned improver had been employed.

[1] Campbell *Vitruvius* Vol. III, 1725, Plate 69

[2] A. Rowe, ed. *Hertfordshire Garden History: A Miscellany* (Hatfield: Hertfordshire Publications, 2009) p 17

[3] T. Williamson, personal communication, May 2015

[4] T. Williamson, personal communication, February 2017

[5] T. Mowl *Historic Gardens of Gloucestershire* (Stroud: Tempus Publishing, 2005) p 70

[6] Ibid., p 68

[7] Ibid., p 70

[8] Ibid., pp 69-70

[9] Ibid., p 71-2

[10] T. Nugent *The Grand Tour* (London: S. Birt et al, 1749) online at
https://books.google.co.uk/books?id=gYAUc2g2HGkC&printsec=frontcover&dq=thomas+nugent+grand+tour&hl=en&sa=X&ei=4zA2VdrfMY3X7Aa_toCYCA&ved=0CCEQ6AEwAA#v=onepage&q=thomas%20nugent%20grand%20tour&f=false accessed Jan. 2015

[11] C. W. James *Chief Justice Coke: His Family and Descendants at Holkham* (London: Country Life, 1929) p 187

[12] Ibid., pp 230-231

[13] Ibid., p 228

[14] T. Williamson, personal communication, Dec., 2016.

[15] James, op. cit., p 202

[16] K. Woodbridge, 'Henry Hoare's Paradise', *The Art Bulletin*, Vol. 47, No. 1 (Mar., 1965), p 4 accessed online at http://www.jstor.org/stable/3048235 on 4.6.13

[17] Charles Montagu, later Lord Halifax, "arranged a Treasury grant of £200 allowing Addison to make an extended stay on the continent. The idea was that he should take advantage of his travel abroad to learn languages and equip himself for a diplomatic career." in Pat Barker, ODNB, on line, accessed April 2015

[18] J. Addison *Remarks on Several Parts of Italy* in R. Hurd *The Works of the Right Honourable Joseph Addison, A New Edition, with Notes by Richard Hurd D. D. Lord Bishop of Worcester* Vol. II (London: T. Cadell & W. Davis, 1811) p 174 online at
https://books.google.co.uk/books?id=7YNjAAAAMAAJ&pg=PA86&dq=joseph+addison+letters&hl=en&sa=X&ei=KM0KVeCbJcWraZyggLgE&ved=0CFkQ6AEwCQ#v=onepage&q=lake&f=false
accessed Feb. 2015

[19] Ibid., p 170

[20] Ibid., p 145

[21] Addison remarked, "At one side of the walks you have the near prospect of the Alps, which are broken into so many steps and precipices, they fill the mind with an agreeable kind of horror, and form one of the most irregular mis-shapen scenes in the world." Addison, ibid., p 174

[22] J. Dixon-Hunt & P. Willis, eds. *The Genius of the Place* (London: Paul Elek, 1976) p 138

[23] Joseph Addison in *The Spectator*, No. 37, 12th April, 1711, quoted in Dixon-Hunt & Willis, ibid., p 140-1

[24] Joseph Addison in *The Spectator*, No. 414, 25th June, 1712, quoted in Dixon-Hunt & Willis, ibid., p 141

[25] Ibid., p 141

[26] S. Switzer *Ichnographia Rustica, or the Nobleman, Gentlemen, and Gardener's Recreation* Vol. III, 1718 (London: 1718) pp vi, xiv
https://books.google.co.uk/books?id=87YgJ9EJjn0C&printsec=frontcover&dq=switzer+ichnographia&hl=en&sa=X&ved=0ahUKEwiY5aGjuN3TAhVBI8AKHbNTDlgQ6AEIIjAA#v=onepage&q=switzer%20ichnographia&f=false accessed May 2013

[27] Kingston had a picture by Salvator Rosa in his London house when he died: I. Grundy *Lady Mary Wortley Montagu* (Oxford: Oxford University Press, 2001) p 16 fn. We do not know if he made the Grand Tour, though his father did, and his friend, Carlisle, certainly did.

[28] Dixon-Hunt & Willis, op. cit., p 187

[29] G. Worsley *Classical Architecture in Britain: The Heroic Age* (London: Yale University Press, 1995) p 149

[30] J. Badeslade *et al, Vitruvius Brittannicus Second Series, Volume the Fourth* 1739 & Vols 4 & 5, 1767-71 (New York: Dover Publications, 2009) Plates 19-23

[31] A. Pope *Essay* in 'The Guardian', 1713, quoted in Dixon-Hunt & Willis, op. cit., p 205

[32] A. Pope *Letter to Martha Blount c.* 1724, quoted in Dixon-Hunt & Willis, op. cit., p 209

[33] Dixon Hunt & Willis, op. cit., p 204

[34] T. Mowl *Gentlemen and Players: Gardeners of the English Landscape* (Stroud: Sutton Publishing, 2000) p 96

[35] T. Mowl & B. Earnshaw *An Insular Rococo: Architecture, Politics and Society in Ireland and England, 1710-1770* (London: Reaktion Books, 1999) p 66

[36] Nugent, op. cit., p 165

[37] Ibid., p 175. N. B. This is much bigger now owing to the construction of a large reservoir in the 1960s.

[38] Ibid., p 178

[39] R. North *A Discourse of Fish and Fish-Ponds* (London, 1718) pp 72-3

[40] He is not riding, and the dogs are pointers, not hounds.

[41] Courtesy of Hugh and Ranji Matheson, Thoresby Park

[42] K. Felus, unpublished PhD thesis, *'Beautiful Objects and Agreeable Retreats': Uses of Garden Buildings in England, 1720 – 1820* p 149

[43] North, op. cit., p 72. There is a painting of Wingfield Manor, *c.* 1700, which shows two women in a rowing boat, but they are unchaperoned, and their purpose is unclear: it does not seem to be pleasure related.

[44] Lady Mary Pierrepont in a letter of 25th Sept., 1711 to Philippa Mundy, quoted in R. Halsband, ed. *The Complete Letters of Lady Mary Wortley Montagu* Vol. I p 110. She was 22. The following year, she eloped with Edward Wortley Montagu.

[45] Lady Mary and her friends would have been riding side-saddle. Later in her diaries, she confesses to riding astride, when living in Italy.

[46] Lady Mary Pierrepont in a letter of Aug., 1725 to her sister, Lady Mar, Halsband, op. cit., Vol. II p 54

[47] D. Birley *Sport and the Making of Britain* (Manchester: Manchester University Press, 1993) p 103; A. Pope in *The Guardian* 1713, quoted in D. Birley *Sport and the Making of Britain* (Manchester: Manchester University Press, 1993) p 106

[48] H. Fielding *The History of Tom Jones, A Foundling* (London: Murray's Book Sales, *c.* 1960) p 158

[49] T. Williamson, personal communication, November 2015

[50] M. Girouard *Life in the English Country House: A Social and Architectural History* (Harmondsworth: Penguin Books, 1980) p 190

[51] K. Felus *Boating, Driving and Dining in the Creations of Brown:* lecture at Compton Verney, 24.6.14

[52] Ibid.

[53] P. Henderson, 'A Shared Passion: The Cecils and their Gardens', in P. Croft (ed.) *Patronage, Culture and Power. The Early Cecils* (New Haven, Ct., 2002) quoted in D. Spring, ed. *Hertfordshire Garden History Vol II* (Hatfield: University of Hertfordshire Press, 2012) p 39

[54] R. Strong *The Artist & the Garden* (London: Yale University Press, 2000) pp 78-9

[55] Ibid., pp 78-9

[56] S. Switzer *Ichnographia* op. cit., Vol. III) p 120

[57] F. M. Piper's 1779 drawing of Stourhead in M. Batey & D. Lambert *The English Garden Tour: A View into the Past* (London: John Murray, 1990) p 191

[58] K. Felus, unpublished PhD thesis, op. cit., p 21

[59] J. Whitney *The Genteel Recreation Or, the Pleasure of Angling, A Poem with a Dialogue between Piscator and Corydon* 1700, in the 'Dedication' (no page numbers) https://books.google.co.uk/books?id=qvxJAAAAIAAJ&printsec=frontcover&dq=john+whitney&hl=en&sa=X&redir_esc=y#v=onepage&q=john%20whitney&f=false accessed July 2014

[60] Felus, K. 'Boats and Boating in the Designed Landscape', *Garden History*, Vol. 34, No. 1 (Summer, 2006), pp. 22-46

[61] T. Mowl, 'Rococo and Later Landscaping at Longleat', *Garden History* Vol. 23, No. 1 (Summer, 1995), p 59 http://www.jstor.org/stable/1587012?seq=5 accessed 11.9.14

[62] K. Felus 'Boats and Boating', op. cit., p 26

[63] 1733 drawing by Jacques Rigaud, engraved by Bernard Baron, in Felus ibid. p 26

[64] Felus, 'Boats and Boating', op. cit., p 27

[65] Ibid., p 28

[66] 35 had boats and 73 did not.

[67] HALS ref. DE/X55/Z2/12, reproduced in D. Spring, ed. *Hertfordshire Garden History Vol II* (Hatfield: University of Hertfordshire Press, 2012)

[68] Lennox-Boyd volume of Wright's drawings, no. 55, quoted in K. Felus, 'Boats and Boating', op. cit., p 35

[69] Her sister, Elizabeth, was married to Admiral George Anson, who circumnavigated the world in 1744; he was a brother of Thomas Anson, owner of Shugborough.
[70] Felus, 'Boats and Boating', op. cit., p 36
[71] Bedfordshire & Luton Archives & Records Service, L33/125 in Felus ibid.
[72] 29 July 1766; BLAS, Lucas Papers, L 30/21/2, quoted in Felus 'Boats and Boating' op. cit. p 39
[73] Thomas Robinson to Frederick Robinson (1st September, 1790); WDRO, Morley Papers, 1259/1/219, quoted in Felus, 'Boats and Boating', op. cit., p 39
[74] Felus, 'Boats and Boating', op. cit., p 28. Princess Amelia was a daughter of George II.
[75] Felus, 'Boats and Boating', op. cit., p 28
[76] K. Felus, unpublished PhD thesis, op. cit., p 152
[77] J. B. Chatelain's drawing, engraved by George Bickham, 1753, in Felus, 'Boats and Boating', op. cit., p 29
[78] Felus, 'Boats and Boating', op. cit., p 39
[79] Ibid., p 30
[80] Ibid., p 25
[81] Jane Austen, *Sense and Sensibility: A Novel. By a Lady*, 3 Vols. (London, Penguin Classics, 1986) pp. 91-2. quoted in Felus, 'Boats and Boating', op. cit., p 34
[82] Photograph, T. Williamson
[83] Photograph via Google images, copyright Blenheim Palace.
[84] Photograph via Google images, copyright www.wyndhamparklodge.co.uk
[85] Mentioned in Coke's poem, quoted in James, op. cit., p 228

5. Lakes: Construction, Form and Siting.

5.1. Construction.

The construction of a lake has to take account of a number of factors. One of the essential components is a source of water such as a stream, river or spring, which constantly replenishes the lake. This, as suggested earlier, is what really distinguishes a lake from a pond, as well as the size criterion in this thesis of one hectare. The constant replenishment means that lakes can usually be much bigger than ponds. The basic construction criteria which were examined in the Introduction apply to all lakes, both geometric and irregular. However, the different types of lake were constructed slightly differently, which had an effect on where they could be made, as well as the costs of making them.

The lakes which evolved in the eighteenth century were similar to the *vivaria* of medieval fish production systems, and the general principles governing their construction, or the construction of any large body of water, remained largely the same, as Currie points out, although he highlights a decline in eighteenth century standards compared with medieval standards.[1] The same general principles were widely employed, in the making of mill ponds, hammer ponds and, later, canal reservoirs. Switzer makes the point, however, that accounts of the technology for making ponds and dams in the eighteenth century varied in all the books he had consulted, and that working practices also varied in their details, such as how thickly clay should be applied for water-proofing ponds.[2] It must be emphasised here that Switzer is talking about making ornamental *ponds* not lakes, in the early eighteenth century. In *Hydrostaticks*, for example, he gives dimensions for reservoirs or basins as 7 to 8 feet deep and 100 to 200 feet square (0.1 h to 0.3 h).[3] In the same chapter, he makes it clear that the only way to make a reservoir on a hillside is to line it with brick or stone, which is expensive. He also complains that there is no written record of some practices, though he goes on to say "in the West (whence this is wrote,) every Ploughman and Shepherd is able to make good Reservoirs and Ponds for holding of Water."[4] He does imply that there was a body of specialist

knowledge among workmen which was unrecorded.[5] However, there are slight hints about the existence of people who had the expertise to make *vivaria*: men such as William de Chester working for King Henry III, Brother John of Waverley (1247-51)[6], and a tombstone in Gunton churchyard, Norfolk, to James Briggs 'Head Pondmaker', 1709[7]. Men like him almost certainly appear in estate accounts, but without descriptors, and the detail of their function is hidden. North gives substance to this theory. Talking about how to make dams, he says,

> The Advantage of Trades, is, that by continual Experience, they
>
> find nearer Ways of doing Things, spending fewer Strokes, and
>
> less Time, than others can. And in the Conduct of this Work,
>
> there is much to be sav'd;[8]

As mentioned in Chapter 1, fishponds were of different sizes, ranging from small ones near the house (*servatoria*) to large breeding ponds in the wider landscape (*vivaria*). The latter could be very large indeed: the King's fishpond at Silverstone in the thirteenth century was *c.* 8.7 h / 21.5 acres – larger than the lake at Bramshill, though probably fairly shallow. North describes how to make a dam for the large type of fishpond (*vivaria*) in *A Discourse of Fish and Fish-ponds*, 1714. He makes the proviso that he is talking about areas of the country with clay soils, not sandy soils, as does Switzer, and his method is this (Figs. 5.1 and 5.2):

1. the plan of the pond [for keeping fish] should be a half oval;
2. the dam should be across the valley (along the 'cut' edge of the oval);
3. a trench should be dug along this line a foot or two deep and rammed full of clay, to stop the water of the pond seeping under the dam [a cut-off trench];
4. a wall of rammed clay must be built right across the valley, and covered with rammed earth ("dug out of the ground where the pond will be") to stop the clay drying out and cracking, as the dam would then leak;
5. the dam wall must be built three feet higher than the required depth of the pond because the earth will sink however hard you ram it to make it solid.[9]
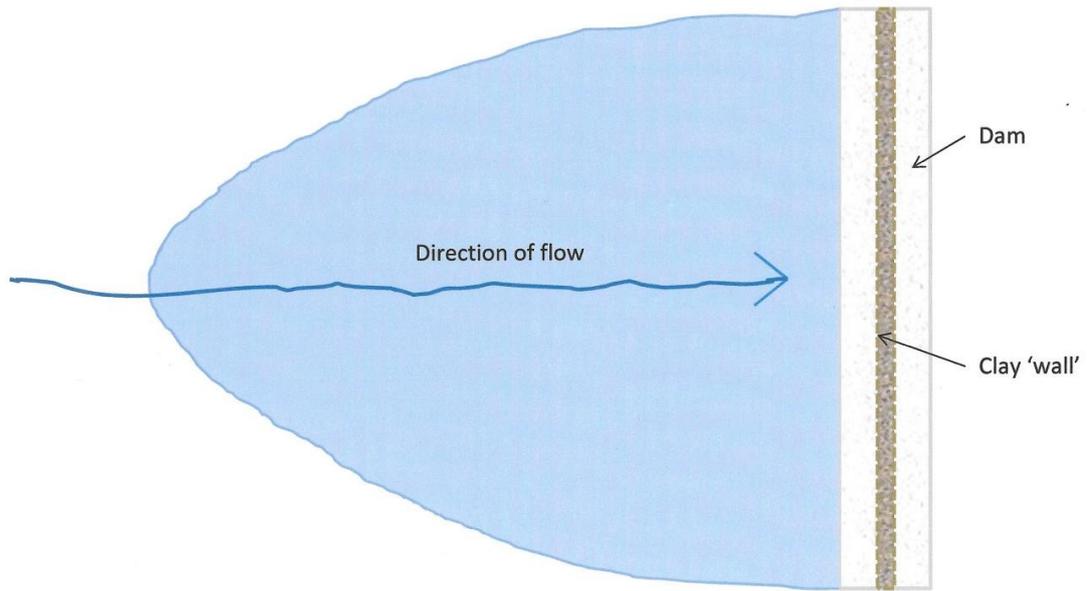
Fig. 5.1. Plan of a fish 'pond' (*vivarium*), to illustrate Roger North's instructions in *A Discourse*.[10]

He gives the dimensions for dams as follows: a medium 'pond' (4 or 5 acres – 1.6 - 2 h - for fishponds) would need a bank [dam] 14 feet (4.3 m) high (at the centre) and at least 50 feet (15 m) wide at the base, and the sides must be sloped to give a top of 16 feet (4.9 m) wide. This will ensure the dam is strong enough, and also take carriages across the top, or trees.[11] To avoid erosion by flood water pouring over the top of the dam, it is necessary to have sluices, North gives detailed instructions for making them, preferably from one whole piece of wood. They also enable the ponds to be drained for maintenance.[12] A sluice of this construction was found at Burghley in the 1980s, during repair works to the dam.[13] This illustrates that the construction of medieval fishponds (*vivaria*) was basically the same as that of eighteenth-century lakes, as Grundy's plan shows (Fig. 5.2).
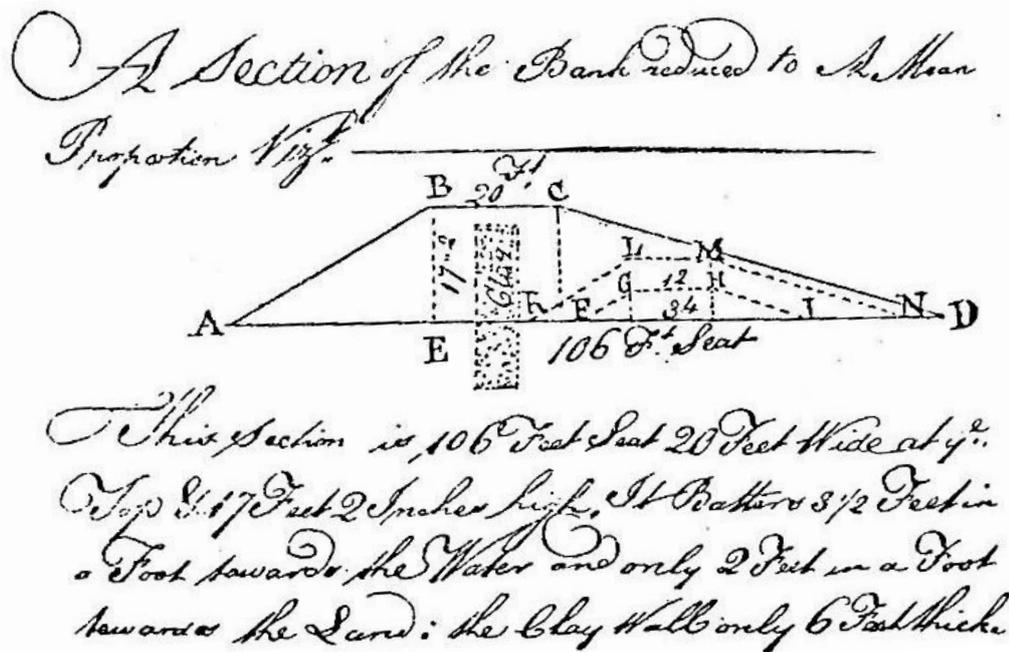
Fig. 5.2. A 1747 cross-section for a dam at Grimsthorpe by John Grundy.[14]

This dam corresponds to a common profile, having a shallower upstream slope (1 foot in 3½ feet) and a steeper downstream slope (1 foot in 2 feet). Sometimes, instead of a clay core inside the dam, a layer of clay was laid on the upstream side of the dam, with the area near the crest of the dam being protected by a layer of stone on top of the clay ('pitched' stone).[15]

The secret of making dams in areas with less stable soils is revealed by John Taverner, who mentions that if your earth "is a light sand, or onely chalke, that it will not stand without timber", so stakes driven into the ground should be packed with fine soil, which should be watered as it is rammed, to bind it solidly.[16] He also recommends that sluices should be made of one piece of wood if possible, and any joints packed with tar and [horse?] hair, going into considerable detail about their construction.[17] John Lawrence also furnishes details of this process of reinforcing dams with stakes.[18] Clearly, the construction of the dam is a complex process, and one with the potential to go wrong, as the danger of leaking is often mentioned.

As mentioned above, a major difference between ponds and lakes is that lakes have some form of water replenishing them – usually a stream or river –

whereas ponds do not. This points to a second vital difference: lakes have to be sited where the water source is, as springs or rivers are necessary for filling lakes, and keeping them full. Ponds – ornamental or functional - are sited where *desired* or *needed*, hence the likelihood that they would need to be 'clayed' all over, as Switzer says in *Ichnographia Rustica* 1718. Water piped from a spring could be used to fill ponds, as he explains, and small ponds would be filled from rain-water and run-off (dewponds). It must be stressed that Switzer uses the word 'pond' to mean simply an area of water. The word 'lake' was not in common use when he was writing. Talking of reservoirs or ponds, he says:

> If they are cut out of the whole Ground, they are commonly circular, and ought to be well clayed, except [unless] the Hill abound with Water. But it may be possible there is some Hollow or Valley in the Hill; then a Head made with the sinking, widening, and clearing of it will do, and save a great deal of Money; but there should be a Trench dug down in the middle of the Head [dam], about a foot wide or wider, and some strong Clay well ramm'd down, or else the Water will soak away thro' the Head; and this Trench ought to be cut down lower than the Bottom of the Reservoir or Pond.[19]

What Switzer is saying here is that where you have a valley, or hollow, supplied by a stream or river, you can get away with clearing the ground and building a dam across the valley. As long as you put a clay core wall inside the dam, with a cut off trench, it will hold water without the pond (or lake) being lined with clay. If there is no stream or river, then the best practice is to 'Clay all Over' the bottom and sides of the area of water. As a caution, he says:

> There be Some who affirm, that there is no need of Claying all Over, but only the Sides, and this doubtless may do where-ever there is any Layers of Clay, or Clayey Gravel under the bottom of your Pond, which often-times naturally happens, or if the Spring lies near; but if it be a deep, loose Sand or Gravel, or if it be towards the Brow of a hill, or toward the Ground, I doubt [think] it ought to be Clayed all over, even if the sides were Brick, has been commonly used: Yet 'tis certainly best to Clay the Bottom, and that with extraordinary good Clay, such as has

been prov'd; and if it were twelve or fourteen Inches thick, still

the better.[20]

He goes on to say that rammed chalk, at least a foot thick, can be used instead of clay in areas where chalk is abundant, such as the West.[21] It must also be remembered that Switzer is talking about relatively small areas of water, and that by 'reservoir' he means a tank, not anything like the canal or public water-supply reservoirs of the late eighteenth century.

A common component of the types of ornamental water systems which Switzer designed was a 'water- carriage'. These were relatively small conduits made of stone or elm wood to convey water from a source to where it was required, for instance to fill ornamental ponds, or reservoirs, or for supplying other water-works such as cascades or fountains. Switzer's water-carriage at Hampton Court, Herefordshire, is an example of the latter. He may also have advised John Kyrle-Ernly on the water-carriage for his cascade at Whetham, Wiltshire, in 1712.[22] Later, Enville, Staffordshire, boasted a water-carriage in the 1760s, known as 'the Navigation', which was a water top-up system for the pools.[23]

5.2. Puddling.

It is often assumed that ornamental lakes of the eighteenth century were lined with puddled clay to stop them leaking, but was this actually the case? The question of whether lakes were usually lined is important because of the implications for size, expense in construction, and siting. A point to note is that when clay is being used as a waterproofing agent, it is 'watered' or 'puddled', so that 'puddling' is often used as a shorthand term for lining a pond with puddled clay. 'Clay lining' is a similar shorthand term. The lining of a 6 h lake, say, would add very considerably to the expense, to the extent that a smaller lake would probably be considered.[24] If a lake was lined, there would be much greater flexibility about where to site it. One of the main objections to 'unlined lakes' is that the water would leak out. However, as explained below, lakes are made at the lowest point of a drainage system and water cannot move anywhere but towards the lake. The critical factor is that water is flowing in, as well as out,

and though water may be lost through percolation, water levels can generally be maintained by adjusting for the loss (closing sluices).

Because lakes have a stream or river running through them, currents are present in the lake which would erode a clay lining. These pictures of the

Fig. 5.3. The course of the stream can be seen winding along the lake bed at Stourhead.
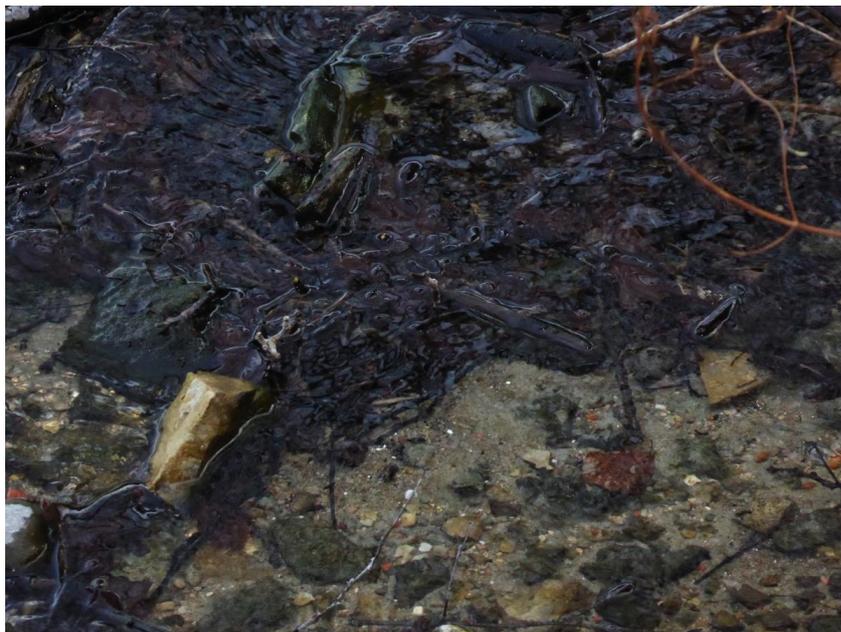
Fig. 5.4. A spring issuing beside the grotto at Stourhead has scoured through the leaf debris, revealing the sandy, gravelly bottom.

drained lake at Stourhead (Figs. 5.3 and 5.4) illustrate this. Whilst these currents would not have such a direct scouring effect when the lake was full, they would still have a scouring effect over time.

There is significant confusion about the use of clay in waterworks. In particular, the 'claying' of the dam has been confused with lining the lakes themselves with clay. As North describes, puddled clay was used in dam construction as a central vertical core – a 'clay wall' - inside the dam itself.[25] Switzer's account in *Ichnographia Rustica* is another source of confusion. He also gives similar instructions, but is discussing relatively small features such as fountains, garden canals, garden ponds or reservoirs.[26] If the site is on sandy, gravelly or chalky soils, he recommends puddling the whole basin with clay *c.* 12-14" thick.[27] However, he is talking about making ornamental water features which have to be fed by pipes carrying water from a spring.[28] They are in specific areas where they are *required* in a design, without a flowing water source, whereas North and Taverner are talking about 'ponds' (lakes) of several hectares which are being made on *feasible* sites, with a water source running through them, or a spring, constantly replenishing them. Generally, Switzer's ponds would have been significantly smaller than the 'ponds' which North and Taverner were discussing.

Fiona Cowell's account of Woods's work at Cusworth, based on his detailed plans, sections and notes, gives more information about the use of clay and the making of dams. She demonstrates that Woods was thoroughly conversant with best practice for making dams: sinking a cut off trench for the clay core into the bedrock, or an equally firm foundation. It must be:

> sunk until you come to a solid and firm bottam either in a close gravel or sand or clay, and I case you should be obliged to sink 3: 4: 5: or 6 feet [1-2m] below the bed of the water before you come to such a bottam you must have patience, and persue it till you are sure you are safe ... Let the clay be put in thin courses not more than 6 or 7 inches [15-18cm] at each course, and well ramed[29].
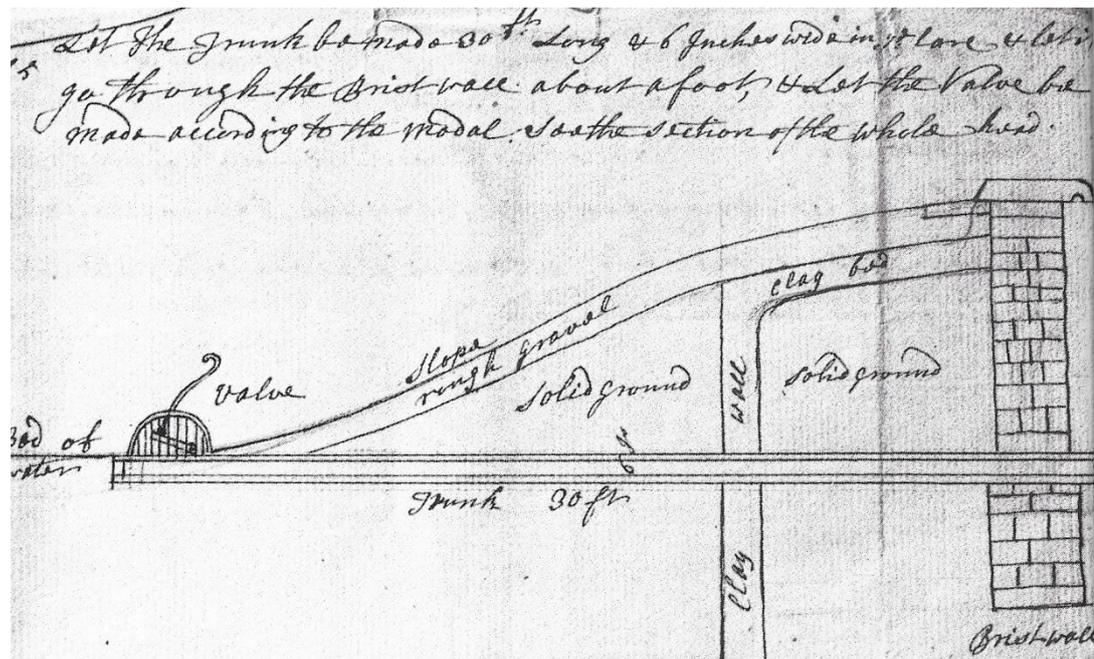
Fig. 5.5. 1764 plan of the dam at Cusworth, Yorkshire, by Richard Woods.[30]

He also made the customary arrangements for coping with flood water or draining the lake by specifying a barrel spillway under the dam made from timber planks and our detailed knowledge of this practice comes from his cross section (Fig. 5.5), although how the 'valve' was to be accessed is a mystery, as it would have been under the water. Perhaps it had to be fished for, as did Brown's at Burghley.[31] What is significant is that the clay is being used as a 'wall' inside the dam, and extends into a trench below it – a cut off trench – to prevent the water passing through or under the dam.

Judith Roberts also discusses the use of puddled clay by John Grundy at Grimsthorpe and by Richard Woods at Cusworth.[32] She points out that Grundy used the clay core method for his dam for the Great Lake at Grimsthorpe (1748) and Woods for the dam of his First Lake (1764) at Cusworth – the clay core was 2 feet wide. Details which Roberts gives about the methods of puddling relate to this clay core at Cusworth.[33] Roberts then goes on to talk about how Grundy proposed to make a lake at Grimsthorpe for the Duke of Ancaster, where there were swallow holes: the estate is mainly on limestone (Fig. 5.6), and she gives considerable detail from Grundy's reports about how the clay lining for the 'artificial bottom' was made. This was not adopted as the lake was not made. However, what has been extrapolated from Roberts' article, over the

intervening years, is that lakes were lined with puddled clay, which is misleading.
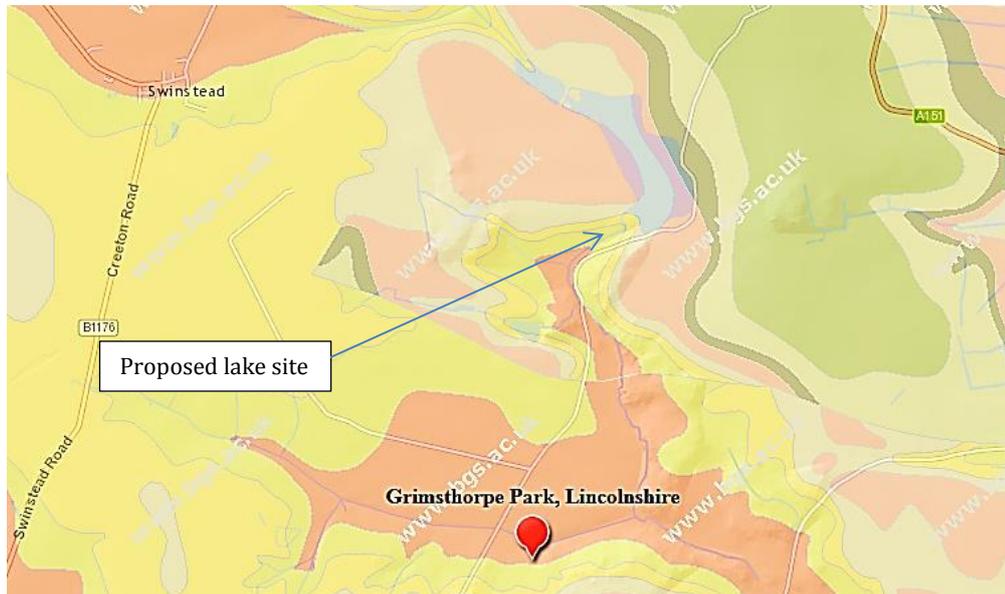
Fig. 5.6. The Great Lake, Grimsthorpe, is predominantly on the Blisworth Clay Formation, surrounded by various limestone formations (pale green and yellow areas).[34]

Grundy's original reports on the water at Grimsthorpe are very thorough, including his detailed surveying measurements for the dam of the proposed new lake.[35] In 1766, in *Another Scheme for Enlarging the great Piece of Water at Grimsthorpe* Grundy wrote:

> the present great Piece of Water, will be enlarged more than 20 Acres [8 h] with this most ornamental and valuable advantage that no termination thereof will appear from the House but it will have the beautiful effect of a very large river, running quite through the Park. ... [but the biggest problems] are that the greatest part of the Ground on which it is proposed to be executed is Chasmny and full of Swallows so that without some very careful and effectual means are used to stop them the Ground cannot be made to hold Water.[36]

The implication is that "careful and effectual means" were not normally necessary to make lakes hold water. He initially proposed an enormous cut-off trench across the valley but finally favoured a full clay lining for the lake, which

he referred to as an 'artificial bottom', as the only fail-safe measure for retaining the water. However, he wrote, "I am apprehensive that there is sufficient Quantity of such loomey Clay to be got on the sides of [adjacent to] the Work which will greatly facilitate this Business".[37] The reason given by both Roberts and G. M. Binnie for the full clay lining not being adopted and the lake not being made at Grimsthorpe was expense: £1733. 10s. or *c.* £130,000 today (2005 conversion figure).[38] It is useful to note that 8 h was a common size for a lake made by Brown, and that the recent construction of 'lakes' (0.3 h and 0.2 h) at Kirkharle, originally designed by Brown, cost £150,000 (including associated works, 2016).[39] Also of interest in Grundy's report is the use of the term 'artificial bottom', and the detailed instructions for making it, which suggest that this was not a routine operation. There would have been no need for such detail if it was routine.

Brown's work at Petworth, Surrey, also sheds light on how lakes were

Fig. 5.7. Part of the 1779 Crow survey of Petworth Park, Surrey. The upper portion of Brown's Horse Pond lake can be seen. Halfmoon Wood appears to be the wood north-east of the word 'Parish'.[40]

made, and whether they were lined or not.[41] He worked there for Lord Egremont in the 1750s, on various pieces of water, and there are four contracts relating to his work, as well as invoices, receipts and letters. The interpretation of what is said in these contracts has been a further source of confusion about lining lakes with clay, so they will be examined in some detail. Brown made four contracts between 1753 and 1756 and several pieces of water are mentioned:

1753 – to make a horse pond,

(Receipt, 14th Aug., 1754 - including:

To Several Plans for Petworth Diliv'd in June - £21.

To a Plan for the Lake in the Park near the Half Moon Wood - £3. 3s.)

1755 – enlarging a pond, to make it 2,460 feet round, for cattle, with 'Clay Walls' and pitched sides,

1756 – to make 'the intended Piece of Water which is to be made in the flat part of the park'. (This had a contract all to itself.)

Terminology is important here. 'Pitching' meant to cover a surface with stone, to protect it, often from stock, in the case of ponds or lakes. 'Clay Walls', in the context of making lakes, usually means the clay core wall inside the dam. North throws light on this term:

> Now first, for making the Bank or Head [dam], you must be sure it is tight, and that it do not sew or leak … therefore a Bed or Wall of Clay the whole length of the Bank, must be carry'd up with good Ramming, from a Foot or Two below the Surface of the Ground[42].

'Piece of Water' is a term which usually refers to a significant body of water, for example the lake in a park. Similar terms were 'Great Water', 'Great Pool'.

The article in the 1753 contract says "To now make the Horse pond in all its parts, the Leaden Work excepted". This cannot relate to the making of the main lake as there is so little detail for so large a project. Secondly, the half-moon shaped pond (3 h) in the north of the park appears to be the subject of the

1755 contract as it has a perimeter *c.* 2,417 feet today. The first article, which deals with this pond, is as follows:

> To enlarging the Pond according to ye Stakes put in for ye Purpose & digging out all such Parts as are not deep enough, (making the shallow Places three feet & a half) & making all the necessary Clay Walls, & levelling the Bottom of it, and pitching the Sides which are 2460 feet round to prevent the Cattle from Damaging it, as likewise to turf the Edges of the Water & to lay in the Plug.[43]

A small pond had existed on this site since at least 1610 and Brown was commissioned to enlarge it considerably, constructing a dam (clay walls) where necessary, making a sluice (plug) as well as levelling the bottom.[44] From this it is clear that Brown was not lining the bottom with clay. The 1756 contract, unlike the others, deals solely with the construction of "the intended Piece of Water which is to be made in the Flat Part of Petworth Park" and the first article is "To make a secure Head" (dam).[45] The perimeter of this piece of water is 4,856 feet today. This, with all its detail, almost certainly relates to the making of the main lake (Fig. 5.7), and no clay is mentioned in it.

Brown's contracts (not just at Petworth) are quite specific, giving numbers of carts and horses, for example, as well as harness and fodder for them. What emerges is that there is no mention of clay, other than the 'Clay Walls', and very large amounts of clay would have been necessary to line the 6 h lake. Even if clay from the lake bottom was spread up the sides of the lake to line it, where is the labour and equipment for doing this? Brown was always careful to itemise anything which 'My Lord' was providing, wherever he was working. At Grimsthorpe, Grundy doubted if there would be enough clay adjacent to the planned lake (8 h), to line it.

At Stowe, currently (2016), the Copper Bottom Lake (*c.* 0.7 h) is being repaired with Bentonite matting to stop it leaking. Adjacent to the Eleven Acre Lake, it crosses a limestone seam, and has given trouble in the past: the name supposedly derives from attempts to plug leaks with copper.[46] There are similar problems with New Water (*c.* 1 h). The fact that these lakes have repeatedly

leaked suggests that they were not lined with clay. The slim shapes and small sizes of these lakes, compared with the Eleven Acre Lake (4.5 h), suggest that the makers were aware that larger lakes would not be feasible in this location. If they *were* lined with clay, presumably problems with currents scouring and/or the limestone seam led to that lining failing.

The importance of the water source – the replenishing mentioned above – is illustrated by Brown's unsuccessful attempt to make a lake in the Grecian Valley at Stowe. Nattes' view (Fig. 5.8) appears to show the shape of the lake bed which Brown made. He moved some 23,500 cubic yards of earth to make it [47]

Fig. 5.8. The Grecian Valley, Stowe, Buckinghamshire, 1805, by J. C. Nattes.[48]

and in 1746/7was trying to make an oval lake or pond, according to Cobham's instructions:

> My lord,
>
> As to finishing the Head of the Oval … indeed I think it would be better not finishing this season, I thinking that a sumer's talks and Tryels about it may make it a very fine thing. The Springs fill the Oval much about a barleycorns head a Day. I can only

add that my hope is still biger than my fear that your Lordship

will see it full.[49]

(A 'barleycorns head' signified a very small amount.[50])

It would appear that an oval pond or lake was planned. Clearly, Brown had doubts about the sufficiency of the water source and wanted more time to address the problem, though he says that he hopes, on balance, to do so successfully: the valley was further up the valley of the Elysian Fields, where the Worthy River had been dammed to create irregular ponds. This demonstrates clearly the importance of the water source for making lakes. If Brown had lined it with clay, presumably he would not have been experiencing such difficulties retaining the water. Perhaps this was one of a number of places where achieving a satisfactory lake would take several years, or may not have been feasible: the bedrock is limestone with superficial deposits of diamicton.

In the same way that the construction of medieval fishponds informed the construction of eighteenth-century lakes, so in turn those lakes formed the basis for the construction of the reservoirs which were beginning to be built in the second half of the century, to supply canals, and also water for towns. Men like Robert Thom, John Rennie, Thomas Telford and James Jardine built them. Generally, these reservoirs were bigger than ornamental lakes but, to date, the available evidence suggests the construction methods were the same. Seeswood Pool, Warwickshire, was one of the earliest reservoirs, begun in 1764 by Sir Richard Newdigate, to supply canals for the coal industry on his Arbury estate.[51] It is on diamicton over a bedrock of sandstone and mudstone, and is very much like an ornamental lake, on the northern edge of Arbury Park. It was enlarged to 7.8 h in 1777, so a similar size to the lakes Brown was making at that time.

Further light is thrown on the methods of constructing reservoirs by Norman Smith. Describing Glencorse Reservoir, built in 1818-23 by Telford and Jardine to supply Edinburgh, with a 23.5 m high dam, Smith says,

The type of earth dam built in Britain for canal reservoirs was

very much the one adopted for water-supply works […] During

its working life the dam has not, it seems, experienced any

problems or required much maintenance [...] Several anxious
months passed during 1821 before bed-rock was reached and a
solid base located for the dam's puddled clay core wall.[52]

This casts a backward light on the construction of eighteenth-century lakes. Glencorse was 21 h, so comparable to a very large eighteenth-century lake, and was built with the same type of dam, but nowhere does Smith (or G. M. Binnie) mention a lining for lakes or reservoirs. In this context, the statement by Andy Hughes, Chairman of the British Dam Society (an association of the Institution of Civil Engineers), is relevant:

It is very rare to line a lake with clay; the site is chosen because
we have had glaciated conditions and generally the water
table bends down into the valley bottom so the water does not
escape unless the geology is sloping away from the lake to the
next valley – very rare.[53]

No evidence has come to light that reservoirs, then or now, were lined, and this supports the theory that ornamental lakes were not usually lined with clay.[54] Indeed, this highlights the progression from the *vivaria* described by North, who also does not mention any clay lining, to the lakes made by Brown *et al*, and ending with the reservoirs of the late eighteenth and the nineteenth centuries, which were often vast. Although dam building techniques changed in the nineteenth and twentieth centuries, in terms of the materials used, the principles remained constant: raising an impervious wall, which also extended well into the bed-rock, to retain the water supplied by a river.

In summary, we can see that the idea that ornamental lakes were lined with clay in the eighteenth century is largely inaccurate, and it has arisen because there has been much confusion over the use of clay. Clay was almost always used in the construction of dams, but sometimes this idea has been 'transferred' to the lakes themselves, or primary sources have been misread, and it has been assumed that lakes were lined with clay. From this examination of the evidence, it can be concluded that ornamental lakes in the eighteenth century were made where the geology and topography were suitable, and that they were not usually lined with clay. It is possible that a few lakes were lined –

at great expense – but little evidence of them has come to light so far.[55] Furthermore, the realisation, based on the knowledge of how to make *vivaria*, that it was unnecessary to line large bodies of water with clay, may have been one of the key factors in the evolution of irregular lakes: men could afford to make much larger bodies of water than hitherto.[56] This increase in size would have meant that geometric lakes were largely unfeasible owing to the expense of earth-moving to create straight sides, and that lakes had to be basically irregular.

5.3. Construction of different lake types.

The basic construction criteria examined above apply to all lakes, both geometric and irregular. The different types of lake were designed slightly differently, affecting where they could be made, as well as the costs of making them, and these factors will be discussed below. As described above, lakes fall into two basic categories: geometric and irregular. Geometric lakes are fully geometric and symmetrical, whilst semi-geometric lakes are made with straight sides or arcs, but are asymmetric. Irregular lakes comprise lakes which are completely irregular in plan view, though the dam tends to be reasonably straight, and river-lakes, which are sinuous, and constructed with weirs. Hybrid lakes fall between the two main categories, having at least two straight sides, plus irregular 'sides'.

Geometric lakes, such as those depicted at Bretby (Fig. 5.9) in 1707, had straight or curved sides and one or more of those sides might be acting as a dam, especially if the land was fairly flat. At Bretby, the rhomboidal 'pond' is in a slight valley falling towards the top of the picture, so the further, 'top' edge is a dam, and quite possibly the two adjoining sides are as well, albeit low, bank-like dams.
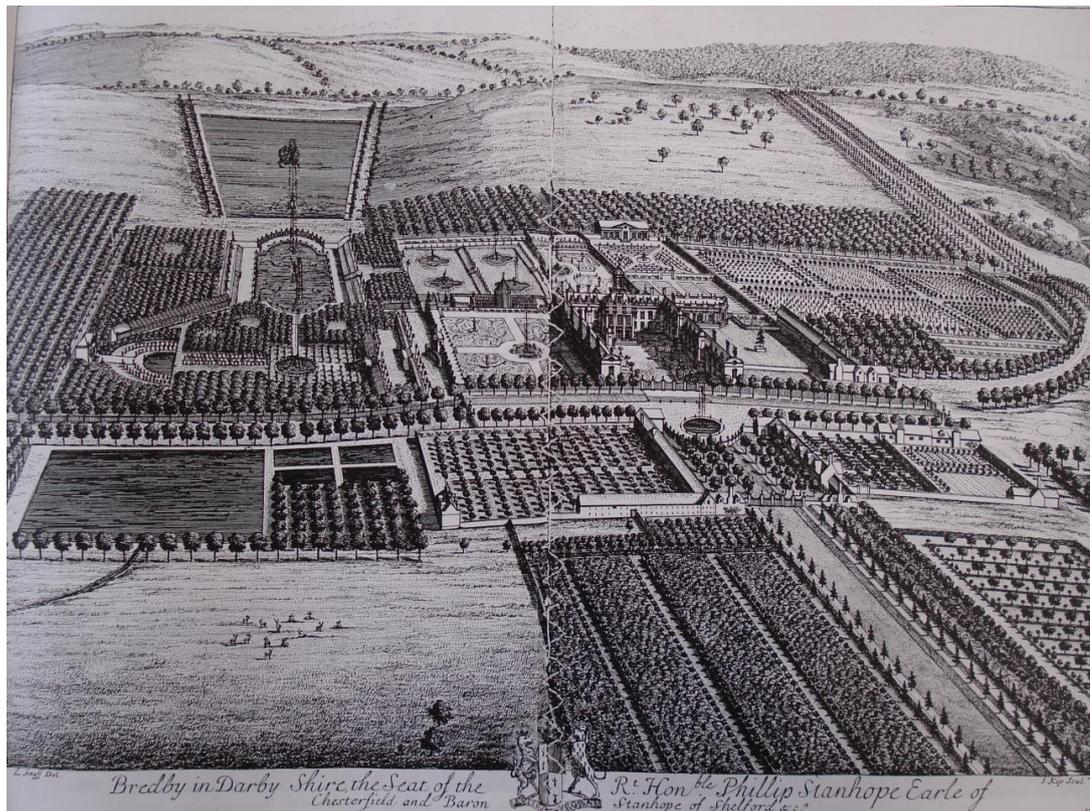
Fig. 5.9. Bretby, Derbyshire, depicted in *Britannia Illustrata*, 1707.

In fact, this pond at Bretby was a geometric lake of 2 h, the site of which is still visible on today's OS maps. The square piece of water in the foreground was also large – probably at least 1 h. The ponds, probably originally fishponds, which occupy the valley to the east of the house today, can just be seen on the extreme right-hand side of the engraving, but were not deemed worthy of full inclusion in the picture. Because they often required more than one dam, and often a considerable amount of earth-moving on anything other than virtually flat sites, geometric lakes were more expensive to construct, hence their position at Bretby, on the flatter land to the left (west) of the house, rather than in the deeper valley to the east. If an irregular lake had been made at Bretby in the later eighteenth century, it would have been in the valley to the right of the house, where the fishponds were. The fact that geometric lakes were relatively expensive to make meant that their sizes and their numbers were usually limited; smaller areas of water were made instead, as Table 9 shows. By the end of the 1730s, it was unusual to make a geometric lake, Enville in the 1740s being an 'outlier'. Evidence about geometric lakes is not copious as the incoming

fashion for irregularity later in the century often led to them being altered, or completely over-written by irregular lakes.

Semi-geometric lakes were constructed along the same lines, but not being symmetrical, were likely to be less expensive because they could be adapted so that the natural terrain acted as a dam on various sides. One dam at least was required to retain the water. Wolterton (Fig. 1.4) is a good example. Being less expensive, relatively, these lakes were likely to be bigger, as Table 25

Garden Name	County	Dating	Dat	Feature1	Reference	Lake siz
Trentham 2	Staffordshir	1695-170	1700	Lake semi- geo	Mowl Staffs. P61	8 .8
Raynham Hall 2	Norfolk	By 1724	1724	Lake semi-geo	Williamson Gazette	9 .2
Blenheim Palace 3	Oxfordshire	1716-24	1724	Lake semi-geo	Vit Brit, Currie GH a	3 .5 poss
Studley Royal 1	Yorkshire	1720s,30	1725	Lake semi-geo	EH, Strong Art. Gdn.	2 poss
Hyde Park 2	Middlesex	Beg. 173(	1731	Lake semi-geo	London Jnl. 1730, Se	12.5, 3.7,1
Wolterton Hall	Norfolk	c.1727; b	1732	Lake semi-geo	Williamson Gazette	4 c
Compton Verney 1	Warwickshir	By 1736	1734	Lake semi-geo	Map: Mowl War, p1	3, ?
Deene 2	Northampto	Aft. 1746	1748	Lake semi-geo	1817 OS map	1 , 1
Barton Abbey 2	Oxfordshire	By 1848	1848	Lake semi-geo	OS map 1880s, VCH	1.2

Table 25. Table of semi-geometric lakes, extracted from the Landscape Database.

suggests. As with geometric lakes, relatively few semi-geometric lakes are known about. By the 1720s-'30s, irregularity was beginning to appear in lake forms, and the hybrid lake became more common, remaining a feasible alternative into the late nineteenth century. There are good reasons for this.

The hybrid lake, with irregular sides and two or more straight sides, was one of the most adaptable lake forms both in terms of topography and fashion. Wollaton, made *c.* 1774-85, is a good example (Fig. 5.10). A lake could be made reasonably easily on flattish sites because two low dams could be used, instead of one large dam, and low dams are easier to construct; the second dam would probably not require sluices. However, on undulating sites, as at Bramshill (Fig. 5.24), larger dams would be required. Hybrid lakes did not necessarily have more than one dam; it would be possible to create a straight side where the lake abutted a slight rise in the ground, and this appears to be the case at Wollaton. The dam is at the south-west end, whilst the spot height and contour lines on
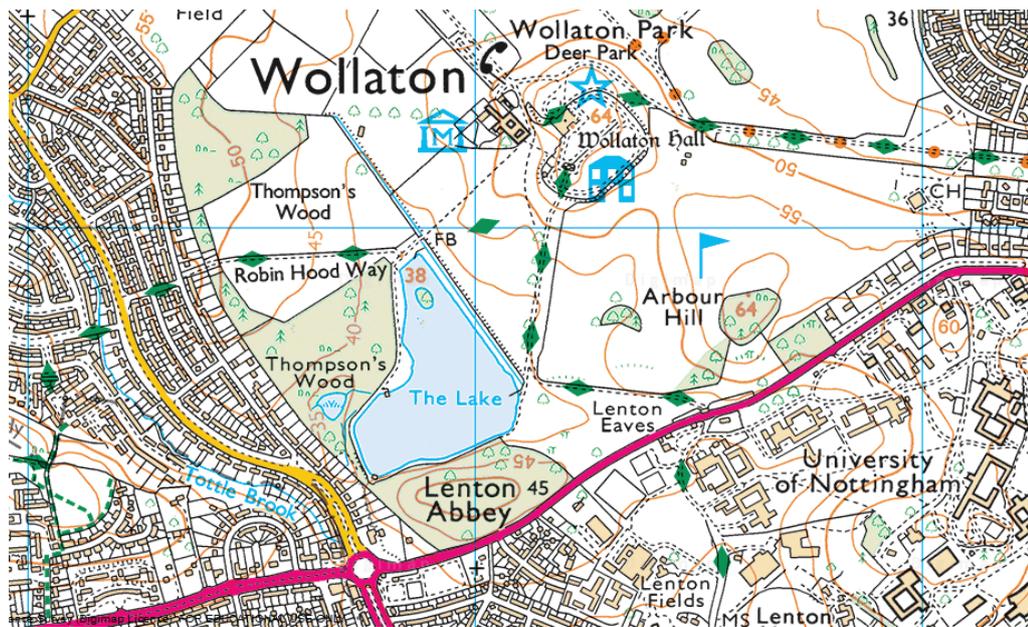
Fig. 5.10. The hybrid lake at Wollaton Park, Nottinghamshire, OS map, 2016.

the north-west and north-east sides indicate that the ground is rising there. On the south-east side, the lake abuts against an outcrop of the Lenton Sandstone Formation; the lake is almost exactly confined to the mudstones, siltstones and sandstones of the Pennine Middle Coal Measures Formation.[57] It was this possibility of leaving the remaining 'sides' irregular which made hybrid lakes less expansive to construct than geometric lakes.

Stylistically, hybrid lakes were a combination of a geometric and an irregular lake, with the potential for a geometric lake to have two sides deformalized subsequently to make it more fashionable. Unfortunately, because of the relative scarcity of maps from this period (1700s), it is not possible to determine how common the latter was. The lake at Raynham Park may be an example of this (Fig. 5.11). The sides of the lake are straight (the dam is on the left side), except for the south-western edge (bottom of the plan), which is shown as a series of arcs, suggesting a semi-geometric intention. By 1838, when the tithe map was produced (Fig. 5.12), the south-western shore of the lake is depicted as less regularly geometric.

Fig. 5.11. Estate map of Raynham Park, Norfolk, *c.* 1730. The house is at the top and north is to the left of the plan.[58]
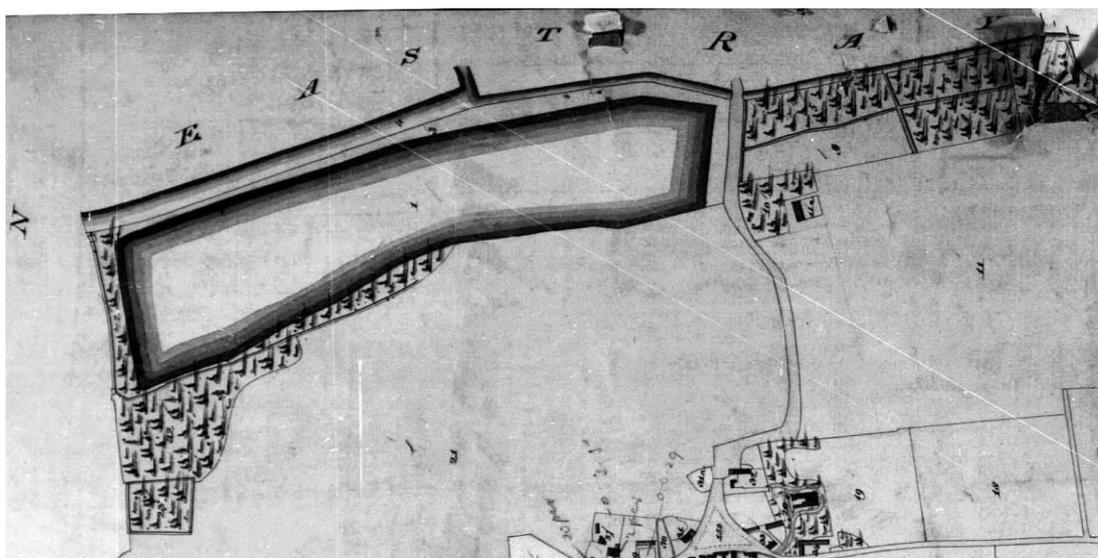
Fig. 5.12. 1838 tithe map of Raynham Park, Norfolk.

This is also the side on which the land begins to rise gently, and begs the question: was the lake ever as geometric as it was depicted, or was it more difficult, and therefore more expensive, to make it geometric on that side? Or, was the lake shore deliberately made more irregular at a later date? Unfortunately, we will probably never know, and this kind of ambiguity also highlights the lack of information and the subjectivity involved in classifying lakes in this way; nevertheless, the classification is useful in identifying commonalities. Another factor, which applies to all lakes, is that they tend to silt up over time, particularly if they are on fairly flat sites, unless they are maintained regularly, which means that they may become significantly smaller in time. The First Edition 6" OS maps are particularly good at indicating this silting up.

Irregular lakes were usually constructed in a valley by putting a dam across the direction of flow of the water source (river, stream, spring), and allowing the water to pond back behind the dam to produce a contour lake. This method produced a completely irregular shoreline, and was marked by its complete lack of geometry. The only straight part might be the dam itself, and this was often disguised – with planting or an adjacent island. Dams might also be slightly curved, though a marked degree of curving would lead to an earth dam of this kind being weaker. It was quite common to ameliorate the irregularity of the shoreline: Brown often graded it very carefully, in parts or completely, and Kemp, whose lakes were often on flatter sites, excavated parts of the shoreline to achieve a totally different shape, one which might be characterised as spreading (see Chapter 6). On virtually flat sites, with a high water table, it was sufficient to scoop out the earth to form an irregular lake, using it to landscape the adjacent areas, or make islands, as Kemp did at Birkenhead Park in the 1840s (Fig. 6.16). However, irregular lakes were usually made in river valleys which were deeper and the consequence was that significant dams were required, often 3-8 m high. Medieval fishponds tended to be relatively shallow (it was easier to monitor and catch the fish), so high dams were not usually a feature, but because irregular lakes in the eighteenth century were made in all types of valleys, dams often had to be higher. This made them technologically more difficult to build successfully, as they were largely made

from earth, and relied on the weight of that earth to hold back the water. Hence they are termed gravity dams.

Having built a dam across a valley, the shape of the resulting lake largely depended on the profile of the valley. A shallow valley would produce a spreading, wide, lake. The deeper the valley, the narrower would the lake tend to be, like the one at Fonthill. These lakes had one dam; if there was more than one dam, a hybrid form would have resulted. Various terms are associated with irregular lakes, such as 'long water', 'broad water' and 'serpentine', but these are descriptors, not definitions. 'Irregular lake' is something of an umbrella term: it incorporates lakes of very varied shapes, but the common concept of an 'informal' lake – a lake with sloping sides, made by damming a stream or streams and following the course of the valley like a natural lake – turns out to be largely accurate.

In order to make discussion of these lakes easier, valley profiles have

Type 1.

Type 2.

Type 3.
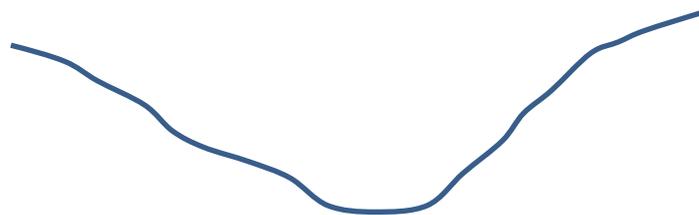
Type 4.
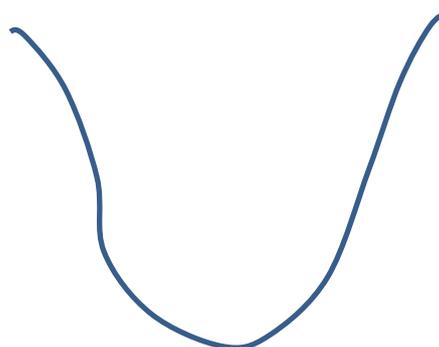
Fig. 5.13. Examples of river valley profiles.

been categorised to aid description and make it more accurate (Fig. 5.13). We have already looked at the general principles of dam construction, and these held true for irregular lakes. Irregular lakes were not usually puddled, as discussed above. Several factors should be borne in mind here. Firstly, as these lakes are almost always created by damming a stream or river in a valley, it means that, by definition, the stream or river was at the bottom of the local drainage area. Fig. 5.14 illustrates this.
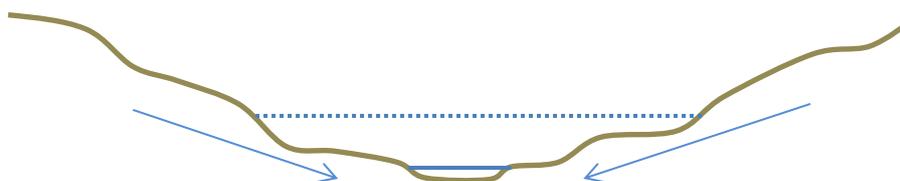
Fig. 5.14. Drainage patterns. The river is at the bottom of the valley, and all the sub-surface water in the drainage area is moving in the direction of the arrows. The dotted line is the planned lake surface.

The significance of this is that if any water should leak out of the lake, it would not be a large amount because the direction of flow of sub-surface water would be towards the lake bottom. This is referred to by H. B. Woodward.[59] Some percolation into the rocks and soil surrounding the lake will occur, but significant amounts of water cannot pass out of the lake, because all ground water is draining towards the lake.[60] The water level in the lake would remain largely constant after some initial loss. Percolation will depend on variables such as the height of the lake above the water table, and the permeability of the rocks of the valley sides. In times of drought, lake levels will fall, as surrounding strata become drier, and more water from the lake percolates into them. Lake levels do then tend to drop. Secondly, and most importantly, the river or stream constantly replenishes the lake.

River-lakes are a subsidiary type of irregular lake, and are narrow, and sinuous. Hitherto, this type of lake, with its special characteristics, has gone unrecognised, perhaps because the method of their construction has not been appreciated. They are made by building one or more weirs across a river to

pond it back, creating a lake rather like a thickened river. The salient characteristic of the river-lake can be seen by examining the beginning and end of the river-lake, and comparing it with the river above and below those points (Fig. 5.15): it is wider but not dramatically so. It is also much the same width from start to finish, and again, does not seem markedly different from the original river. Horton, Northamptonshire, is a good example.

Fig. 5.15. Horton Park, Northamptonshire, First Edition OS Map, 1882.

The rectangular pieces of water at the west end of the lake are probably the remains of a moat, or of two ponds in a formal garden made by the Montagus in the seventeenth century, and re-used to form part of the lake made by George Montagu (2nd Earl of Halifax, 1739) in the mid-eighteenth century.[61]

At first glance, river-lakes and narrow irregular lakes may seem very similar, but there is a basic difference between them. Both types of lake rely, to differing extents, on utilising an existing water course. However, a person making an irregular lake expends greater effort and money as irregular lakes are usually bigger and require more work to make. There is also a basic difference in construction: river-lakes are made using weirs to pond back water. This was the case at the west end of Horton lake. Irregular lakes are more complex, involving dams. Weirs are cheaper and easier to build than dams (see below), and because they do not retain a great amount of water, the shape of the lake they make is similar to the course of the original river. River-lakes can be

constructed in valleys where the fall of the river is gradual. They are not suitable for areas where there is any significant fall as a dam would be necessary to retain the water, and a different kind of lake would be produced, such as a hybrid or irregular lake. There are two great advantages in constructing a river-lake: the water supply is ensured and proven and, resulting from that, the cost would be relatively low. One such river-lake was made at Wilcot, near Pewsey, where the existing Kennet and Avon canal was simply broadened to make a river-lake (Fig. 5.16).

Fig. 5.16. Wilcot Park, Wiltshire, 1808 OS drawing.

(The direction of 'flow', if any, is from west to east.) This section of the canal was in use by *c.* 1800.[62]

The chronological occurrence of river-lakes is shown in Table 25. As can be seen, they did not appear until the 1750s. It is not known who the 'inventor' was but Brown was certainly an early practitioner, with the possibility that he produced the Wallington plan.[63] Generally, river-lakes were not large – 1–2 h being common, as they were usually narrow. However, size did depend on length (often determined by park size) and where the river was sizable, the result could be a large lake, as with the River Derwent at Chatsworth: 10 h.

Garden Name	County	Dating	Dat	Feature1	Featur	Reference	Lake siz
Latimer House	Buckingham	1750s	1758	Lake River-lak	Brown	EH, Turner p183	4.4
Peper Harow	Surrey	1757-8	1758	Lake River-lak	Brown	Turner p185	3 c.
Stratfield Saye	Hampshire	1757	1760	Lake River-lak	Brown	GH gazetteer, EH	4.7, 2.6
Horton Hall	Northampto	By 1763?	1760	Lake River-lak		Eyre map 1779	1.8
Belhus Park 1	Essex	1753-63	1761	Lake River-lak	Brown	Hinde p59	1.5 c.
Charlecote Park 2	Warwickshir		1761	Lake River-lak	Brown	EH	
Chatsworth 4	Derbyshire	1760s e	1762	Lake River-lak	Brown	Painting by W. Marl	10 .0
Audley End 3	Essex	by 1764	1764	Lake River-lak	Brown	Turner p93,Strong p	3
Cranford Hall, C. St.	Northampto	By 1813	1765	Lake River-lak		1760s? 1813 OS map	1
Ranston	Dorset	By 1774	1765	Lake River-lak		Picture:Watts	1.1
Shortgrove Park	Essex	1753-'70s	1765	Lake River-lak	Brown	EH:river-lake, weir	1.7
Wycombe Abbey	Buckingham	1760s	1765	Lake River-lak	Brown	EH, Cascade date no	3
Brocket Hall 2	Hertfordshir	By 1768	1768	Lake River-lak		1768 Tomkins paint	
Broadlands	Hampshire	1767	1769	Lake River-lak	Brown		3.5 c.
Kedleston	Derbyshire	1765-7?	1771	Lake River-lak		J-S p97 Adam plan	13 .7
Boynton Hall	Yorkshire	1770s	1775	Lake River-lak		Painting, Devis. No	0.4?
Ramsbury Manor	Wiltshire	By 1775	1775	Lake River-lak		OS map 1818	5.2
Youngsbury	Hertfordshir	c. 1770	1779	Lake River-lak	Brown	Turner p193	1.9 c.
Olantigh	Kent	Poss 176	1779	Lake River-lak		Picture, Watts 1779	2 c.
Badger Hall/ Badge	Shropshire	c. 1780	1780	Lake River-lak	Emes, Wi	1837 tithe. P&G UK	1.5, 0.8
Costessey Hall 2	Norfolk	1775-95	1780	Lake River-lak		EH, O S 1881	3
Cranford	Middlesex	1780s ??	1780	Lake River-lak		1865 OS map	
Netheravon House	Wiltshire	Poss 175	1780	Lake River-lak	Wright, T	OS map 1808	5 .8
Woodhall Park	Hertfordshir	c. 1780	1780	Lake River-lak		EH. W. Malcolm wa	3
Cottesbrooke	Northampto	Prob 178	1781	Lake River-lak		1813 OS map	2.1
Bramshill Pk. 2	Hampshire	By 1799	1792	Lake River-lak		1799 map: EH entry	3 .4
Pinkney nr Shersto	Wiltshire	1773-181	1793	Lake River-lak		O S 1813	1.1
Brockhall Park 2	Northampto	1775-181	1794	Lake River-lak		1813 OS map; EH: 18	1 .6
Thoresby Hall 7	Nottingham	By 1796	1796	Lake River-lak	Repton	Red Book, Observat	4
Panshanger	Hertfordshir	By 1805	1799	Lake River-lak	Repton	Jacques p 161. EH	6.5
Estcourt Park	Gloucestersl	By 1813	1800	Lake River-lak		1813, 1885 OS map	3 .6 + 3 .6=
Easton Grey	Wiltshire	c. 1800?	1800	Lake River-lak		1813 OS map	2.8
Draycot Park	Wiltshire	1784-181	1800	Lake River-lak		O S 1813	1.4
Hatfield 2	Hertfordshir	By 1805	1805	Lake River-lak		A & D 1766 map of H	5 .9
Lexham Hall	Norfolk	1795-181	1806	Lake River-lak		O S 1817, 1883 EH	1.7
Quidenham Hall	Norfolk	1795-182	1808	Lake River-lak		O S 1821. NHER:	2
Swerford	Oxfordshire	c. 1815	1815	Lake River-lak		EH entry,OS map 18	1 .4
Riddlesworth	Norfolk	1795-184	1817	Lake River-lak		Acq. 1792. 1840 tith	5
Bayfield Hall	Norfolk	1816-39	1827	Lake River-lak		1816 OS,1839 tithe i	3.2
Tackley Park/ Hill C	Oxfordshire	1815-39	1830	Lake River-lak		OS map 1880s, 1839	1 .4

Table 26. Chronological table of river-lakes, extracted from the Landscape Database.

The intention in making a river-lake was to create a body of water which was sufficiently large to pass as a lake, and to act as an ornament, perhaps reflecting the house, whilst not going to the considerable expense and labour of building dams. In some instances, some earth moving, to enhance the river-lake may have been undertaken, as at Chatsworth, where hydrographic factors also had to be taken into consideration (see below). There, Brown put in a weir to service a new mill in 1760-1.[64] He then embellished this scheme in the early 1760s, putting in a second weir, at a cost of £239 12s 1d, further upstream to pond back the river and make it wider, as part of a scheme of landscape improvements commissioned by the 4th Duke of Devonshire.[65] The eastern river bank was dug away immediately above the weir (*c.* 700 m south of the house), to widen the river more and enhance the impression of being a lake. Walpole mentioned this in 1760: "The Duke is widening it [the river] and is making it the middle of his park."[66]
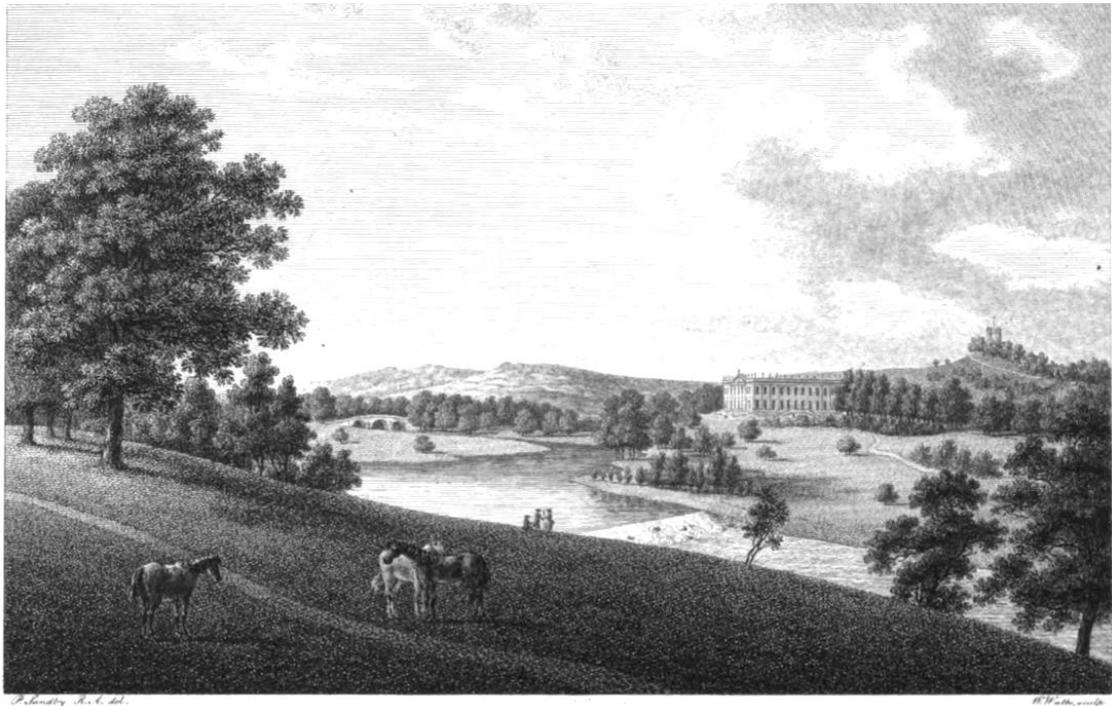
Fig. 5.17. Chatsworth, Derbyshire, engraving by W. Watts, 1779.[67]

Clearly, the river-lake was the focus of the newly improved landscape, as an engraving of 1779 by Watts shows (Fig. 5.17). The house sits amid smooth

lawns graced with scattered trees and clumps in the approved landscape style, conforming to the Brown formula of a house show-cased by lawns, relieved by trees, and set off like a jewel by the water. The use of a weir produced contrasting effects for the viewer: still, calm water above the weir, and the excited, noisy rushing water as it passed over the weir and beyond.[68] It is unlikely, however, that this effect was the primary reason for constructing a river-lake. The most cogent reason was probably topography (a gentle fall of the river bed) plus the proximity of the house to the river (167 m today). An irregular lake created simply by putting a dam south of the house would have brought the edge of the water much too close to the house, with the danger of flooding. Furthermore, the Derwent has to absorb spates from the adjacent moors, and weirs are more suitable for coping with erratic flow than dams, as sluices do not have to be opened and closed, depending on the amount of flow.[69] The river-lake was therefore a stylistic choice governed by topography and the site of the house.

Brown's lake at Belhus (mid-1750s, Fig. 3.52) is apparently one of the earliest river-lakes. It was in place by 1763 so it would seem reasonable to think that the idea had occurred to Brown by the time he was working at Chatsworth in the late 1750s to early '60s. However, it is difficult to assess the 'lead time' of projects such as these, and the basic idea for Chatsworth may have been discussed some time earlier. On river courses with a greater fall, weirs would not work as agents of ponding back as they would have to be higher or very numerous, and weirs are not robust enough to be high and stable.[70] Generally, weirs are only used to retain water in an existing water course; once a significantly wider body of water is required then a dam becomes necessary.

5.4. River-lakes and Weirs.

It was quite common for a river-lake to be formed using a number of weirs; indeed, two at least were usually required. Kedleston is a good example (Fig. 5.18); the weirs are clearly labelled, with the bridge constructed on a further weir (Fig. 5.19).

Fig 5.18. Kedleston Park, Derbyshire, OS map, 2016.

Fig. 5.19. The bridge-weir at Kedleston, designed by Robert Adam in 1764 but not built until *c.* 1771.

An important difference between dams and weirs is that weirs are less complex to construct than dams, but still require some expertise. Fig. 5.20 shows the general principle of a weir: a low barrier is made to pond back water, thus raising the water level and widening the river. The vital difference between
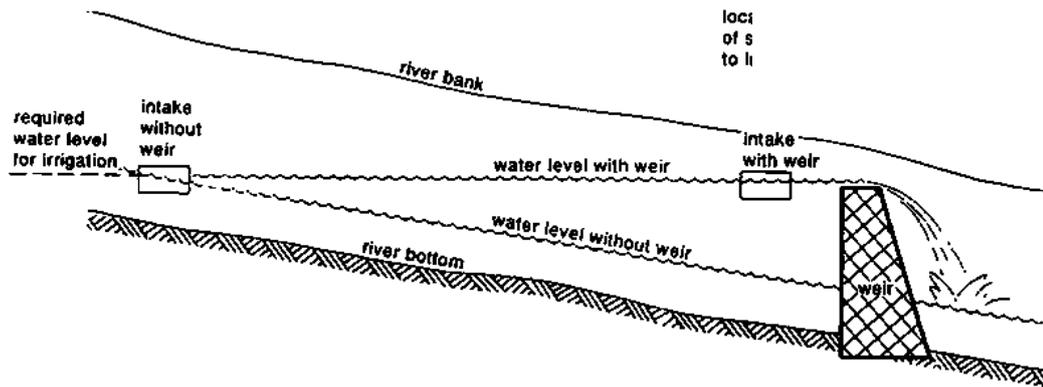
Fig. 5.20. Diagram of a basic weir construction.[71]

a dam and a weir is that a weir is designed so that the water overtops it, whereas a dam must not on any account be overtopped, as this might lead to it being breached. This is basically because dams usually retain much larger bodies of water and a failure would be catastrophic. Their construction takes account of this, as we have seen. Their shape is different: sloping on both sides to withstand water pressure, with sluices and spillways to enable water levels to be controlled to prevent overtopping. With weirs, special attention is paid to the construction of the crest to prevent water breaching the weir through constant friction, as Fig. 5.21 shows. The weir is largely made of brick and stone, in contrast to an eighteenth-century dam, which was largely made of earth.
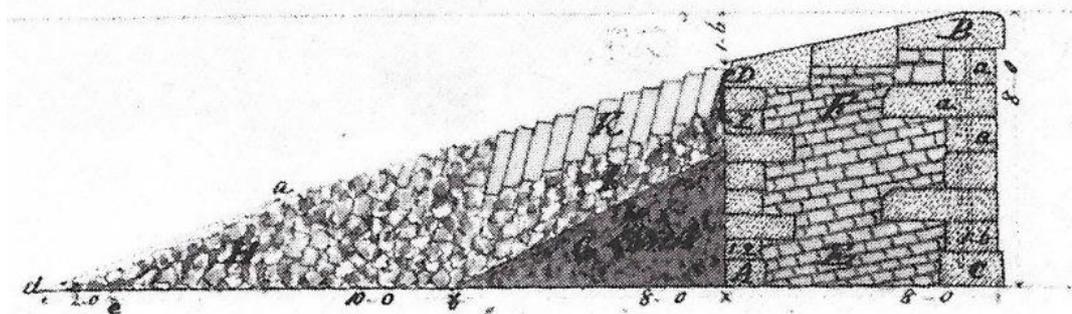
Fig. 5.21. Smeaton's design for a weir on the River Coquet. Note the stone crest 'B' and the stone facing 'a'. The water is flowing from left to right.[72]

A weir is slightly higher than the natural river level. The water is ponded back, and the river spreads out upstream, whereas a dam is significantly higher than the natural river level and significantly wider than its natural course. In

practice though, there may be little difference between a lake produced by a high weir or a low dam on a fairly flat site, as at Kimberley. The difference becomes significant as scale increases, and the mode of construction becomes more critical.

Not a great deal is known about eighteenth-century weirs. However, an illustration (Fig. 5.22) from the Environment Agency's *River Weirs – Good Practice Guide* throws some light on weir construction in the past.[73] From this, it can be seen that a previous method of constructing a weir was to drive wooden piles upright into the river bed. There has been a weir on the site at Northenden, Manchester, since 1607 and

> These sawn timbers are probably no earlier than the 18th century, and a date in the late 18th or early 19th century is suggested for the ashlar blocks of the weir's stone sill. It is possible, however, that the gravel and silt mound with its stakes and posts is of an earlier origin.[74]

Fig. 5.22. Northenden Weir, River Mersey. The motorway on the OS map below can just be seen in the top left of the photograph.[75]
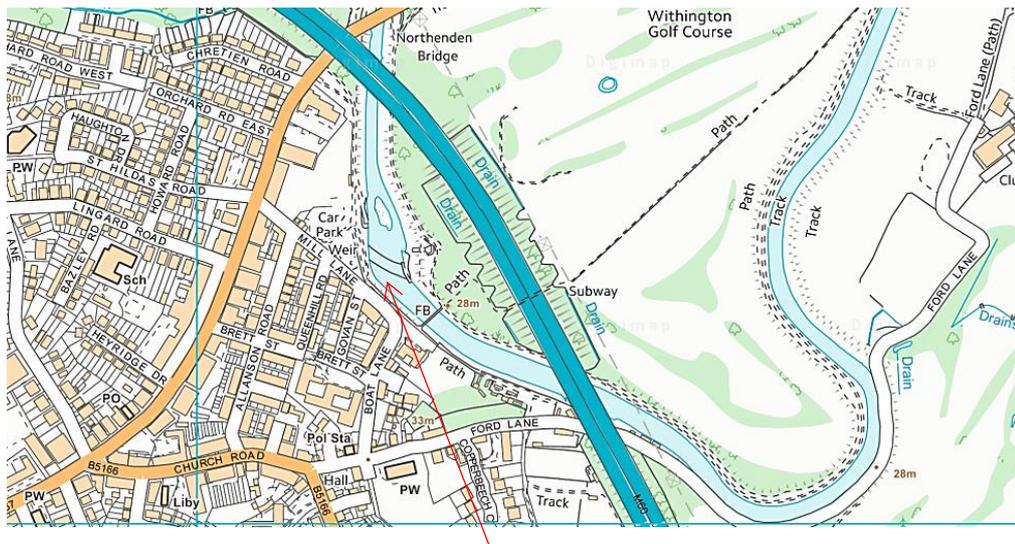
Fig. 5.23. Northenden Weir, Manchester, OS map, 2017.

5.5. Factors Governing Sites for Lakes.

The subject of the siting of lakes is complex. Two main influences operate: i) topographical and geological; ii) sociological factors such as fashions in garden and landscape design, or the relationship of the lake to the house (discussed in Chapter 4). The impact of topography and geology on siting will be explored below. The consideration of garden history phenomena – lakes – in geological and topographical terms has rarely been attempted to date, possibly because cross-disciplinary approaches are not particularly easy. However, they can be illuminating. A detailed scientific study is not being attempted here, but the aim is to understand where and why lakes were made successfully, through an examination of the general factors which operate in the siting and construction of lakes.

5.5.1. Geology.

Geology has a direct impact on the making of lakes. It is particularly significant given that lakes do not usually have a clay lining, and require constant refilling. Clearly, it is not possible to make a lake where there is no water supply, as North hints at, and it is the geology of an area – the superficial deposits as well as the bedrock geology – which largely determine whether

surface water is available. Ideally, there should be a good supply of surface water which can be captured, and for this to be the case, the superficial deposits need to be impermeable at or fairly near the surface, or water will not be available. To take an extreme example: an upland limestone area will have little or no surface water, and little chance of gathering it naturally, as the limestone is very porous. An ideal situation for a fishpond (*c.* 2 h / 5 acres), as North and Switzer suggest, would be where the surface deposits are clayey, or where there is an impermeable lens (often clay) not far beneath the surface, acting as a water-proof layer, and causing water to appear on or near the surface. Areas with very sandy soils, with no layer of clay near the surface or robust water source such as a river, would also prove difficult, and therefore expensive, for making lakes in, and North indicates

> but yet the two great Distinctions, are Clay and Sand, or standing Water and Springs [and] My concerns are in a Clay Country[76].

The example of Bramshill Park (Figs. 5.24-5.26) gives a good idea of the geological complexities underlying lakes. The lake was made by 1699 and is a typical hybrid lake of *c.* 6 h /14.8 acres, having three straight sides, forming right angles, the remaining 'sides' being irregular in shape. The lake was created by building large dams, 3–4 m high, on the northern, western and eastern sides, and is fed by a stream coming in on the eastern side. It lies predominantly on the Barton, Bracklesham and Bagshot Beds of north east Hampshire, with outcrops of London Clay and the Harwich Formations on the peripheries.[77]
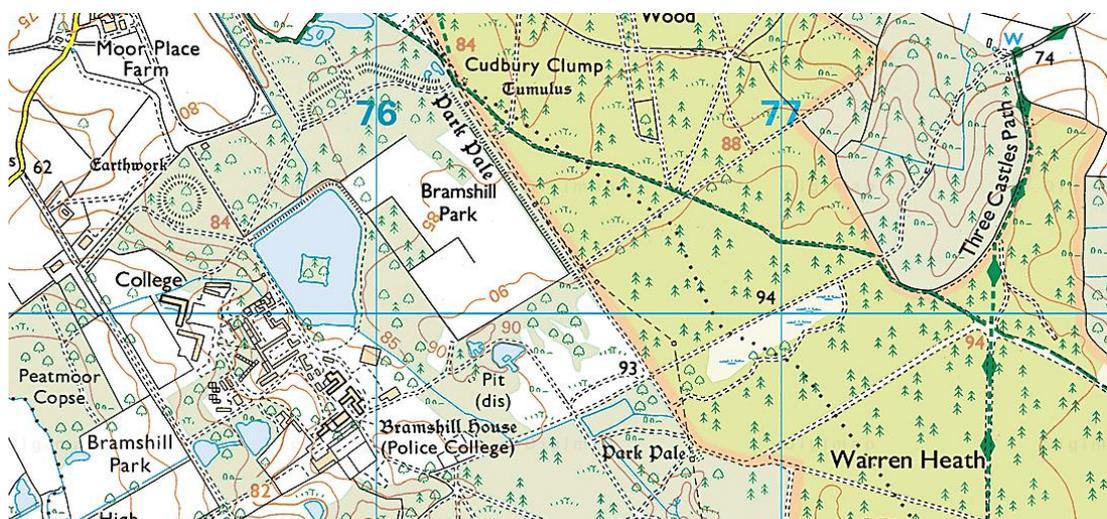
Fig. 5.24. Bramshill Park, Hampshire, OS map, 2016.

Fig. 5.25. Detail of the 1699 map of Bramshill Park, Hampshire, by Isaac Justis.[78]

These Barton, Bracklesham and Bagshot Beds consist mainly of fine to medium grained sand with thin beds of clay and clayey silt. It is these lenses of clay which contain the layers of sand which act as aquifers and "Springs occur at the junction with underlying clays."[79] The London Clay and Harwich Formations mainly consist of blue-grey or grey-brown, slightly calcareous, silty clay and clayey silt, with some layers of sandy clay.[80]

Fig. 5.26. Curator, Lyndsey Kerrr, standing near the southern edge of Bramshill
lake, visible in the top left corner. Note the standing water.

As can be seen from Fig. 5.26, there is plenty of surface water, and the site
inspection confirmed the sandy nature of the soil, mixed with clayey and peaty
soils. The predominant geology of the area was ideal for making a large lake: the
sandy nature of the soil would have made it relatively easy to move in large
quantities, and the thin layers of clay of the Barton, Bracklesham and Bagshot
Beds quite possibly meant that clay was readily available for water-proofing the
dams. The dams at Bramshill are large, as Figs. 5.27 and 5.28 show. These
would have been earth dams constructed according to the historical methods
described by North *et al*, unless they have been rebuilt at some point. Hybrid
lakes of this kind are spreading in plan view, rather than elongated, as a result of
the flattish areas where alluvial deposits, or lenses of clay, occur. The lake at
Kimberley (made by 1739, Fig. 1.5) is a case in point, being in a basin-like area
inclined to marshiness. Hybrid lakes do not usually occur in hilly areas.

Fig. 5.27 North-west dam at Bramshill.

Fig. 5.28 North-east dam, Bramshill.

The geology of an area, which is the principal determinant of the topography, consists of bedrock geology – the underlying rocks – and drift geology (now referred to as superficial deposits). Superficial deposits generally consist of sands, gravels, clays or alluvium which have been formed through glacial or river action, for example. They do not occur everywhere. The maps below show the distribution of lakes in the three counties focussed on: Norfolk, Northamptonshire and Wiltshire. Whilst it is common for garden history features to be analysed in economic and sociological terms, looking at them in relation to geology is a fresh approach, but one which is particularly pertinent to lakes.
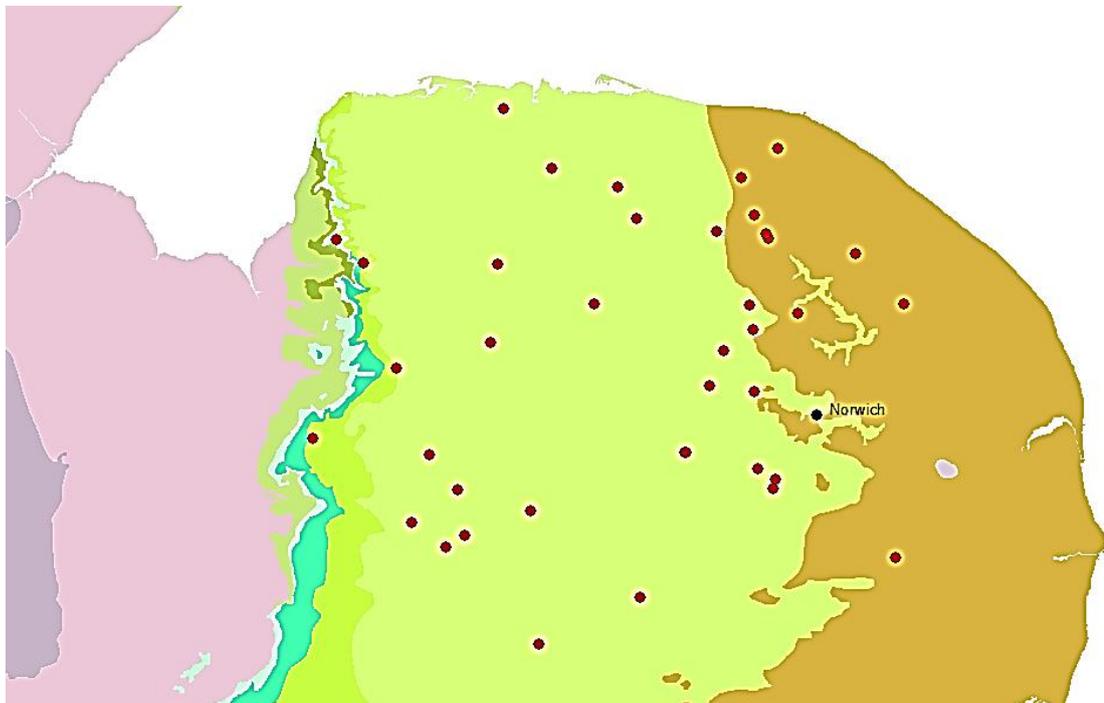
Fig. 5.29. Distribution of lakes in Norfolk mapped on the bedrock geology, scale 1 to 625,000.[81]

General key: greens – chalk; brown - undifferentiated clay, sand, gravel and silt; turquoise - greensand.
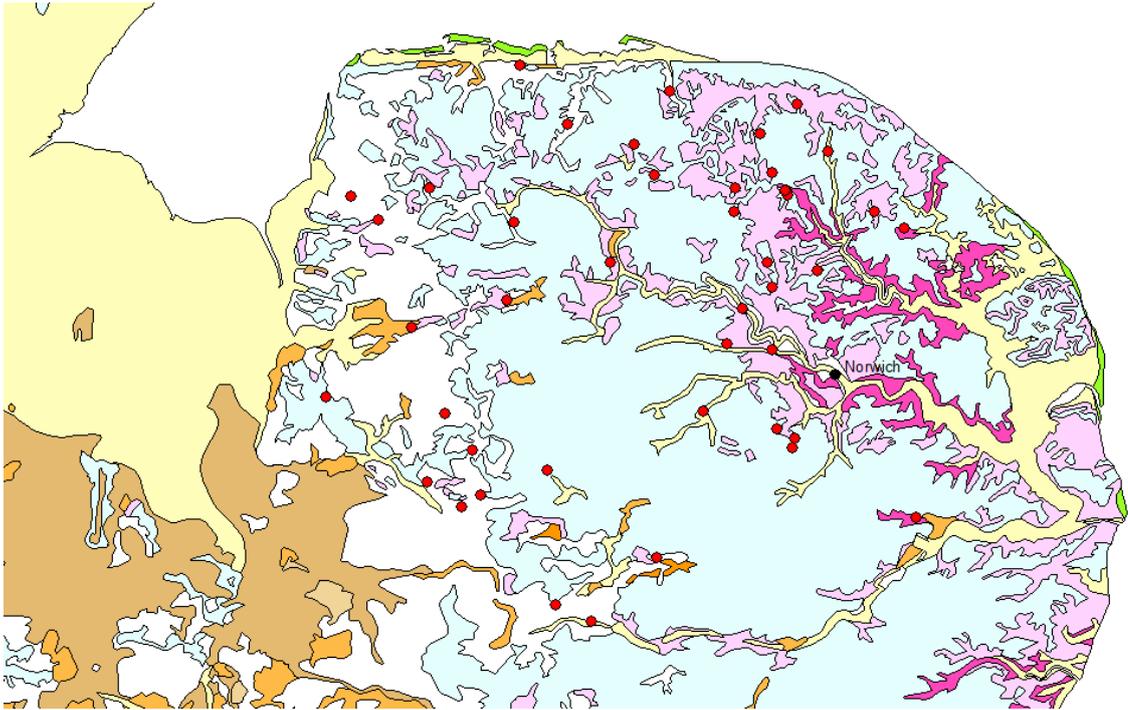
Fig. 5.30. Distribution of lakes in Norfolk mapped on the superficial geology, scale 1 to 625,000.[82]

General key: white - no deposits; light blue - glacial and sedimentary sands, gravels and clays; pinks - sands, gravels and clays, yellow - alluvium; light brown - river terrace deposits.

It is noticeable that, almost without exception, lakes in Norfolk (Fig. 5.30) do not occur on the diamicton (light blue – glacial deposits of sands, gravels, clays), although some border it. This is in part because they represent the higher ground, so streams and rivers are less likely to occur there. Also of note is that the underlying bed rock (Fig. 5.29) does not appear to have affected the distribution of lakes. The low-lying area of The Broads, east of Norwich, has very few lakes, which may be attributed to the unsuitability of this area for making parks.
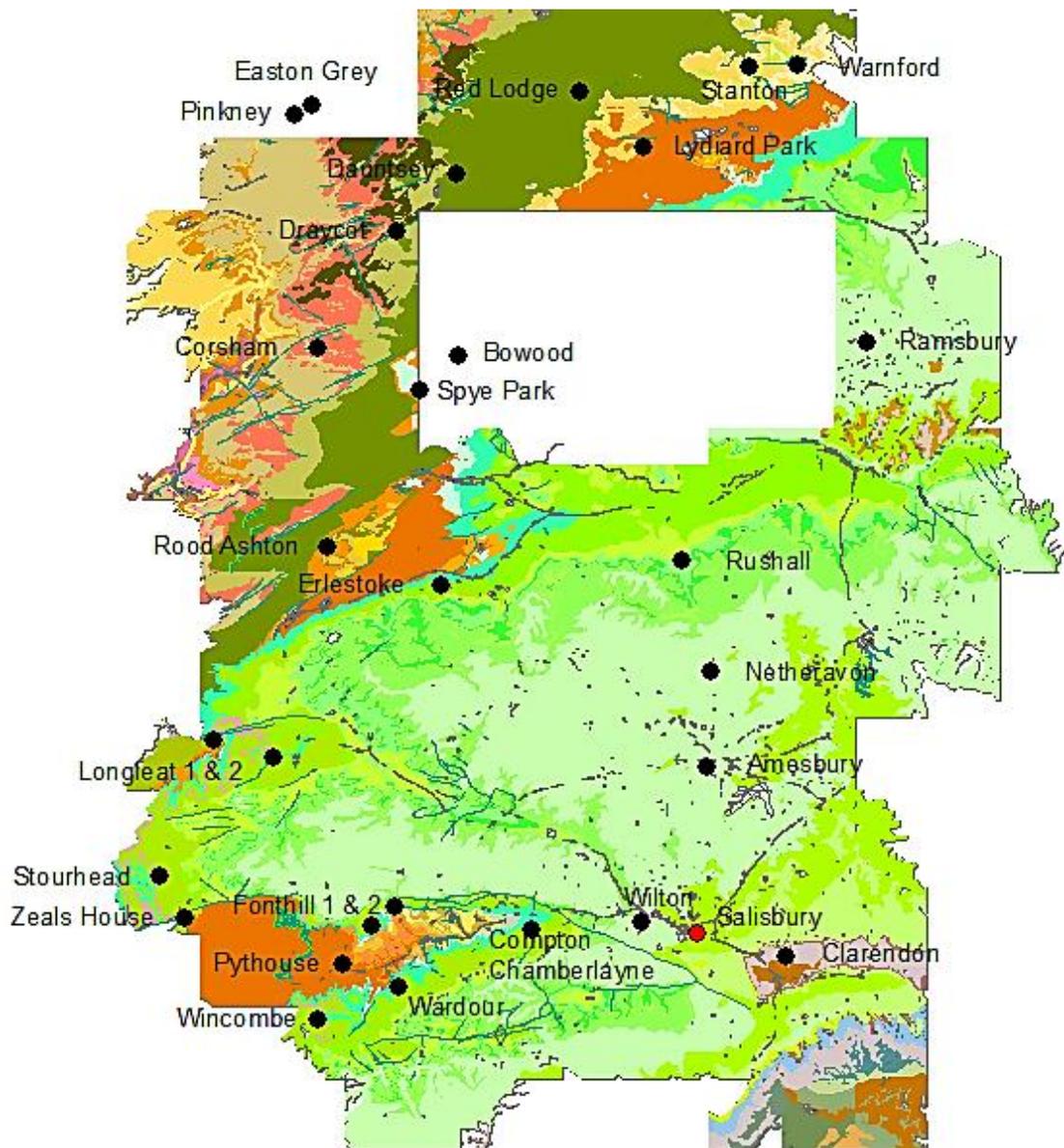
Fig. 5.31. Distribution of lakes in Wiltshire mapped on the bedrock geology, scale 1 to 10,000.[83]

General key: light greens – chalks; dark green – clays; turquoise – greensand; russet brown – mudstone. White: no data (courtesy of BGS).

There is no obvious pattern in the distribution of lakes and the geology in Wiltshire (Fig. 5.31) at this scale, except regarding the chalks (light greens), which have almost no lakes, and this roughly corresponds to Salisbury plain, where there is no surface water other than winterbournes. The map below (Fig. 5.32) shows no superficial deposits in this area of Wiltshire, which almost

certainly explains why there are lakes over the chalk bedrock in Norfolk, but not in Wiltshire.
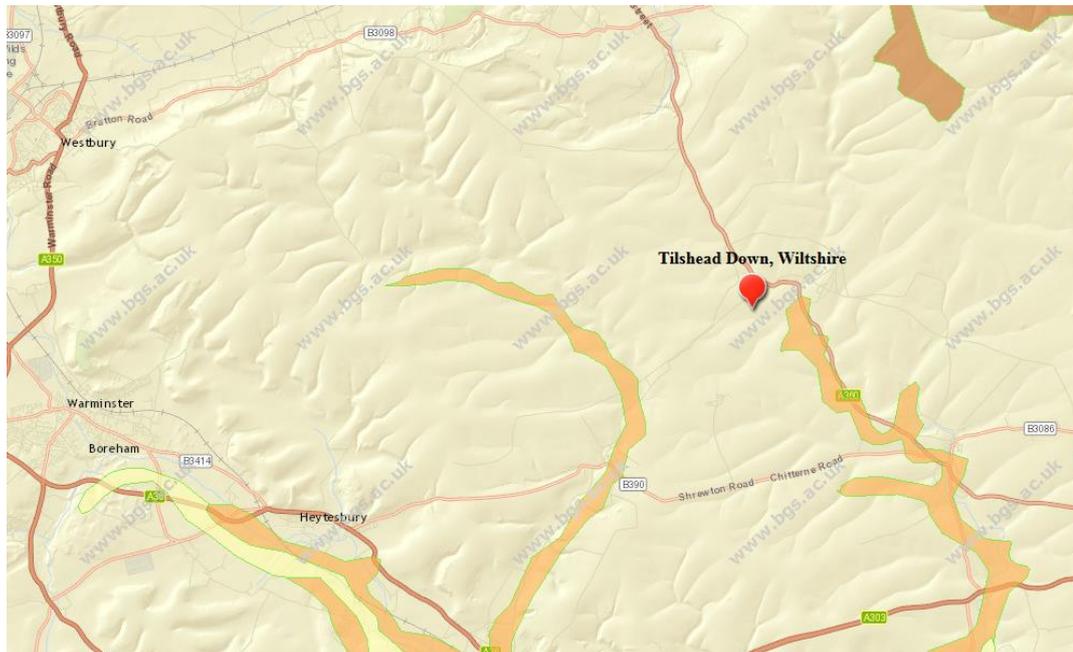
Fig. 5.32. Map of the superficial deposits of the Salisbury Plain area, Wiltshire, scale 1 to 625,000.[84]

General key: the pale buff colour signifies no superficial deposits. There are slight river terrace and alluvial deposits (light brown and yellow). The darker brown is clay-with-flints (corresponding with higher ground).

Parks in Wiltshire which did not have lakes in the nineteenth century were examined (Table 26 and Fig. 5.33) to see if any consistent factors emerged in relation to siting lakes. There are few places where a lake of some description, particularly a river-lake, would have been impossible to make. In some instances, parks may have been too small to afford the space for a lake; Grittleton may be such an example. Badminton Park (mainly in Gloucestershire) is of particular interest. Originally two fishponds, the 1 h lake was made by 1750, and the lack of a significantly large lake in such a significant park is noteworthy. The stream to the south east of the house could possibly have been dammed to make a lake in front of the house. However, the bedrock in the area is the Forest Marble Formation, which is a silicate-mudstone, with limestone lenses. Given that, forming a lake successfully may have been problematical. It is

known that Brown was consulted, but there is no evidence in the estate archives to suggest that he did any work there.[85]

Place	Bedrock geology	Superficial deposits	Comments
Charlton	Sandstones, siltstones, mudstones	None	A river-lake would have been feasible.
Grittleton	Calcareous mudstones	None	A small park
Castle Combe*	Calcareous mudstones	Alluvium; head - clay and silt	A river-lake would have been feasible. (park made 1841-85)
Littlecote	Chalk	Alluvium, river sands and gravels	A river-lake would have been feasible.
Tottenham	Worked ground	Clay with flints; head	Given the number of ponds, a lake would probably have been feasible.
Bowden	Sandstones (Kingston Formation)	None	The estate is on the scarp of a limestone escarpment so making a lake would have been difficult.
Roundway	Clays	None	A lake would have been feasible.
Tidworth	Chalk, landscaped ground	Head - gravel	A river-lake would have been feasible.
Heytesbury	Chalk	Alluvium	The river is just east of the house.
*Ferne Park**	Worked ground; fault	None; slight river terrace deposits	Little surface water on plateau. Park 1840-1886.
Rushmore*	Chalks	Clay with flints on plateau; no deposits given on slopes; slight river terrace deposits	Valleys adjacent to house are dry valleys.

Table 27. Table of geology in parks without lakes in Wiltshire in the nineteenth century. Parks in italics were very small.   * Denotes new parks.

BGS definitions: 'worked ground' = areas where the ground has been cut away such as quarries and road cuttings.

'head' = sand, gravel, clay deposits which have moved down slopes (solifluction, soil creep).
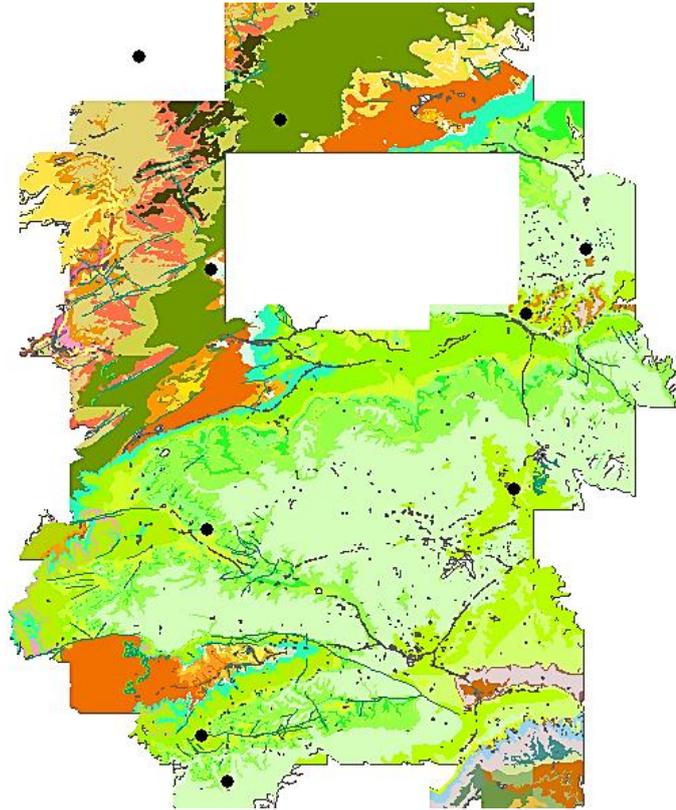
Fig. 5.33. Wiltshire parks (in Table 27) in the nineteenth century without lakes plotted on the 1 to 10,000 bedrock geology map.[86]

General key: the lighter greens are principally chalk formations. The olive green is principally Oxford Clay. White: no data (courtesy of BGS).

With the exception of two places, these parks are on chalk formations. Of the two exceptions, Bowden Park is on a sandstone scarp slope, with few superficial deposits, and Grittleton is on calcareous mudstones and nodular limestones. Eighteenth-century lakes on the formations adjacent to Salisbury Plain tend to be river-lakes, or river-like lakes, as at Longleat and Wilton. Very few villages existed on the Plain, and it has been an army training ground since at least 1757.[87] This points to the geology determining settlement patterns which, in turn, meant that no lakes were made in the area. River-lakes would have been a feasible option in nearly half of these parks without lakes. The lack of a lake at Tottenham Park (eighteenth century) is puzzling, as there appears to be a good scattering of ponds, suggesting that a reasonable amount of surface water could be retained. Alternatively, the presence of *only* ponds may point to the difficulty of retaining water other than by making ponds, which would be lined with puddled clay. It must be emphasised, however, that a survey such as this, which

is primarily map based, has it limits when considering whether lakes could be made, even when linked to geology maps. A visit to Newark, Gloucestershire (20.4.2016) highlighted this. The initial OS map based assessment indicated that the irregular pond (*c.* 0.3 h) would have been difficult to achieve: it is on a steep limestone scarp slope below the house. However, the site visit showed it to be on a natural 'terrace' on the scarp, with multiple springs feeding it, which did not appear on the OS map. The small size of the pond may indicate that puddling was necessary to retain the water, and that a lake was not feasible because of this.
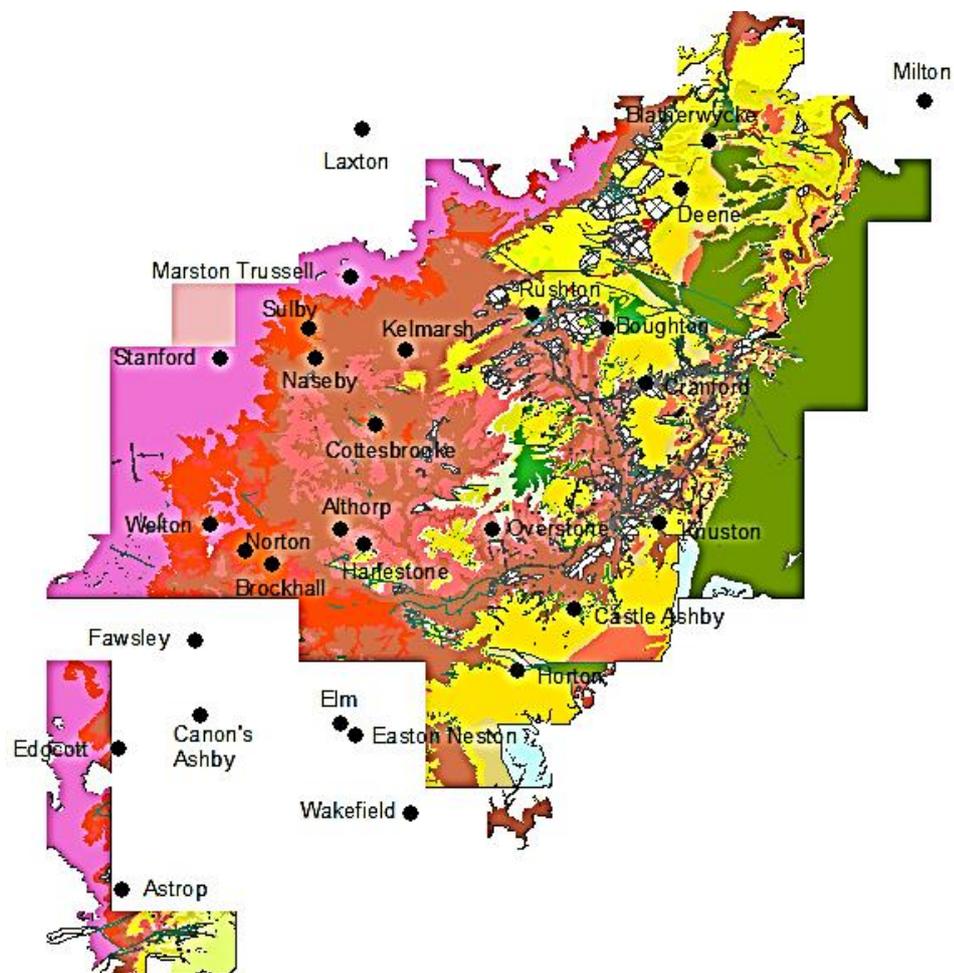
Fig. 5.34. Distribution of lakes in Northamptonshire mapped on the bedrock geology, scale 1 to 10,000.[88]

General key: dull pinky red – sandstones; brown – mudstones; dark orange – siltstones and mudstones; dull yellow – sandstone, limestone, mudstone; lighter yellow – limestone; dark green – mudstone. White: no data (courtesy of BGS).

A number of lakes were made on the mudstones and siltstones (brown and orange) of Northamptonshire (Fig. 5.34), and some bordering on the limestone, but there were none on the higher ground of the Oxford and Kellaways Formations (dark green: mudstone). The map for Deene Park shows an interesting phenomenon (Fig. 5.35). A string of ponds largely follows the
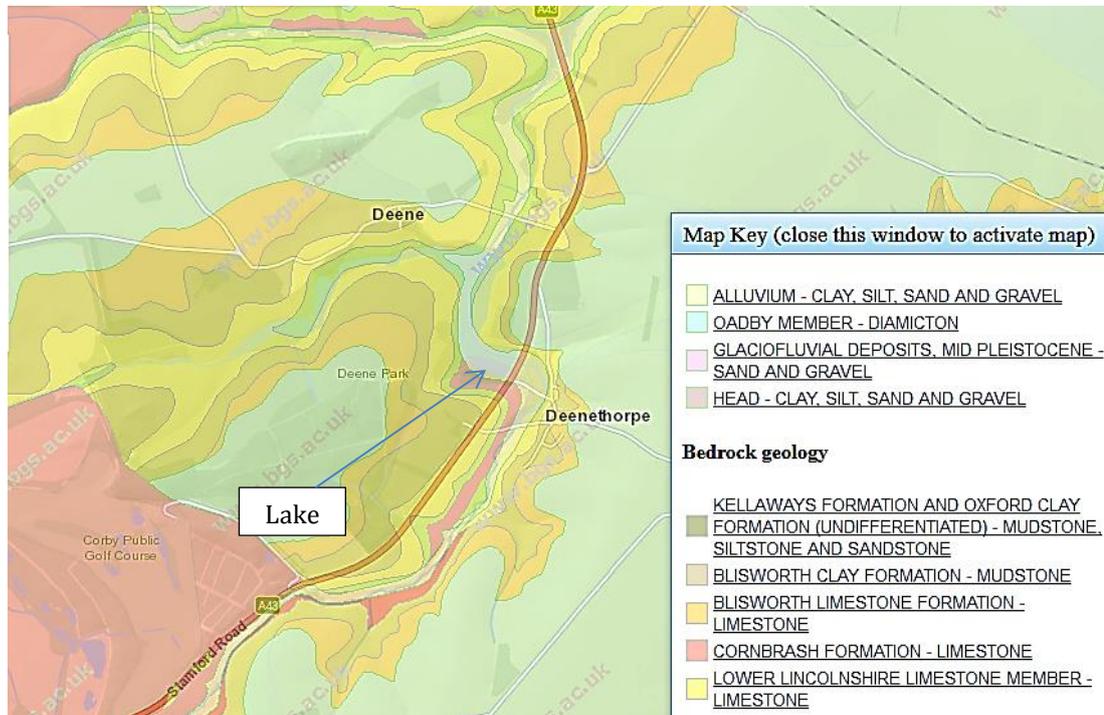
Fig 5.35. Map of bedrock and superficial deposits for Deene Park, Northamptonshire, scale 1 to 50,000.[89]

Grantham Formation (sandstone, siltstone, mudstone) but the lake (considerably extended in the early nineteenth century) has been made partly on these rocks, and partly on the Lower Lincolnshire Limestone, with few superficial deposits appearing in that area. Conversely, at Horton, the river-lake is solely on the alluvial deposits of the underlying river system, as might be expected with a river-lake.

Several conclusions can be drawn from this examination of the geology of the counties of Norfolk, Northamptonshire and Wiltshire. Firstly, where there are superficial deposits overlying rocks such as sandstones, chalks and limestones, lakes have been made at the junctions of these deposits with the bedrock, as in Norfolk. Where these are absent, as in the chalk upland area of Salisbury Plain in Wiltshire, lakes other than river-lakes on alluvial deposits are

generally not feasible. Secondly, the example of Deene shows that it is not impossible to make lakes on limestone rocks, but this conclusion may simply be dependent on the scale of the map; more detailed mapping of the geology might reveal a different picture. Thirdly, mudstones were suitable for constructing lakes on, as was the case in Northamptonshire. Fourthly, geology has a bearing on where lakes can be made in that it ultimately determines the topography and the resulting drainage systems, which are discussed below. In areas with little or no surface water, lakes are unfeasible as they rely on rivers, streams or springs to constantly refill them. Clearly, the subject of geology and lake construction is very complex and it is likely that specific local factors have the strongest bearing, as Grundy's reports for a lake at Grimsthorpe highlight.

Bearing in mind that William Smith's geology map of Britain was not published until 1815, Grundy appears to have had a very good understanding of the rocks in the area of the proposed lake, and their concomitant problems. He had made the Great Pond (16 h), for the Duke of Ancaster at Grimsthorpe in *c.* 1745. His detailed surveying record and drawing of that dam appear in his 'report',[90] and the Duke wanted him to 'extend' this lake to the south-west. The report for this is dated 1766. He had identified, by consulting local workmen, that there were swallow holes in the area, and the site is indeed a limestone area (Blisworth, Rutland and Upper Lincolnshire Formation), with slight alluvial deposits along the river bed (Fig. 5.6). As he suspected that the site for the dam would be on 'chasms' (swallow holes), he specified a significant cut off trench filled with clay extending below the dam, or an 'artificial bottom', as discussed above. What Grundy's report emphasises is that lakes were only made where they were feasible, where the ground would literally hold water. The permeability of rocks is a very complex subject and, despite using detailed geology maps as well as OS maps, it has to be concluded that only a partial picture can be obtained from maps. Site surveys were essential (and still are). Best practice, followed by men such as Grundy and Brown, was to inspect the site personally, and glean all available information, prior to a survey.

5.5.2. Topography.

The role of topography in the siting of lakes is also complex. The drainage systems produced by factors such as weather and glaciation operating on the underlying geology are of primary importance in the siting of lakes. Because lakes are dependent on rivers and streams, they have to be made where these occur. Often, house sites were adjacent to rivers, so creating a lake in the vicinity was feasible. Bowood is an example: the original eighteenth-century house was *c.* 200 m from the original stream, which was dammed in 1766 to produce a lake adjacent to the house. The *type* of lake which could be made was dependent upon the general topography, although more than one lake type may have been feasible in a given area. In fact, there was a changing relationship between topography and lake type, which could be represented like this:
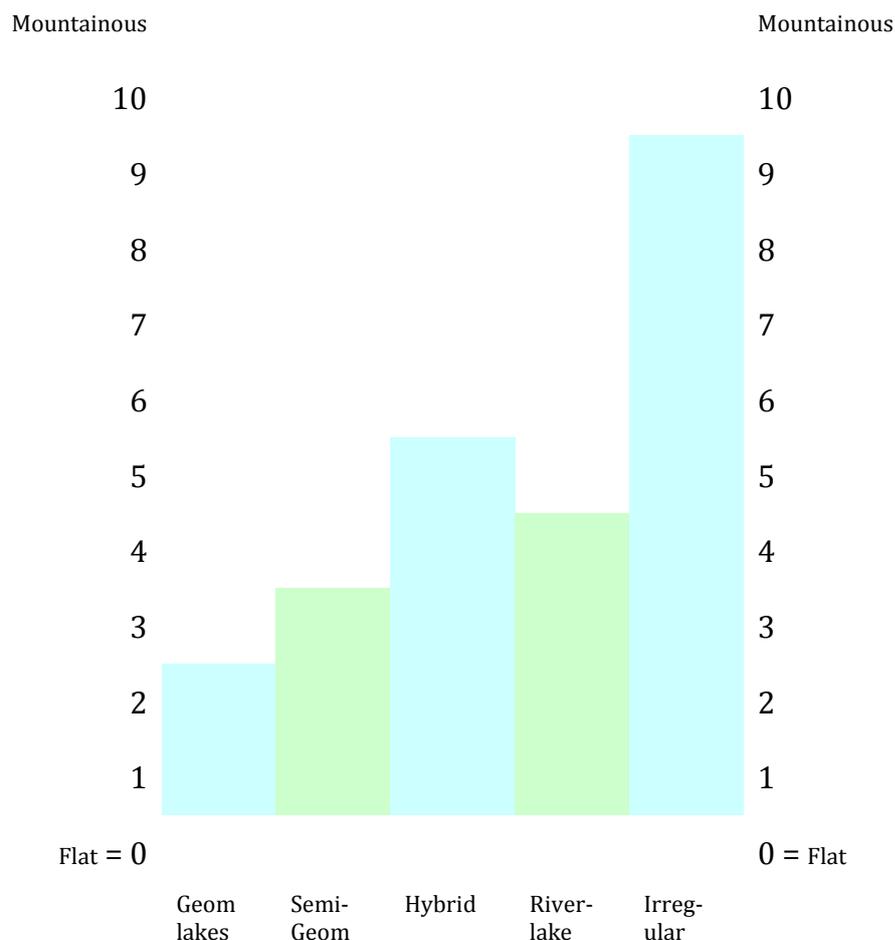

Table 28. Diagram illustrating the range of topography in which different lake types can be made. The units indicate a simple scale from flat to mountainous.

Table 28 is a conceptual representation indicating the different types of topography, from flat to mountainous, in which the different types of lake can occur. As the diagram suggests, irregular lakes were the most flexible in terms of possible sites, because they could be adapted to most land forms. Though often they were constructed to be reasonably deep and not particularly wide, they could also be relatively shallow and spreading. Because they could be adapted to many different types of topography, they are depicted as having the greatest range on the graph. River-lakes, on the other hand, required a river which was in a fairly discreet channel, otherwise a spreading lake would occur. They were particularly 'site sensitive': they were made in river valleys with a relatively gentle fall (along the length of the river), with weirs. They were not generally suited to very hilly/ mountainous topography (valley type 4) because river valleys are deep in those conditions; a house perched on the side of a steep valley would look down on a rather distant body of water much more akin to a river than a lake; a house in the bottom of a steep valley would be hemmed in by hills and very near the water. The exception would be the wide-bottomed glaciated valley, which does not generally occur in England. At Audley End, for example (Fig. 3.53), in gently undulating countryside, a river-lake was created which looked convincingly lake-like. It was a good solution to the problem: because the house was low-lying, an irregular lake might have led to flooding.

Geometric and semi-geometric lakes were some of the most constricted by topography: a nearly flat site was ideal, otherwise the expense of moving earth to make straight sides would be great. Semi-geometric lakes were more flexible because they were not symmetrical and could be adapted according to the topography. Wolterton and Blenheim have been mentioned. Hybrid lakes were, like irregular lakes, suitable for a variety of different types of terrain, though more restricted by the requirement of two or more straight sides.

Highclere Castle is an example which illustrates well the interlinked effect of geology and topography on the siting of lakes (Fig. 5.36). The house, on a site dating from medieval times, is on a chalk ridge, with no surface water within *c.* 500 m, and was originally supplied by wells. Approximately 500 m north of the house, the chalk gives way to London Clay deposits and the land
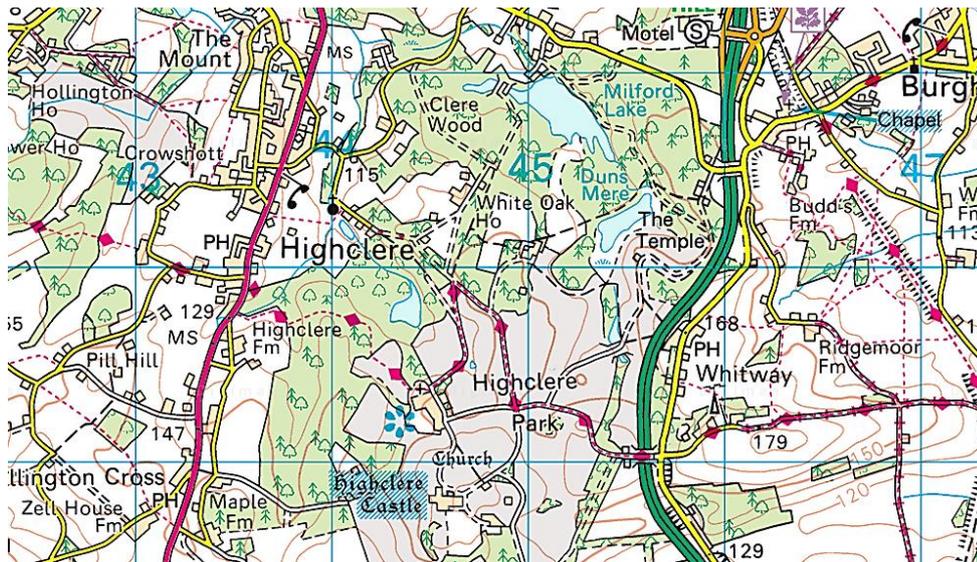
Fig. 5.36. Highclere Castle, Hampshire, OS map, 2016.

dips generally towards the north. Being softer, the clay deposits have been eroded by water action, producing a drainage basin, with streams and rivers. The result of these factors was that a lake could not be made near the house. The feasible sites were some distance away, in the river valleys, and this is where the lakes have been made.

5.6. Conclusion.

The fundamental difference between ponds and lakes is that lakes are constantly replenished by a water source, but ponds are not (other than by rainfall) unless water is ducted into them. Thus, ponds are usually lined with clay, but lakes are not. Lakes are made by damming a water source, usually a river or stream, and the different types of lake are constructed in slightly different ways. Geometric lakes require fairly flat land, and are relatively expensive to make because of the earth-moving required. Hybrid lakes have at least two straight sides, and irregular lakes are basically the same as *vivaria* in construction, and can be made in almost any type of terrain, providing there is a water source. River-lakes are constructed with weirs in gently falling river valleys, and are useful where a spreading lake will not work, or funds are limited, as they are the least expensive type of lake to construct.

Geology and topography are the two primary factors in determining where and how lakes can be made. At the macro level, geology determines the porosity of rocks and where drainage basins occur. At the local level, topography governs where lakes can be sited, and the forms of lakes which can be made. The survey of lakes in relation to geology in Norfolk, Northamptonshire and Wiltshire revealed that lakes were unlikely to be made in areas where the bedrock was chalk or limestone without any superficial deposits. It also indicated that the usual geology maps were too small scale to show enough detail for gauging whether an area would support a lake. On-site surveys or inspections would be required, as made by Grundy, Brown and his contemporaries. Given the parameters above, lakes could be made in most areas, but realistically, expense restricted certain types of lake to certain types of topography.

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[1] C. Currie, 'Fishponds as Garden Features, *c.* 1550-1750', *Garden History*, Vol. 18, No. 1 (Spring, 1990), p. 30. *Vivaria* could be very large: the Bishop of Winchester's largest pond, Frensham Great Pond, is still *c.* 29h today. Given in E. Roberts 'The Bishop of Winchester's Fishponds in Hampshire, 1150-1400: Their Development, Function and Management', *Proc. Hampsh. Field Club Archaeol. Soc.* 42, 1986, 125-138 p 125

[2] S. Switzer *Hydrostaticks* op. cit., p 130

[3] Ibid., p 128

[4] Ibid., p 128

[5] Switzer *A Universal System of Water & Water-works* (London: Thomas Cox, 1734) p 131 online at
https://books.google.co.uk/books?id=LH4rAAAAYAAJ&pg=PP11&dq=switzer+introduction&hl=en&sa=X&ved=0ahUKEwidsbm5t93TAhVKJcAKHVFlCd4Q6AEIJjAB#v=onepage&q=switzer%20introduction&f=false accessed May 2013. The practice Switzer mentions is that of applying clay in two distinct layers, with a layer of slaked lime between to deter earthworms.

[6] J. M. Steane, 'The Royal Fishponds of Medieval England' in Aston, M. ed. *Medieval Fish, Fisheries and Fishponds in England* (Oxford: BAR 182, 1988) p 40

[7] I am indebted to Roger Cortis for this information about James Briggs.

[8] North *A Discourse* op. cit., p 14

[9] Ibid., p 4-6

[10] Diagram by author

[11] North, op. cit., p 8

[12] North, op. cit. p 12

[13] G. M. Binnie *Early Dam Builders in Britain* (London: Thomas Telford, 1987) p 39

[14] Ibid. p 68

[15] T. Hinde *Capability Brown: The Story of a Master Gardener* p 62. Brown did this at Burghley.

[16] J. Taverner *Certaine experiments concerning fish and fruite practised by Iohn Taverner, Gentleman* (London: William Ponsonby, 1600) p 3

[17] Ibid., p 3 - 6

[18] J. Lawrence *The Modern Land Steward in which the duties and functions of stewardship are considered and explained…*(London: Various, 2nd ed. 1806) p 312

[19] Switzer *Ichnographia* op. cit., Vol. I p 303

[20] Ibid., p 306- 307

[21] Currie supports this with evidence of the use of chalk to heighten the dam (and therefore deepen the water) of the monastic fishpond at Southwick, Hants, around 1300. Ibid., p 38

[22] Diary of John Kyrle-Ernly, WSHC 1720/742

[23] M. Symes and S. Haynes *Enville, Hagley, The Leasowes: Three Great Eighteenth-Century Gardens* (Bristol: Redcliffe Press, 2010) p 96

[24] Switzer alludes to the extra expense of puddling the whole construction. See above.

[25] North, op. cit. p 16

[26] Switzer *Ichnographia* op. cit., Vol. I pp 304-5

[27] Ibid., p 307

[28] Ibid., p 301

[29] Richard Woods quoted in Cowell, op. cit., p 113

[30] Binnie, op. cit., p 66

[31] Binnie, op. cit., p 39

[32] J. Roberts, 'Well Temper'd Clay': Constructing Water Features in the Landscape Park' in *Garden History* 2001, Vol. 29(1)

[33] Ibid., p 18

[34] Geology of Britain Viewer on line at http://mapapps.bgs.ac.uk/geologyofbritain/home.html accessed 2016

[35] John Grundy *Slopes Ponds and Reservoirs and Engine and Piping to supply the House and Offices and other Works done at Grimsthorpe in Lincolnshire 1745 to 1748* p 143, in Report Books Vol. 2, ref.1740GRUSLR, held by the Institution of Civil Engineers, London

[36] Ibid., p 189

[37] Ibid., p 190

[38] Currency conversion given at http://www.nationalarchives.gov.uk/currency/default2.asp and Binnie, op. cit., p 70

[39] Charles Quest-Ritson 'The Unknowable Capability Brown', *Country Life* 7th Sept., 2016

[40] 1779 estate survey by James Crow, at West Sussex Record Office, ref. PHA 3606

[41] Brown's work in general is discussed in Chapter 3

[42] North, op. cit., p 5

[43] Contract of June, 1755 between L. Brown and Lord Egremont regarding work at Petworth, West Sussex Record Office, ref. PHA 6623

[44] Treswell's 1610 Map of Petworth Park, West Sussex Record Office, ref. PHA 3574

[45] Contract of May, 1756 between L. Brown and Lord Egremont regarding work at Petworth, West Sussex Record Office, ref. PHA 6623

[46] Barry Smith, Garden and Estates Manager. Stowe, personal communication 6.4.2016

[47] G. B. Clarke *The History of Stowe* Part 14, p 21 quoted in T. Hinde *Capability Brown: The Story of a Master Gardener* p 27

[48] Jonathan Marsden in *Stowe Landscape Gardens: A Comprehensive Guide* (Swindon: National Trust Enterprises, 1997) p 46

[49] Brown's letter to Cobham, 24th February 1746, Soane Museum, Stroud papers. quoted in S. Shields *Moving Heaven and Earth: Capability Brown's Gift of Landscape* (London: Unicorn Publishing, 2016) p. 40

[50] A barley corn was *c.* 1/3 of an inch. Given in *Britannica (Edinburgh, 1769)*

[51] Binnie, op. cit., p 73

[52] N. Smith *A History of Dams* (London: Peter Davies, 1971) p 179

[53] Andy Hughes, Chairman of the British Dam Society, personal communication 9.12.2015

[54] Henry Hewlett ed. *Improvements in Reservoir construction, operation and maintenance* (London: Thomas Telford Publishing, 2006) and G. M. Binnie, ibid

[55] It is also possible that some lakes were partially lined; this may apply to the Copper Bottom Lake at Stowe.

[56] The proviso was that there was a constant water supply.

[57] BGS Geology of Britain Viewer on line at
http://mapapps.bgs.ac.uk/geologyofbritain/home.html accessed Feb. 2014
[58] 'Raynham Hall Archives, uncatalogued map of Raynham Park, prepared for Charles, Viscount Townshend' by kind permission of the Marquess of Townshend.
[59] H. Woodward *The Geology of Water-Supply* (London: Edward Arnold, 1910) p 117
[60] Ibid., p 117
[61] RCHME, 'Archaeological Sites in Central Northamptonshire', *An Inventory of the Historical Monuments in the County of Northamptonshire* Vol. 2 (London: HMSO, 1979) pp 61-71
[62] J. Russell *The Kennet & Avon Canal: A journey from Newbury to Bath in 1964* (Bath: Millstream Books, 1997) pp 7-10 quoted on http://en.wikipedia.org/wiki/Kennet_and_Avon_Canal accessed 19.9.14
[63] EH listing: Wallington Park and Garden 2014
[64] T. Williamson & J. Barnatt *Chatsworth: A Landscape History* (Macclesfield: Windgather Press, 2005) p 108.
[65] Ibid., p 116
[66] Ibid., p 116
[67] W. Watts *The Seats of the Nobility and Gentry in a Collection of the most interesting and Picturesque Views engraved by W. Watts From Drawings by the most eminent Artists* (London: Watts, 1779) Plate 81, on line at
https://archive.org/stream/picturesqueviews00unse#page/n7/mode/2up accessed June 2014
[68] See a short video of this in Appendix 3
[69] T. Williamson: personal communication, 2016
[70] Modern dams are sometimes a combination of weir and dam. The main construction is a dam, with a section of the crest being lower and acting as a weir.
[71] Image on line at http://www.fao.org/docrep/u5835e/u5835e0c.gif accessed 30.8.14
[72] Binnie, op. cit., p 54
[73] C. Rickard, R. Day and J. Purseglove *River Weirs – Good Practice Guide R&D Publication W5B-023/HQP* (Bristol: Environment Agency, 2003) p 55
[74] University of Manchester *Northenden Mill: Manchester An Archaeological Desk-Based Assessment* (Manchester: University of Manchester, 2004) p 13
https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/290655/sw5b-023-hqp-e-e.pdf accessed 30.8.14
[75] Ibid., p 13
[76] North, op. cit., in the *Introduction*
[77] BGS Geology of Britain Viewer on line at
http://mapapps.bgs.ac.uk/geologyofbritain/home.html accessed 2015
[78] Uncatalogued. By kind permission of the owners of Bramshill Park, 2014
[79] C. S. Cheney *et al*, *The physical properties of minor aquifers in England and Wales* in Hydrogeology Group Technical Report WD/00/04 Environment Agency R&D Publication 68 (Nottingham: British Geological Survey, 2000) p 40
[80] London Clay Formation and Harwich Formation are described in the BGS Lexicon on line at http://www.bgs.ac.uk/lexicon/lexicon.cfm?pub=LC and
http://www.bgs.ac.uk/lexicon/lexicon.cfm?pub=HWH accessed on 14.6.14
[81] The 1 to 10,000 map of superficial deposits of Norfolk was too incomplete to use, and was not supplied by BGS. Licence 2016/024 ED British Geological Survey @ NERC. All rights reserved.
[82] Licence 2016/024 ED British Geological Survey @ NERC. All rights reserved.
[83] Licence 2016/024 ED British Geological Survey @ NERC. All rights reserved.
[84] BGS Geology of Britain Viewer, op. cit., accessed 2017
[85] Elaine Milsom, archivist at Badminton: personal communication, Jan. 2014
[86] Licence 2016/024 ED British Geological Survey @ NERC. All rights reserved.
[87] Pete Cox (AC Archaeology): lecture on *Anyone lost a hillfort? – Archaeology results from the Wessex Water Salisbury Transfer pipeline scheme 2014-2016* at the WANHS annual Archaeology in Wiltshire Conference, 2017
[88] Licence 2016/024 ED British Geological Survey @ NERC. All rights reserved.
[89] BGS Geology of Britain Viewer, op. cit., accessed 2016
[90] Grundy, op. cit., pp 143-4

6. Lakes in the Nineteenth Century.

6.1. Lake Chronology.

Before looking at Repton and the protagonists of the Picturesque at the end of the eighteenth century and the beginning of the nineteenth century, an overview of lake numbers will provide an outline of what was happening to lakes in the nineteenth century (Table 29), and a framework in which to analyse any changes which occurred. Lakes which were altered or increased in size were not considered to be new, so a lake made by Brown, but altered by Repton was counted once, for example. Trends in the eighteenth century have already
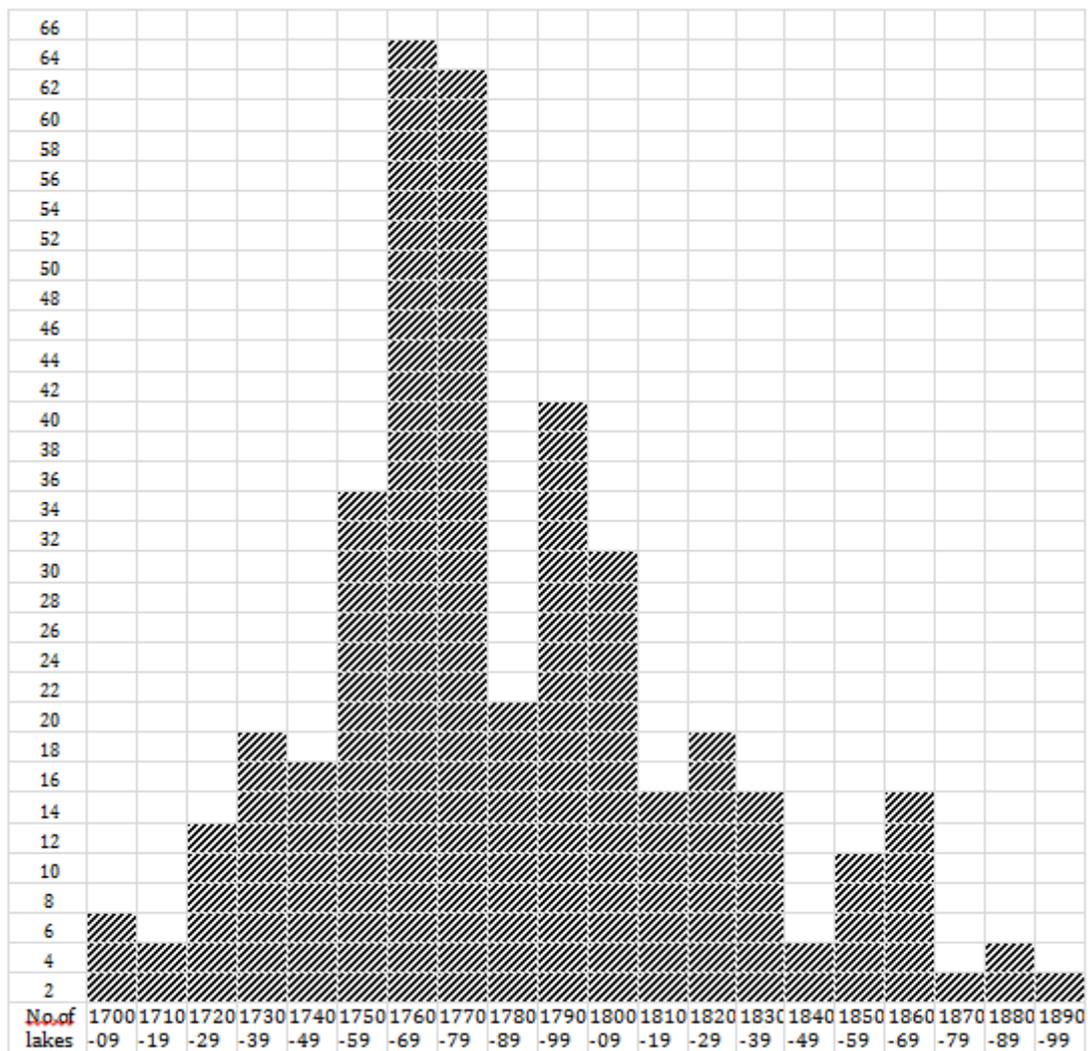

Table 29. Numbers of all lakes in ten year periods, 1700-1899, including geometric and semi-geometric.

been discussed but Table 29 shows that numbers of lakes, which were falling in 1800, continued to fall throughout the nineteenth century, except for the 1860s. There was a heavy reliance on maps in producing these data, as specific dates for lakes are not common, and the parameters used have been discussed above. The graph should be regarded as an indication of trends, rather than finite statistics. The availability of the OS drawings, many of which were produced in 1800-20, may have affected statistics in that period. However, there is still a marked decline in numbers of lakes from *c.* 1815 onwards, and this period included the tithe maps of the 1840s and the First Edition 6" OS maps, so more means of gathering data were available. The peak in the 1860s is almost certainly a result of an anomaly in the data. If, for example, a lake appears on a First Edition 6" O S map of 1880 but not on a tithe map of 1840 then, lacking any other information, a mid-point date of 1860 was entered in the database.[1] Similarly, the 'bulge' in the 1820s is likely to be caused by being the mid-point between the OS drawings of the 1800s and the tithe maps of the 1840s. The significant dip in lake numbers in the 1780s mirrors the dip in numbers of Parliamentary enclosures at that time, which points towards economic and political causes. However, there is no obvious explanation, although it is worth mentioning general factors such as the Land Tax, the Navigation Acts, and disruption to trade, all of which had more impact in times of war, notably the American War of Independence (1775-83) and the Revolutionary and Napoleonic Wars (1792-1815).[2] The agricultural depression of the 1870s may also have had a similar effect: given that the First Edition 6" OS maps yield more information for that period, higher numbers of lakes might have been expected.

Despite being a rather 'blunt instrument', this statistical analysis is a completely fresh approach to the study of lakes, and has proved very valuable. As well as demonstrating that lake making peaked in the 1760s and '70s, it has revealed the hitherto unsuspected and significant fall in lake numbers in the nineteenth century. This in turn has led to an examination of the reasons behind that fall, outlined above and discussed further below.

| Hectares | 1700-9 | 1710-19 | 1720-9 | 1730-9 | 1740-9 | 1750-9 | 1760-9 | 1770-9 | 1780-9 | 1790-9 | 1800-9 | 1810-19 | 1820-29 | 1830-39 | 1840-49 | 1850-59 | 1860-69 | 1870-79 | 1880-89 | 1890-99 |

30 + row cells: 1 = 47h | 1=42 1=30 | 1 = 55h | 1 = 34h
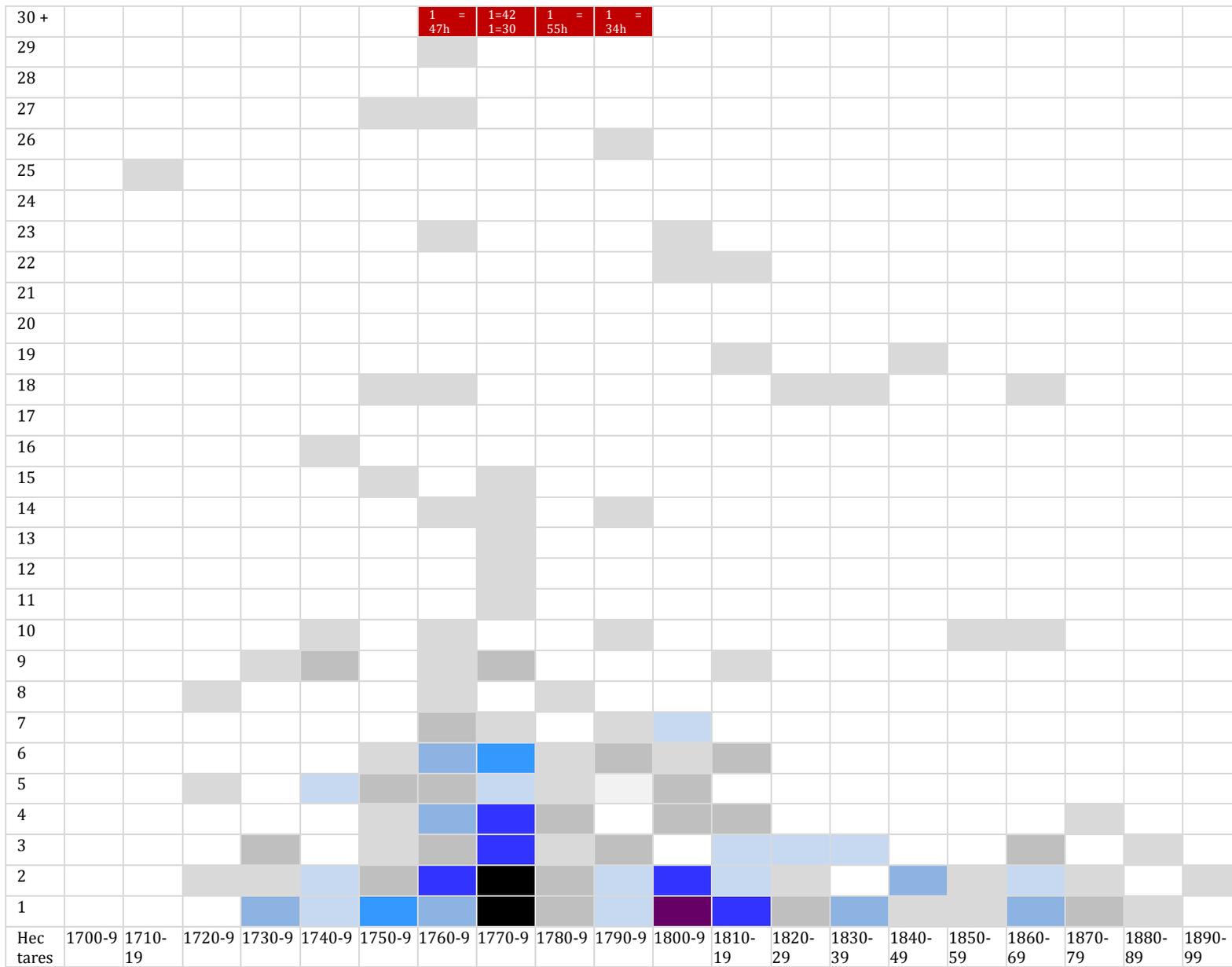
Table 30.

Lake sizes: irregular and hybrid lakes, 1700-1899 (actual numbers).

Key: no. of lakes
1
2
3
4
5
6
7
8
9
10
30 +

6.2. Lake Size and Parks.

The data in Table 30 show that for the period 1730–99, the most usual lake size was *c.* 2-4 h, though lakes of *c.* 5-7 h were common. Brown's lakes were consistently larger than average, at *c.* 7 h, which probably reflects the fact that his clients were frequently the wealthiest men, with the largest estates. However, in the period 1800-99, the most common lake size was *c.* 1-2 h, with an average size of *c.* 3 h, and larger lakes were not common. As before, Cheshire lakes were largely excluded because of the effects of salt extraction. It must be emphasised, however, that this survey is not an exhaustive list of lakes in England. Rather, the results should be regarded as indications of what was happening to lakes. Considering all the data on lakes in the nineteenth century, the general conclusion must be that, as well as declining in numbers, they also declined in size.

The reasons for that decline are complex, and not particularly clear. One factor may have been what was happening to parks in the nineteenth century, though there is little national data on which to base an evaluation. Data for

Size: hectares	Numbers of parks		
	c. 1750	Late 18C c. 1797	*c.* 1905
150+	11*	15	23
75-150		32	36
15-74.9	15*	71	181
< 15 h		23	43

Table 31. Numbers of parks in Norfolk: statistics from *An Historical Atlas of Norfolk*.

* For parks *c.* 1750, this category was simply 'large', or 'small'.

Size: hectares	Numbers of parks	
	Increase *c.*1750-*c.*1797	Increase *c.*1797-*c.*1905
150+	3	8
75-150 h		4
15-74.9 h	56	110
< 15 h		20

Table 32. Increase in park numbers in Norfolk.

Norfolk and Suffolk show that the trend in the nineteenth century was a decline in new large parks, and an increase in smaller ones (Table 32).[3] In Norfolk, approximately 100 new parks were created from 1820-99, and of these only three had lakes. As Williamson points out, the term 'park' is a rather slippery one, but the relevant point is how much land owners had available in which to make lakes. As those areas of land were smaller in new parks in the nineteenth century, it seems rational to suggest that lakes would also be generally smaller.[4] Another factor, also pointed out by Williamson, was that the best locations for parks in Norfolk, especially large ones, had been occupied by the end of the eighteenth century, so fewer suitable locations for large lakes remained, as these new parks tended to be located on dry interfluves where lake-making would be challenging.[5]

In some instances, a park was created in the nineteenth century, then expanded, then a lake was made. This happened at Dauntsey, in Wiltshire. On the tithe map of 1846, there was a small area of gardens around the house, and a collection of farms. By 1884, these farms were designated as 'park' on the O S map, but more importantly, Idiver Farm to the west of the house had been replaced by an irregular lake of 1.2 h. This process was not new; it had happened in the eighteenth century, and it continued to occur in the nineteenth century.

In general terms, out of *c.* 50 new lakes made in England in the period 1820-99, approximately two-thirds were made in existing parks, a small proportion being a second lake. Just under one third of new lakes was made in new parks (see Table 33). Of note, is that in these new parks, the majority of lakes were positioned directly in front of the main 'garden' façade of the house on a parallel axis, in contrast to the oblique axis which had been predominant in the eighteenth century. These lakes were small, being 1.5 h on average, and irregular lakes predominated. Bearwood, with a lake of 18 h, is on the cusp of this change, being altered in 1819-20. The relationship of that house to the lake belongs to the previous era, whilst the lake shape is akin to the new shape which was coming into fashion, discussed below. In no sense is this an

Place	County	Date of Park	Size: at creation	Type of Lake	Date of Lake c.	Size of Lake	Position relative to house	Height of house above lake (m)	Distance: from house to lake	Comments
Ingleborough	Yorkshire	By 1807?	50?	Irregular	1820?	3	Oblique	10	150	
Newlands Manor	Hampshire	1800 c.	93 c.	Irregular	1820?	1.3	In front	7	100	
Felthorpe Hall	Norfolk	1817-40	43	Irregular	1828 c.	1	Oblique	7	210	No estate there in 1817? No EH entry.
Morton Hall	Norfolk	1817-41	335?	Irregular	1829 c.	1.5c	In front	25	250	
Tackley Park	Oxon.	1815-39	41	Irregular	1830?	1.4	Oblique	12	75	
Carleton Hall	Norfolk	1830s?	22?	Irregular	1837 c.	1.1	Oblique	3	40	
Dunorlan	Kent	1825 c.?	54?	Irregular	1838 c.	2.5	In front	17	120	Lake preceded park. New Italianate house c. 1855.
Elm Lodge	Northamptonshire	After 1822	21?	Irregular	1855?	1.5	In front	7	100	Very small 'park'.
Warnham	Sussex	1859	107	Irregular	1859	1	In front	15	320	
Farnborough Hill	Hampshire	1839-74	84	Irregular	1860 s?	1.2	Oblique	25	500	No estate in 1839. Lake probably out of sight.
Knossington	Leics.	1847-84	41	Irregular	1864	1	In front	18	90	
Dauntsey	Wiltshire	1846-84	3.24	Irregular	1865	1.2	In front	5	200	Gardens in 1846. Idiver Farm became the lake. Farms were modified into a park (160h) on 1884 OS.
Red Lodge	Wiltshire	1855 c.	26?	Irregular	1870	2	In front	15	265	Deer park, then later park.
Naseby Hall/ The Woolleys	Northamptonshire	1822 c.	50	Hybrid	1878 c.	1.4	In front	7	100	House built c. 1822; small park in 1884. Nothing there in 1817.
Marston Trussell	Northamptonshire	1834-85	20?	Irregular	1880 c.	1.7	In front	5	160	Park established c. 1870. Very small 'park'.
Aldenham	Herts.	1877-98	150	Irregular	1895 c.	2	Oblique	5	580	

Table 33. New parks with lakes: 1815-99.

exhaustive list of new parks; more work needs to be done in identifying them. However, the characteristics observed in this table are generally mirrored in a table of new lakes made in the nineteenth century in existing parks (Table 34). Approximately two-thirds of these lakes were 2 h or less in size, and over half were positioned in front of the main garden façade of the house. The relative

Place	County	Date of lake	Size of lake (h)	Position relative to house	Height of house above lake (m)	Distance: from house to lake (m)	Shape of lake
Heckfield	Hants.	1815	0.9	In front	11	130	Roughly rectangular
Dodington	Gloucs.	1815	1.8	In front	8	75	Long, narrow
Swerford	Oxon.	1815	1.4	In front	18	55	River-lake
Riddlesworth	Norfolk	1817	5	In front	7	300	River-lake
Eccleshall Castle	Staffs.	1817	1.1	Oblique	3	90	Long, narrow
Welton	N'hants.	1818	1	In front	7	40	Very square
Bearwood	Berks.	1820	18	Oblique	15	270	Spreading
Fonthill (Bitham)	Wilts.	1825	3.3	In front	20	300	Spreading
Buck. Palace	Middlesex	1828	2	In front	3	167	Rounded rectangle with 'tail'
Buckingham Palace	Middlesex	1828	2	In front	3	165	Rounded
Honingham	Norfolk	1828	1	Not visible?	2.7	330	V-shaped
Ketteringham	Norfolk	1828	1, 1.3	In front	2	55	Elongated
Rushton	N'hants.	1829	1.4	Oblique	12	208	Oval-shaped, indented
Zeals	Wilts.	1830	1	In front	8	135	L shaped, rounded
Bracon	Norfolk	1835	1	In front	8	280	Rounded
Hilborough	Norfolk	1835	1.1	Oblique	5	195	Very rounded
Osmaston	Derbys.	1837	5, 3.3	In front	33	260	Long, thin
Tackley	Oxon.	1838	1.4	Oblique	7	135	Ribbon like
Stapleton	Yorks.	1839	2.5	Oblique	5	350	Diamond shaped
Riddlesworth	Norfolk	1840	5	In front	7	300	Ribbon like
Ketteringham	Norfolk	1843	2.3	In front	3	50	Long, narrow
Kew	Middlesex	1845	2.4	Oblique	2	200	Spreading triangle
Garswood Old Park	Lancs.	1848	1.5	Opposite E front	20	280	Very rounded, roughly triangular
Olantigh	Kent	1855	2	In front	3	70	Elongated
Easton Neston	N'hants.	1860	1	Oblique	7	530	River-lake
Bayfield	Norfolk	1862	3.2	In front	5	80	Ribbon like
Narford	Norfolk	1862	10	Oblique	2	5	Spreading
Rendcomb	Gloucs.	1866	2.5	Oblique	25	400	Sausage shaped. Out of sight?
Sandringham	Norfolk	1868	1.4	Oblique	5	85	Spreading with 'tail'
Heydon	Norfolk	1875	1	Oblique	3	675	Ribbon like. Out of sight?
Naseby	Norfolk	1878	1.4	In front	5	80	Fat L shape
Rolleston	Leics.	1879	4.2	In front	18	147	Rectangular, with 'arms'
Sulby	N'hants.	1879	1	In front	3	10	Long, narrow
Rood Ashton	Wilts.	1880	2.5	Oblique	18	500	Rounded, slightly U shaped
Biddlesden	Bucks.	1884	2.5	In front	5	77	Slightly rectangular

Table 34. New lakes in existing parks: 1815-1899.

heights and distances between house and lake remained dependent on topography, but it is noticeable that nineteenth-century lakes in new parks were often somewhat closer to the house than eighteenth-century lakes. This may well have been a result of parks being generally smaller.

6.3. Changes in Lake Shape.
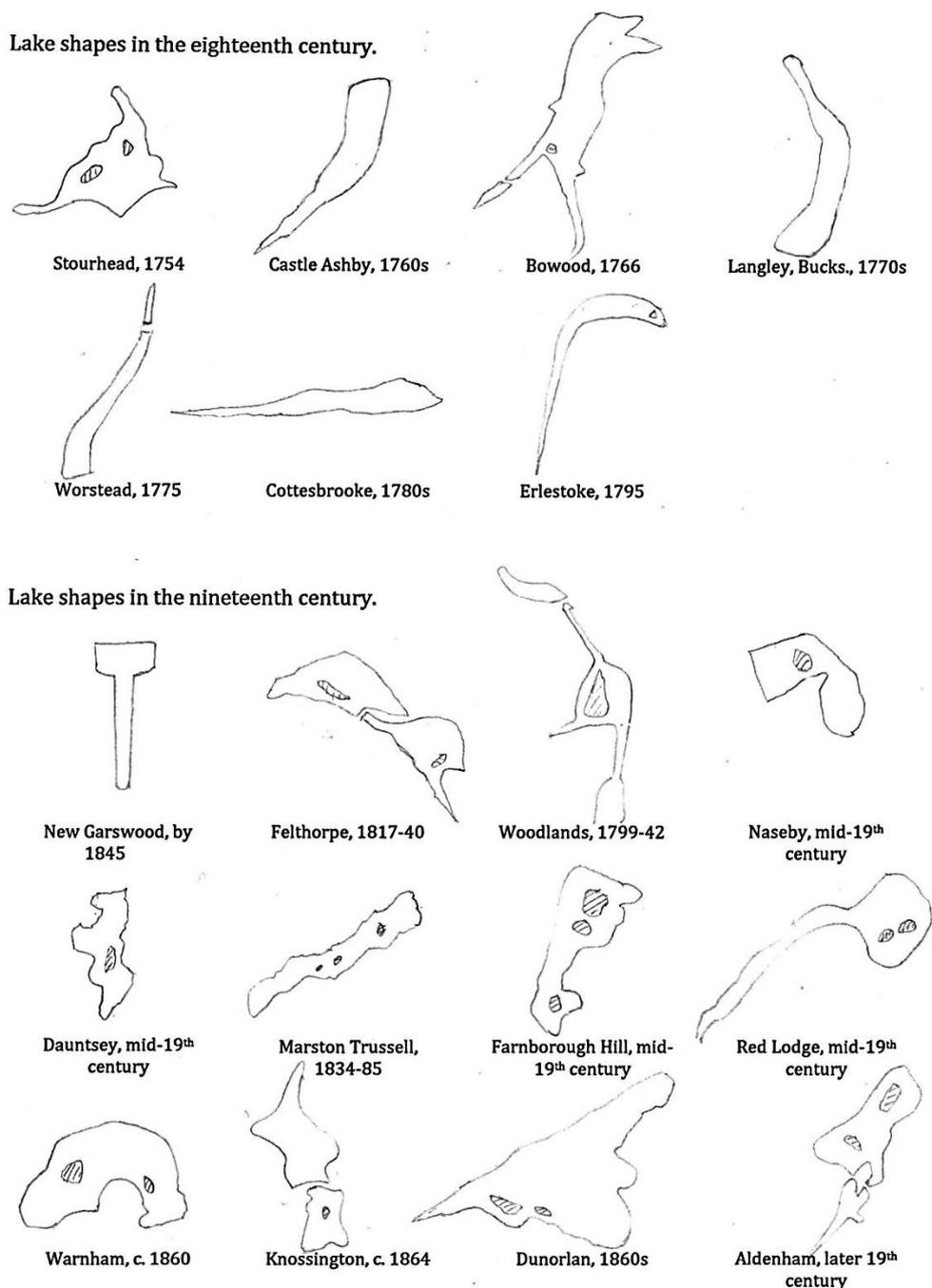
Fig. 6.1. Lakes shapes in the eighteenth and nineteenth centuries.

As well as declining in numbers and size, lakes also changed in shape. Whereas, in the eighteenth century, the majority of lakes could be characterised as elongated, lakes which were made in the nineteenth century could be characterised as spreading. The image above highlights these differences (Fig. 6.1). These changes in size and shape have not been noted in studies of garden history before, and are a significant new contribution to our knowledge of lakes in the nineteenth century. Even when taking the topography into consideration, it appears that this spreading shape was favoured over the more elongated form of the eighteenth century. The increase in the numbers of islands is also noticeable. An eighteenth-century lake might, if large, have one island, but a nineteenth century lake would usually have at least two, if not several. It is tempting to suggest that this spreading shape was a result of lakes being mostly made in fairly flat areas. However, the lake at Dunorlan, just outside Tunbridge Wells, was made probably in the 1820s, in a valley below the house, and could as easily have been made more elongated, rather than a bulbous triangle (Fig. 6.2).

Fig. 6.2. Dunorlan Park, Kent, First Edition OS map, 1868.

Similarly, at Rood Ashton, Wiltshire, a park of *c.* 150 h, a bulbous dumpling of a lake was made at some time between 1838 and 1885 (Fig. 6.3). It would have been easier to make a more elongated, horned lake, like Stourhead,

letting the water flow back up the two stream valleys. Instead, the outline has been formed into pillow-like cusps, with rectangular projections in several places, and two islands have been made.

Fig. 6.3. Ashton Park, Wiltshire, 1885 First Edition OS map.

At places such as Trentham, Longleat and Fonthill, where large, elongated lakes were made in the eighteenth century, spreading, spreading lakes were made further out in the park in the nineteenth century (Fig. 6.4).   At Fonthill, the new
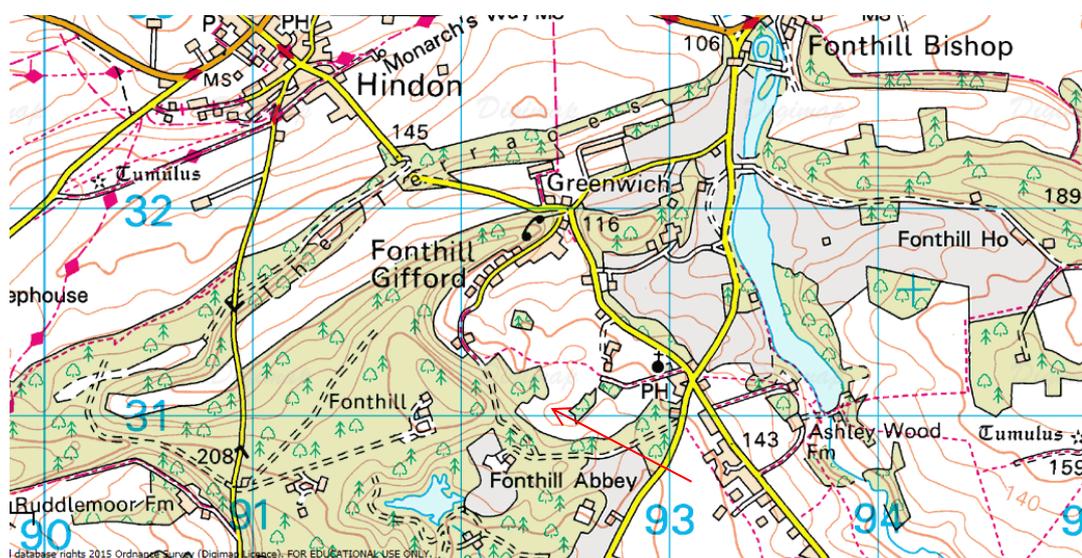
Fig. 6.4. Fonthill, Wiltshire: Bitham Lake, OS map 2016.

'abbey' was started in *c.* 1796, but the new lake does not appear to have been started until after *c.* 1805 (OS drawing, 1808). At Trentham, Black Lake was made by 1836, and Shearwater Lake at Longleat in the 1790s.[6] The rationale behind this change in shape would appear to be the desire to increase the perimeter area of the lake. This would accord with the Picturesque precepts discussed below. W. S. Gilpin in particular was keen to avoid any appearance of straightness in lake margins, and recommended planting right up to the edge in some areas, with walks touching upon the edges intermittently, to avoid revealing the actual extent of a lake, in order to make it seem bigger.[7] In terms of size, this was a more economical way of achieving what Brown set out to do when he concealed the ends of his lakes by making them turn out of sight. Mounding up areas of the margins, and planting them with suitable shrubs would achieve a similar effect, as well as making margins more varied.[8] This was also the reason that Gilpin recommended making islands. His emphasis is very much on walking around lakes and, given the general decrease in the size of lakes, rowing, rather than sailing, must have been the usual activity. The decline of carriage drives in parks in the nineteenth century also points to a greater interest in walking rather than driving in parks, although evidence for activities in parks is not as robust as for the eighteenth century.[9] With the increase in turnpike roads at the end of the eighteenth century, and the expansion of a national road network, carriage driving was becoming a common-place necessity, and was no longer a novelty to be enjoyed by the elite. There was also less scope for carriage drives in smaller parks. Edward Kemp also explores how to achieve the optimum shape for these lakes (spreading) in the mid-nineteenth century, in his book *How To Lay Out A Garden* 1858.[10] These changes to lake shapes and margins did not begin to appear until the 1820s and '30s, and will be explored in more detail below.

Roughly half of new lakes had boathouses in the nineteenth century. However, it was not until the production of the First Edition 6" maps that boathouses were routinely marked, so it is difficult to gauge when they first became popular. The OS drawings of the early nineteenth century are too small scale to show them, so it is only the presence of other data which reveals them before *c.* 1880. They sometimes appear on tithe maps but "There is a huge variation in the detail included and quality of tithe maps".[11] Thus, the evidence

for the lack of boathouses before the 1880s is partly negative, as there are few illustrations and diary entries which include them before that time. Given the use of garden buildings for storing boats, as at Stowe, and the boathouses mentioned by Felus, such as Kedleston, in the eighteenth century, it seems possible that in the nineteenth century relatively simple, purpose-built boathouses began to appear, perhaps largely for rowing boats, and this point will be discussed below.

6.4. First half of the nineteenth century.

6.4.1. Repton.

Having looked at the chronology of lakes in the nineteenth century, and the main changes which occurred, we need to look at the practitioners responsible for making them, and the aesthetic principles which may or may not have influenced them. The leading designer of the late eighteenth and early nineteenth centuries was Humphry Repton (1752 – 1818). As can be seen from the graph (Table 29), his landscape career coincided with the national downward trend in the numbers of lakes in this period. He originated from East Anglia and grew up in Norwich. Having spent some time in The Netherlands, and failed in business, in 1788 Repton decided to adopt the profession of landscape gardener.[12] After several small commissions, he began work for the Duke of Portland at Welbeck, and the Duke's patronage launched his career. Perhaps Repton's best talent was as an artist and his method of working, as is well-known, was to produce plans and accompanying explanations and illustrations, usually bound in a Red Book. The first Red Book for Welbeck was produced in 1789. Repton claimed to have produced some 400 Red Books.[13] Steven Daniels makes the point:

> Repton saw the profession of landscape gardening not just as a way of making money but as an opportunity to mix with landed society.[14]

A further factor in Repton's career was his keenness, at the start of his career, to maintain Brown's reputation, which brought him into conflict with the proponents of the picturesque ethos, Uvedale Price and Payne Knight.[15] These factors – his artistic talent, social aspirations and championship of Brown's work – are the key to Repton's career as a landscaper. After a buoyant start with the Welbeck commission, Repton designed for a number of aristocratic clients, such as the Duke of Bedford at Woburn (1804), where he produced an irregular lake, but unlike Brown, he rarely obtained a remit for whole large parks, or even a substantial portion of them. He did design some whole 'estates' but they were very small.[16] After 1793, his career did not attain the same heights again, and he spent more time on designing villa gardens for wealthy gentry.[17] Also unlike Brown, he did not design and build; he did not offer a complete package. This meant that his designs were liable to be misinterpreted, or altered by a foreman on the spot in favour of an easier alternative. Daniels makes reference to Repton's non-attendance at Woburn, where William Adam bewailed the lack of any overall direction.[18] Undoubtedly, Repton was an artistic man and perhaps not very practical; he was more at home designing pleasure grounds, although he was very concerned with approaches. His focus on, and success with, designing approaches appears to have been recognised by contemporaries, as Jane Austen famously assures us in *Mansfield Park*. The stolid Mr. Rushworth (modelled on Austen's cousin, the Rev. Thomas Leigh and his house, Stoneleigh Abbey[19]) actually becomes animated when describing Repton's improvements at his friend's house, Compton: "The approach *now* is one of the finest things in the country. You see the house in the most surprising manner."[20]

Repton's focus on pleasure grounds was, perhaps, in default of more extensive commissions. He was concerned with the impact of the foreground, which was a painterly approach to landscape more in sympathy with the ideals of the Picturesque.[21] There is little sense of major innovation in his designs. Rather, he was content to work within the Brown mode, with minor variations of his own. His contribution was a largely a shift in emphasis, towards formal gardens, not one of innovation and change in the park.[22] Repton did not design very many lakes, as Table 35 shows. At Welbeck, he possibly deepened an existing lake (Gouldsmeadow), but the chronology of the lakes there is not

Garden Name	County	Dating	Dat	Feature1	Feature2	Featur	Reference	Lake siz
Welbeck Abbey 6	Nottingham		1790	Lake altered		Repton	Daniels p 157	Unknown
Tyringham, Hall	Buckingham	c. 1793	1795	River signif		Repton	EH,OS map 1885	4 .8
Thoresby Hall 6	Nottingham	By 1796	1796	Lake River-lak	Weir cascade	Repton	Red Book, Observat	4
Corsham Court 2	Wiltshire	1795-7	1796	Lake irregular		Repton	EH, OS map 1808	6 .2 (5.6 to
Panshanger	Hertfordshir	By 1805	1799	Lake River-lak		Repton	Jacques p 161. EH	4.2
Tewin Water/ Cole	Hertfordshir	1799-180	1800	Lake River-lak		Repton	EH.1805 OS map Hat	4
Woburn Abbey	Bedfordshir		1804	Lake irregular	Lake altered	Repton	Mott p121, EH	5
Bayham Abbey	Kent	1799-181	1810	Lake irregular		Repton	Jacques p 161. 1841	6.2
Oulton Hall, Leeds	Yorkshire	1810	1811	Pond informa		Repton	P & G. 1840 tithe	
Barningham 2	Norfolk	1795-181	1813	Lake altered		Repton	1816 OS, 'Fragment:	

Table 35. Repton's works with water, extracted from the Landscape Database.

precisely known. He may have created the 1.3 h lake at Tendring, but that is conjecture as the maker is not known. At Panshanger (*c.* 4 h) and Bayham (*c.* 6 h) he was responsible for the lakes, and at Woburn he made the formal pool to the west of the house into an irregular lake, now *c.* 5 h. At Thoresby, he deformalized the canals, creating a river-lake with several weirs, and at Corsham Court, he created the lake planned by Brown by extending an existing pond. At Longleat, he deepened and extended Brown's lake.

Repton's work at Thoresby exemplifies the ideals of his approach to water: he recommended it being as natural as possible, especially rivers and cascades, in *Observations*, where he suggested the use of rocks to achieve a natural effect.[23] Brown made a plan for Thoresby, but it was not implemented as far as is known, though Repton drew his design for updating the old canals with reference to it (Fig. 6.5). He labelled the dotted lines as Brown's plan, and Brown's intended cascade. He made the course of the River Meden much more informal, ponding it back with several weirs to make it wider, and introducing a new approach over a new bridge (Figs. 6.6 and 6.7). It was his design for a new cascade which was most noteworthy, and he describes it in *Observations*:

> In forming this cascade huge masses of rock were brought from the crags of Creswell, one in particular of many tons weight, with a large tree growing in its fissures; the water has been so conducted by concealed leaden pipes it appears to have forced itself through the ledges of the rocks.[24]
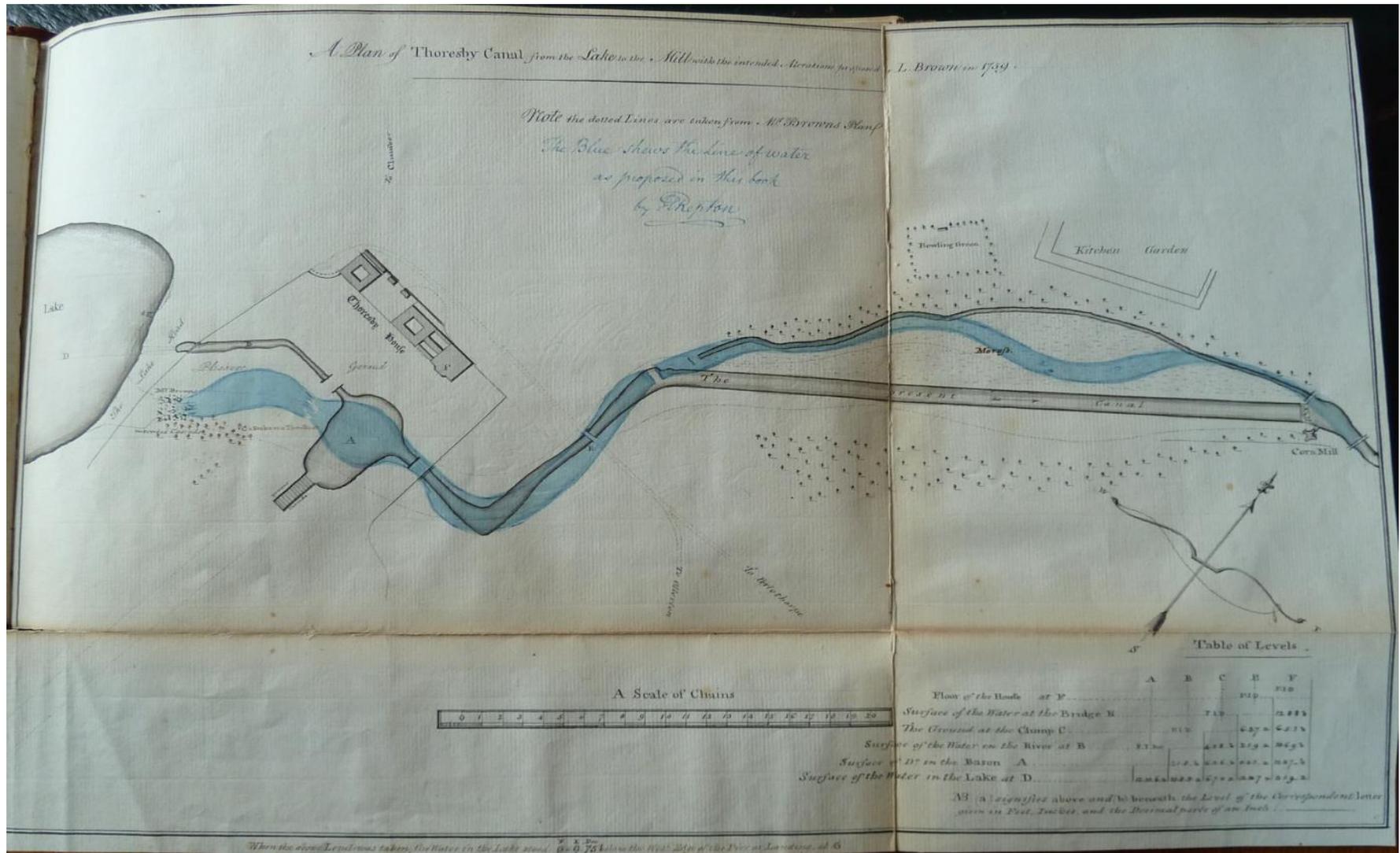
Fig. 6.5. Repton's plan for Thoresby Hall, Nottinghamshire, in his 1791 Red Book for Thoresby.[25]

Figs. 6.6 and 6.7. Repton's before and after 'slides' of the reconfigured river and approach drive at Thoresby.[26]

He disarms the critic by saying that if this is considered to be an artificial management of water, it is no less so than making an artificial lake in the first

place. He coyly ends by saying he has not included an illustration because "the best reference is to the spot itself".[27] Fortunately, he did actually make a picture

Fig. 6.8. The cascade at Thoresby Hall, designed by Repton, engraved by J. Peltro, 1801, after Repton.[28]

of it (Fig. 6.8). He goes on to say, "A rapid stream, violently agitated, is one of the most interesting objects in nature".[29] He explicitly says that he aims to imitate the natural waterfall which occurs when a lake is made by rocks blocking the path of a river, which then tumbles over them with great fury. He excuses this artifice at Thoresby by pointing out that Creswell Crags are only a short distance away, in Derbyshire. In his preference for animated, natural water, he differed from Brown. He was much closer to the ideals of Price and Knight, and at Thoresby he was "perhaps experimenting with his own interpretation of the new taste for the Picturesque".[30]

To date, it has been difficult to assess the extent of Repton's involvement with making lakes, but new information about the lake at Panshanger throws light on this.[31] His design appears in his Red Book for Panshanger (Fig. 6.9). It was a river-lake, and was constructed much as planned. The site was a flat plain, as indicated on the plan, and Repton chose to construct the lake by using several weirs to pond back water, though only two are indicated on the plan. It is likely

that the cascade mentioned in the accounts was actually one of these two weirs.[32] The OS drawing of 1805 (Fig. 6.10) shows that the plan for the northern
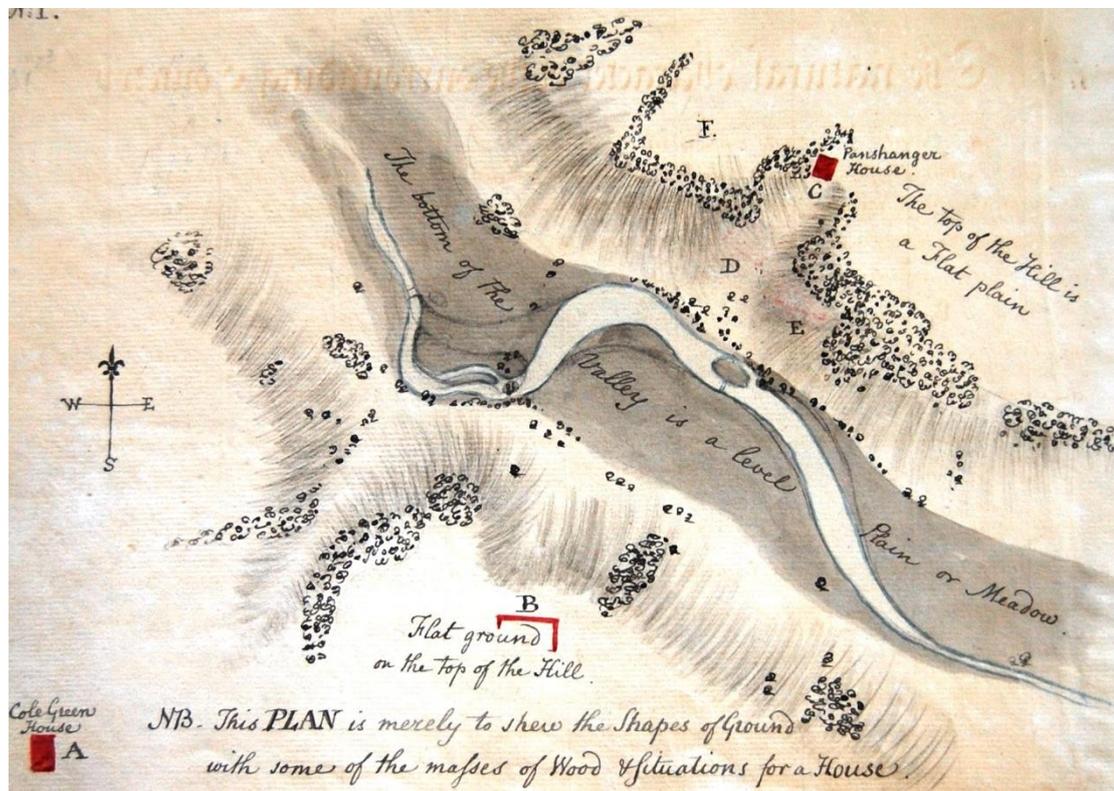
Fig. 6.9. Humphry Repton's 1799 plan for a lake at Panshanger, Hertfordshire.[33]

Fig. 6.10. 1805 OS drawing of Panshanger Park, Hertfordshire.

end of the lake was modified, as two more weirs were made to split the River Mimram and create a substantial island. A ledger of payments by Dr. Thos. Pallett on behalf of Earl Cowper for the Piece of Water in the Park, in 1799, shows that a considerable amount of earth was moved:

> 'about 60 hands [were] at work' digging and 'wheeling out' the 'moory soil' and huge quantities of the underlying 'gravel soil' in the valley bottom. In August another twenty men joined the workforce and in September 110 men were employed. Work continued through the winter, spring and summer of 1800 and included widening the water to the south and north, 'wheeling and spreading earth' and 'altering and slopeing'. By September 1800 the 'Piece of Water' was nearing completion and Repton was on site to supervise the final levelling on the north and south sides of the water, on the island and below the cascade. The total cost of making the 'piece of Water below Pansanger' recorded at Michaelmas 1800 was £2,030 2s 1d.[34]

These accounts included "men attending Mr. Repton", and give considerable insight into how Repton operated.[35] His was clearly quite involved in the work, and the 'slopeing' mentioned is possibly indicated by lines on either side of the lake south of the middle island. It is clear from the accounts that a considerable amount of earth was moved in wheelbarrows. The straightening and widening involved spreading out the spoil suitably on the adjacent land, especially below the cascade (probably the weir by the lower island). There was considerable digging out above the 'engine house', although it is not clear where that was. Perhaps a device to deliver water to the mansion, it accounted for half the cost of making the lake, and may help to explain how expensive the lake was. That cost also illustrates that a virtually flat site was not ideal for making a river-lake. A spreading, irregular lake would have been less expensive to make because it would have involved less earth moving. The likelihood is that a slim, sinuous lake was regarded as more fashionable in 1799. Another factor was that the firm of Mat^w Willcox & Co. was used to do the earth moving, rather than estate labour, which possibly increased the expense.

Although Repton's work at Panshanger gives considerable insight into how lakes were made, his significance in relation to lakes is questionable. He is associated with only a handful of lakes, and with most of these he was generally altering existing lakes in some way, possibly extending them, or making them irregular, as at Woburn and Welbeck. At Bayham his proposals for the lake appear to have been adopted, possibly at a later date, but it is not known whether he was involved with the construction or not.[36] As with other improvers, definite information about the lakes he made is scarce, but on the available evidence, Repton did not make a new contribution in design terms, being content to work in the established mode. One place where he did show originality and flair, however, was at Thoresby, and the cascade he made there is on a different level in terms of design, and much closer to Picturesque ideals.

6.4.2. The Picturesque.

Not only did Repton's career coincide with a decline in lake numbers and size, linked to a general decrease in park size and the fact that most large parks already had lakes, but also with a prevalent ambivalence about aesthetic style. Brown's death in 1783 emphasised this ambivalence in terms not just of an obvious practitioner to consult in landscape design, but also which style to aim at, as Jacques sums up:

> The rapid reversal of Lancelot Brown's reputation had left many improvers confused, whilst the promoters of new styles could not form a united front except to agree that picturesqueness was to be sought for.[37]

Although Repton attempted to fill the gap, his apparent championship of Brown did not recommend him to patrons who were beginning to feel that Brown's style was old-fashioned. It was at this point that ideas about 'picturesque' landscape design began to be discussed. The main proponents were Sir Uvedale Price (1747-1829) and Richard Payne Knight (1750-1824), seconded by William Gilpin (1762-1843). They debated many nuances between them, but the nub of their ideas was that *beauty* was smooth, flowing, tranquil, tame, and that

the *picturesque* was rough, varied, exciting, turbulent. In terms of water, this translated into rushing streams, rivers and cascades. They eschewed Brown's smooth lawns flowing down to placid lakes (as they saw them). Their contributions were chiefly through their publications. Price published his *Essay on the Picturesque* in 1794, and was answered by Payne Knight in *The Landscape: a Didactic Poem, Addressed to Uvedale Price* in the same year. Gilpin published a series of *Observations* on various areas of Britain in the 1780s, which were illustrated commentaries on the regions he visited, and *Three Essays* in 1792, including *On Picturesque Beauty*, which was more analytical, on the nature of picturesque beauty, picturesque travel, and on the sketching of landscape, together with a poem on landscape painting. Gilpin's work was complemented in the field of literature by William Wordsworth, whose work did much to popularise the Lake District, just at the time when the Continent became inaccessible to British visitors. These three men were not landscape designers themselves. Price did design his own landscape at Foxley, as did Payne Knight at Downton, but their significance lies in the intellectual debate which they fostered about picturesque ideals and the sterility of Brown's landscapes, as they perceived them.

In his design for Thoresby, Repton seems to embrace fully Picturesque ideals – imitating the crashing and roar of a natural cascade, with 'Nature's Bridge' extending over the torrent. He considered this to be one of his most successful creations, and stated his love of romantic scenery.[38] In *Observations*, he recommends that we take nature for our model: "the highest perfection is, to imitate nature so judiciously, that the interference of art shall never be detected."[39] In this regard, Repton agreed with Price and Payne Knight. However, his next statement perhaps explains why he did not attempt to imitate picturesque nature more often: "her wildest features are seldom within the range of man's habitation. The rugged paths of alpine scenery will not be daily trod by the foot of affluence".[40] In other words, the scope for such imitation is limited – suitable sites and suitably large pockets. As Jacques points out, by *c.* 1791, Repton was finding that the practicalities of landscape designing interfered with trying to imitate a painting in the design, and this led to a rupture between him and Price, who had initially treated him as a friend, recommending him to possible patrons.[41] He was castigated by them for his

departure from their tenets, and for his championship of Brown, and the controversy was at its height in 1794-5.[42] In fact, Repton's ideas on the treatment of rivers and cascades, notably at Thoresby, were close to theirs; Price valued the utility of the agricultural context, for example, buildings such as mills, whilst Knight favoured a surprising degree of formality in the house surroundings, including terraces.[43] In this respect, they did not differ so much from Repton.

The Picturesque debate raged in the 1790s and early 1800s, but then subsided, to be replaced by a multiplicity of styles and,

> The growing diversification of style was accompanied by a revival of interest in the garden at the expense of the park. Indian, Italian, French and cottage styles of gardening appeared at a bewildering rate.[44]

All four men, including William Gilpin, wrote about their ideas, but Repton was the only one who designed widely. However, with their writings, and Gilpin's pictures, they changed the taste of landscape design from that which had prevailed in Brown's time, to one which was more concerned with variety and, in terms of water, movement and noise.

An assessment of the impact of the Picturesque ideas on ornamental water depends on the definition of that term. If Price's or Payne Knight's definitions of 'picturesque' are adhered to, the assessment has to be that their impact was small. However, if the Picturesque is defined as a movement concerned with detail, especially in the foreground, and water which was animated – babbling streams and cascades – as opposed to still and reflective (Brown's lakes, as they perceived them), then it was a significant movement in its influence on lakes in the nineteenth century, although the effects were not apparent until later in the century.

6.4.3. Loudon and W. S. Gilpin.

The changing shapes of lakes was discussed above, and it was noted that this was not dependent on topography but was driven by changes in aesthetics

and park size. Two men are linked with this change, through their influential writings: John Claudius Loudon (1783–1843) and William Sawrey Gilpin (1761/2-1843). Loudon published *An Encyclopedia of Gardening* in 1822, and Gilpin published *Practical Hints Upon Landscape Gardening: with Some Remarks on Domestic Architecture as Connected with Scenery* in 1832. Both these treatises laid down how lakes should be made, and how the margins should be treated, and it is evident from Loudon's illustrations that if his instructions were followed, lakes like those in Fig. 6.11 would be the result. Loudon was a Scot

Fig. 6.11. Dauntsey lake, Wiltshire, possibly made *c.* 1865, First Edition 6" OS map, 1884. North is to the right.

who began working part-time in 1794 as a nurseryman and landscape gardener at Dalry. He had settled in London by 1803, and by 1804, he was executing commissions for the duchess of Brunswick and others in the London area and Scotland.[45] His career as a designer was chiefly connected with public spaces – cemeteries at Histon, Cambridge, Bath Abbey, Southampton Old Cemetery, a public garden (1839) and an arboretum (1840), both in Derby.

Loudon's chief contribution to landscape design was his writings: *An Encyclopædia of Gardening* in 1822, *The Encyclopedia of Agriculture* in 1825, *The Gardener's Magazine* from 1826, *The Magazine of Natural History* from 1828, and *Arboretum et Fruticetum Britannicum* in 1835-8. As well as writing, he travelled on the Continent, as far as Moscow, in 1813-14, and again in 1840. In his *Encyclopedia of Gardening* the essence of what he recommended was rushing water, with a highly varied course and varied sound, with 'naturally' planted margins and carefully positioned islands, and 'natural' cascades to add noise and excitement. He felt the reflective, mirror-like qualities of water were not much sought after, and distinguished between still water (lakes) and running

water (rivers and rills), recommending the latter.[46] He made the point that formal gardens require formal water features, and these should be as lavish as the general scale of the gardens they were for. He placed great emphasis on 'natural' water looking as natural as possible, though artificial mountain streams were out of the question as being too difficult to simulate successfully.[47]
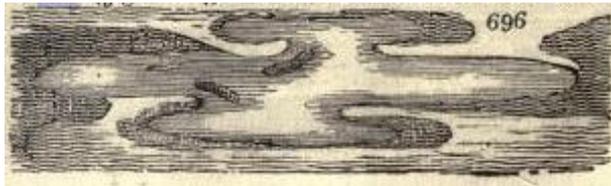
Fig. 6.12. An ideal lake shape, by Loudon.[48]

Fig. 6.13. An ideal lake shape, by Loudon.[49]

Figs. 6.12 and 6.13 show what Loudon had in mind for lakes, and he describes them thus:

> The outline of the plan of the lake is to be varied by the contrasted position of bays, inlets and smaller indentations, on the same principles as we suggested for varying a mass of wood. To the irregularity of outlines so produced, islands and *aits* (fig. 697) may be added on the same principle[50].

He recommended studying the natural situations of lakes and rivers, and copying them to achieve a convincing result. Studying the stones and rocks, as well as the natural trees and shrubs which occur on the margins of natural lakes and rivers, was the key:

> The *marginal banks* of water in nature, are tame or bold, gravelly or sedgy, stony or rocky, according to the character of the surrounding ground. Art, therefore, must imitate each in its proper place, not always by a studious picturesque arrangement, but by excavating the ground-work, planting the trees and shrubs, and leaving the rest to the motion of the waves of the water. After the effects of one winter, stones or gravel may be deposited in spots suitable for stony or gravelly

shores. But to enter into this, and many other circumstances of

the imitation of lakes, would exceed the proper limits.[51]

It is interesting that he regards the landscaping of lakes as being outside his remit. Quite why, is not obvious. Despite this, he continues to give advice on them. He is concerned that rushes and 'aquatics' (marginal plants) should not extend too far from the edge of the water as that would give a marshy appearance. He recommends significant plantings of trees by lakes, not 'sparingly or indiscriminately scattered around the margin' but to reflect shapes, colour, light and shade, and to 'relieve the brilliancy of the water'.[52] Islands are held to be 'the greatest ornaments of lakes'. He points out that if they do not link visually with other islands or the shore, forming part of a prominence or recess, they will appear quite unnatural. Likewise, centrally placed islands should also be avoided. What he says about puddling lakes is ambiguous. His advice is "to arrange by puddling and under-draining, that a marshy appearance may not surround the lake".[53] He did not actually make any lakes, as far as can be ascertained, and this statement has a 'catch all' ring about it. He did advise upon the outline of the lake at Harewood, which had been created by Brown. Illustrations of 1806 show that he proposed an extensive alteration of the shores to give a broken, rocky outline, but a comparison of the 1796 and 1851 maps suggests that any works which took place were restricted to fairly minor irregularities introduced along the north-east shore.[54] His chief interest seems to have been in streams and rivers, in which the ideal was to be improving one, rather than making one anew, and he gives advice for straightening the course occasionally, to increase the speed, or undercutting the banks to increase the swirling of the water, and hence the noise.[55] He distinguished between formal and naturalistic cascades, and gives instructions for constructing them.

Loudon's publications were important in disseminating current thinking on landscape design, as well as horticultural advances, for example, in hot-house construction and use. He introduced the term 'gardenesque' in the *Gardener's Magazine* in Dec., 1832. As Howard Leathlean says:

he aimed for a union of groupings (but not picturesque outlines) that would consist of perfectly grown, individual specimens arranged in an orderly fashion, preferably with a symmetrical axis.[56]

It was subsequently used "to describe a style of garden layout characterised by rampant eclecticism and lack of artistic unity" and became associated with exotic planting.[57] What has not been recognised to date is the impact of Loudon's writings about lakes, which appear to have served, at least in part, as a blueprint for the spreading lakes which proliferated in the nineteenth century, from the 1820s onwards.

Although William Sawrey Gilpin perhaps carried out a greater number of practical projects than Loudon, typically designing terraces and pleasure grounds, altering approach drives, advising on pinetums, or planting in parks, no lakes can be attributed to him.[58] He became a friend of Uvedale Price, and subscribed to the concept that a landscape was akin to a painting, favouring the tenets of intricacy, variety and connection.[59] His *Practical Hints Upon Landscape Gardening* 1835, affords a good summary of the direction in which landscape design was developing in the mid-nineteenth century. He inveighs against the 'baldness' of Brown's landscapes, the insipid 'easy sweep' of his approaches and the regularity of his clumps. He has a completely different opinion about views: he does not want the *approaching* visitor to see the best views; these should be seen from the windows of the house.[60] This was the complete opposite of Brown's ethos. Gilpin advocates large trees in the foreground of the view from the house, and recommends the use of shrubs to unite larger trees with the lawn. In one respect, his ideas roll back landscape style by over a century. He very much favours an architectural division between the 'dress ground' and the park: "a sunk fence I hold to be wholly irreconcilable to a shadow of taste."[61] He discusses transparent fences and masonry walls, as well as terrace walks in the shrubbery, and how to treat flower beds – 'spottiness' of scattered beds in a lawn should be avoided. In order to connect the house with its surroundings, Gilpin wanted, "the principle of an architectural foreground to be established" (Fig. 6.14), and it was,

typified in his proposals by terrace walks, parterre gardens, and balustrades. Working in the 1820s and 1830s Gilpin was at the forefront of this reintroduction of formality into the garden. Good examples of his work can be seen at Gorhambury, Hertfordshire, Wolterton Hall, Norfolk, and Sudbury Hall, Derbyshire.[62]

Fig. 6.14. Gilpin's illustration of the architectural separation of gardens and park at Heanton, Devon.[63]

In relation to water, concealing the dam was his first concern, followed by the creation of a 'natural' variation in the shoreline, which should not have an appearance of straightness at any point.[64] He used shrubs as a means to conceal changes in the ground, made either by dams, or by mounding up earth to produce variety in flat ground. He advised that one should not stake out the shape of a lake or pool too exactly, but rather place stakes within the expected shape, so that the water could make its own, natural outline, and to leave some parts of the banks as they had been broken by pickaxes, which looks natural, and avoid a "'hanging level', as the workmen call it".[65] He suggests avoiding a drive, or walk, across the dam if possible as this reveals where the lake finishes,

and also avoiding having a walk which goes all around a piece of water as that also betrays its extent. Walks should have views of the water constrained by planting, and should touch upon edges of the water, not follow it. This would make it seem bigger.[66] The implication of these strictures is that the lakes in question were not large, and that walking around them, not driving, was the usual activity. The treatment of the lake margins should be adapted to the situation: they should be wild and broken in wild country, more gentle in undulating country. Occasional groups of alder and willow should be used to break the margins, plus some weeping wych elms.[67] It was essential to connect the woods adorning the banks with the rest of the woodland in the area. This is in direct contrast with Brown's approach. His (Brown's) aim was to keep the lake margins clear and uncluttered, so that the beauty of the water, with its reflective qualities, could be fully appreciated.

Gilpin makes an important distinction between trying to create a lake and an artificial river, pointing out correctly that it is easier to make a 'natural looking' lake than to imitate a river:

> The difficulties of concealing the extremities of the artificial
> river, so as to impress the idea of continuity, will be
> considerable, even under the most favourable circumstances.[68]

This is an indication that the impact of picturesque ideas was a focus on animated water, whilst acknowledging the difficulties that that entailed. He goes on to recommend islands as a good way of concealing or distracting attention from the dam or end of a lake, but the number and size must depend on the situation, and they must not be regular in shape or height.[69] He favours 'lower growths' (shrubs) and 'fern' for islands, and exposing tree roots, with stones, at the edges, as this will be 'picturesque'. If possible, trees should be encouraged to lean over banks, which may have to be raised to achieve this effect.[70] There is some evidence of this roughening of edges in his plans for the lake at Wolterton, where he suggested altering and extending the lake towards the north-east in one plan, and to the north-west in another, and the intention to construct an island.[71] Also,

> A number of the [Gilpin's] drawings show proposed changes to
> the view southwards from the hall, across the lake; all feature

the kind of rich, luxuriant, rather dense lakeside planting characteristic of 'picturesque' designers.[72] (Fig. 6.15)
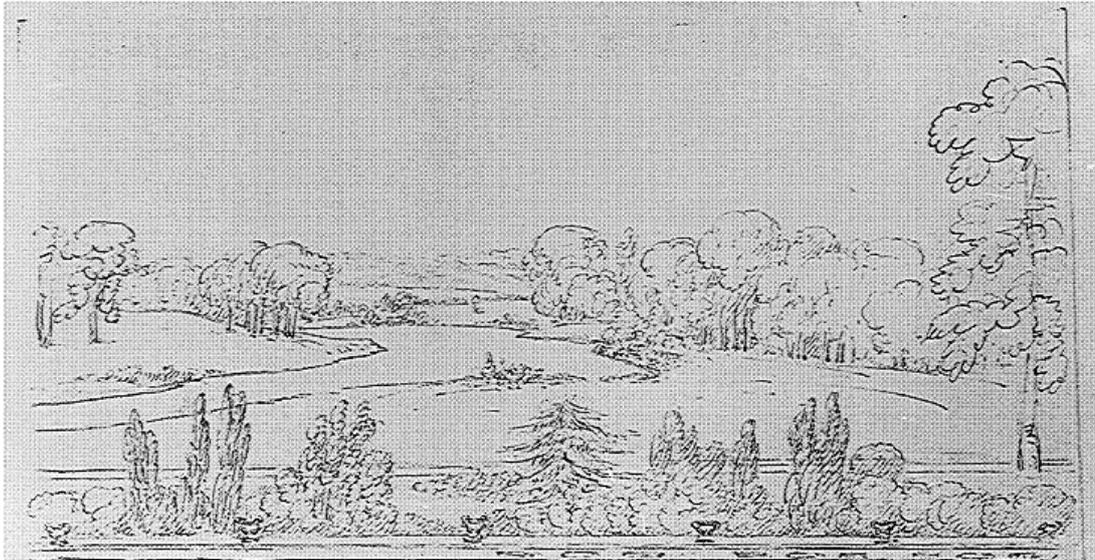
Fig. 6.15. W. S. Gilpin's late 1820s sketch of proposed changes to the south of Wolterton Hall.[73]

A further recommendation in *Practical Hints* is a boathouse or fishing cottage on the lake shore.[74] It is possible that, just as Whateley's positive comments on islands in his *Observations* of 1770 may well have been responsible for the popularity of islands towards the end of the eighteenth century, this comment of Gilpin's may have brought the boathouse a significant measure of popularity in the mid-nineteenth century. However, they are not mentioned by Whateley, and do not occur in many of Brown's plans, so it would seem likely that they increased in popularity in the nineteenth century, perhaps as a result of Gilpin's writing. There were some elaborate structures in the eighteenth century which incorporated boathouses, such as the fishing pavilions at Kedleston and Enville, but these were more like banqueting houses than boathouses.

6.5. Mid-nineteenth century.

6.5.1. Edward Kemp.

Working later in the nineteenth century was Edward Kemp (1817–1891). Born in Surrey, he was apprenticed to Joseph Paxton at Chatsworth in the 1830s.[75] From 1843, he superintended the development of the public park at Birkenhead (Fig. 6.16), which Paxton had designed (1842-5) and remained head gardener there for forty years. As Paxton withdrew from the project in

Fig. 6.16. Birkenhead Park, Liverpool, First Edition 6 " OS map, 1872. The lakes are 1.7h and 1.2 h.

1845, Kemp's contribution was significant.[76] Janet Waymark summarises:

> Birkenhead Park was drained by the creation of two lakes, and the spoil was artfully contrived to look like low hills around the lakes, which, with their islands, helped to provide views across the water. The hills were made craggy with stone from the excavation of the lakes, and trees were planted to separate the views; all the additions gave a feeling of the park as a 'natural' phenomenon.[77]

Lakes in public parks are not included in this study, although reference is made to them where it illuminates a designer's work. The rationale for making them was completely different as they did not have a mansion as a focus (except where a traditional house and park was converted to public use). Table 36 shows Kemp's main works. The public parks are in brackets. His commissions included flower gardens as well as public parks and cemeteries, and his publications included *How to Lay Out a Small Garden* 1850. As the title suggests, Kemp was not generally dealing with landscape parks, but with gardens of 3 to 30 acres (1.2-12 h). He mentions geometric shaped basins as being the most

Garden Name	County	Dating	Dat	Feature1	Featur	Reference	Lake siz
Basildon Park	Berkshire		1838	Terraces	Kemp, Ed	Kemp advised on th	
Garswood 2/ New H	Lancashire	By 1845	1845	Pond geometr	Kemp, Ed	How to Lay Out ..	
(Birkenhead Public	Cheshire	1843-7	1847	Lake irregular	Kemp, Ed	P & G UK, EH	1.7, 1.2
Thornton/ Stanacre	Cheshire		1850	Pond informa	Kemp, Ed	Kemp, How to Lay ..	0.5
Leighton Hall	Powis	Mid 19C	1853	Gardens	Kemp, Ed	P & G	
Castle Park/Park Pli	Cheshire		1855	Gardens	Kemp, Ed	P & G & in How to L	(0.3)
(Hesketh Public Par	Lancashire		1864	Lake irregular	Kemp, Ed	ODNB Waymark	(1)
(Stanley Public Parl	Lancashire		1868	Lake irregular	Kemp, Ed	ODNB Waymark	(1.5)
(Newsham Park)	Cheshire	2 h	1868	Lake irregular	Kemp, Ed	He converted it to	2)
Knightshayes Court	Devon		1868	No water visib	Kemp, Ed	Painting in J-Stops	
(Saltwell Public Par	Northumbel		1876	Lake irregular	Kemp, Ed	ODNB Waymark	1.6)

Table 36. Edward Kemp's water works, extracted from the Landscape Database.

appropriate water features for formal gardens, and he repeats much of the traditional wisdom about designing ponds and lakes and making dams. He maintains that ponds should be lined with puddled clay, and so should 'lakes', unless they are on clay.[78] Although he talks of 'lakes', he does appear to mean ponds, as he describes the water as 'stagnant'. However, his actual practice did not extend to making more than a handful of small lakes (see Table 36). Ends of lakes should be disguised, islands should be in proportion to the size of a lake, and not used in very small lakes. Both the irregular 'lake' designs illustrated by Kemp in *How to Lay Out a Small Garden* are small – *c.* 0.5 h (Fig. 6.17), and the lakes he designed in public parks – Hesketh, Southport, Stanley, Liverpool, and Saltwell, Gateshead – were usually 1–1.5 h. Thornton, Cheshire, is a typical

spreading shaped Kemp lake; they were mainly on flattish ground.[79] He says the site for this small park (40 h) was chosen in 1850, and had abandoned marl pits, which he decided to convert into a small 'lake' (0.5 h). He adds:

> These pits … are always filled with clear water, and often with Water-lilies and other pleasing aquatic plants. In this instance too, as is usual, they were accompanied by a number of rugged old Oaks, of stunted growth; and picturesque masses of Thorns, Furze and other brushwood clothed the banks between them.[80]

It is difficult to tell from Kemp's plan whether his 'lake' had a strip of clear turf around it, as he recommended (below), or not. It appears so, but this could also
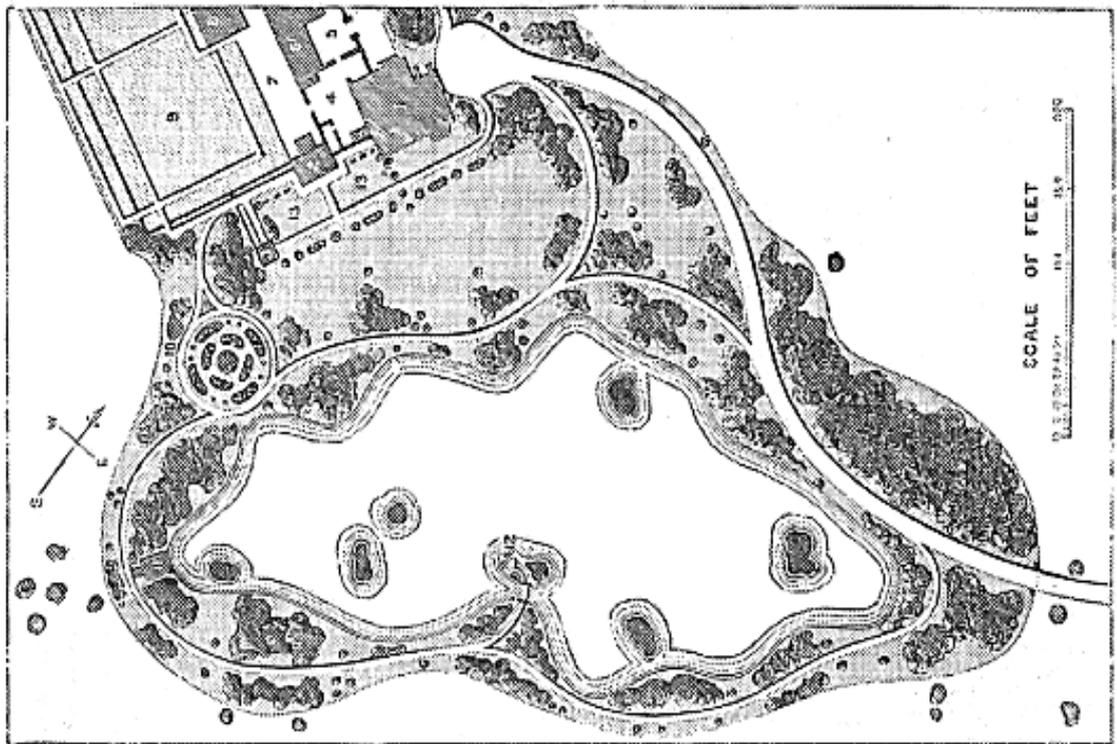
Fig. 6.17. Thornton Park, Cheshire, designed by Kemp.[81]

be the pitching which he recommends for edges.[82] What he says about planting lake margins is interesting:

> Smoothness and softness in the finish of the banks around the water should be a leading feature, and the grass should slope

down, more or less gently, to the very edge of the water so that
there should be no hard line of earth between them.[83]

This is in direct contrast to what Loudon says in his *Encyclopedia* of 1822, and perhaps marks the definitive change from Picturesque ideas to high Victorian precepts.[84] Even where plantations come down to the water, Kemp recommends a strip of turf so that the water is not washing against bare earth anywhere.[85] He maintains that lake margins should be either planted or 'mounded', and that too many trees too near a lake make the water dull and unreflective, as well as concealing the water. He favours a scattering of specimen trees: weeping willows and birches, cut-leaved alder, swamp cypress, liquidamber, tamarisk. If mounds are low, dwarf shrubs should be used, and if islands are small, shrubs such as dogwood, arbutus, thickets of common thorns, hollies and furze are recommended.[86] In 'more secluded parts' and more informal areas of water, he recommends 'aquatic plants', and more broken edges to the water, with rocks and tree roots to enliven them.[87] These recommendations differ in detail from Gilpin's, but are still a contrast to Brown's ideas of keeping lake margins clear and uncluttered, with a sweeping gradient, rather than mounds. On dams, Kemp favours planting shrubs, rather than trees, whereas Brown generally used trees.[88] He does not discuss approaches over water at all. In general, the tenor of Kemp's work tends towards a 'garden style' rather than a landscape style, even in his public parks. It is domestic rather than park-like, and his designs and writings about ornamental water reflect this, as does his design at New Garswood, which included formal gardens leading, via steps, down to a formal pond.

6.5.2. The Impact of the Picturesque.

The significance of the Picturesque debate, especially in terms of ornamental water, arguably had little to do with Picturesque principles themselves. Rather, the fact that the debate occurred signified that people wanted a change in style. Popular opinion had been sated with the Brownian English Landscape style, and wanted a fresh look. The Picturesque did not have an impact initially but subsequently translated into a desire for more animation

in the landscape, especially relating to water, with a greater focus on detail in the foreground, as we have seen W. S. Gilpin and Loudon writing about. Lakes continued to be made throughout the nineteenth century, though not in large numbers, and not many large parks were made, though smaller parks were. It was this smaller park size, combined with the aesthetics of the Picturesque, albeit much muted and modified, which had a direct effect on lakes. Their spreading shape arose from the indentations to increase their perimeters, allowing more planting on or near the margins, to make them seem larger than they were. The emphasis was on water seeming 'natural', with margins often being made deliberately rough, and being planted with native shrubs common to river banks. Islands increased in numbers, and were similarly planted, if Gilpin's advice was followed. As well as affecting lake shapes, the Picturesque aesthetic led to cascades becoming popular. They rushed and tumbled in an animated way, and could easily be accommodated in the smaller parks, or added to existing lakes. Although apparently 'natural', they were actually stage managed, particularly in the later part of the century, with carefully positioned rocks and boulders, and 'picturesque' planting amongst them and alongside. It is doubtful whether Price and Knight would have recognised their ideals in these landscapes at first glance.

6.5.3. Cascades and the Pulham Firm.

Cascades in the latter part of the nineteenth century are inextricably linked with the firm of James Pulham and Co. and their synthetic rock, Pulhamite. Initially, in the 1820s and '30s, James Pulham I made architectural ornaments from a type of cement – Portland Cement - pioneered by the firm of William Lockwood. In the 1840s, his son, James Pulham II, began producing a synthetic rock, which became known as Pulhamite, and the firm became extremely skilled in producing such good imitations of natural rocks that they appeared to be real. It was the combination of the desirability of the picturesque elements of water tumbling over 'natural' looking rocky cascades and the Pulhams' ability to supply 'rocks' to suit any situation which led to the proliferation of cascades from the 1850s, peaking in the 1880s (Table 37).

	Formal	Unknown form	Informal		All cascades
Pre 1700	/	/			//
1700-09	//				//
1710-19	///	/			////
1720-29	////				////
1730-39	/	//			///
1740-49	//	//			////
1750-59	//	///			/////
1760-69		////	//		//////
1770-79		//	///		/////
1780-89		/	/		//
1790-99			/		/
1800-09		//			//
1810-19	/	/	//		////
1820-29			/		/
1830-39		/	/		//
1840-49		/	/		//
1850-59	/	//	//		/////
1860-69			///////		///////
1870-79	/	/	//////////		///////////
1880-89			////		////
1890-1900	/	/	//		////

Table 37. Numbers of cascades by decade, extracted from the Landscape Database.

The criteria for dating cascades are the same as for dating lakes: where known, the date of creation is given (usually the commencement of work), but where there is a span of years, even decades, a mid-point date is given. For example, if a lake or cascade does not appear on a map of 1830, but does appear on one of 1860, a date of 1845 is given. Two other factors apply to the cascade data: they are harder to identify on maps, and data is more plentiful in the later nineteenth century, so those dates tend to be firmer. (This last point also applies to lakes.) Such cascades were often linked to pools, or a series of pools, or sometimes lakes. The flexibility of Pulhamite was the key to its success: 'rocks' of almost any type could be reproduced and cascades or cliffs or caves, for example, could be created which blended in with the location and appeared to be 'natural'. It

enabled people who did not have access to supplies of real rock, such as Repton had used at Thoresby, to have similar features in their landscapes which were just as convincing. Over the course of the latter part of the nineteenth century, the Pulhams created numerous rocky landscapes, many with cascades and features such as ' boat-caves', or cliff walks as at Bawdsey, Suffolk, and Madeira Walk at Ramsgate, Kent. James Pulham II was the driving force in the company in the nineteenth century (Table 38).

Garden Name	County	Dating	Dat	Feature1	Featur	Reference	Lake siz
Bayfordbury	Hertfordshir	1845-6	1846	Rock garden	Pulham, J	EH: 'Lake' 1772, alm	0.8
Highnam 3	Gloucestersl	1847-9	1848	Cascade infor	Pulham, J	Hitching, EH.	
Berry Hill	Buckingham	1856-60	1859	Cascade infor	Pulham, J	Hitching p 294 P & G	0.7
Fonthill 3 Abbey	Wiltshire	1859-60	1860	Cascade infor	Pulham, J	Hitching p 293	
Orchardleigh Park	Somerset	1862-3	1863	Cascade infor	Pulham, J	Hitching p 294	
Rendcomb 2 rob	Gloucestersl	1865	1866	Lake irregular	Pulham, J	P & Gdns.Hitching p	2.5
Donington Park	Leicestershi	1866-7	1867	Cascade	Pulham, J	Hitching p 295	
Castle Donington	Leicestershi	1866-7	1867	Canal informa	Pulham, J	Hitching p 295	
Audley End 5	Essex		1867	Ponds	Pulham, J	Almost certainly	
Bearwood Park 3	Berkshire	1865-71	1868	Rock garden	Pulham, J	EH, OS 1871, 1839 ti	18
Dunsdale	Yorkshire	1866-73	1869	Canal informa	Pulham, J	Hitching p 295	
Lockinge House	Oxfordshire	1864-71	1870	Cascade infor	Pulham, J	Hitching p 294	
High Leigh	Hertfordshir		1871	Cascade infor	Pulham, J	Hitching p 299	
Hutton Hall 2	Yorkshire	1868-74	1871	Cascade infor	Pulham, J	Hitching p 297	
Titsey Place	Surrey		1871	Cascade infor	Pulham, J	Hitching p 299	
Abberley Hall	Worcestersh	1867-80s	1872	Cascade infor	Pulham, J	Hitching p 296	
Smithills Hall	Lancashire	1873-5	1874	Cascade infor	Pulham, J	Hitching p 301	
Welcombe Hall	Warwickshir		1875	Cascade	Pulham, J	Hitching p 302	
Sandringham 3	Norfolk	By 1877	1875	Cascade infor	Pulham, J	Hitching p 87	
Brogyntyn Hall	Shropshire	1870s	1875	Cascade infor	Pulham, J	Hitching p 297	
Bearwood Park 4	Berkshire	1879-85	1881	Cascade infor	Pulham, J	Hitching p 303	
Winterbourne	Devon		1884	Cascade infor	Pulham, J	Hitching p 304	
Sheffield Place 2	Sussex	1882-5	1884	Cascade infor	Pulham, J	Hitching	3
Dumbleton 3	Gloucestersl	1880s	1885	Boat-cave	Pulham, J	Hitching p 303	0.5
Waddesdon Manor	Buckingham	1881-92	1887	Water garden	Pulham, J	Hitching p 110	
Holly Hill	Hampshire	c. 1892	1892	Cascade infor	Pulham, J	Hitching p77. Inf. Po	
Buckhurst Park 3/ S	Sussex	1890s	1895	Cascade infor	Pulham, J	Hitching p 305	

Table 38. Works by James Pulham II, extracted from the Landscape Database.

Just as ornamental lakes were an essential feature of the eighteenth-century landscape, so 'natural' tumbling water, and preferably a series of ponds and cascades, became the signature ornamental water feature of the second half of the nineteenth century. Where landscapes were sufficiently large, and of suitable topography, lakes with cascades were made, or cascades were added to existing lakes. At Dunorlan, Tunbridge Wells, for instance, a lake was made in the early nineteenth century, then extended to Robert Marnock's design in the 1860s, with cascades built by James Pulham II (Fig. 6.18).
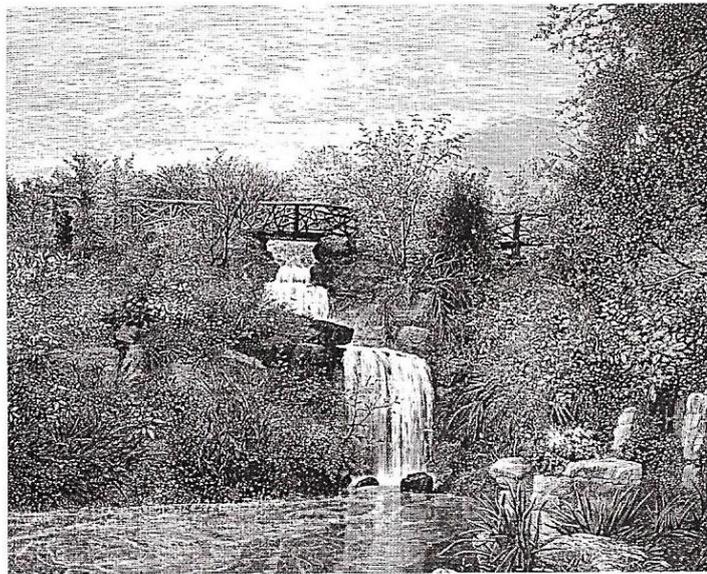
Fig. 6.18. Cascade by James Pulham II, Dunorlan Park, Kent.[89]

One significant factor relating to cascades is that their 'footprint' is relatively small because they are predominantly vertical features. This means that they can be included in relatively small landscapes, with the scope for using ponds or pools rather than lakes in many instances. A word of caution is necessary, however: as with lakes, accurate data are not readily available. Cascades are not always mentioned, and dates are even less common.

James Pulham II's work at Highnam Court, Gloucestershire (1847-9 and 1851-62) is the earliest surviving complete Pulham rock garden.[90] Pulham made a series of small pools and cascades in the boggy area between the upper and lower lakes west of the house, uniting them with a water garden complete with a 'gorge' and grottoes. The 'stream' is spanned by a Japanese style bridge and a rocky outcrop forms an island. The rock features were made from a

combination of Pulhamite and York stone. At Sheffield Park, James Pulham II used sandstone from local quarries to construct an artificial cascade between the Ten Foot Pond (or First Lake) and Second Lake (Fig. 6.19) from 1882-85.

Fig. 6.19. The Pulham cascade at Sheffield Park, Sussex.[91]

The list of works by the Pulham firm compiled by Claude Hitching is detailed and includes other notable places such as Audley End, Sandringham, Waddesdon Manor, Buckingham Palace and Bawdsey Manor.[92] By no means were the Pulhams restricted to water features: at Buckingham Palace a bridge and rocky banks and mounds were made. Their commissions also encompassed public places: Battersea Park, and Madeira Walk, among others. An innovative feature which emerged from the Pulhams' construction of artificial banks and islands was the boat-cave: a boathouse constructed in the (artificial) rocky banks of a lake as a cave. The 'bulge' in cascade numbers in the 1870s and '80s also coincides with the Pulham firm at its peak, and it seems likely that their skill and ingenuity fuelled the fashion for ponds and cascades in the second half of the nineteenth century. The adaptability of cascades also contributed to their success: an animated though low cascade falling into a small pond could have considerable appeal, and would fit into quite restricted gardens.

In the nineteenth century, the trend was for the big estates to focus on constructing lodges and gateways on the edges of parks, and terraces around

the house. They did not make new lakes because, in general, they already had them. Instead, the emphasis was on animated water. This was the legacy of the Picturesque movement, and could be regarded as a signature element of parks in the mid-nineteenth century. We have seen that the Pulhams made water features in a considerable number of places – chains of ponds with cascades, rocky streams, ponds with cliffs, boat-caves. These features were generally fairly close to the house, in the area which would have been termed the pleasure grounds in the eighteenth century. In terms of ornamental water though, little else happened after *c.* 1820, although fountains and formal garden basins came back into fashion later in the century. In large, established parks, having built lodges and gatehouses, the general pattern was to build terraces around the house, with formal parterres, and sometimes conservatories, in the middle of the century, and the lakes remained largely unchanged. Where new lakes were made, especially in new parks, they were closer to the house, smaller, spreading and often directly in front. There is a sense that they were becoming more 'domestic', more within the ambit of the house, to be walked around by those who could be tempted beyond the new terraces, not driven around. There is also a sense that in the nineteenth century, the park stagnated; nothing 'new' happened in it. There is little evidence that existing lakes were changed significantly. If they were altered, this tended to be a minor re-shaping of the shoreline, as with the North Lake at Castle Howard in the mid-nineteenth century. Lake margins did change, being planted with shrubs, or plantations touching the shoreline intermittently.[93] People who had lakes and wanted something new went along the Pulham route, or splashed out on a big conservatory and exotic plants, or an American Garden and exotic trees. These innovations were not in the park (except the American Garden), and it was perfectly possible, as at Waddesdon Manor, to make a new park (1880s) without a lake, which would have been virtually unthinkable for a wealthy man in the 1770s. This is in direct contrast to Bearwood, with its spreading lake of *c.* 1820. This spreading shape, which developed in the 1820s-'30s, derived from the Picturesque, with its focus on 'natural' landscapes, especially water: the indentation of lake outlines, the mounding of banks, the planting of banks and islands may have looked more 'natural' to nineteenth-century eyes than the smooth, minimalist style of Brown's lakes.

6.5.4. Separation of House and Lake.

In order to understand the role of lakes in the mid-nineteenth century, it is necessary to understand the changing relationship between the house and the landscape. The effect of building terraces was to segregate the house from its surroundings. This meant that the lake, which in Brown's time had been connected seamlessly with the house by lawns, was now at one remove. It could perhaps be viewed better from the raised terraces, but a person casually stepping out of the house would have to be tempted beyond the flowerbeds and gravel paths to reach it. This segregation actually began to develop early in the century, with the use of 'transparent fences' by Repton, and Gilpin's emphasis on an architectural division between gardens and the park exemplifies this (Figs. 6.20 and 6.21).[94] Eventually, it had the effect of isolating the lake in the park.
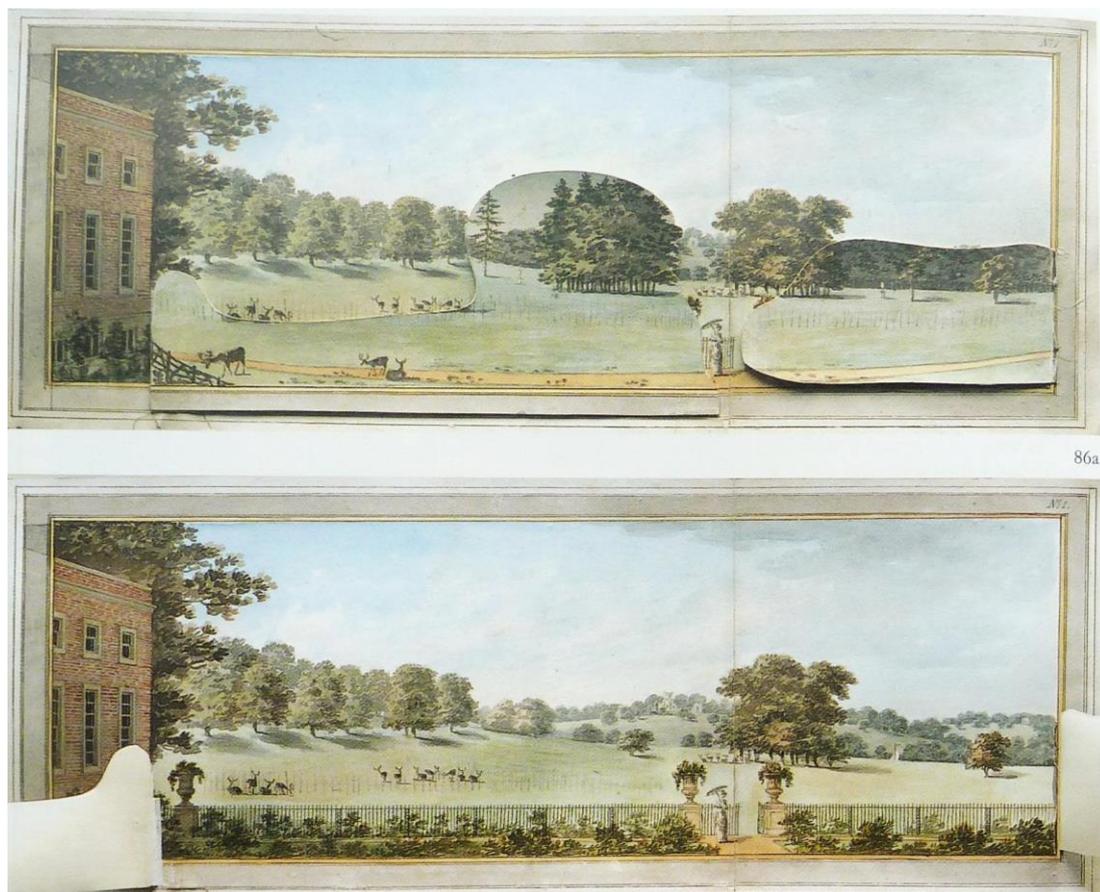
Fig. 6.20. Repton's plan for Wimpole, Cambridgeshire, 1801,

from the Red Book.[95]

Fig. 6.21. *c.* 1820: Harrow Manor, Middlesex by John Glover.[96]

In Fig. 6.21, the women appear to be imprisoned in the gardens, and flowers in pots are being arranged on the lawn. There is a similar sense of being
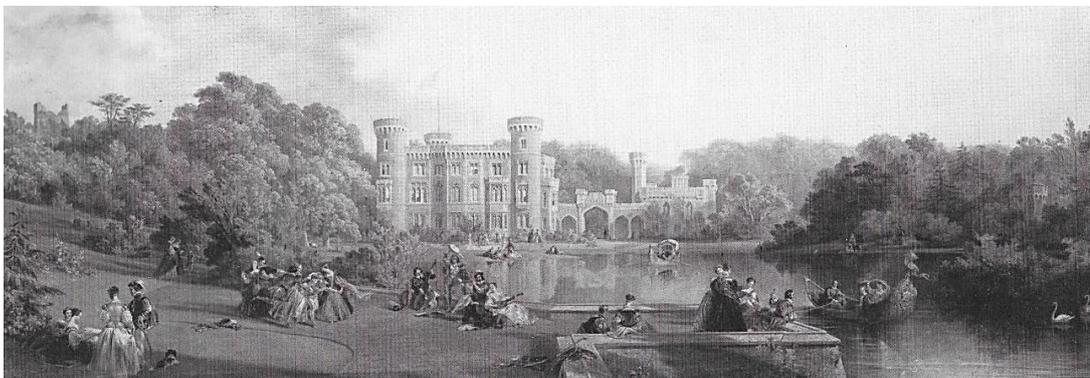
Fig. 6.22. 1847, Johnston Castle, Co. Wexford, by Edward Thomas Parry.[97]

restrained in this painting (Fig. 6.22): the balustrade of the bastion has the air of a boundary, or perhaps a refuge for those not 'daring' enough to boat on the lake, which is right in front of the house.

With the emphasis on 'unimproved' landscape which the Picturesque movement advocated, there was an increasing tension between 'house' and

'landscape', which these paintings hint at, and Figs. 6.23 and 6.24 make more explicit. The terraces act as a barricade between the house and the park.

Fig. 6.23. 1845 Beaufront Castle, Northumberland, by J. W. Carmichael.[98]

Fig. 6.24. 1870 Knostrop Hall, Yorkshire, by J. A. Grimshaw.[99]

Although there may have been little real difference between how the park looked in 1745 and 1845, these paintings demonstrate that perceptions of it had changed, and the suggestion is that within the balustrades or terrace walls everything is ordered, whilst beyond that is a wildness, or at least an unkemptness, which might be characterised as Picturesque. A comparison with Brown's landscape at Benham Park (Fig. 6.25) makes this change of perception even clearer, with some far-reaching implications for lakes: they were becoming isolated in the park, in a way which is reminiscent of their *vivaria* 'forebears'.

Fig. 6.25. Brown's landscape at Benham Park, Berkshire.

6.5.5. Salvin, Nesfield and Barry.

The practitioners sought by the wealthy to make those terraces and parterres were Anthony Salvin and his brother-in-law and later business partner, William Andrews Nesfield, and Charles Barry. However, there is evidence that these three men did engage with the landscape beyond the terraces, specifically lakes, in different ways, though how much this was initiated by the clients and how much by the designers is difficult to assess.

Salvin (1799-1881) is mainly noted for his houses, and significant works were Harlaxton Manor (1835-43), Keele (1854-60) and Thoresby Hall (1864-76). At Harlaxton, a new lake (2.3 h) was created to flank the approach to the new house from the north and Salvin appears to have been responsible for the bridge taking the main approach directly across the lake.[100] The lake and the bridge considerably enhance the approach to the house and, with the land rising, the hall appears dramatically above (Figs. 6.26 and 6.27). This flanking of the approach route with water is again reminiscent of Somersham, or Raglan or Staunton Harold, and attests to the continuing importance of approaches passing over water.

Fig. 6.26. Harlaxton Manor, Lincolnshire, OS map, 2016.

Fig. 6.27. View from the bridge to Harlaxton Hall, Lincolnshire.[101]

Salvin frequently recommended Nesfield (1793-1881) to design the parterres for his terraces, and this aspect of Nesfield's work is well-known, based on the 'bedding out' which was pioneered in the 1820s and '30s by such

men as John Caie at Bedford Lodge, Kensington, George Fleming at Trentham and Beaton at Shrubland.[102] What is less well known is the extent of his accomplishments, which included:

> fashioning lakes, fountains and cascades; positioning new houses, lodges and gateways; screening railway lines; planting trees and avenues; [...] laying out terraces and balustrade walkways;[103]

At Crewe Hall, where he worked from 1840 to 1860, he linked the house to the existing lake with his design of terraces and parterres (Fig. 6.28), according to his guiding principle that,

> the formal area around the house should merge gradually with the natural area in the far distance, with a transitional zone in between.[104]

The lake no longer exists as the dam burst in 1941.[105] At Crewe, as elsewhere, it is often difficult to establish exactly which elements Salvin and Nesfield were
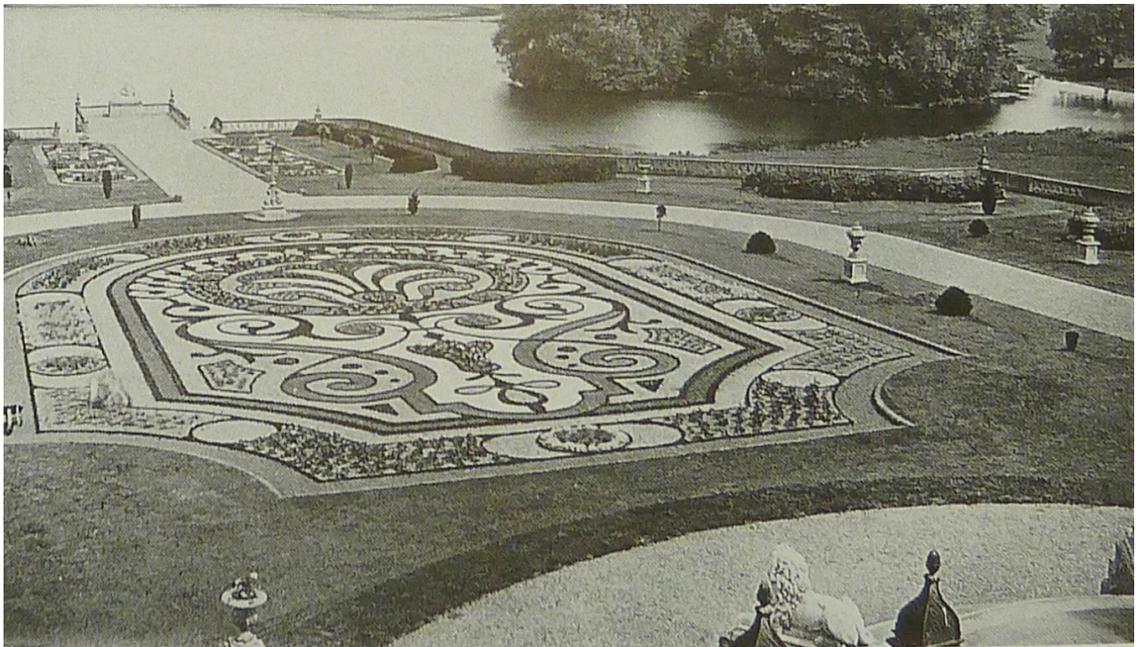
Fig. 6.28. W. A. Nesfield's parterre at Crewe Hall, Cheshire, *c.* 1870.[106]
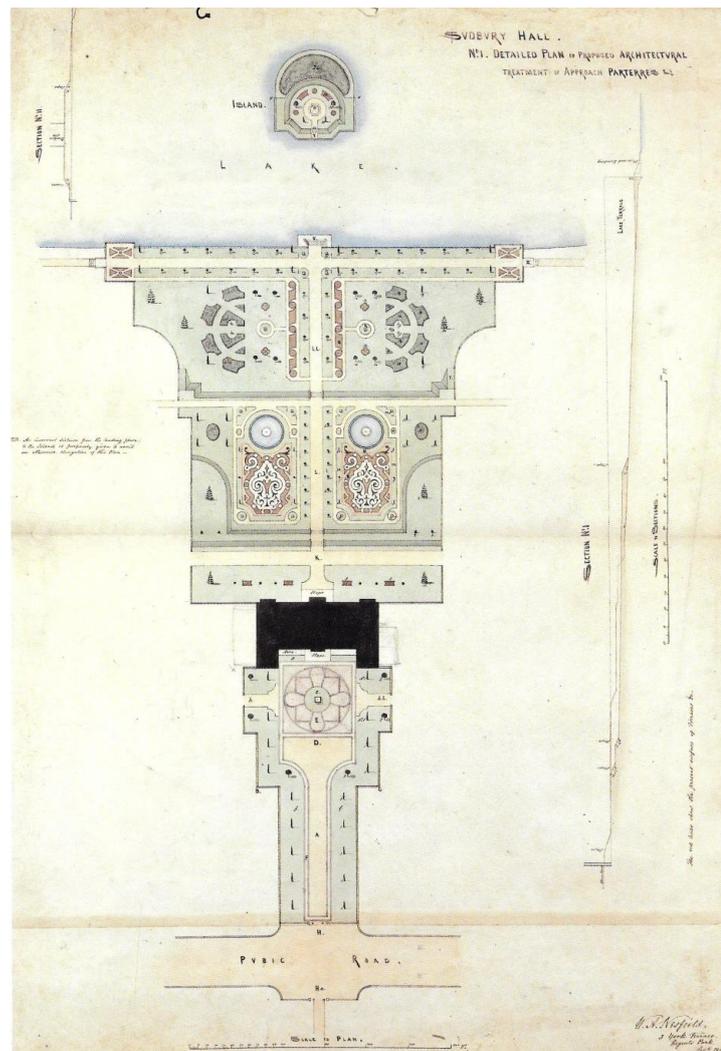
Fig. 6.29. 1852 garden plan for Sudbury Hall, Cheshire, by W. A. Nesfield.[107]

responsible for, and the lack of monographs on both men exacerbates this.[108] Through Salvin's recommendation, Nesfield produced a similar plan for Sudbury Hall in 1852 (Fig. 6.29).[109] Like Crewe, the site was fairly flat, with a 7 h lake (eighteenth century), and Nesfield's aim was to re-orientate the existing axis of the gardens, which was parallel to the house, to extend longitudinally away from the house, and so provide a longer perspective view, directly engaging with the lake, and marrying house to lake. For unknown reasons, this was not executed.

Nesfield worked extensively at Castle Howard from 1849 to the mid-1860s, beginning with a commission to alter the shoreline and island of the Great Lake (north of the house).[110] By 1850-51, an enormous balustraded parterre to the south of the house was being constructed, along with the Atlas

Fountain. This, and the Prince of Wales Fountain in the South Lake, were gravity fed from the reservoir in Wray Wood (which tended to leak), which itself was supplied with water pumped up hill by a steam engine from Coneysthorpe village, a mile to the north.[111] Adjacent to the parterre was the South Lake, and another part of Nesfield's remit was to link it with the New River. He did this by creating the Temple Pool between the two, although Christopher Ridgway suggests the idea itself may have been Henderson's (the agent). Nesfield also altered the shape of South Lake, making it more formal. The rationale behind the scheme was to create the illusion, looking from the house towards the Mausoleum, of a continuous sheet of water. Nesfield added an additional pool, and two cascades to the concept. As Ridgway points out,

> The effect of adding these formal features (both additional pools repeated the symmetry of the South Lake) was to extend the geometrical region begun with the parterre south of the house and continued by the South Lake, which itself received additional formal embellishments in 1864.[112]

This created the *trompe l'oeil* effect which Henderson had predicted, the changes in level being hidden from a viewer near the house, with the Mausoleum, nearly a mile away, forming part of the vista (Fig. 6.30).
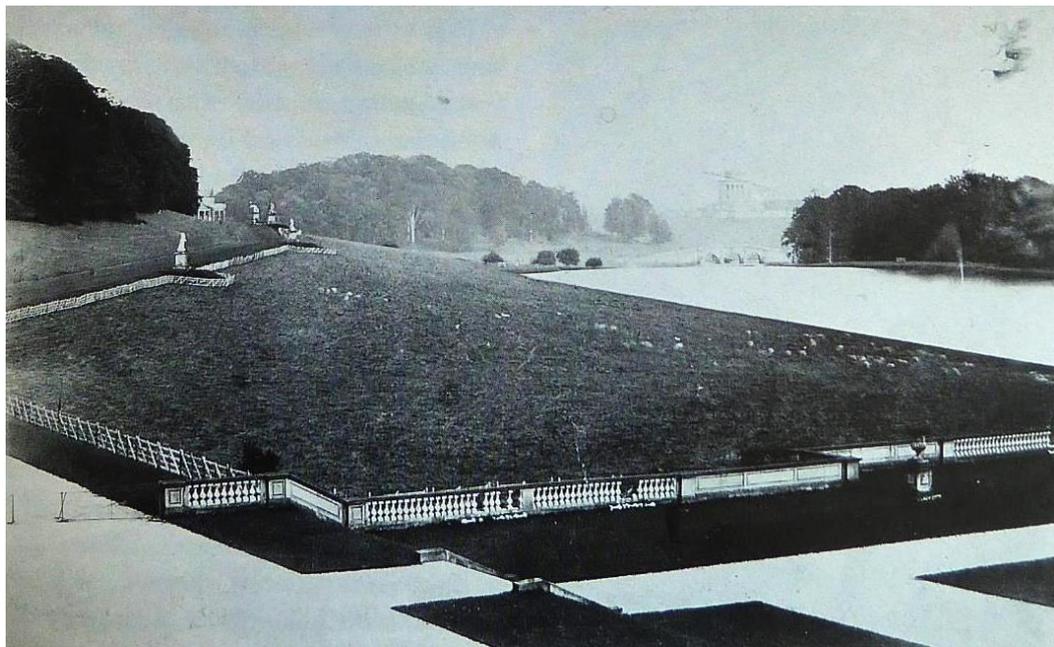
Fig. 6.30. 1870s view to the Mausoleum, via the bridge over the New River, from W. A. Nesfield's South Parterre at Castle Howard.[113]

By 1894, Rosalind, 9th Countess of Carlisle, had removed Nesfield's parterres and gravel walks, and was busy trying to soften the geometric outlines of the South Lake. (This was possibly the fourth outline for this lake shore.) Trees and shrubs were also planted above the lake which eventually obliterated the vista in Fig. 6.30. Fashion was beginning to change as early as the 1870s, as people began to take note of the ideas of William Robinson, as promulgated in his *The Wild Garden* 1870. It has been a general view that Nesfield was primarily a creator of intricate parterre designs, but his work at Castle Howard belies this. His ability to fashion water features, and the engagement with lakes in his parterre designs has not hitherto been widely recognised.

Sir Charles Barry (1795-1860) had a similar impact to Salvin on houses and landscapes. Remembered in the twentieth-century for his design of the Houses of Parliament, his work most widely recognised today (2017) is probably his remodelling of Highclere Castle, also known as 'Downton Abbey', owing to the television series. His signature was the Italianate style, his taste having been formed during an extensive tour of Europe and the Near East in 1817-20.[114] Like Salvin, his commissions often included formal gardens, with terraces and parterres, and extended into the landscape with the design of lodges, gates and obelisks. At Bowood, for example, he designed the Golden Gates, and the Lansdowne Monument which stands on Cherhill Down. At two places, Barry designed terraces which bridged the gap between house and lake: Trentham and Clumber and at a third, Harewood, he remodelled the house in the 1840s, and his Italianate gardens provided views over the lake (Fig. 6.31). As with Salvin, it can be difficult to disentangle Nesfield's work from Barry's, and it is possible that Nesfield did the planting plans there. The influence of the Italian lakes can be clearly detected, in the juxtaposition of terraces and water.

Fig. 6.31. Charles Barry's terrace at Harewood, Yorkshire.[115]

Despite this, there is still a sense of separation from the lake. How do you reach it from the house? The OS map of 1891-2 (Fig. 6.32) suggests the route was a very indirect one, either around via the stables, or possibly along the eastern

Fig. 6.32. Harewood, Lincolnshire, First Edition 6" OS map, 1891-2.

boundary. As today, there was a clear vista between trees to the lake. There are steps from the terraces down to a grass rampart but the conclusion from these facts has to be that the lake was primarily for looking at, at least initially, and further effort was required to actually reach it. That may have depended on the 3rd Earl of Harewood's taste, because at Trentham and Clumber, the gardens designed by Barry extended to the lake edge. The other factor may have been that the lake at Harewood is further from the house, and considerably lower, so the cost of a similar scheme would have been greater.

The gardens at Trentham are well-known today, with their planting by Piet Oudolf and Tom Stuart Smith, which follows the outlines of Barry's parterres. Barry's gardens were large, and occupied the whole area between

Fig. 6.33. Trentham Gardens, Staffordshire.

the house and the lake (Fig. 6.33), which is a flat site. The photograph illustrates well how Barry conceived his parterres as a transitional zone taking the visitor from the formality of the house, via the 'outside formality' of the gardens to the lake. Not visible in this photograph, but visible in Fig. 6.34 below, is the straight edge that Brown's lake has at this end, which complemented Barry's gardens, and which was the remainder of the semi-geometric lake of *c.* 1700, discussed in Chapter 3 (Fig. 3.64). Here, there is no doubt that the gardens are

Fig. 6.34. 1877 First Edition 6" OS map of Trentham, Staffordshire.

Fig. 6.35. Perseus slaying Medusa, on the bastion at Trentham, originally erected in 1840.

meant to link the house and lake, and the small bastion jutting into the lake emphasises this (Fig. 6.35). Like Nesfield's design at Sudbury, Barry's is on an axis stretching away from the house and draws the eye and the visitor from house to lake.[116] At Clumber, the house was much closer to the lake, and the
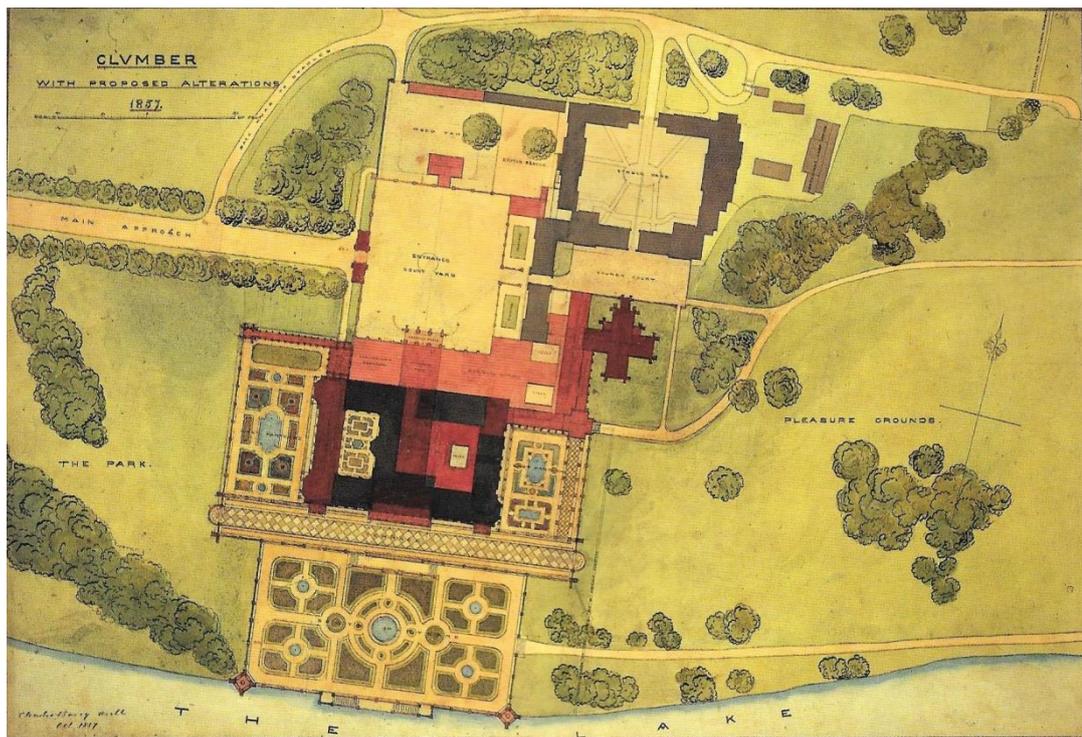
Fig. 6.36. Charles Barry's 1857 design for Clumber, Nottinghamshire.[117]

axis is parallel to the house (Fig. 6.36). The 1884 First Edition OS map suggests that this parterre was made very much as indicated in the plan, with one or two minor alterations and, again, Nesfield's name is linked with this work. In 1837, he designed a battery jutting into the lake, just off the plan to the east, and may have been responsible for the actual terraces.[118] The house was rebuilt in 1879, by Charles Barry – junior. This serves to illustrate how complex the situation is when assessing the works of Salvin, Nesfield and Barry; W. E. Nesfield also worked on some of these sites.

What emerges from this is that Nesfield and designers such as Salvin and Barry, were capable of dealing with many aspects of landscape, and that they were alert to opportunities of engaging with ornamental water. There remains a sense of uneasiness, or at least ambivalence, about the role of that water. Clearly, some patrons embraced it, but it would appear that others did not, preferring to remain safely on their terraces. At Bowood, for example, where terraces were constructed in the early to mid-nineteenth century, there was no attempt to link them with the lake, and at Sudbury, where the topography was relatively flat, Nesfield's plan to link the house with the lake was not adopted.

As well as acting as a barrier between house and park, extended terraces and parterres also provided scope for ladies' talents in growing flowers, and Jane Loudon's publications testify to the increasing practical interest of women in the subject. The continuing interest in collecting plants from overseas fostered the interest in conservatories, which could be palatial (Chatsworth, Kew, Enville, Tatton Park), and 'American' Gardens, which consisted of primarily exotic trees, mainly from North America, as at Fonthill.

Terraces clearly affected the way in which lakes were approached from the house, but having negotiated the terraces, the approaches to any lake which was at a distance from the house remained similar to the eighteenth century: paths led obliquely from house to lake, usually winding around it. However, there is some evidence that the main approach to the house in new parks was less likely to involve the lake, which was somewhat buried in the park, (in the case of large parks). This is certainly the case with Bearwood, Berkshire, Red Lodge, Wiltshire, and Lynford, Morton and Felthorpe in Norfolk. The decline in circuit drives in the nineteenth century further contributed to this isolation of the lake.[119] It would also be a mistake to think 'only terraces' in relation to the nineteenth century. They were substantial and architectural, and could be extensive, as at Holkham and Trentham. Fig. 6.37 gives a flavour of them.

Fig. 6.37. Holkham Hall, Norfolk: terraces by W. A. Nesfield and W. Burn.[120]

These were gardens in their own right. It must also be acknowledged that to us the juxtaposition of highly formal gardens with informal lakes has a jarring note. However, this may be what the Victorians, or their designers, perceived that they had seen in Italy. Certainly, they revelled in the extensive bedding schemes which the new technology of heated glass houses made possible, as well as the increasing general wealth of patrons, at least up to the 1870s.

In the mid-nineteenth century, in a few instances, the tension between house and landscape was mitigated by the expedient, adopted by Barry and Nesfield, of designing parterre gardens and terraces which extended right down to the lake, whereas Brown and his contemporaries had been happy to let the park come right up to the house. The general trend, though, appears to have been a clear segregation of house and lake, brought about by the construction of terraces. In this context (mid- to late nineteenth century), the advent of the 'moral' house, as promulgated by Girouard, may be relevant.[121] There was a dawning feeling that there was a proper place for everything. In house planning, this was evinced by rooms primarily for men or women: drawing rooms and morning rooms for ladies, libraries and smoking rooms for men. Externally, these spawned terraces with flower beds, with parterres below, or sometimes a conservatory, and the main sections of the parterres would be aligned on the windows and doors of the principal rooms.[122] In landscapes, this translated into a sense that the 'polite' place to be, especially for women, was on the terraces, or in the pleasure ground, not in the park, and pleasure grounds were becoming more 'garden-like', as at Alton Towers, for example.[123] Men, of course, continued hunting, shooting and fishing in the park. The apparent proliferation of boathouses suggests they also rowed on the generally smaller lakes, fishing perhaps, and possibly the more intrepid women joined them, genteelly rowing on lakes near the house, but there are few paintings of them. The 'portrait landscape' is virtually absent after the 1820s, and there are very few images of people in parks after this time, suggesting that patrons did not commission paintings of them, or activities in them. In the 1850s, Adveno Brooke portrayed women in gardens, especially on terraces. This, and the later nineteenth-century pre-Raphaelite focus on the female form, and the work of the Impressionists, implies that parks were no longer of interest.

6.6. Late Nineteenth Century.

Very few lakes were made in the later nineteenth century. From 1870-99, possibly half a dozen lakes were made, and a couple were altered. In comparison, around 28 lakes were made in the preceding 30 years, which itself is not a large number when compared with the same decades of the eighteenth century. As mentioned in Chapter 4, it appears that the 'novelty factor' which had operated in the eighteenth century had dissipated, and other things were taking that place, terraces and conservatories being two of them. By 1900, the age of the motor car was dawning, to be closely followed by that of the plane, and a different focus was developing, which did not involve the park or lakes.

6.7. Conclusion.

Several significant points have emerged from this study of lakes in the nineteenth century. A chronology has been established for the first time, and this shows that numbers declined from *c.* 1815 onwards, and lakes also became generally smaller, the latter probably being linked to new parks being smaller on average. The shapes of lakes also changed, becoming spreading, whereas they had generally been elongated in the eighteenth century. This appears to have been a response to the aesthetics of the Picturesque movement as, combined with the 'roughing up' of lake margins, it produced more varied edges, with more scope for 'surprises', and the impression that a walk around such a lake was longer than it actually was. Islands also became more popular, fulfilling a similar role of creating interest and making a lake seem bigger. Unlike the eighteenth century, there were few makers of lakes (as there were fewer lakes).

This survey also shows that in the large, established parks there was little significant change in lakes after *c.* 1820. Margins might be altered slightly, or planted differently, the rhododendrons and laurels on the lake shores at Stourhead, planted in the early nineteenth century by Richard Colt Hoare, being a case in point, but these were changes in detail rather than substance. The

aesthetics of the Picturesque movement led, eventually, to a desire for animated water, and ponds in series with cascades became popular, especially in smaller parks, the Pulham firm being instrumental in providing them. Some were made in larger parks: cascades and ponds at Sheffield Park, and possibly a small cascade at Bowood, for example. However, there is no doubt that the large, established parks focussed on lodges and gateways in the earlier part of the century, and elaborate terraces and formal gardens in the later part, at the expense of water. In the spreading lakes which were made, islands were popular, as were boathouses. The distance of lakes from the house, and relative height, remained dependent on topography. Lakes may have looked more 'naturalistic' to nineteenth-century viewers on the ground because of the increased indentation of lake edges, the mounding of banks, planting, and islands. Other interests also came to the fore: as well as terraces, perceived to be Italian, technological advances in glass and iron manufacture made large conservatories possible, and the bedding schemes which they spawned. However, it is possible that one other factor in declining lake numbers was stronger than the rest: the novelty of lakes had worn off – they had been 'done'. A lake was no longer deemed to be a vital ingredient of the ornamental landscape, but depended largely on personal taste, as opposed to prevailing fashion. A new park might well have an irregular lake, but it did not have to be large because it was no longer seen as the main statement. This was particularly so after c. 1820.

In the eighteenth century, the English Landscape style predominated, primarily driven by Brown's 'design and build' practice. In terms of lakes, the nineteenth century did not see a similar practitioner. Repton did not have the business acumen of Brown, preferring to concentrate on designing rather than building, and he did not develop anything new in relation to lakes.[124] There was also a developing sense that experts were required – architects, engineers – whereas Brown and his contemporaries were happy to provide the whole 'package': house, lake, landscape, planting, drives. Consequently, Brown was able to 'roll out' his style of house and landscape, whereas the process began to become more fragmented in the nineteenth century, and no single style predominated. Most significant was the increasing separation between gardens

and park, which tended to leave lakes isolated in the park, whilst gardens and their appurtenances gained in importance.

[1] The spread of dates 1840–1880 would be represented in the Landscape Database in the column called 'Dating'. It would not be possible to sort that column sensibly by date, however.

[2] Total taxation increased sharply towards the end of the eighteenth century, according to J. V. Beckett and M. Turner in 'Taxation and Economic Growth in Eighteenth-Century England', *The Economic History Review* New Series, Vol. 43, No. 3 (Aug., 1990), p 384. Possibly, wars had some kind of delayed effect so that the events of the later 1770s had most impact in the 1780s, a decade which was largely war free, with the effects of that peace translating into the 1790s.

[3] T. Williamson *Suffolk's Gardens and Parks: Designed Landscapes from the Tudors to the Victorians* (Macclesfield: Windgather Press, 2000) p 109 and P. Wade-Martins, ed. *An Historical Atlas of Norfolk* (Norwich: Norfolk Museums Service, 1993) p 111

[4] Wade-Martins, ibid., p 110

[5] T. Williamson, personal communication, Dec. 2014

[6] HE listing: Longleat Park and Garden

[7] W. S. Gilpin *Practical Hints upon Landscape Gardening with some remarks on Domestic Architecture as Connected with Scenery* (London, 1835) online at https://books.google.co.uk/books?id=O5hgAAAAcAAJ&printsec=frontcover&dq=william+sawrey+gilpin&hl=en&sa=X&redir_esc=y#v=onepage&q&f=false accessed Feb. 2016 p 157

[8] Ibid., p 155

[9] T. Williamson, personal communication, 3.6.2016

[10] E. Kemp *How To Lay Out A Garden* (Massachusetts, 1858) online at https://books.google.co.uk/books?id=N_GZ85voiWcC&printsec=frontcover&dq=edward+kemp+how+to+lay+out+a+garden&hl=en&sa=X&ved=0ahUKEwin7cqjs8LKAhWHMhoKHbkACWkQ6AEIMDAA#v=onepage&q&f=false accessed   Jan. 2016 p 295

[11] Steven Cable, Remote Enquiries Duty Officer, National Archives, Kew, by e mail, 23.2.2016

[12] S. Daniels, entry for H. Repton in ODNB online accessed December 2015

[13] Ibid.

[14] Ibid.

[15] S. Daniels *Humphry Repton: Landscape Gardening and the Geography of Georgian England* (London: Yale University Press, 2000) p 104

[16] T. Williamson, personal communication, March 2017

[17] Daniels *Humphry Repton* op. cit., p 3

[18] Daniels *Humphry Repton* op. cit., p 177

[19] EH listing: Stoneleigh Park and Garden

[20] J. Austen *Mansfield Park* (London: Penguin Books, ed. 1996) p 46

[21] Williamson *Suffolk's Gardens & Parks: Designed Landscapes from the Tudors to the Victorians* (Macclesfield: Windgather Press, 2000) p 92

[22] T. Williamson, personal communication, June 2017

[23] H. Repton *Observations on the Theory and Practice of Landscape Gardening* (London, 1805) online at https://archive.org/stream/observationsonth00rept#page/n13/mode/2up accessed Jan. 2016 p 32 and 38

[24] Ibid. fn. p 38

[25] By kind permission of Hugh and Ranji Matheson

[26] Ibid.

[27] Repton, op. cit., fn. p 38

[28] Daniels *Humphry Repton* op. cit., Fig. 158

[29] Repton, op. cit., p 38

[30] J. Finch, 'Three Men in a Boat: Biographies and Narrative in the Historic Landscape', *Landscape Research* Vol. 33, No. 5, 511–530, October 2008, p 521

[31] I am indebted to Tom Williamson and Anne Rowe for drawing my attention to this.

[32] Accounts ledger for 1798-1811 in Hertfordshire Archives and Local Studies office, ref. HALS D/EP/EA23/2 fol. 180

[33] Ref. HALS DE,P,P21 No. 1

[34] A. Rowe and T. Williamson in 'Humphry Repton in Hertfordshire', edited by Tom Williamson and Sue Flood, forthcoming publication: University of Hertfordshire Press, Hatfield in 2018.

[35] Accounts ledger for 1798-1811 in Hertfordshire Archives and Local Studies office, ref. HALS D/EP/EA23/2 fol. 180

[36] HE listing: Bayham Abbey Park and Garden

[37] D. Jacques *Georgian Gardens: The Reign of Nature* (London: B. T. Batsford, 1983) p 181

[38] A. Gore and G. Carter, editors, *Humphry Repton's Memoirs* (Norwich: Michael Russell, 2005) p 162 quoted in Daniels *Humphry Repton* op. cit., p 161

[39] Repton, op. cit., p 38

[40] Repton, op. cit., p 39

[41] Jacques, op. cit., p 146

[42] Daniels *Humphry Repton* op. cit., p 104

[43] J. Appleton, 'Some thoughts on the geology of the picturesque', *Journal of Garden History* Vol. 6, No. 3, p 280

[44] Jacques, op. cit., p 183

[45] B. Elliott, entry for J. C. Loudon, ODNB online, accessed February 2016

[46] J. C. Loudon *An Encyclopaedia of Gardening* (London, 1825) online at https://archive.org/stream/encyclopdiaofgar00loud#page/n3/mode/2up accessed Jan. 2016 p 1010

[47] Ibid., p 1010

[48] Ibid., p 1010

[49] Ibid., p 1111

[50] Ibid., p 1011

[51] Ibid., p 1011

[52] Ibid., p 1011

[53] Ibid., p 1011

[54] EH listing: Harewood Park and Garden

[55] Loudon, op. cit., p 111

[56] H. Leathlean 'From Gardenesque to Home Landscape: The Garden Journalism of Henry Noel Humphreys', *Garden History* Vol. 23, No. 2 (Winter, 1995) pp. 175-191 p 176

[57] B. Elliot, op. cit.

[58] He did formulate proposals for altering the existing lake at Wolterton: T. Williamson, personal communication, June 2017

[59] S. Piebenga, entry for W. S. Gilpin, ODNB online, accessed June 2016

[60] Gilpin, op. cit., p 20

[61] Gilpin, op. cit., p 85

[62] Piebenga, op. cit.

[63] Gilpin, op. cit., p 44

[64] Gilpin, op. cit., pp 153-4

[65] Gilpin, op. cit., p 155

[66] Gilpin, op. cit., p 157

[67] Gilpin, op. cit., p 157

[68] Gilpin, op. cit., p 161

[69] Gilpin, op. cit., p 164

[70] Gilpin, op. cit., p 170

[71] T. Williamson *The Archaeology of the Landscape Park : Garden Design in Norfolk, England, c. 1680-1840* BAR British Series 267 (Oxford: Archaeopress, 1998) p 214

[72] Ibid., Plate 49

[73] Wolterton Hall Archives, ref., Wolt. Box 10

[74] Gilpin, op. cit., p 162

[75] J. Waymark, entry for Edward Kemp, ODNB online, accessed April 2016

[76] Parks & Gardens UK entry: Birkenhead Park, online at http://www.parksandgardens.org/places-and-people/site/415 accessed 19.4.2017

[77] Waymark, op. cit.

[78] Kemp, op. cit., p 297

[79] Kemp, op. cit., pp 301-2

[80] Kemp, op. cit., p 301

[81] Kemp, op. cit., p 302

[82] Kemp, op. cit., p 305

[83] Kemp, op. cit., p 297

[84] J. C. Loudon, op. cit., p 1011

[85] Kemp op. cit., p 297

[86] Kemp op. cit., p 296

[87] Kemp op. cit., p 297

[88] Kemp op. cit., p 300

[89] Sales Brochure in C. Hitching *Rock landscapes: The Pulham Legacy. Rock Gardens, Grottoes, Ferneries, Follies Fountains & Garden Ornaments* (Woodbridge: Antique Collectors' Club, 2010) p 71

[90] Hitching, op. cit., p 61

[91] Hitching, op. cit., p 125.

[92] Hitching, op. cit., p 291

[93] Colt Hoare planted rhododendrons alongside the lake in the early nineteenth century at Stourhead: EH listing, Stourhead Park and Garden.

[94] Gilpin, op. cit., p 39

[95] Reproduced in G. Jackson-Stops *An English Arcadia 1600-1990* (London: National Trust Enterprises, 1991) p 116

[96] J. Harris *The Artist and the Country House* (London: Philip Wilson Publishers, 1979) p 344

[97] Ibid., p 359

[98] Ibid., p 358

[99] Ibid., p 359

[100] HE listing: Harlaxton Manor Park and Garden

[101] Online image from www.harlaxton.co.uk accessed June 2013

[102] G. and S. Jellicoe, P. Goode and M. Lancaster, eds. *The Oxford Companion to Gardens* (OUP: Oxford, 1986) p 42

[103] S. Evans, 'William Andrews Nesfield: An Introduction to His Life and Work' in C. Ridgeway, ed. *William Andrews Nesfield, Victorian Landscape Architect: Papers from the Bicentenary Conference, King's Manor, York, 1994* (York: University of York, 1996) p 7

[104] Ibid., p 8: from "numerous reports" for various properties written by W. A. Nesfield.

[105] EH listing: Crewe Hall Park and Garden

[106] Evans, op. cit., p 7

[107] Evans, op. cit., p 135

[108] EH listing: Crewe Hall Park and Garden

[109] G. Jackson-Stops, op. cit., pp 133-5

[110] C. Ridgeway, 'Design and Restoration at Castle Howard' in C. Ridgeway, ed. *William Andrews Nesfield, Victorian Landscape Architect: Papers from the Bicentenary Conference, King's Manor, York, 1994* (York: University of York, 1996) pp39-54

[111] Ibid., p 44

[112] Ibid., p 47

[113] Ibid., p 47

[114] M. Girouard, 'Charles Barry: A Centenary Assessment', *Country Life* 13th Oct., 1960

[115] Online image from WeddingVenues.com accessed November 2016

[116] Jackson-Stops, op. cit., p 137

[117] Jackson-Stops, op. cit., p 137

[118] EH listing: Clumber Park and Garden

[119] T. Williamson: personal communication, June 2017

[120] R. White *Holkham* (Holkham: Arie & Ingrams, 2010) p 62

[121] M. Girouard *Life in the English Country House: A Social and Architectural History* (Harmondsworth: Penguin Books, 1980) p 276

[122] Evans, op. cit., p 8

[123] T. Mowl & D. Barre *Historic Gardens of Staffordshire* (Bristol: Redcliffe Press, 2007) p 222

[124] Daniels *Humphry Repton* op. cit., p 1

7. Conclusion.

For a visitor to a later eighteenth-century landscape, the most striking feature apart from the house, would often have been the irregular lake. These features were frequently very large, yet they have been virtually ignored by garden historians and very little has been written about them, Steffie Shield's recent book (2016) being an exception. It is hoped that this study of ornamental lakes has succeeded in illuminating a neglected aspect of garden history.

One major aim of the thesis was to establish a chronology of ornamental lakes as a basis for finding out why and in what form they appeared, and how they evolved. The main sources employed were maps, plans and images (mainly landscape paintings) and archival documents. Primary texts such as those by Roger North and Stephen Switzer were also consulted, but secondary material was limited in scope and quantity. Lakes were categorised according to factors such as shape and methods of construction. The three main categories were geometric lakes, irregular lakes and hybrid lakes, with river-lakes as a sub-category. This categorisation revealed how factors such as topography affected lake construction, and the level of difficulty involved in making different types of lake, as well as facilitating the construction of the chronology.

As well as establishing a straightforward chronology of when different types of lake began to appear, or disappear, the analysis of the sample also yielded information about trends in the sizes of lakes, and who designed them. It was found that a small number of large bodies of water (geometric lakes) began to be made in the last decade of the seventeenth century and the early 1700s. The analysis revealed that very few geometric lakes were made after the 1730s, and this category was not very numerous. The same can be said of what I have defined as 'semi-geometric' lakes, which were even less numerous. It is, however, difficult to assess the true popularity of these lakes as they may, in many cases, have been over-written by subsequent lakes.

The first 'irregular' lake was made in *c.* 1719, and numbers began to increase in the following decades, peaking in the 1760s and '70s. 'River-lakes' did not come into existence until *c.* 1760, but were relatively popular,

accounting for *c.* 10% of lakes in the eighteenth century. They differed from irregular lakes because they involved using existing rivers, and were constructed using weirs rather than dams. The earliest river-lakes are attributable to Brown, and he may well have invented them. They continued to be made in small numbers throughout the nineteenth century. What have been defined as 'hybrid' lakes in this thesis were made throughout the eighteenth and nineteenth centuries. Initially, this may have been because a geometric lake was desired but was too expensive to make. Subsequently, they may have occurred because geometric lakes were updated to become somewhat irregular, to conform to changing fashion.

Study of the sample also established that whilst Brown made around one quarter of the lakes (irregular and river-lakes) in the eighteenth century, most lakes were made by unknown people. These would probably have been estate owners in conjunction with their own workers, or local experts. A small percentage of lakes – *c.* 10% - was made by men such as William Emes, Nathanial Richmond, Richard Woods and later, Edward Kemp. This investigation of the making of lakes revealed virtually no evidence of skilled men at a national level who specialised in making dams. This may be owing to the difficulties of identifying them in archives.

There was a marked dip in the numbers of lakes being made in the 1780s, which mirrored the dip in numbers of Parliamentary enclosure acts. The reasons for this dip are not clear cut but were almost certainly related to factors such as the economic costs of the American War of Independence, and the threat of war with France. Despite recovering to some extent in the 1790s, the general trend in lake numbers was downwards after this point.

Prior to this investigation, very little was known about lakes in the nineteenth century. Lakes in public parks were slightly better understood, but were excluded from this study as the imperatives for making them are completely different. Water in purpose-made public parks also tends to be small, so often did not reach the 1 hectare size criterion. The analysis of the sample showed that lake numbers declined from the 1790s onwards, with a significant dip occurring around 1820. Numbers continued to fall from then on, reaching a very low point by 1899. The various minor peaks and troughs

apparent throughout the century almost certainly relate to the availability of data: different sets of maps being published at different times (tithe maps, First Edition Ordnance Survey maps). The data also showed that lake sizes became smaller in the nineteenth century: 2 h being a common size, and that lakes changed in shape. They became spreading, rather than elongated in shape as they had been in the eighteenth century. The reduction in lake sizes was probably related to park size, as new parks created in the nineteenth century were often relatively small. Walking round lakes, rather than carriage driving, became more common, and this also had an impact on lake shapes and planting. More indentations of the shoreline, and planting to disguise the limits of the lake, became common, as this made walking around them more interesting, resulting in the spreading shape.

Although individual designers of lakes have not been the main focus of this thesis, the analysis of the data did highlight a change in the pattern of lake designing. Although virtually nothing is known about the designers of geometric lakes in the early eighteenth century, in the succeeding decades (1720s-'40s) it was found that it was largely the owners of elite landscapes who were the impetus behind the making of the new irregular or hybrid lakes. This changed in the 1750s, when irregular lakes were becoming fashionable and it became usual to employ an 'improver' to design the lake, and often the house and accompanying landscape. In the later nineteenth century, there was a tendency for specialisms to arise, with more of a distinction between architects and landscapers. Edward Kemp came into the latter category.

Lakes evolved for a variety of reasons and the factors responsible for their appearance were complex and intertwined. One of the key factors was the influence of Italy and the experience of the Grand Tour. Men such as Carlisle of Castle Howard, Coke of Holkham, Burlington of Chiswick and Londesborough, Cobham of Stowe (all members of the Kit-Cat Club) made the Grand Tour, which exposed them to other styles of landscapes and other types of topography, notably lakes in the Alps, and in Italy. These men made the earliest lakes, and in some instances were directed by Vanbrugh. The importance of this foreign travel was that the configuration of gardens and landscapes bordered by large bodies of water made an impact on tourists, who began to want to replicate

these views at home. The irregular lake was a vital ingredient in attempting to construct a landscape reminiscent of those scenes. Being visible from the house, and having plantations adjacent to some parts of the lake, were two other important ingredients. Addison had remarked on plantations, made by the monks at Ripaille, bordering Lake Geneva, with vistas cut through plantations to the lake, and this happily coincided with the existing popularity of geometric plantations on large estates in England at that time. Burlington's patronage of

Fig. 7.1. Chateau de Ripaille on Lake Geneva.[1]

Castell, which led to the publication of the influential *Villas of the Ancients* in 1728, was a secondary way in which the influence of Italy was disseminated throughout the elite. The fact that Addison published his *Remarks* in 1701-3, with Vanbrugh, Kingston, Carlisle and Burlington making irregular lakes in the 1710s and '20s, highlights the fact that these lakes pre-dated Brown by several decades. Although Brown had a distinctive style, and transformed the style of irregular lakes, he did not 'invent' them.

A subsidiary aspect of the Grand Tour was the paintings which tourists brought back, often by Lorrain, Poussin, Rosa, Dughet, and their imitators. Men like Coke at Holkham collected works by Lorrain, as did Hoare with Dughet.

Typically, these artists portrayed landscapes (often rural), with water of some sort, and classical buildings, or their remains. Although these paintings, and the subsequent engravings of them, often depicted lake-like areas of water, or natural lakes, it seems that they imprinted the formula of 'irregular landscape plus water plus classical architecture' on the minds of many people. The paintings cemented the Italian experience for the returned tourists and some of them, notably Hoare at Stourhead, aimed to produce landscapes which reflected these scenes and experiences. The paintings also served to announce to visitors the provenance of those landscapes.

Whilst to some extent styles of ornamental water are related to landscape styles, to date it has been assumed that lakes formed part of a 'package'; that they appeared because landscape style changed. It was assumed that geometric landscapes fell out of fashion, to be replaced by informal landscapes, and that irregular lakes then developed. However, one of the significant findings of this thesis is that irregular lakes were first made in new geometric landscapes, albeit ones which were becoming 'unbalanced', before landscapes became more completely irregular in style. There is evidence that they were already beginning to become less symmetrical and more unbalanced by 1700. This was partly because they were getting bigger, a process begun by Le Nôtre in laying out Vaux-le-Vicomte and Versaille. Lakes intensified that process. Once lakes – large bodies of irregular water - became popular, landscapes had to change around them. Because they were irregular, they would not fit easily into geometric landscapes, which were linear, whereas ornamental canals had fitted neatly into those landscapes. The only way to fit a 'lake' into a geometric landscape without unbalancing it was to make it rectangular, and put it in place of a parterre, as at Boughton and Welford. This was not usually practicable on anything other than a relatively flat site with an adjacent water source. At places such as Thoresby, Holkham and Castle Howard, owners had estates large enough to make a lake and to retain significant geometric plantations with vistas and rides, but eventually even those landscapes became much less formal. These early lakes were off-set from the house, and further contributed to the unbalancing of the landscape.

Vanbrugh, who had military and naval experience, was instrumental in spreading the concept of making lakes: he made one at Castle Howard for the 3rd

Earl of Carlisle and he tried, unsuccessfully, to persuade the Duchess of Marlborough to make one at Blenheim. However, her use of the word 'lake' for a large body of ornamental water, presumably acquired from Vanbrugh, ensured that it entered the nation's vocabulary, with its accompanying concept. He also designed a 16 h lake at Welbeck in 1703. It was not made but, significantly, Vanbrugh was advising the top men in society in the first two decades of the century, and influencing the taste for irregular water.

A further factor in the emergence of irregular lakes was the development in the use of parks, and bodies of water in particular. There is good evidence, from both images and texts, that the desire to row, and later sail, was instrumental in lakes being made, and also increasing in size later in the eighteenth century. The 1726 painting of Thoresby Park provides some of the clearest and earliest evidence, depicting several luxurious rowing boats on the lake. The incidence of pictures showing people boating increased after this, becoming significant in the 1750s, and sailing boats also became more common at this time. This is supported by Rigaud's pictures of boats at Stowe, for example, and textual accounts such as of Jemima, Countess of Bedford's entertainments on boats at Wrest, and her commissioning Wright to extend the canals there. Naumachia also became popular from the 1740s onwards, with the 5th Lord Byron's activities at Newstead, and Sir Francis Dashwood's at West Wycombe, being noteworthy. Entertainments such as these would have been very unsatisfactory on the generally small and unexciting geometric lakes of the early eighteenth century.

An increase in the use of parks by both men and women, but particularly women, may also have contributed to the development of lakes. Boating was one such use but the increase in the number of paintings showing women doing other things, such as carriage driving, from the 1750s onwards, and later walking and sketching in the park (usually by the lake), strongly suggests that carriage drives and circuit walks developed in response to women wanting to do these things. The tendency to place lakes in front of the house in the latter part of the eighteenth century, may have been partly driven by a wish to make lakes more accessible for women. In the nineteenth century, writers such as W. S. Gilpin, Kemp and Loudon were very much talking in terms of walks around

the lake, which, if new, was likely to be smaller than in the eighteenth century.

Once the concept of an ornamental lake had become established, lakes were undoubtedly used as status symbols, to display the wealth of a fashion-conscious owner, with bigger being better, in this context. Part of this display was the use of lakes in relation to the house. In the second half of the eighteenth century, it became desirable for the lake to reflect the house, thereby enhancing both lake and house considerably. Secondly, routeing the main approach to the house across the lake was deemed to add considerably to the impact on the visitor, and Brown was particularly adept at this. Approaching a residence over water seems to have had an enduring importance. This was recognised in relation to the medieval period, where fishponds often flanked elite residences, as at Somersham, or where the approach to a castle was over a lake-moat. Simply crossing an ordinary moat conferred a *cachet*. Excursions into psychology are not the remit of this thesis, but it does appear that, for over a millennium, crossing water to reach a residence satisfied a deep and enduring psychological need, and marked passing over a boundary from the exterior, public space to an interior, private space. A third aspect of lakes as status symbols was the stocking of them with fish. Again, this refers back to the medieval era, when fishponds were systems for producing high status, freshwater fish. Stylistically, irregular lakes were similar to medieval fishponds and, whilst freshwater fish did not have the same high value in the eighteenth century, it was still a valuable 'crop'. However, while some of this 'second hand' status still attached to fish production, it was mainly the expense of constructing a large area of water, as much for aesthetic and leisure reasons, which meant that lakes conferred considerable status.

This study also investigated the technology of lake construction. It sought to show how closely it is related to geology and topography, and to understand the difficulties faced in making lakes. The data analysed suggest that there is an essential difference between ponds and lakes, not just a size difference: a lake is a body of water which is constantly replenished, by a stream for example, and a pond has no source of replenishment other than rainfall and water running off the hills. This had significant implications for both the construction and siting of lakes.

There is relatively little primary evidence for how eighteenth-century lakes were constructed. There are no known plans showing how lakes were made, and very few plans of dam construction, so this study has had to rely on a few instances where dams have been examined, usually for repair, as at Petworth, or Burghley. These suggest that what North and Switzer write about making dams for fishponds of several acres in size is accurate. This underlines the link between the construction of medieval *vivaria* and the ornamental lakes of the eighteenth century. The technology was basically the same, with some development in sluice design in the succeeding centuries.

The focus on geology, topography and hydrology led to a significant conclusion, which was that lakes were not normally lined with puddled clay, or indeed, anything else. It has been a widely held view that lakes were lined, based on the knowledge, chiefly gained from North and Switzer, that ponds were lined with puddled clay. This is where the distinction between a pond and a lake becomes critical, and the waters are muddied because the sources (North, Switzer) refer to *all* bodies of water as ponds. A pond is situated where it is *required*, such as adjacent to a house, for storing fish (*servatorium*), or at a focal point in a garden. Because the site of a pond is selected according to a particular requirement, the site is not necessarily suitable for holding water, and a lining is often necessary. This was the case with Bridgeman's Round Pond in Kensington Gardens. This also applied to canals – both 'garden' and industrial, unless they were canalised rivers. Conversely, a lake has to be sited where there is a river, stream or spring which will keep filling it.

The argument that lakes were not lined is largely based on negative evidence, though not entirely. There is no mention of lining lakes with clay in the contracts of Brown, who made the most lakes in the eighteenth century, and his contracts were quite specific. Given that his lakes usually covered at least 5 h, the amount of clay required, and the labour for digging, transporting and puddling it, would have been considerable, and it would have been essential to include this in the contract, or make it clear that it was the client's responsibility. The confusion which has arisen around this subject is due, in part, to North's and Switzer's accounts of how to line ponds. However, North is talking about store ponds for fish, and Switzer is talking about garden ponds.

North's account of how to make the larger fishponds (*vivaria*) makes it clear that they are not lined with clay: he recommends using any clay in the bottom of them to make the dam (head) with. This use of clay in the making of dams - a clay core 'wall' – has led to further confusion and the assumption that the entire lake was made with a clay lining.

Geological maps were examined, and research into topography and hydrology was conducted to inform conclusions about site factors affecting lake construction, and lake distribution. This was confined to the three counties of Norfolk, Northamptonshire and Wiltshire, and was sufficient to produce a general understanding of factors affecting the siting of lakes. As far as is known, this is the first time that a feature such as lakes has been plotted against geological deposits, and the results were informative. It became apparent that lakes could be made in widely diverse geological areas. The exception was chalk or limestone, if there were no superficial deposits overlying the bedrock. This was apparent in Wiltshire, where there were no lakes on the chalk rocks of Salisbury Plain. In contrast, the same rocks outcropping in Norfolk, but with superficial deposits, did support the making of lakes, although these were usually at the junction of the sands/ gravels/ clays with the glacial deposits. It was noted that even large scale geology maps of bedrock and superficial deposits were not sufficiently detailed to be really informative about siting lakes, and it was concluded that only specific surveys of lake sites would be relevant. This corresponded with actions of men like Grundy and Brown, who gleaned as much information of the site as possible by inspecting the actual ground and questioning local workmen.[2]

Because the research methodology was largely based on an analysis of maps, it was possible to relate the incidence of different lake types to broad variations in topography. This helped to explain site constraints in relation to stylistic and chronological developments. The classification system of lakes used in this investigation was particularly valuable in this respect. It was found that geometric lakes were usually constructed on fairly flat sites. This accorded with the requirement that they had straight sides (or geometric arcs): less earth would need to be moved on a relatively flat site, and thus these lakes would be easier to make, and cost less than if they were constructed on hilly sites. Places

such as Boughton, Wimpole and Wanstead come to mind. Hybrid lakes, with their requirement of two straight sides, were also easier to make in fairly flat areas. Because irregular lakes did not require a lot of earth-moving to make them, although this might be done for aesthetic reasons, they could be made anywhere that there was a river or stream. The topography affected the general shape of the lake: a spreading lake would occur in flatter areas, and a narrower, linear lake in deeper valleys. River-lakes were found to be quite site specific, requiring a good water course, though one which was not too 'steep', so they were usually made in suitable river valleys. These were perhaps the least expensive type of lake to make, as they were constructed using weirs rather than dams, and did not necessarily entail much earth moving. As many residences were situated near rivers, it was often possible to construct a river-lake nearby, which was a good option if the house was very near the river and likely to flood.

The results of the chronological sample showed that lake numbers began to decline in the 1790s, and that this decline increased in the early decades of the nineteenth century. The polemics of the Picturesque did not appear to have a direct effect on ornamental water other than to lead to preference for animated water, with the mirror-like, Brownian lake sometimes being castigated as dull. By 1900, very few lakes were being made, and estate owners turned their focus towards other elements such as lodges, terraces and conservatories. Occasionally, a second lake was made, possibly instead of building a conservatory. In the middle decades, cascades became very popular, with the Pulham playing a dominant role. The investigation also revealed that lakes changed in size and shape, becoming generally smaller, and spreading in shape. Lakes were more likely to be positioned in front of houses, probably because many new parks in the nineteenth century were smaller than their predecessors, and this also affected lake size.

The subject of ornamental lakes has proved to be complex and diverse, but it is hoped that this thesis has thrown a new light on it. The method of systematically analysing the chronological development of a particular feature is a fresh approach, and not only did this produce new information about lake numbers, but it meant that lakes could also be analysed in terms of changes in

style and use. This was a distinct benefit of studying a single element of design over time, and it raises questions about the usefulness of approaching landscape history in successive stylistic 'packages'. However, the chronological approach had the inherent problem of presenting a vast subject, and the solution of focussing on three geographical areas only partly solved that problem, as some significant lakes were outside those areas. This was compensated for by a wide use of sources, and by a flexible approach, to allow seminal examples to be included.

As well as producing new information and theories about the origins and evolution of lakes, it is hoped that the definitions and terminology which have been devised in this study, to make discussion clearer and more precise, will be of value in the future – the pond versus lake distinction being of particular interest.

One of the main attractions of water is that it is always changing, never static, and the story of ornamental lakes is also one of change, from their beginnings in *vivaria*, via formal water features, to informal lakes. Their evolution reflects general changes in society, just as many eighteenth century lakes mirrored the mansions of their owners.

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[1] Image online at http://www.savoie-mont-blanc.com/en/offre/fiche/castle-of-ripaille-home-of-the-dukes-of-savoy/153862 accessed January 2017

[2] John Grundy *Slopes Ponds and Reservoirs and Engine and Piping to supply the House and Offices and other Works done at Grimsthorpe in Lincolnshire 1745 to 1748* in Report Books Vol. 2, p 143, held by the Institution of Civil Engineers, ref. 1740 GRUSLR

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