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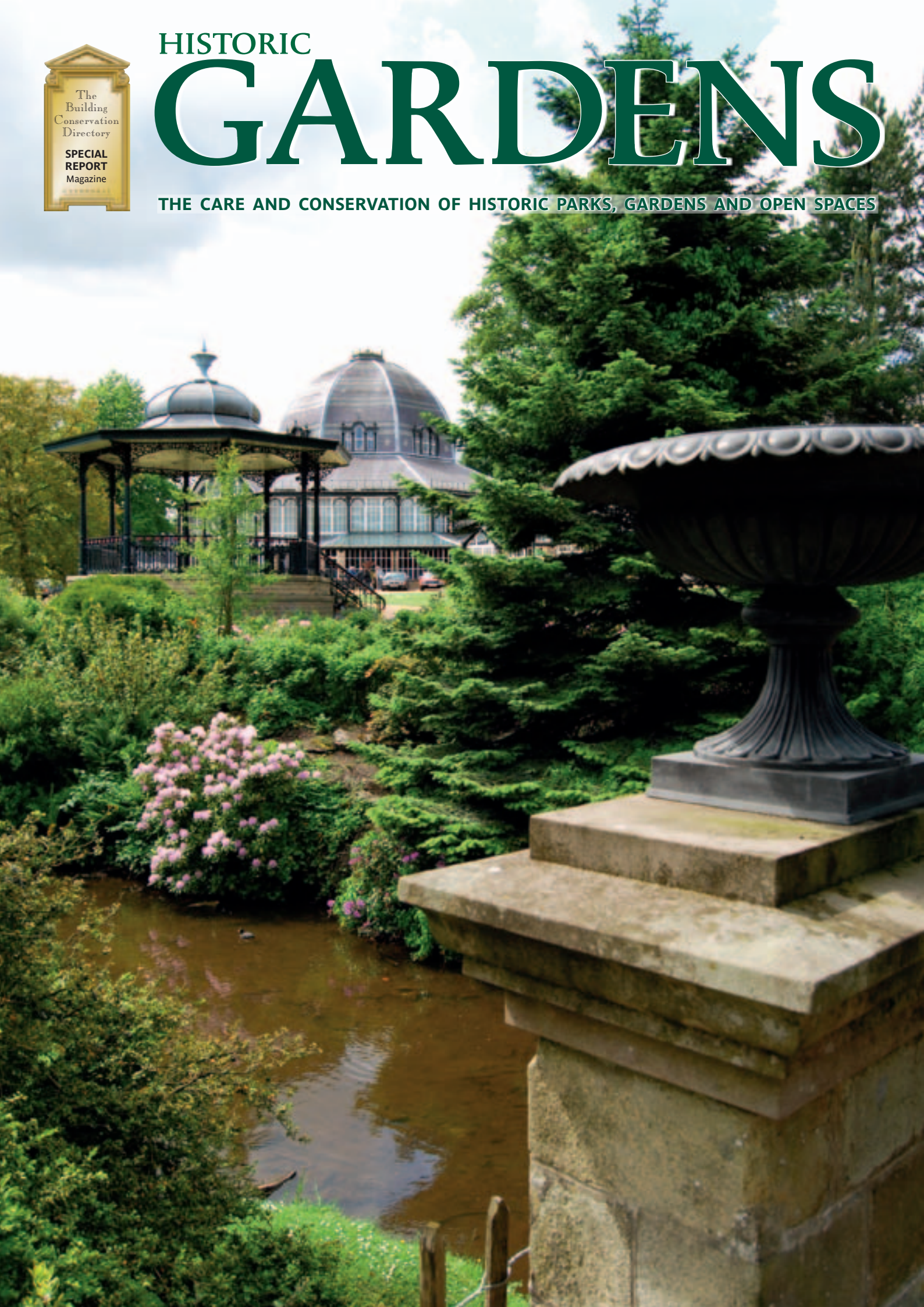
HISTORIC GARDENS

THE CARE AND CONSERVATION OF HISTORIC PARKS, GARDENS AND OPEN SPACES



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THE BUILDING CONSERVATION DIRECTORY
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FRONT COVER
Pavilion Gardens, Buxton, Derbyshire, designed by Edward Milner in 1871, which is included on the Register of Parks and Gardens at Grade II*. 'The Octagonal', the building in the background, is Grade II listed. Statutory protection is discussed in articles on pages 21 and 30. (Photo: Jonathan Taylor)

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FROM THE EDITOR

Given the special place occupied in Britain's collective psyche by parks and gardens it is perhaps unsurprising that their history should be so charged with insights into the character of the inhabitants of these islands. Look closely at the history of landscape design, garden structures and features, plantings or methods of propagation, and you enter a world lush with resourcefulness, scientific endeavour and industry, but also often characterised by a delicious eccentricity.

The joy and inspiration that our ancestors found in the designed landscape is reflected in the enormous popularity of historic gardens in modern Britain. One reason for this may lie in the enduring power of gardens to heal and regenerate, a truth that is demonstrated in many of the excellent articles collected in this edition of *Historic Gardens*. In Liverpool, Stanley Park's transition from decline and decay to a source of new growth both within and beyond its boundaries provides a particularly striking example of how civic open spaces can nourish and enhance communities. Ponds and traditional orchards, wilder but no less in need of management, also clearly benefit diverse human communities as well as bio-diverse ecologies.

Collectively, the following articles constitute an overwhelming case for ensuring that these vital and revitalising spaces enjoy the protection they deserve. They are elements of our heritage every bit as important as the great stately homes, cathedrals and other buildings we now regard as sacrosanct.

A TASTE FOR THE EXOTIC

PINEAPPLE CULTIVATION IN BRITAIN

Johanna Lausen-Higgins

Flowering 'Jamaica Queen'

Christopher Columbus first encountered the pineapple in 1493, unleashing a flurry of attempts to convey its exotic flavour to uninitiated Europeans. The superlatives and majestic comparisons continued long after. In a work of 1640, John Parkinson, Royal Botanist to Charles I, described the pineapple as:

> *Scaly like an Artichoke at the first view, but more like to a cone of the Pine tree, which we call a pineapple for the forme... being so sweete in smell... tasting... as if Wine, Rosewater and Sugar were mixed together.* (*Theatrum Botanicum*)

Parkinson wrote those words before the pineapple had even reached the shores of Britain. Its introduction to Europe resulted in a veritable mania for growing pineapples and parading them at the dinner table became a fashion requisite of 18th century nobility. In Britain and the Netherlands the practice was not the preserve of the aristocracy but also extended to the gentry. The pineapple was a representation of owners' wealth but also a testimony to their gardeners' skill and experience. Producing a crop of tropical fruit in the colder climes of Europe before the advent of the hot water heating system in 1816 was a remarkable achievement and was, perhaps not unjustly, described as 'artistry'.

The founding of horticultural societies during the Victorian period brought new opportunities for the display of pineapples at horticultural shows, a tradition that lasted until the beginning of the 20th century. However, the inevitable demise of the pineapple as horticultural status symbol began with the arrival of imported fruit from the Azores at the end of the 19th century.

ORIGIN

Pineapples originate from the Orinoco basin in South America, but before their introduction to Europe, the date of which is uncertain, they were distributed throughout the tropics. Later, this led to some confusion about their origin. *The Gardener's Dictionary* of 1759 by Philip Miller, for example, gives the origin of the pineapple as Africa. The pineapple is a terrestrial, tropical plant but is remarkably desiccation-tolerant as it possesses a range of leaf adaptations that help it to cope with drought. This must explain why the plant's distribution was so successful long before the invention of the Wardian case (the 19th century forerunner of the terrarium).

EARLY HISTORY

European pineapple cultivation was pioneered in the Netherlands. The early success of Dutch growers was a reflection of the trade monopoly the Netherlands enjoyed in the Caribbean in the form of the Dutch West India Company, established in 1621. As a result, plant stock could be imported directly from the West Indies in the form of seeds, suckers and crowns, from which the first plants were propagated.

Agnes Block is believed to be the first person to fruit a pineapple in Europe, on her estate at Vijerhof near Leiden. Many eminent Dutch growers joined the challenge, including Jan Commelin, at the Amsterdam Hortus botanical garden between 1688 and 1689, and Caspar Fagel at his seat

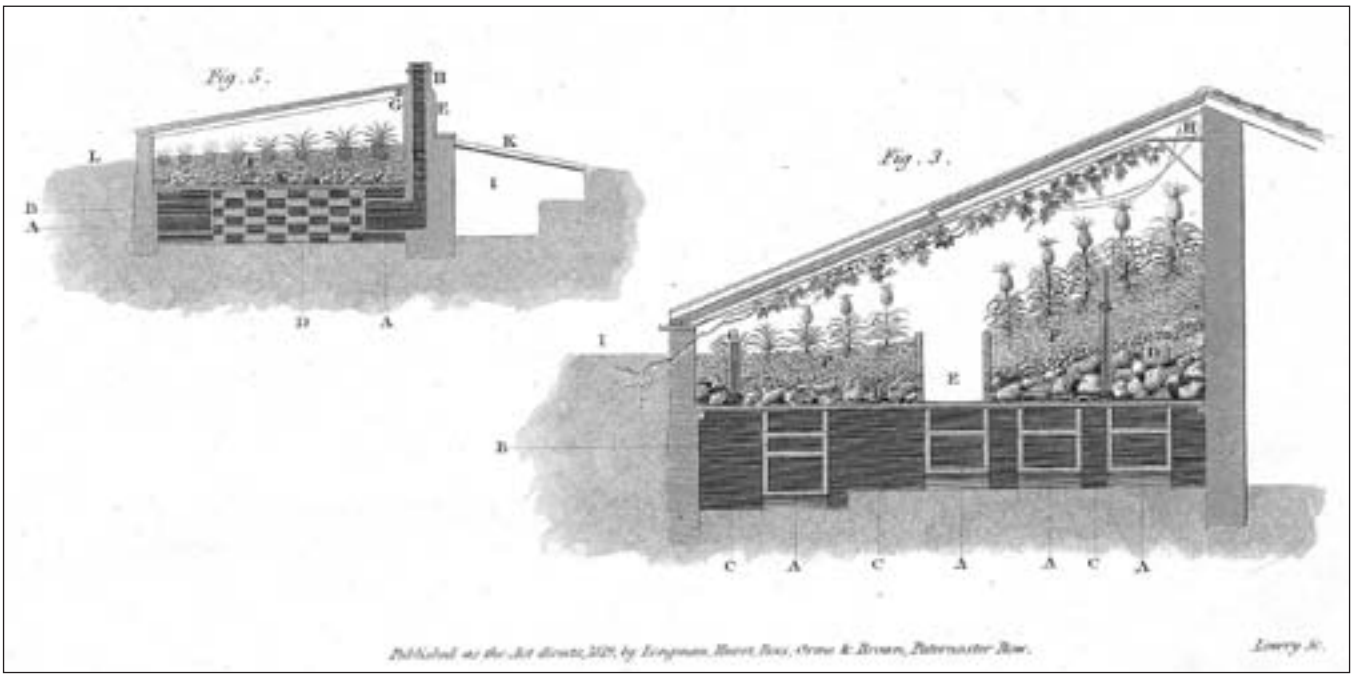


Illustration of hothouse and pinery-vinery from Loudon's An Encyclopedia of Gardening

De Leeuwenhorst in Noordwijkerhout. Pieter de la Court, a wealthy cloth merchant at Driehoek near Leiden, devised his own system for growing pineapples and many British gardeners were sent to his estate to learn about his cultivation techniques.

Dutch methods of pineapple growing became the blueprint for cultivation in Britain, undoubtedly endorsed after the Glorious Revolution of 1688 cemented Anglo-Dutch relations. William Bentinck, close adviser of William III, is thought to have shipped the entire stock of Caspar Fagel's pineapple plants over to Hampton Court in 1692. The fruits were, however, ripened from this stock of mature plants and therefore did not count as British-grown pineapples. Pineapples had been ripened in this way before, as commemorated in Hendrik Danckerts' painting of 1675 depicting Charles II being presented with a pineapple by John Rose, gardener to the Duchess of Cleveland. Danckerts' painting led to the common misconception that Rose was the first to grow a pineapple in Britain.

THE 18th CENTURY

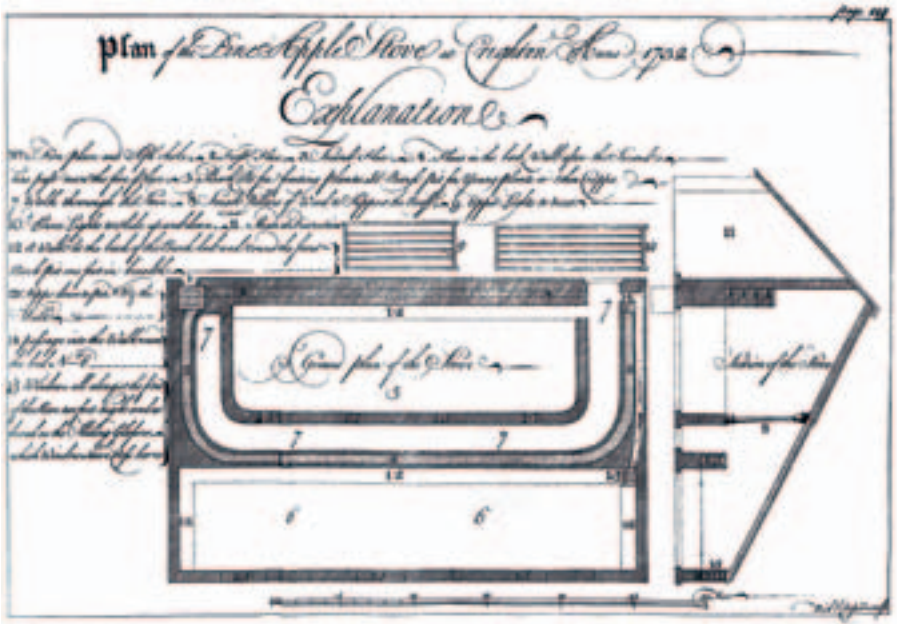
The first reliable crop of pineapples in Britain was in fact achieved by a Dutch grower, Henry Telende, gardener to Matthew Decker, at his seat in Richmond between 1714 and 1716. Decker commissioned a painting in 1720 to celebrate this feat and this time the pineapple takes pride of place as the sole object of admiration. From this point on the craze for growing them developed into a full-blown pineapple mania. The list of gentlemen engaged in this rarefied horticultural activity reads like a who's who of Georgian society and includes the poets William Cowper and Alexander Pope and the architect Lord Burlington.

The period is mainly associated with the English landscape movement and glasshouse cultivation is a rather neglected subject. The latter was, however, an important part of 18th century horticulture and many of the associated inventions that we now take for granted were developed or refined during this period, such as the use of angled glazing, spirit thermometers and furnace-heated greenhouses called hothouses or stoves.

STRUCTURES DEVISED FOR PINEAPPLE GROWING

The appearance of innovations seems to follow no clear chronological order. Early attempts at cultivation were made in orangeries, which had been designed to provide frost protection for citrus fruit during the winter months. Orangeries, however, did not provide enough heat and light for the tropical pineapple, which grew all year round. Heating in glasshouses during the mid 17th century was provided by furnaces placed within the structure, but fumes often damaged or killed the plants. Hot-air flues were then devised, which dissipated heat slowly through winding flues built into cavity walls. These 'fire walls' were heated by hot air rising from furnaces or stoves and required constant stoking with coal. This was a dangerous method and many early 'pineries', as they later became known, burned down when the inevitable accumulation of soot and debris within the flues caught fire. A light environment with even, fume-free, continuous heat was still only an aspiration.

Henry Telende's method of pineapple cultivation was published in Richard Bradley's *A General Treatise of Husbandry and Gardening* in 1721. Telende grew the young plants, called 'succession plants', in large cold frames called tan pits. The fruiting plants would subsequently be moved into the stove or hothouse to benefit from the additional heat provided by the hot-air flues.



James Justice's plan of the pineapple stove published in The Scots Gardiners' Director, 1754

The tan pits were lined with pebbles at the bottom followed by a layer of manure and then topped with a layer of tanners' bark into which the pots were plunged. The last of these elements was the most important. Tanners' bark (oak bark soaked in water and used in leather tanning) fermented slowly, steadily producing a constant temperature of 25°C–30°C for two to three months and a further two if stirred. Manure alone was inferior, in that it heated violently at first but cooled more quickly. Stable bottom heat is essential for pineapple cultivation and tanners' bark provided the first reliable source. It became one of the most fundamental resources for hothouse gardeners and remained in use until the end of the 19th century.

James Justice, a principal clerk at the Court of Sessions at Edinburgh, was also a talented amateur gardener. On his estate at Crichton he developed an incredibly efficient glasshouse in which he combined the bark pits for succession and fruiting plants under one roof. (Justice published a very elegant drawing of it in *The Scots Gardiners' Director* in 1754.) In a letter to Philip Miller and other members of the Royal Society in 1728, he proudly announces: 'I have eight of the Ananas in fine fruit'. The letter makes Justice the first documented gardener to have grown pineapples successfully in Scotland, which may be one of the reasons why he was appointed fellow of The Royal Society in 1730. The genus *Justicia*, named after him, commemorates his horticultural legacy.

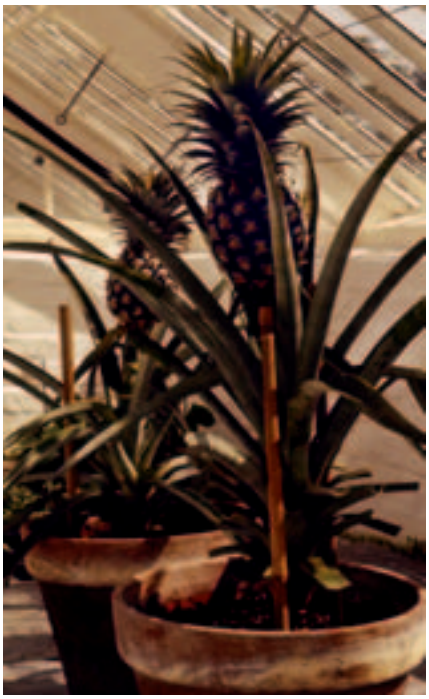
An interesting variant growing structure was the pinery-vinery, first proposed by Thomas Hitt in 1757. Here, vines created a canopy for an understorey of pineapples. The vines would have been planted, as was customary in vineries, outside, and fed into the structure through small open arches built into the low brick wall. A fervent admirer of this method was William Speechly, gardener to the third Duke of Portland, and grandson of William Bentinck, who had sent the first batch of pineapples to Britain in 1692. Portland inherited Welbeck Abbey in Nottinghamshire in 1762, and his passion for growing pineapples nearly ruined him. Nevertheless, he sent Speechly to Holland like many before him to study all the latest techniques. Speechly published his now greatly refined methods in *A Treatise on the Culture of the Pineapple and the Management of the Hot-house* in 1779, with a detailed plan of his 'Approved Pine and Grape Stove'. Overall, however, the structure is very similar to Justice's earlier design of 1730, and Speechly may have drawn important lessons from it. The profile is virtually identical and he also combined the tanners' bark pits for young and fruiting plants into one structure, the former at the front, the latter at the back.

The most stunning setting for pineapple hothouses was in the kitchen garden at Dunmore, Scotland, the seat of John Murray, Earl of Dunmore. The roof of the summerhouse, built into the sheltered south-facing wall, is carved into the shape of a giant stone pineapple and still commands the walled orchard today. Its gothic ogee-arched windows terminate cleverly into the midrib of the leaves that curve outward in beautiful arches four feet wide. Above, the leaf-like bracts and plump fruitlets give it an incredibly naturalistic look. The structure is completed with a spiny-leafed crown. To anyone familiar with pineapple varieties it is immediately obvious that the cultivar 'Jamaica Queen' must have been used as the model, a variety with fiercely spiny leaves, outward projecting fruitlets and a perfectly egg-shaped outline tapering more towards the top.

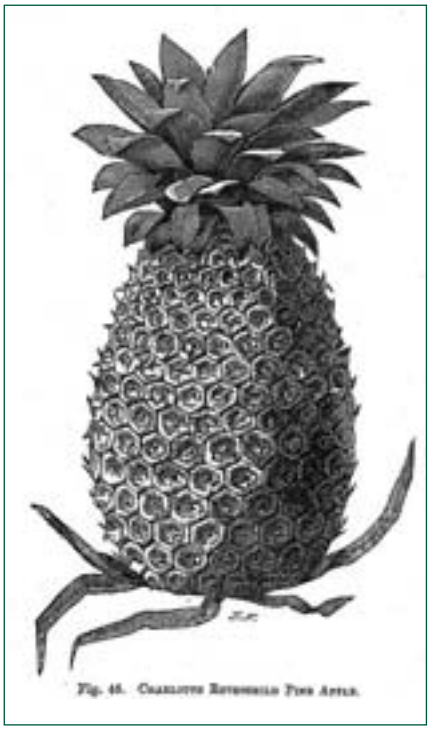
Although this outstanding work of art survives, the hothouses which would have flanked it have gone; the chimneys for the flues, beautifully disguised as Grecian urns are now the only evidence that this exotic fruit once flourished here. Astonishingly, both the architect, and the date of this extraordinary building are unknown, but it is thought to have been carved by Italian stonemasons due

The extraordinary Pineapple Summerhouse at Dunmore, Scotland was once flanked by hothouses (1761–1776)

Plunging pineapples back into leaf mould and straw after potting on at the Lost Gardens of Heligan, Cornwall



'Smooth Cayenne' pineapples fruiting in their clay pots at the Lost Gardens of Heligan, Cornwall



'Charlotte Rothschild' pineapple illustrated in J Wright's The Fruit Grower's Guide Vol V

to the fine quality of the work. The portico, a pedimented Venetian arch, was built in 1761 but the stone pineapple roof is thought to have been added later between 1761 and 1776.

Although Philip Miller and John Abercrombie extolled the virtues of tanners' bark while lamenting the flaws of manure, many structures that used dung as a heating method were devised into the mid 19th century. Adam Taylor wrote a tract *A Treatise on the Ananas or Pine-apple* in 1769 in which the use of horse manure was promoted, probably for the first time, as a method of heating a pineapple pit. The difference here is the use of pits compared to hothouses; pits require less heat to warm the air around the pineapples. Crucially, however, the pots were still plunged into tanners' bark to provide bottom heat near the plants, with the added bonus of a slightly better odour. The dung was confined to two outer bays flanking the structure, and the fermenting manure released heat, which was conveyed into the structure through pigeon holes. These glasshouses were effectively large cold-frames and this moderate version of a pineapple hothouse meant smaller estates could afford to serve a pineapple at the dinner table. (Pineapples could be hired for dinner parties but cost a guinea each, two if eaten.)

A restored 19th century manure-heated pineapple pit can be seen in action, complete with steaming dung pits and fruiting pines, at the Lost Gardens of Heligan near St Austell in Cornwall. Unfortunately, tanners' bark can no longer be obtained, making it even more difficult to achieve a healthy crop without the aid of artificial heating. Despite this, large crops were achieved in 1997 and 2002, the latter without the help of tanners' bark. The first fruit was sent to the Queen, thereby honouring the tradition initiated by Matthew Decker over 250 years ago.

THE 19TH CENTURY

Three developments of the Victorian period changed pineapple cultivation radically: the inventions of hot water heating in 1816 and sheet glass in 1833, and the abolition of the glass tax in 1845. From then on glasshouses for pineapple cultivation became very large and grand structures, with up to 1,000 plants packed into them.

Pineapple cultivation had, by this time, spread widely in Northern Europe to places such as St Petersburg, Paris, Warsaw, Berlin and Munich.

One of the most successful pineapple growers was Joseph Paxton, head gardener to the Duke of Devonshire at Chatsworth between 1826 and 1858. His pineapples were the envy of every estate and regularly won medals at horticultural shows. The pineapple houses at Chatsworth were erected in 1738, but had declined somewhat before Paxton took over. Now quantity as well as size became important, and gardeners were expected to produce fruit all year round; this required a good knowledge of the best winter and summer-fruiting cultivars. If records can be believed, Victorian gardeners grew pineapples of enormous sizes. Cultivation of the pineapple was now the measure of a gardener's skill and a pinery was mandatory for every estate kitchen garden, and remained so for almost another century.

1900 TO THE PRESENT DAY

Pineapples were still exhibited at horticultural shows in the 1900s but, ironically, just as pineapple cultivation was being perfected, the demand for the home-grown pineapple began to dwindle as imported fruits started to arrive in much better condition than in the past. The first world war eventually put a stop to this horticultural extravaganza.

Sadly, of the 52 varieties listed by Monro in 1835, only two remain in cultivation today, 'Smooth Cayenne' and 'Jamaica Queen'. These are thought to be the two major strains from which most cultivars originated. From the 1950s onwards, pineapples were bred so they fitted neatly into a tin. Fruits with a characteristically pyramidal shape such as 'Black Prince' became extinct. Fortunately, however, some traces of Britain's long and sometimes eccentric love affair with the pineapple remain. Two working pineapple glasshouses can be seen in Britain today: the 19th century pineapple pit at the Lost Gardens of Heligan, mentioned above, and the pinery-vinery at Tatton Park, which is a recently restored structure dating from the mid 18th century.

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JOHANNA LAUSEN-HIGGINS came to the UK in 1999 to work at the Lost Gardens of Heligan where she tended the glasshouses, pineapple pit and outdoor fruit trees and plants. She completed a BSc (Hons) at the Royal Botanic Garden Edinburgh (RBGE) last year, is currently studying for an MA in Garden History at the University of Bristol and is an occasional lecturer at RBGE. She would like to thank Jeremy Milln, a National Trust archaeologist, for supplying information about the pinery-vinery at Tatton Park. Email jlausenhiggins@gmail.com.

POND PLANTS AND WILDLIFE

Mark Woods

A typical stone-lined 19th-century ornamental garden pool: regular silt clearance for the fish limits the diversity of species that the pond can support.

In 1999 the Pond Conservation Trust estimated that there were approximately 400,000 ponds in Britain.[1] Ponds are important not only as a unique resource for biodiversity, an amenity for a wide range of interests, and a visual focus in many landscapes, but also because they form a key part of the culture and history of Britain. An estimated 98 per cent of the ponds in lowland Britain are of artificial origin and were created for a wide range of agricultural, industrial and ornamental purposes.

Some of Britain's oldest artificial ponds are associated with medieval manors and monasteries, and were created for functional rather than ornamental reasons. During the 18th century, many of the surviving manor ponds were modified for aesthetic reasons and incorporated into the gardens of large country houses or enlarged into lakes and surrounded by parklands.[2] Others were modified for water storage, often to supply fountains and artificial waterfalls. Some were stone-lined, stocked with ornamental plants and sometimes fish, and regularly cleared of silt and debris. As a consequence, they are usually of limited value for nature conservation, although they remain of enormous cultural and historic significance. However, many former manor and monastic ponds were located in less formal areas of estate gardens such as ornamental woodlands and grazed lawns. It is these ponds that have often developed a significant nature conservation interest because of their age, continuity of low-intensity management and lack of agro-chemical inputs.

In the late Victorian and Edwardian periods, ponds and pools were created for many different ornamental and leisure purposes in public parks and private gardens. The variety is almost endless, from rambling picturesque boating ponds and shallow skating ponds in public parks, to small duck ponds on village greens, and from the stiff canal-like pools popularised by Gertrude Jekyl, to romantic Japanese water gardens. In each case, complex ecosystems may have to be taken into account whenever conservation and repair work is being considered.

LOST PONDS

While the cultural significance of ponds in historic parks and gardens is often obvious, their ecological value has only recently been fully appreciated. One reason for this is that, when compared with larger water-bodies or rivers, ponds in the countryside are relatively ephemeral features, and without intervention they silt up, often disappearing in less than a century. Agricultural 'improvements' and, to a lesser extent, urban development in the wider countryside have also led to significant losses in the past century[1] (perhaps as high as 75 per cent) and a general decline in biodiversity. However, the loss of ponds in historic landscapes has been much less severe because of protection and sympathetic management.

National pond surveys carried out in 1996[3] and targeted research have highlighted the importance of ponds for biodiversity. For example, Wright et al (1996)[4] demonstrated that invertebrate diversity and abundance were greater in ponds than in rivers. As a result, ponds are now included in the updated list of the UK government's Biodiversity

Action Plan, 'Priority Habitats'.[5] Its website lists more than 50 priority species that are associated with ponds for conservation action, either because of significant declines in recent times, or because they are rare and threatened by extinction. Ponds are also used for breeding by all three European protected[6] amphibians that occur in Britain including the great crested newt *Triturus cristatus*, the pool frog *Rana lessonae* and the natterjack toad *Bufo calamita*.

WHAT MAKES A GOOD POND FOR WILDLIFE?

It is difficult to be specific about what defines a 'good' pond for wildlife because different types of ponds will support characteristic flora and fauna dependent on their origin and local environmental factors such as substrate, water-source and surrounding habitat. However, there are general features that, if present, are likely to encourage ecological interest.

Water quality is important. Ponds with a high ecological interest are usually associated with water that is free of pollutants and has low levels of soil nutrients such as nitrogen, phosphate and potassium. High nutrient loads in ponds have become increasingly problematic in the British lowlands, largely as a result of agricultural intensification. This can encourage algal blooms which have a severe impact on both biodiversity and the ornamental value of a pond.

An isolated pond is usually of less ecological value than one that is located in a cluster of others, because the risk of species extinction increases as pond density declines.[1] Recolonisation of ponds that have lost populations of species becomes less likely with increasing isolation, because the more uncommon species associated with ponds often have poor dispersal mechanisms.

Ponds with structural variation are more likely to provide opportunities for a higher number of species than ponds with a more uniform structure. For example, small variations of pond-bed topography allow a greater number of dragonfly species to co-exist with each other. In a more uniform environment, smaller less-competitive dragonfly species will be less able to hide and avoid predation by the larger dragonfly species.

Native plants are preferable to ornamental ones because they support a greater diversity of animal species, but in an ornamental setting, native plants may not be appropriate. In this situation, some degree of invasion by native species should be tolerated as these plants can be helpful to wildlife: even the most heavily managed ponds can support wildflowers in the margins and the submerged plant community will usually contain some native species.

To some extent, a lack of native species in a garden environment can be offset by complex plant architecture. In general, the more diverse the plant structure, the greater the range of opportunities that organisms can exploit. In the case of a pond this can mean that a diverse range of emergent, floating-leaved and submerged aquatic plants is best.

Water-lilies are a familiar site in ponds, lakes, canals and slow-flowing rivers, but most populations of white water lily Nymphaea alba in Britain are not native. However, stands of any water-lily species in a pond can provide excellent habitat for pond fauna including great crested newts. However, the ecological value of a pond will decline, if the majority or the entire pond surface is covered by water-lily pads. This is because the heavy shade will suppress the growth of other plant species. In addition, dense stands of water-lily can reduce the area available for male newts to display and attract females. Therefore, management of aquatic plants is usually essential to maintain the long-term ecological interest of a pond. (Photo: Helen Evriviades, BSG)

The pond above is located in the grounds of Walton Manor, a 16th century building at Milton Keynes. It is a plastic-lined pond set within a formal landscape of paving, mown lawns and ornamental shrubbery that is approximately 4m in diameter and 0.75m in depth. This pond contains medium-size populations of great crested newt (peak count of 29 adults) and smooth newt (peak count of 45 adults) and common frog has also been recorded; most importantly the pond does not contain any fish species. The newts lay their eggs on the water-lily (genus Nymphaea*) pads and strands of filamentous algae. (Photo: Natalie White, BSG)*

The photograph above shows a pond in the latter stages of natural succession at Cotswold Wildlife Park, a process whereby standing water-bodies gradually infill with silt and debris, and change to wetland, then ultimately to terrestrial habitat. The pond shown is now dominated by bottle sedge Carex rostrata *in the centre, with hard rush* Juncus inflexus *and marsh bedstraw* Galium palustre *on the margins, and could be classified as a wetland rather than aquatic habitat.*

Although ponds such as this can support amphibians, they are sub-optimal for breeding purposes, because of a lack of open water for display. Unless there is good reason, ponds with a complete cover of wetland rather than aquatic plant species should not be restored by removal of vegetation and silts because wetlands are often as valuable as ponds and will support a different biological community to that which is typically associated with ponds. In all cases, a survey should be carried out before any management is implemented. (Photo: Helen Evriviades, BSG)

The dew pond at Brackenhurst Hall, which was constructed in 1928, is a fine example of a pond with significant ecological and historical value in a formal garden setting. (Photo: Neville Davey)

It is important to remember that too much pond vegetation can have a detrimental impact and can cause undesirable chemical changes such as daily oxygen depletion. Ideally, a pond with approximately 35 per cent open water and 65 per cent vegetation cover during late summer is recommended, as some species require areas that are relatively plant-free. Newts for example need areas of open water to mate.

Broadleaved trees and shrubs on the margins of ponds can be both desirable and detrimental. Many aquatic invertebrates feed on decaying organic matter and the input of small amounts of deadwood and leaves from bank-side trees is desirable. In addition, trees on the north side of a pond can be beneficial because they shelter the pond surface and keep areas ice-free, allowing wildfowl such as diving ducks to forage. However, too many bank-side trees will shade the surface of the pond and restrict aquatic plant growth and excessive input of dead leaves can rapidly increase water acidity and accelerate the rate of infill.

PONDS IN HISTORIC LANDSCAPES

In historic landscapes, estate managers will often be expected to manage ponds primarily for their ornamental appeal, but this does not need to conflict with ecological management. For example, many of the techniques employed to maintain the aesthetic appeal of ponds, such as clearance of emergent vegetation, can also benefit wildlife.

In a short article it is not possible to cover all aspects of pond management techniques, but the Brackenhurst case study which follows covers many of the generic issues and solutions for restoring and managing a pond of significant ecological, historical and cultural importance.

BRACKENHURST HALL DEW POND

The 200ha Brackenhurst Estate is approximately 1.5 miles to the south of Southwell in Nottinghamshire. The estate includes the 18th century, Grade II-listed Brackenhurst Hall, gardens and parkland. The hall and its grounds have been used as an agricultural college for over 60 years and in 1999 merged with Nottingham Trent University. The hall is now home to the university's School of Animal, Rural and Environmental Sciences, and its gardens are managed by the university's estates department and horticulture staff at the Brackenhurst campus.

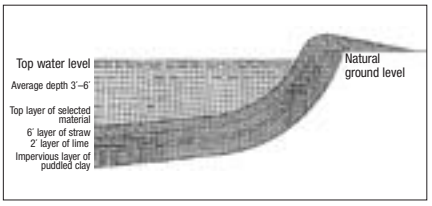
In 1928 the gardens were landscaped in the style of Sir Edwin Lutyens, including an Italianate courtyard, a sunken Dutch garden, rose garden, Japanese rock garden and a teardrop-shaped dew pond that was partly set in ornamental woodland, with a boathouse and 'willow pattern' bridge. Water collected from the roof of the hall was fed through a drainage system to supply water to the dew pond and small stone-lined ponds located in the formal garden areas. Excess water drained out of the system via outflow pipes into the ha-ha that still surrounds the gardens.

The dew pond was of particular historical interest because of its traditional design and construction, a feature not commonly found in Nottinghamshire. Although the dew pond was primarily designed as an attractive feature, its close proximity to the hall ensured a useful source of water in event of a fire.

Prior to its merger with Nottingham Trent University, a lack of resources during the latter half of the 20th century led to some of the garden features falling into a state of neglect. Fortunately, the development of horticultural courses on the campus provided the expertise and labour to start to restore the gardens.

Brackenhurst Hall and dew pond in the early 1930s (Photo: Nottingham Trent University Archives)

The rose-garden pond at Brackenhurst Hall in the 1930s (Photo: Nottingham Trent University Archives)



The drawing shows a cross-section of a typical dew pond. The straw and lime layers are flexible and protect the impermeable layer of puddled clay from damage by grazing livestock. (Source unknown)

Discussions with English Heritage during the late 1990s identified the dew pond and its associated features as a high priority for restoration and work began in March 2001. By this time the dew pond was usually dry in summer, choked with tall reeds and partly infilled at the east end, which had isolated the boathouse from the pond. However, the restoration was not straightforward because, a year before the work was due to start, biological surveys identified the presence of great crested newts in the gardens.

The presence of the newts required the restoration work to be carried out under a conservation licence from English Nature (now Natural England). In order to obtain a licence it was necessary to demonstrate that the work would be of benefit to the newts. Clearly the provision of a restored 150m^2 breeding pond would be a conservation gain for newts, but horticultural staff raised concerns about the constraints of managing the gardens, given the presence of a protected species. Concerns were addressed by the preparation of an action plan which minimised the risk of harming newts and enabled the gardens to be managed without undue constraints. Although many ponds will not contain newts or protected species, this example confirms the importance of carrying out biological surveys and historical research before restoring a pond or resuming pond management in historical landscapes.

The restoration work required tracked excavators to remove vegetation and soils, and to restore the original profile. The

The rose-garden pond in 2005 supports a small breeding population of great crested newts. The pond is leaking (hence the low water levels), but is due for restoration as part of a larger project to restore the rose-garden. The stripped and weighted plastic bags provide newts with alternative egg-laying substrate and will be replaced with suitable plants once restoration work is completed. A brick ramp is installed in the pond during summer to allow young amphibians to escape. (Photo: Neville Davey)

A great crested newt, captured during post-restoration monitoring of the Brackenhurst dew pond. The distinctive belly patterns are unique to each adult and can be used to identify and track the fate of individuals during future monitoring events. (Photo: Neville Davey)

damaged dew pond lining was removed and replaced by a butyl liner and the water control structures were repaired. All of the work was supervised by a licensed ecologist (a requirement of the English Nature licence) and any animals encountered (including the newts) were trapped and removed to suitable habitat elsewhere in the gardens.

Photographs taken in the early 1930s clearly showed that the pond margins were planted with emergent reeds and tall herbs, and that the open water areas contained small patches of water-lily (genus *Nymphaea*) but it was not possible to identify the actual plant species. If the pond had been located in the parkland areas, then native or naturalised species would have been selected for planting. However, given the pond's location in the gardens, a mix of native and ornamental species was considered to be more appropriate.

In order to balance the requirements of wildlife with amenity considerations, the marginal strip of emergent vegetation around the dew pond is restricted to a width of less than 1.5m and submerged and floating leaved plants do not occupy more than 65 per cent of the open water areas. Routine vegetation control is carried out by hand-raking and pulling during winter, when newts are absent. The work is labour-intensive and often unpleasant, but if regularly undertaken will be less intrusive than occasional large-scale interventions. After removal, plant materials are left next to the pond for two to three days to allow stranded invertebrates to return to the pond.

Parkland ponds are often effectively managed by controlled livestock grazing and trampling. The action of livestock at the water's edge fragments marginal vegetation and creates muddy areas. Wet patches of mud create opportunities for specialist invertebrates and short annual plants, which would not occur in the absence of livestock. However, some control of livestock is essential to prevent too much damage to ponds. For example, exclusion of livestock during early summer will protect amphibians during their breeding season.

If vegetation control is necessary, mechanical and chemical controls should be avoided unless there is no other satisfactory alternative. However, there are cases where chemical control may be necessary to control the spread of plant species listed on Schedule 9 of the *Wildlife and Countryside Act 1981*. A significant number of these species are aquatic (see text box below) and pond managers should avoid planting these species in historic landscapes.

Many ponds in historical landscapes will contain populations of fish. These ponds are often devoid of amphibian populations because of predation of larvae and at high densities of fish the diversity of invertebrates can also be affected. However, this is not always the case and for ponds already containing fish there is little ecological value in removal unless the pond is overstocked. However, if protected amphibians such as great crested newts are present, then the introduction of fish is a criminal offence under the *Wildlife and Countryside Act 1981* and ignorance of the presence of the newts is not a defence; it is the landowner's duty to find out!

When the dew pond was restored, the mature bank-side trees were retained. The south and the north banks have been kept clear of trees to maintain views from the hall and to minimise shading of open water. Elsewhere, the bank-side trees have been regularly pruned to maintain their shape and keep them in a safe condition, but small amounts of deadwood (twigs and shoots) are allowed to fall into the pond to provide food for the many aquatic invertebrates that feed on decaying organic materials.

Water control structures such as silt-traps are regularly checked to ensure that they are still functional. To date, repairs have not been required, but if necessary they will have to be carried out under the supervision of a licensed ecologist because the newts use these structures for resting and foraging.

SCHEDULE 9 OF THE *WILDLIFE & COUNTRYSIDE ACT, 1981*

It is an offence without a licence, to plant or cause to grow, any plant listed on Schedule 9. The list includes plants that may pose a threat to our native flora. The list is revised from time to time and the current list of aquatic species is provided below.

- Water fern *Azolla filiculoides*
- Canadian pondweed *Elodea canadensis*
- Fanwort *Cabomba caroliniana*
- Parrot's-feather *Myriophyllum aquaticum*
- Australian stonecrop *Crassula helmsii*
- Giant rhubarb *Gunnera tinctoria*
- Water hyacinth *Eichhornia crassipes*
- Himalayan balsam *Impatiens balsamifera*
- Floating pennywort *Hydrocotyle ranunculoides*
- Duck potato *Sagittaria latifolia*
- Curly waterweed *Lagarosiphon major*
- Water primrose *Ludwigia grandiflora*
- Water lettuce *Pistia stratoites*
- Floating water primrose *Ludwigia peploides*
- Nuttall's Pondweed *Elodea nuttallii*
- Water primrose *Ludwigia uruguayensis*

The boathouse and willow-pattern bridge at the east end of the dew pond three years after restoration. Marginal vegetation has developed further, but the channel is being annually cleared of floating and submerged vegetation to provide male great crested newts with sufficient open water to display to females during courtship. (Photo: Neville Davey)

The small stone-lined ponds in the gardens continue to support breeding amphibians, so any work such as masonry repairs, vegetation clearance and cleaning are carried out during winter. During the amphibian breeding season brick ramps are temporarily placed into two of the stone-lined garden ponds that have vertical sides. The ramps allow young amphibians to leave the ponds and are subsequently removed towards the end of summer when young amphibians have left the pond.

Management of the surrounding gardens has been adapted to reduce the risk of harm to newts. Structural repairs and maintenance are carried out during spring and early summer when newts are in the breeding ponds. The grasslands surrounding the pond are kept short throughout the year to deter newts from using this habitat for dispersal. Flowerbeds next to the pond are planted with perennial plants and mulched with wood chips to minimise the need for soil cultivation and to reduce the risk of disturbance to newts. The gardens are managed organically, so the risk of water pollution and amphibian poisoning has been removed.

With careful timing and appropriate techniques, the aesthetic and ecological value of Brackenhurst's dew pond has been restored. The dew pond is once again an attractive and key feature of the gardens. The ecological value of the gardens (including the dew pond) has been recognised by its designation as a County Wildlife Site and the population of the newts, now estimated to be greater than 2,000 adults, is considered to be of regional importance. The pond also supports a diverse range of plants, nesting wildfowl, foraging bats, and at least eight dragonfly and damselfly species.

Notes

1. P Williams et al, *The Pond Book: A Guide to the Management and Creation of Ponds,* Pond Conservation Trust, Oxford, 1999
2. E Agate and A Brooks, *Waterways and Wetlands: A Practical Handbook*, BTCV, Reading, 1997
3. P Williams et al, *Lowland Pond Survey 1996*, DoETR, London, 1998
4. JF Wright et al, 'Macro-invertebrate Frequency data for the RIVPACS III sites in Great Britain and their use for conservation evaluation', *Aquatic Conservation: Marine and Freshwater Ecosystems*, 6, 1996
5. The UK list of priority habitats can be viewed online at www.ukbap.org.uk/PriorityHabitats.aspx
6. *The Conservation (Natural Habitats &c) Regulations*, HMSO, London, 1994

Useful Contacts

County Wildlife Trusts – you can find your county trust by searching The Wildlife Trust's website: www.wildlifetrusts.org.

The Pond Conservation Trust: see www.pondconservation.org.uk.

County Biological Records Centres – you can find species records for your local area by searching the local records centre pages on the website of the National Federation for Biological Recording: www.nbn-nfbr.org.uk.

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Contemporary photographs were provided by Neville Davey CBiol MSB CEnv MIEEM (lecturer, Nottingham Trent University) and archive photographs were kindly supplied by Nottingham Trent University.

STANLEY PARK
AND THE GLADSTONE CONSERVATORY, LIVERPOOL

Adrian Pearson

View of the restored conservatory and bandstand in its new landscape setting

Stanley Park, a Grade II registered landscape, is located some two miles north-east of Liverpool city centre in a predominantly late-19th and 20th-century residential area. The site is approximately 45 hectares, and slopes away from its southern boundary.

The park's surroundings are dominated by the football stadiums of Liverpool Football Club and Everton Football Club. Liverpool's ground, Anfield, abuts Anfield Road on the Park's southern boundary, while Everton's Goodison Park lies across Walton Lane beyond its north-west corner.

STANLEY PARK

Stanley Park was one of three municipal parks conceived together in the mid-19th century to provide Liverpool with attractive open space for citizens of all classes, but specifically for the working class. At that time the city was growing at a phenomenal rate in a generally unplanned and uncoordinated manner. Public open space was extremely limited. The successful development of the highly influential Birkenhead Park (1843–7) by the towns's local rivals provided the spur for the development of a grand plan to form a ring of parks around the city limits. Although not fully realised, the plan's outcome was the creation of three great Victorian municipal parks: Sefton in the south (André and Hornblower, 1872), Newsham in the east (Kemp, 1868) and Stanley in the north (Kemp and Robson, 1870).

Stanley Park is arguably the most architecturally significant of the city's parks. The park and adjacent Anfield Cemetery were designed by Edward Kemp, a pupil of Joseph Paxton who had assisted with the design of the landscape at both Chatsworth House and Birkenhead Park. His proposals combined many of the features laid out at Birkenhead Park and Sefton Park. The result

Aerial view of the park with Goodison (Everton FC) in the foreground and Anfield (Liverpool FC) in the top right (English Heritage)

Historical postcards from the park's heyday (Liverpool City Council)

was a superb composition of three distinct zones (formal, informal and 'picturesque' landscape), carefully and subtly interrelated, that exploited the south to north fall of land across the site. Kemp's plan was enhanced by the successful fusion of landscape and built form through the buildings and structures designed by ER Robson, then the city architect. The partnership proved very successful and led to further collaborations (including Saltwell Park in Gateshead) before Robson went on to become the school boards architect for London.

Stanley Park was formally opened on Saturday, 14 May 1870 to great acclaim. The event was sufficiently grand to secure coverage in the *Illustrated London News* (28 May 1870), which reported:

> *Stanley Park which was formally opened by the Mayor Mr Joseph Hubback on Saturday the 14th inst will be a valuable boon to the inhabitants of the north end of the town... The ground taken for this new Park is very high, commanding a panorama of South Lancashire and Cheshire with the sea coast: the distant mountains of North Wales as far as Snowdon on the one hand: the mountains of Westmorland and Cumberland on the other: some of the North Yorkshire Hills: Blackstone Edge and the Peak of Derbyshire: but the last of these are often obscured by the smoke of the factory districts. The park is greatly laid out with a terrace, lawns and shrubberies, a lake and bridges over it arranged by Mr Kemp; landscape gardener of Birkenhead.*

Sadly, the impact of the original layout had been greatly diluted by subsequent alterations, which have almost entirely been made without consideration or sympathy for Kemp's aims. These changes included the insertion of bowling greens and tennis courts as well as the use of a large area of the 'middle ground' for football pitches, all contributing to the loss of clarity of Kemp's vision.

The buildings and other structures in the park were originally set within a carefully composed and balanced landscape but its fabric and integrity have suffered, as have the built elements it incorporates. Tree planting, predominantly concentrated along the park's northern and western boundaries, had been poorly managed over many years resulting in the loss of many fine views, both within and out of the park. The landforms remained much as they were laid out by Kemp, although insensitive re-grading around the lakes had created an inward looking and detached zone, cutting off views and compromising pedestrian safety.

Through the latter half of the 20th century the landscape and structures became victim to the cycle of chronic underfunding and endemic misuse that has affected many municipal parks. This was exacerbated by well-intentioned but ill-advised changes to the structure of the park and its facilities. Not long after opening, one of the lakes was filled in, presumably in response to a problem with the lake lining. A sunken garden (the Audley Gardens) was created and furnished with statues depicting characters from fairy tales and mythology donated from a Liverpool benefactor, George Audley. From 1923 until the early 1960s an outdoor swimming pool occupied a section of the original lake formation.

Later, the brutal design of the leisure facilities on the eastern section of the park delivered an unsightly backdrop to the decaying historic features of the central core. Finally, an attempt to reuse the conservatory as a public house only hastened its demise and encouraged misuse of the western end of the terraces.

Outside the three zones of the park's original core a fourth component, the eastern park, was of considerably less interest. Not only did this section fit awkwardly with Kemp's historic core, it had been subject to the most aggressive change. The area was dominated by the large municipal sports hall previously mentioned and now demolished, accompanied by a vast expanse of tarmac that provided match day parking for the nearby football grounds. This presented the ideal location for the planned new stadium, which in turn would provide the catalyst for the landscape restoration and regeneration of the park.

By the turn of the new millennium little positive activity was being generated by those who were using the park, although it was clearly still much loved by local people. There was an accepted need to change the cycle of misuse and encourage local people to reclaim possession of the park. In other urban parks the value of considered regeneration and proactive management had proved that change was possible. In Lloyd Evans Prichard's direct experience this had been well demonstrated at Heaton Park, Manchester and at Birkenhead Park. The funding model applied at Stanley Park would need to be quite different to suit the park's specific requirements and those of the parties directly involved in the regeneration plan.

REGENERATION

In 2004 Lloyd Evans Prichard (LEP) was commissioned to complete a condition and historic appraisal of the buildings and

The restored central pavilion on the formal terrace: new cast iron gates and screens were added to prevent unwanted access when the park is closed.

Prior to the regeneration, the central pavilion had become the focus for anti social behaviour which resulted in the near loss of the building.

A view of the restored sandstone bridge following reconstruction of the guardings and refuge detail

structures within the park landscape. This work formed an integral part of the wider planning application for the construction of the state-of-the-art football stadium on the eastern park for Liverpool FC. The permission for the stadium was hard fought and ultimately granted, but was conditional upon the full restoration and regeneration of the historic core of the park. LEP was subsequently appointed by Liverpool City Council to take responsibility for the restoration of the many structures which decorated Kemp's landscape. These included pavilions, bridges, the Gladstone Conservatory, and a variety of other built elements.

THE PAVILIONS

These structures provided shelter along Kemp's formal terraces and framed the views across the park to the distant landscapes. Constructed in Liverpool's signature red sandstone, they adopt a simplified gothic style with columns and arches supporting slate roofs. The regeneration proposals included plans for their full restoration in tandem with the provision of new landscape features based on Kemp's original planting plans.

THE BRIDGES

Kemp's picturesque landscape included three lake areas crossed by a sandstone bridge and four iron beam composite bridges. These were in varying states of disrepair with the sandstone bridge being shut to the public since extreme vandalism had led to much of the parapet walls being pushed into the lake. The stone was retrieved from the waters and used to provide templates for replacement stone. The bridge was then carefully reconstructed to match its original configuration.

The composite bridges were generally in a better condition but it was necessary to carefully dismantle the structures for restoration to allow for the repair of the corrosion to their iron beams. In due course these were reconstructed with new stonework to match the existing where this was required.

OTHER BUILT ELEMENTS

Other features of the park which were identified in the regeneration plan included the bandstand, boundary railings and walls, the surviving masonry plinth of a long since destroyed boathouse, and a number of smaller Edwardian shelters used in conjunction

Typical damage to the stonework baluster detail to the abutments of the composite bridges

A composite bridge with new resin bound gravel surfacing

with the bowling greens and tennis courts. While some of these were considered to be inappropriate in the context of the restored landscape, many were restored and presented in the light of their new setting.

One further major structure presented the greatest challenge in providing a positive benefit to enhance and promote the regenerated landscape, the Gladstone Conservatory.

THE GLADSTONE CONSERVATORY

While this iconic building was not an original feature of the park, its carefully chosen position complements and enhances the westernmost section of Kemp's formal terraces. The glasshouse was gifted to the park by Alderman Henry Yates Thompson in 1900. Earlier, and presumably for fairness, Thompson also gave Sefton Park in the south of the city an even grander glasshouse, the Palm House. Both are predominantly cast and wrought iron structures by McKenzie and Moncur of Glasgow. The Palm House restoration in 2000 provided a model for the regeneration of the Gladstone Conservatory. Indeed, it was clear that many similar components had been used through both structures although their specific function and form are very different.

The development of a business plan based on audience development research brought forward proposals for the restoration and reuse of the building as a function and wedding venue with the addition of a permanent café for park users. In essence, the strategy was to carefully dismantle and restore the existing historic iron frame off-site while a contemporary undercroft structure was built to house the ancillary accommodation required to serve the new use. The restored iron frame was then to be re-erected on the new undercroft structure to present the listed building free of any of the modern accretions that would diminish the appreciation of its historic form and volume. The setting of the conservatory and the adjacent bandstand would be subject to a radical reappraisal so that the relationship between the buildings and landscape could be enhanced. In effect, a new precinct was created to lead visitors from the car parking areas through the building and into the landscape. Careful attention to documented evidence of Kemp's planting plans allowed the landscape architects (Planit EDC) to propose a form and plant types which acknowledged his influence.

Following budget cost approval in November 2005, a detailed survey of the conservatory structure was carried out in December of that year. The aim was to comprehensively analyse the condition of the ironwork and assess the component assemblies that made up the walls and roof. In turn, this would allow the production of a scope of works to provide both a structure for cost control and a specification to guide prospective contractors on materials and workmanship. The survey was carried out over a three-day period in two teams; one assessing the condition of high level elements using a hydraulic platform and one at ground level assessing the lower wall structure.

The difficulties of scheduling repairs in such a structure were acknowledged at a very early stage in the process. Having been involved in dismantling three pairs of listed iron promenade shelters in Blackpool, LEP knew that the structure's true condition would only be revealed once deconstruction and removal of finishes commenced. Through discussions with recognised specialists in this field of work it was resolved that the most appropriate way to manage this would be to break the process down into elements that could be defined and costed (dismantling, re-erection, glazing, painting and so on), while accepting some flexibility within the repair of elements so that the tender figure could be managed as the restoration progressed.

The restored conservatory prior to introduction of loose furniture and tables. The lift housing and stair stand as independent contemporary interventions in the volume of the restored iron framed conservatory.

The detailed survey allowed LEP to break down the entire structure into a series of component assemblies. The building is essentially a kit of parts: knowing how the components fit together allows a clear understanding of how best to dismantle and re-assemble it. Based on this detailed knowledge, it was also possible to produce appropriate specifications and costings for the paint and glazing systems and to calculate the contractor's overheads, scaffolding costs and so on.

This left the restoration of the ironwork as the element of greatest uncertainty. The design team carefully considered methods and proposals for managing this 'risk' within a defined contract cost. In effect, the specification dictated the materials and restoration techniques. It was the extent that these would be required that was impossible to accurately forecast with the information available at that stage. The LEP survey had identified a proportion of the structural elements that would require replacement. These were scheduled on a component-by-component basis so that a unit cost for each could be established and an overall cost for 'new' identified.

The element of 'repair' for each component was also scheduled but it was down to the expertise and experience of the chosen specialist subcontractors to reassess this once deconstruction was under way. This did not remove the risks involved but it did allow the design team to establish and monitor costs as the contract works progressed. This approach placed a great deal of responsibility on the design team to manage the process effectively but it was agreed that this was the best way forward.

Prior to the regeneration the conservatory was a ruinous shell.

The wrought and cast iron frame was carefully recorded and dismantled for restoration off site in workshop conditions. This allowed the construction of the contemporary basement structure which would provide a café for the park and all ancillary accommodation. The restored frame was then re-erected on its new base.

View of the basement park café which spills out onto the terrace on the north side of the conservatory

The restored conservatory and bandstand in the setting of the new landscape precinct

RESTORATION

The process identified two key areas where materials specification was crucial to success: replacement ironwork and the provision of new glazing. LEP's investigations confirmed that the structure was a combination of cast iron elements (columns and decorative friezes), wrought iron elements (glazing bars, purlins, and fixing straps) and early steel beams (eaves beams and ridge). In general, the team's approach dictated the maximum retention of original fabric. Where repairs to elements were required these were to be on a 'like-for-like' basis so that wrought iron, for example, would be repaired using wrought iron of a matching quality. However, where replacement of components was necessary this was less straightforward.

Wrought iron is simply no longer manufactured commercially, and only 'reclaimed' wrought iron is available. This is difficult to grade and can vary from good quality (ships chains) to poor (reclaimed railings). This clouds the issue of like-for-like provenance. Allied to this, the supply of true wrought iron is variable and few sources reclaim the material in quantity. For this reason it was decided that replacement components should be supplied in a contemporary material. Our research highlighted the compatibility of 'pure iron', a modern material with a similar composition, structure and properties to wrought iron. Its use would allow damaged components to be reused as compatible material for like-for-like repairs. All replacement components would be clearly stamped and dated to identify their origin.

The issue of replacement glazing would prove an even more difficult issue to address. In conservation terms the aspirations were to use the most historically accurate replacement glass possible. However, the practical requirements for environmental control and safety would also need to be considered. Given the building's intended new use, any measures to address overheating in summer and cold in winter could not be ignored. Likewise, the health and safety implications of overhead glazing in a public building needed to be fully acknowledged.

Having used a modern Swiss manufactured glass in a recent conservation project, LEP was aware that it was possible to source slightly textured or rippled glass in large sheets with a nominal increase in the thickness of the glazing system. It was likely that the original glass was approximately 4mm thick. To increase this by any substantial amount would create issues in terms of the rebate depth of the glazing bars and their structural capability.

Through detailed discussions with the manufacturer a system was proposed which used a similar product in a laminated form. Unfortunately, this fell victim to the value engineering exercise that was necessary to keep costs within budget. As a compromise, and with the close involvement of the specialist restoration contractor (Eura Conservation), it was decided to use a modern float glass which is overheated as part of the toughening process, resulting in a slight distortion to its surface finish. The float glass does not match the aesthetic of the more expensive option but its use did address the safety issues and incorporating a solar control safety film on the inside also provided some environmental benefit.

This approach resulted in an overall thickness of 6mm on inclined overhead glazing and 10mm on the low level vertical areas where the use of a more robust material was considered prudent. The structural engineers considered that the existing structure would be more than capable of accepting any increased loading.

The new glass would allow the proposals to keep within the budget constraints and the slight imperfections in its structure would go some way towards delivering the softer look of historic glass. The use of an applied film to address environmental and safety considerations fulfilled the team's responsibilities to acknowledge the practical issues raised by the building's new public use.

STANLEY PARK TODAY

The regeneration of Stanley Park means that visitors can enjoy the full beauty of the restored landscape at their leisure and then retire to the conservatory café where modern facilities offer refreshment and comfort. Above this, the restored volume of the conservatory provides a dynamic new venue for a range of functions and uses, from weddings to display and performance.

The enhancement of the park's fabric married to the sensitive incorporation of increased security has provided a safe environment where all can appreciate the quality of the original design. More importantly, the regeneration has restored local pride in, and a sense of ownership of, the park and its structures. The cycle of decline and misuse has been broken and the park is once again the focal point of the community it serves.

Client: Liverpool City Council
Architect: Lloyd Evans Prichard Ltd
Landscape architect: Planit EDC
Project manager: 2020 Liverpool
Quantity surveyor: Gleeds
Structural engineer: 2020 Liverpool
M & E engineer: Mouchel
Ironwork restoration: Eura Conservation

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TRACING THE PAST

ARCHAEOLOGY AND GARDEN RECONSTRUCTION

Brian Dix

'Orpheus', an inverted pyramid, under construction in the grounds of Boughton House, Northamptonshire *A modern garden feature in keeping with the surrounding historic landscape was introduced after archaeological evaluation, including trial excavation, showed any earlier remains to have been largely destroyed*

Archaeological techniques allow us to rediscover the original form of historic gardens and associated parkland and provide essential information for accurate repair and reconstruction. Yet, by identifying areas of potential sensitivity and importance, such investigation often highlights the tension between preservation, renewal, and enhancement. Some gardens have been accurately restored but others are partial or complete re-creations which attempt to evoke an original spirit rather than to be a faithful reconstruction. While they may occupy the same site as an earlier garden and follow its actual dimensions and layout, they may rely for much of their detail upon the interpretation of previous descriptions and related historical sources, as in the case of the recently refurbished Elizabethan Garden at Kenilworth Castle.

Like its predecessor, which may have been designed expressly for a royal visit in 1575, the garden at Kenilworth is located below the castle keep, where an earthen terrace was constructed both as a processional way and to provide a viewing platform. According to a contemporary report a richly decorated aviary stood directly opposite and there were arbours at each end, with the area between divided into quarters by grass and sand walks, and filled with flowers, fragrant herbs and fruit trees. A tall sculptured fountain stood in the middle and the rediscovery of its foundations proved a vital key to understanding the original geometry. Taken in conjunction with various building dimensions and other measurements recorded in the historical account, the information provides a reliable basis for rebuilding the garden, although much finishing detail remains necessarily speculative and is based on analogy with contemporary practice.

Even where no remains have survived, a carefully conjectured re-creation can provide a vision of what might once have existed. Entirely new gardens built in a scrupulously researched medieval style have been incorporated within appropriate surroundings at Winchester (Queen Eleanor's Garden) and Tretower Court in Wales, and

elsewhere later designs have been copied to enhance the setting of several 17th-century houses. They include the layout of the walled courtyard or bawn at Tully Castle, above Lower Lough Erne in north-west Ulster, together with the arrangement of garden compartments and covered walks around Moseley Old Hall, near Wolverhampton, which draws upon a design from around 1640 that had been used in Yorkshire. More accurate garden reconstructions can equally mislead the unwary. Although the gardens at Ham House, on the bank of the River Thames at Petersham, are based on a plan of the former grounds there, the Cherry Garden lacks any such fruit and reproduces the historical layout with fanciful box-edged beds filled with Dutch and cotton lavenders.

Similarly, the reconstruction of the Great Garden at Kirby Hall, Northamptonshire, follows its known layout from the end of the 17th century when George London advised upon changes, but the precise detail of the reintroduced cutwork has been adapted from his design for another property.

It is easy to promote an illusion of authenticity, although the extent of fabrication, or invention, can be such that it adds an entirely false layer. Caution is required. As garden reconstruction and restoration become more and more a precondition of popular appreciation we must be aware of our intentions, our wishes, and our interpretations of the different historical and archaeological sources available.

Elizabethan Garden, Kenilworth Castle *The form and dimensions of the excavated foundation of the central fountain match those recorded in an Elizabethan description. This information, together with details from the terrace beside the keep, provides the key to understanding the layout of the garden.*

EVIDENCE

Many sources of information are available for the study and reconstruction of historic parks and gardens, ranging from contemporary written accounts and other historical documents to a variety of illustrations, including detailed views as well as measured surveys, maps and other plans. None of them was prepared with the needs of the modern inquirer in mind, however, and they remain silent on many aspects that today interest us most. We must qualify the status of the information they contain and sometimes question what they show. For example, the scale and effect of individual features and layout may have been exaggerated through tricks of perspective or artistic licence, or in order to please a patron, and works might be shown which were intended but never completed, or only finished in a different form. Reliance upon such details without means of corroboration may easily result in misrepresenting the historical appearance, together with misunderstanding original purposes. Likewise, building materials may have been deliberately selected in order to provide a contrast of colour and texture, and layout and the choice of plants might emphasise the wealth and importance of the owner, in addition to keeping up with changing fashion.

Archaeological investigation is a vital tool for discovering this kind of detail. At Hampton Court Palace, for example, early 18th-century views show a triangular garden containing a fountain at the south-eastern end of the Privy Garden, even though it appears never to have been constructed. Close physical examination of the area has failed to reveal associated earthworks or other remains, and geophysical survey has also proved negative. Had traces survived, archaeology would be an essential means of identifying their age and character. In addition to ensuring proper understanding of the history and function of surviving garden elements, its results can add knowledge about the wider context that is crucial for site interpretation and management, particularly with respect to future use and development. The historic core of many old gardens is still recognisable and typical elements of rigid landscape design can often be traced from the Middle Ages onwards, as much within existing parkland as beneath modern lawns.

Together with the banks and ditches of former raised walks and moats, lesser scarps and surface depressions betray the presence of early garden features, frequently denoting the lines of former walls and sunken paths. Previous flowerbeds can also be identified in the same way. The designed landscape surrounding a country house might also contain avenues, clumps of trees, shelter belts and other parkland planting, often previously connected with distant garden buildings and other monuments that served as the focal point of vistas or as eye-catching features. Former tree sites and lost alignments may still be visible in the shape of the ground or can be denoted by different vegetation. With abandoned approach routes and winding carriage drives, they build a picture of how

Tully Castle, County Fermanagh *A new garden in the style of an early 17th-century one now occupies the site of the walled courtyard or 'bawn' on the south side of the castle that burned in 1641.*

Avenues beside the Long Water, Hampton Court *Recording and analysis of lost tree positions enabled the historical arrangement to be recovered, forming the basis for accurate replanting.*

the landscape may have been manipulated to impress, or even overawe the visitor. The recognition, careful recording and accurate reinstatement of such traces can therefore revive an important visual amenity as seen both from the house and within the park.

An example of this type of rediscovery can be found in the Home Park at Hampton Court, Surrey, where the avenue-system currently being restored is part of an impressive Baroque landscape that originally radiated from Sir Christopher Wren's new palace built for King William III and Queen Mary II. It incorporated the earlier planting of a double row of lime trees that had been laid out on each side of the broad canal known as the Long Water, which was created to the east of the palace in 1661. They have also been recently replanted using the historical positions and thereby reproducing the slight inaccuracy of the previous setting out. But clearly this did not matter since the visual appearance looks right.

CONSERVATION ISSUES

In the United Kingdom it is now commonplace for archaeological assessment

Garden of the Solovetsky Monastery in the White Sea, Russia *A favourable microclimate supported the creation of a remarkable garden in the early 19th century, equipped with hotbeds and greenhouses as well as other growing areas. Their remains can be identified together with older features and evidence of later use as a Soviet gulag.*

to underpin most bids for funding the repair and reuse of historical sites. The fundamental contribution of archaeology to good conservation management is widely recognised abroad too, with pertinent studies being carried out in historic parks and gardens from Russia to Romania and Ukraine to the United States, for example, as well as in other parts of Europe and the rest of the world. Individual sites extend from the hanging terraces of a monastic garden on the island of Solovki, at the edge of the Russian Arctic Circle, to Sotterley Plantation on the banks of the Patuxent River, USA, where traces of an earlier layout are preserved in the lawns beside an early colonial mansion.

In Britain, with a tradition of field observation beginning in the 16th century, the sites of abandoned gardens have been recognised in such increasing numbers that they now form one of the most common types of archaeological site. Their examination ranges from the analysis of medieval settings through the rediscovery of Renaissance splendour and Baroque grandeur to the investigation of 18th- and 19th-century designed landscapes, together with later public parks and cemeteries.

By revealing the nature of past gardens and how they developed across time, archaeological study also acknowledges their frequent transformation through the natural stages of growth and decay and there are many instances where we should opt for preserving the quality of repose that comes with age. However, restoration and reconstruction can aid positive conservation if the historical elements (canals, drains, paths, borders, tree pits, etc) are repaired and re-used. Indeed, for many modern visitors, the enjoyment of an historic garden is heightened by the reintroduction of original plant varieties and correct planting to give living form to otherwise esoteric elements.

EXCAVATING HISTORIC GARDENS

Whereas the lost features of a garden may often be identified through the historical record and by using geophysical survey and other non-intrusive techniques, archaeological excavation is the only method of establishing their actual character and history, particularly where no documents survive. In addition to being an essential stage of subsequent repair or reconstruction, excavation can be further employed to evaluate the extent

Restored formal flower garden at Audley End, Essex *Archaeological excavation confirmed the early 19th-century layout of the parterre with its elaborate pattern of flower beds which have been reinstated to the original plan.*

and condition of any remains, providing information on the constraints of a site.

The need for this type of sensitive approach arose with the proposed introduction of a new garden feature into the 300-year old formal landscape that the first dukes of Montagu had created at Boughton House, near Kettering in Northamptonshire. Since the intended location lay within an early garden compartment, a programme of historical research, on-site survey and archaeological evaluation was commissioned to identify the extent of any related remains and to assess the likely impact upon them. The investigation included archaeological trial excavation, which showed that much significant fabric had been destroyed previously. New use was therefore permitted for Kim Wilkie's design of 'Orpheus' to be constructed within the area of existing disturbance. Its sympathetic geometry and grass slopes fit neatly into the inherited landscape, where the outstanding importance of the original French-inspired grounds is being recovered through ongoing repair and reinstatement of the historic canal system and associated features.

Archaeological investigation and recording enable us to identify the original methods of ground preparation and to restore former profiles, as well as reconstruct previous layouts and planting arrangements. Excavation can range in scale from the clearance of a complete garden plan as preparation for its reinstatement, to the examination of the salient points and key features of the grounds.

The first archaeological work in ancient gardens to reveal the form and nature of their planting was carried out at Pompeii around the start of the 20th century. Excavation at later historic sites soon followed, with pioneer investigations in Virginia, USA and at Kirby Hall in England between the two world wars. However, many earlier restorations were based upon the interpretation of historical plans and views without the benefit of archaeology; or, where there was investigation, it was largely restricted to the examination of isolated features, with most reliance placed on contemporary documents. Now there is awareness of the value of tangible remains, and the combination of clear physical traces and a good historical record has led to the reconstruction of some historic gardens with greater accuracy than was thought possible a few years ago.

At Hampton Court Palace, King William III's Privy Garden has been reconstructed following the original layout revealed by excavation. Investigation also determined the relative levels between the different parts of the garden, using the evidence of surviving features such as statue plinths, drain funnels and the original rim of the fountain basin. The exact positions of topiary along the terraces could be reconstructed from the rediscovered tree pits, while the brick footings for flights of steps provided an important clue to terrace profiles and their gradients.

Garden archaeology has been equally successful in planning accurate reconstruction elsewhere. At Audley End in Saffron Walden, Essex, for example, the 1830s flower parterre has been restored, incorporating planting based upon a contemporary documented scheme. Likewise, the reconstruction of ornamental beds on the East Parterre at Witley Court, Worcestershire, allows the effects of WA Nesfield's planting schemes to be rediscovered and increases our understanding of historical gardening techniques. Both are English Heritage sites, but similar investigation underpins accurate reconstruction elsewhere.

The scale of individual sites which have been investigated in this way ranges from the designed landscapes of country houses to smaller town gardens and yards from the 18th century onwards, often with surprising results. For example, excavations in the backyards of the ordinary houses in the centre of Colonial Williamsburg suggest that these had been used for growing food rather than flower-gardening.

Floor plans have been recovered from a variety of lost buildings. They range from the largely ornamental, which were incorporated into 18th-century landscape gardens like those at Painshill, Surrey and Hestercombe, near Taunton in Somerset, to the more prosaic greenhouses that were used in kitchen gardens in the 19th and early 20th centuries. Excavation has also uncovered details of grottos and the waterworks associated with them, together with more elaborate cascades like that designed by William Kent, which was built in about 1738 as the headpiece for the river in the grounds of Chiswick House and now recently restored.

Such investigation serves not simply to guide the future repair and reconstruction of garden features but also permits a better understanding of the history and sociology of garden design. The seeds so planted will continue to grow.

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CONSERVATION OF HISTORIC DESIGNED LANDSCAPES

AND THE ENGLISH PLANNING SYSTEM

Jonathan Lovie

Morrab Gardens, Penzance – a late 19th century public park designed by Reginald Upcher of Poole which is included on the Register of Parks and Gardens at Grade II (Photo: Jonathan Lovie)

The study of 'garden history' is a relatively new discipline. The term itself, like the frequently used short-hand 'parks and gardens', fails to recognise the dynamic nature of the subject, and the constantly evolving understanding of the various landscape types which make a significant contribution to England's cultural heritage – and indeed, to European and world culture.

In order that designed landscapes of all types, from the great landscape parks such as Stowe or Petworth, to public parks, cemeteries and even institutional landscapes, that have a special or national significance should be easily recognised, the 1983 *National Heritage Act* empowered English Heritage to compile a Register of 'parks, gardens and other land'.

THE REGISTER OF PARKS AND GARDENS OF SPECIAL HISTORIC INTEREST

The initial *Register* was compiled in the mid-1980s, and was revised in the late 1990s. The designation now comprises over 1,600 designed landscapes which are nationally significant, and new sites continue to be added as and when they are identified.

In order to merit inclusion on the *Register*, and in order to ensure a consistency within the designation, a site must demonstrate through its historic development and interest, its design and integrity that it meets one or more of English Heritage's criteria for designation. To this extent it is important to remember that the *Register* is a highly selective designation, and only those sites which are assessed to be of national significance will be included.

While all landscapes designated on the *Register* are of national significance, it is obvious that some will, by their age, rarity or perhaps design interest, be of greater significance than others. In order to reflect this, designated landscapes are graded at Grade I, Grade II* and Grade II.

Grade I landscapes will be those considered to be of international significance (such as Stowe, Blenheim or Highgate Cemetery); Grade II* sites are those which are of exceptional national significance (such as Godolphin in Cornwall or Crystal Palace Park in London); and Grade II sites are those considered to be of national significance.

The latter includes a diverse selection of landscape types, ranging from country house gardens to sites such as the garden developed by the sculptor, Dame Barbara Hepworth, at her studio in St Ives, Cornwall.

The *Register of Parks and Gardens* forms one of the suite of national designations applied to the historic environment, alongside listing for buildings, scheduling for archaeology, and the *Register of Historic Battlefields*.

Under the programme of Heritage Protection Reform introduced by the labour government all historic environment designations are being brought together within the new National Register. This move will help to emphasise the way in which the different elements of the historic environment are frequently inextricably linked: for example, a registered landscape may form the designed setting of a listed country house, and may contain a scheduled feature which was incorporated into the landscape design; and the whole might form part of the setting of an historic battlefield. The historic development, interest and therefore significance of each one of these features is thus clearly related, and to some extent dependent upon, the significance of the other features. It therefore follows that a development which impacts adversely on one element of the historic environment may have an impact on the overall significance of that site.

These reforms do not affect the widely varying levels of protection which apply to the different types of heritage asset. Thus scheduled monuments continue to enjoy the greatest degree of statutory protections, closely followed by listed buildings. Registered designed landscapes, however, remain without any additional statutory control or protection, as before.

In order to seek to protect important designed landscapes from the adverse impact of change, other 'tools' within the planning system must therefore be deployed, such as the listing of built structures and the scheduling of other features.

Stoke Poges Gardens of Remembrance, Buckinghamshire – a 1930s commemorative landscape included on the Register at Grade I (Photo: Jonathan Lovie)

The Boringdon Arch near Plymouth is a Grade II listed structure designed by Robert Adam, standing above a scheduled ancient monument, and is integrally linked to the historic and aesthetic development of the adjacent Grade II* designed landscape at Saltram. (Photo: Jonathan Lovie)*

PPS5: NEW GOVERNMENT POLICY

Although the labour government's proposals for a new heritage protection act are unlikely to be fulfilled by the new coalition, one key element of their proposals was achieved in March 2010, just before the election: PPS5 was issued.

Planning Policy Statement 5: Conservation of the Historic Environment, to give it its full title, replaced two former policy documents, PPGs 15 (*Planning and the Historic Environment*) and 16 (*Archaeology and Planning*), effectively unifying control over all 'heritage assets'. Listed buildings and scheduled monuments are now 'designated heritage assets', as are world heritage sites, protected wreck sites, registered parks and gardens, registered battlefields and conservation areas. PPS5 thus provides the new unified framework within which planning applications affecting nationally designated landscapes must be determined.

The PPS makes several radical departures from previous guidance, the first being its emphasis on understanding the 'significance' of the heritage asset, which it defines as; 'The value of a heritage asset to this and future generations because of its heritage interest. That interest may be archaeological, architectural, artistic or historic'. This concept thus neatly embraces all historic assets, including parks and gardens, and ties in the terminology of its parent act, the *Planning (Listed Buildings and Conservation Areas) Act 1990*, which refers to 'special architectural or historic interest'.

Furthermore, some degree of protection is extended to all heritage assets, whether designated or not:

In considering the impact of a proposal on any heritage asset, local planning authorities should take into account the particular nature of the significance of the heritage asset and the value that it holds for this and future generations. (HE7.4)

If there is any doubt of the implications of this for a planning application affecting a historic park or garden that is not included on the statutory register, Policy HE8 is even clearer:

The effect of an application on the significance of such [an undesignated] heritage asset or its setting is a material consideration in determining the application. (HE8.1)

This does not mean that the *Register of Parks and Gardens* is now redundant, as the much stronger wording used in relation to designated assets in policy HE9 makes clear:

There should be a presumption in favour of the conservation of designated heritage assets and the more significant the designated heritage asset, the greater the presumption in favour of its conservation should be. … Substantial harm to or loss of a grade II listed building, park or garden should be exceptional. Substantial harm to or loss of designated heritage assets of the highest significance, including scheduled monuments, 14 protected wreck sites, battlefields, grade I and II listed buildings and grade I and II* registered parks and gardens, World Heritage Sites, should be wholly exceptional. (HE9.1)*

Warstone Lane Cemetery (Grade II) in the Birmingham Jewellery Quarter conservation area makes a significant contribution to the special historic interest and character of that place and, through its collection of funerary monuments, reflects the historic development of the surrounding area. (Photo: Jonathan Lovie)

PPS5 is considerably shorter than either of the two PPGs it replaces. It achieves this by focussing on the principles rather than the detail and, in particular, on fostering an understanding of the impact of a proposal on the significance of the heritage asset: *Local planning authorities should require an applicant to provide a description of the significance of the heritage assets affected and the contribution of their setting to that significance. The level of detail should be proportionate to the importance of the heritage asset and no more than is sufficient to understand the potential impact of the proposal on the significance of the heritage asset. (HE6.1)*

The general philosophical approach of PPS5 clearly corresponds well to the more 'holistic' approach to the historic environment emerging from Heritage Protection Reform. However, delivery of this more informed approach to planning for the historic environment will require significant investment of resources: owners and developers will have to be willing to invest in appropriate professional advice; local authorities will need to invest in their historic environment services in order that appropriate levels of information are available; and the external expert advisers, the statutory consultees, will almost inevitably find that their workload increases as more detailed scrutiny of the nuances of development proposals will be required.

STATUTORY CONSULTATION ON HISTORIC DESIGNED LANDSCAPES

Government Circular 9/95 sets out the requirement for planning authorities to consult The Garden History Society and English Heritage on planning applications affecting nationally designated designed landscapes:

- The Garden History Society must be consulted on applications affecting any registered landscape, regardless of grade
- English Heritage must be consulted on proposals which affect Grade I and Grade II* registered sites.

Additionally, English Heritage may comment on proposals which affect Grade II landscapes, for example where the landscape forms the setting to a highly graded listed building, or where there are wider policy implications.

Although sometimes criticised for introducing an element of delay into the determination of planning applications, statutory consultation provides planning authorities with an essential opportunity to acquire additional expert guidance which is often unavailable 'in house'. It is also an important element in the process of democratic scrutiny of development proposals.

In order to streamline the application process, and to minimise the potential for delay once an application has been submitted, it is important that planners encourage applicants to follow best practice and engage in as wide-ranging pre-application discussions as possible. Such discussions should certainly involve the appropriate statutory consultees, and ideally should also involve relevant national and local amenity societies and other 'stakeholders'.

LOCALLY DESIGNATED DESIGNED LANDSCAPES

Not all designed landscapes which are important to local communities, or which help to create a particular sense of place or local distinctiveness, will meet the high criteria for national designation; and there are many sites which have been identified through English Heritage's Register Review Programme as being of potentially national significance but which have not yet been assessed for inclusion on the *Register of Parks and Gardens*.

Such sites, although falling outside the remit of national designation, clearly merit identification within the planning system in order that the impact of potential change may be correctly evaluated before permission is granted for development. Already many local authorities include a Local List of locally or regionally significant designed landscapes within their Local Development Framework. Such lists need to be robust and ideally supported by a definitive map and a statement setting out why the site is considered to be significant.

PPS5 places much greater emphasis on the importance of such sites, and actively

encourages local authorities to identify places which are significant for their communities within the planning system. In addition to the base list within the LDF, it is envisaged that supporting evidence will be gathered within the county's Historic Environment Record (HER), a much expanded form of the old Sites and Monuments Record. The HER thus becomes an essential repository of data to be consulted by anyone with an interest in the historic environment, and a key element in the reformed planning system.

There is an increasing number of counties developing Historic Environment Records providing on-line resources to owners, developers and the wider community.

CONSERVATION AREAS AND DESIGNED LANDSCAPES

Designed landscapes are often crucial elements in the historic and aesthetic interest of a particular locality. It therefore follows, especially in urban areas, that many conservation areas will include, or be closely associated with, a designed landscape. Examples might include an early 19th century residential development surrounding communal gardens or an urban square (Calverly Park, Tunbridge Wells – Grade II); a cemetery or burial ground serving a particular community (Key Hill Cemetery, Birmingham – Grade II*); or a public park with associated residential development (Crystal Palace Park – Grade II*). The same principles of association will apply equally to nationally designated designed landscapes, and those which have been identified on the local lists.

While the connection between designed landscapes and conservation area designation is perhaps more frequent and obvious in the urban context, there are rural situations where landscape designation and conservation area designation work together. An 18th or 19th century model village, for example, may form an integral part of the development of a designed landscape. In the case of the Milton Abbas conservation area in Dorset, the village was designed by Lancelot 'Capability' Brown and Sir William Chambers in the late 18th century, and is integrally linked to the evolution of the Grade II* designed landscape associated with Milton Abbey which is nearby. While the village is not included within the registered site boundary of the designated landscape, it forms an essential element of its setting and features in a key designed view from within the landscape.

Conservation area designation extends the scope of protection to include the demolition of unlisted buildings within the area through the need for conservation area consent, and it introduces protection for trees. Specific alterations to houses may also be introduced through Article 4 designations. Designation thus offers greater control over many of the historic assets comprised within it. It is a locally accountable and highly democratic designation, and it is thus a particularly appropriate tool for seeking the conservation of both nationally and locally designated designed landscapes and, crucially, their settings.

It is clear from PPS5 that the Government's intention was to promote the greater use of conservation areas, and from the perspective of historic designed landscapes, whether nationally designated or not, this is very much to be welcomed and encouraged.

CONSERVATION OF HISTORIC PLANTING WITHIN DESIGNED LANDSCAPES

Inclusion of a landscape on the *Register of Parks and Gardens* does not bring with it any additional statutory control. It follows, therefore, that the planning authority does not acquire any control over changes to historic planting within that site unless any proposed change requires planning consent. Thus it is possible for the owner of a registered garden, for example, to remove an Arts and Crafts topiary garden completely, even if that feature made a significant (or, indeed, the principal) contribution to the site's special historic interest. The only exception would be if the removal formed part of a development scheme, or if the site fell within a conservation area, or the topiary trees were covered by a tree preservation order.

In this situation, the conservation area designation offers a much more appropriate and flexible framework for conservation and management than the tree preservation order. The conservation area designation is predicated on an understanding of those elements which contribute to the special historic and aesthetic interest of that place, and its sensitive interpretation will allow for appropriate management of trees and larger shrubs.

The same is often not the case with planting subject to tree preservation orders (TPOs), especially where these are applied on a blanket basis. Indeed, such a designation can, ironically, be a disincentive to appropriate management, with the result that over time the proliferation of weed species and scrub leads to a significant diminution of the special historic interest and character of the designed landscape through, for example, the erosion of designed views. TPOs are thus a very blunt weapon which should be used with great discrimination and only in situations where other designations more appropriate to historic designed landscapes cannot be applied.

THE FUTURE

At the time of writing we are at a point both of great potential, and of great uncertainty.

PPS5 offers an exciting prospect for a more unified and informed approach to managing the historic environment, with challenging opportunities for all involved within it to demonstrate an understanding of what makes a particular place 'special' and why it merits conservation, and to what extent it may merit preservation.

However, the new coalition government's proposals for the protection of England's historic environment remain unclear. Furthermore, the huge economic uncertainties facing the country over the next few years call into question the ability of either national or local government to deliver key elements of the new system. It is clear that far from being revenue neutral the new system will require significant investment from developers, local authorities and the statutory consultees. In the context of significant public spending cuts, central government is unlikely to provide, and with the present system already stretched, 'efficiency savings' seem inevitable.

While it may not be possible to deliver the entire reform programme in the short or even medium term, at least we now have some key elements of a system to which we can aspire.

Durlston Castle near Swanage in Dorset is a remarkable late 19th century didactic landscape which is included on the Register at Grade II. A blanket tree preservation order coupled with a raft of natural environment designations has prevented the appropriate management of trees within the designed landscape leading to the loss and erosion of important designed views which form part of the special historic interest and character of the site. (Photo: Jonathan Lovie)

JONATHAN LOVIE has been an historic landscape consultant since 1994. Between 1998 and 2002 he was retained by English Heritage as a Consultant Register Inspector. Since 2002 he has been the part-time Principal Conservation Officer and Policy Advisor to The Garden History Society, and continues to practice as a private consultant.

This article has been updated by Cathedral Communications, including a new section entitled 'PPS5: New Government Policy', in response to developments that occurred after the article was written.

THE TRADITIONAL BRITISH ORCHARD

A PRECIOUS AND FRAGILE RESOURCE

Henry Johnson

A traditionally grazed orchard in Conderton, Worcestershire with mistletoe and dead wood habitats, key features of traditional orchard ecosystems

Traditional orchards have a number of features that distinguish them from similar types of land use, such as commercial orchards, and similar types of habitat, such as parkland.

Natural England (formerly English Nature) supplies the following definition:

> *Traditional orchards are characterised by widely spaced standard* or half-standard fruit trees, of old and often scarce varieties, grown on vigorous rootstocks* and planted at low densities, usually less than 150 trees per hectare in permanent grassland.*

They will contain at least five fruit trees that have been grown as 'standards' and therefore have crowns high enough for livestock to graze beneath.

Apples are the most common fruit in traditional orchards, but sites usually have a mix of apple, pear, plum, damson and walnut, although rarely with all types represented. Cobnut (hazel) and cherry orchards are also a characteristic feature of certain regions.

The spacing of the trees varies according to fruit variety, with plums and cobnuts sometimes as little as 3m apart, apples 8–10m apart and cherry and perry pear orchards with spacings often over 20m. The planting pattern may be regular but successive re-plantings have often blurred any original order.

Traditional orchards are managed extensively. This means little or no use of fertilisers or herbicides beneath the trees, or chemical insecticides and fungicides among the branches. The grassland sward is either grazed (by sheep or cattle) or allowed to grow and cut for hay.

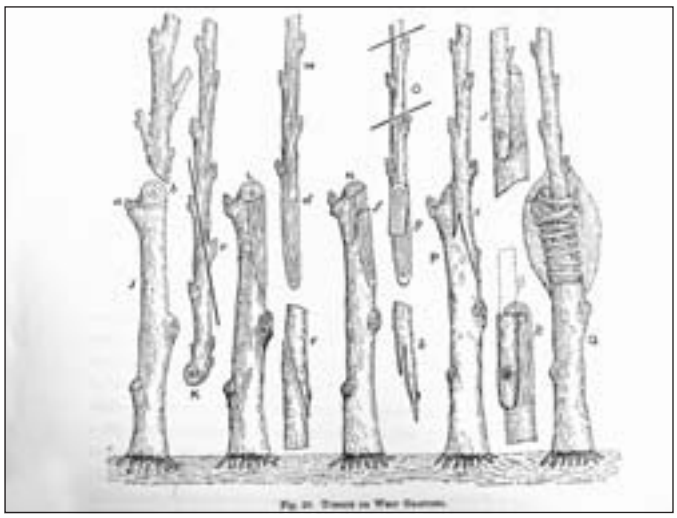
There are currently around 24,600 ha of traditional orchard in the UK, with the average size being about 1 ha.

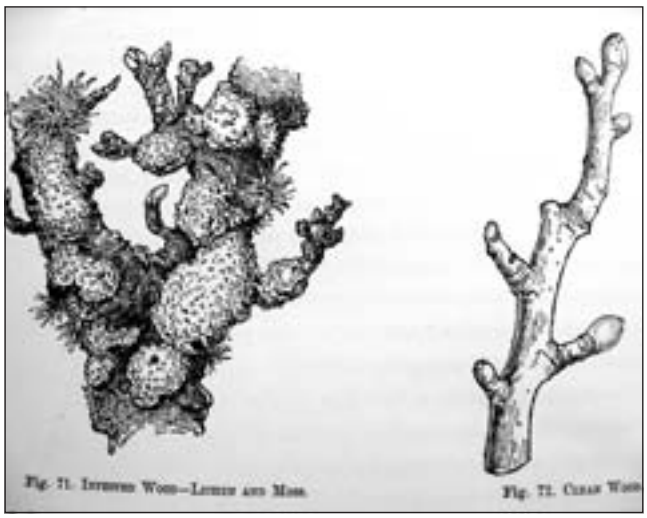
HISTORY

The orchard has been a component of the British landscape for many centuries and has a complex history. DNA evidence strongly supports the theory that of the almost 3,000 apple varieties that populate British orchards, all are the un-hybridised descendants of the wild sweet apple *Malus pumila* of the Tian Shan region of Central and Inner Asia, and unrelated to the native European crab apple *Malus sylvestris*.[1]

The Romans are traditionally credited with introducing both the sweet apple

**Words followed by an asterisk are defined in the glossary below*





Two illustrations from John Wright's The Fruit Grower's Guide published in 1892, at a time when Victorian horticulturalists were devoting tremendous energy to the study of all aspects of fruit growing

Malus pumila and the pear *Pyrus communis*[2] and they were competent in the skills of grafting*, developing new varieties and probably cider-making.[3] Perhaps surprisingly, the 500 or so years of Roman occupation left no written evidence or vestige in a place name of such activities. The Angle, Jute and Saxon invaders who followed the Romans left a scattering of place-names, such as Applegarth ('apple orchard') and Appleton ('where apples grow'), and these are thought to refer to groupings of *Malus pumila* established in the landscape.[1]

Traditional orchard cultivation began to decline with the fall of the Roman Empire, but the associated skills and knowledge may have survived into the late medieval period within settled monastic communities. Monasteries were well suited to developing and cultivating skills such as planting, grafting and pruning in their monastic orchards or 'pomaria'.[4] Henry VIII's Reformation destroyed many of these orcharding centres, but his appointed fruitier Richard Harris introduced grafting material (scion wood) for pears from the Netherlands and apples from France and established orchards at Teynham in Kent.

During the 17th century much of our fruit growing expertise centred around aristocratic nurserymen such as Ralph Austen and John Tradescant, and the writer John Evelyn, who were influenced by continental, and particularly French fruit-growing heritage. These wealthy travelling plantsmen collected fruit varieties and established orchards in the estates and large houses of England. Orchards became widely associated with the aristocracy, as illustrated by the number of National Trust properties that incorporate historic orchards. Trees were often grown in quite formal arrangements on dwarfing rootstocks*, but larger trees and spacious plantings more characteristic of our idea of 'traditional' orchards occurred as well. By 1700, orchards were a dominant landscape feature in many counties.

The first written records of cider-making date from the reign of King John (1199–1216). By 1700 the counties of Worcestershire, Herefordshire, Gloucestershire and Somerset already had a well-established tradition of orcharding for the production of cider and perry. This industry developed to use up surplus fruit that could not be taken to market due to the region's then inadequate infrastructure.[5] These proliferating farm orchards would often have been dual purpose: providing fruit to eat, cook or store for the farm as well as juice and alcohol. Cider became a component of the farm labourer's wage.

Many of the extant traditional orchards in Britain are the legacy of the small-scale mixed farming that was predominant before the intensification of agriculture after the second world war. As a result, these orchards are often found close to settlements and usually betray the location of former farms, now shrouded in more recent development. This proximity to habitation facilitated some of the cultural associations that are still apparent today, with orchards acting as centres for *'songs, recipes, cider, festive gatherings... wisdom gathered over generations about pruning and grafting, aspect and slope, soil and season, variety and use'*.[6] The wassail is one such example of these 'festive gatherings' designed to ward off evil spirits and encourage productive cropping in the coming year. It still occurs at Carhampton in Somerset, and in many other parts of the West Country.

In contrast to cider orchards, perry pear orchards with standard trees are a rarer but more spectacular component of the landscape of south-west England, with the trees growing larger and older than apple trees. Some of the old perry pear trees that survive today date from 18th century plantings, in keeping with the saying, 'Walnuts and pears, you plant for your heirs'. Luckwill and Pollard list 101 different varieties of perry pear from Gloucestershire alone, many being very localised.

The 19th century was a turbulent period for traditional orchards, but by 1870 fruit growing was on the increase again to provide for nascent markets (such as that for jam) supplied by a new rail network. From 1912 onwards, the standardised rootstocks developed by the research stations at East Malling, Merton and Long Ashton enabled people to maximise their planting arrangements for productivity, with the vigorous type M25 rootstock the most suitable for grazed traditional orchards.

Since 1950, fewer and fewer traditional orchards have been planted and the national stock of standard fruit trees is now heavily biased towards an older generation of trees that are more than 50 years old. The 1980s saw the beginning of a significant push to try to reduce the national dependence on food imports with the advent of the Common Agricultural Policy. Funding was made available to convert traditional orchards into more productive farmland causing the widespread destruction of older orchards; a pattern which, to some extent, continues today. Over the last century virtually all fruit grown for the consumer market has been produced in intensive commercial orchards that utilise semi-dwarfing rootstocks, a range of chemical treatments and trees planted closely in rows along herbicide treated strips. Traditional standard orchards are still planted in association with the cider industry, since sheep-grazed orchards are a component of the commercial set-up of a few producers, like Julian Temperley at Burrow Hill, Somerset.

BIODIVERSITY

The ecological value of traditional orchards has long been underestimated and they have only recently come to be appreciated as biodiverse islands within a largely intensive agricultural landscape. In 2004, over 1,800 species were found across the plant, fungi and animal kingdoms in just 2.2 ha of traditional orchard in the Wyre Valley Site of Special Scientific Interest (SSSI) in Worcestershire in the first study of its kind in the UK.[7] In April 2009, Natural England published a report on traditional orchard biodiversity after surveying six traditional orchards for diversity of species and habitat features, with a particular focus on bryophytes*, lichens, invertebrates and fungi. Within these groups they found a total of 810 species, and more generally the sites were rich in nationally rare and scarce species and contained a varied matrix of different habitats including veteran fruit trees,

non-fruit trees, hedgerows, scrub, grassland communities, dead wood, ponds and streams.

Fruit trees age much more quickly than most other species found in the countryside so they rapidly accumulate the 'veteran' features associated with over-mature trees.. Large volumes of standing dead wood in the form of 'stag's heads', whole limbs and rotting heartwood are specific habitats favoured by suites of very specialised organisms that have become increasingly rare in the countryside. The presence of old trees spaced within permanent grassland creates a range of habitats very similar to those found in wood pasture landscapes (such as medieval hunting parks like Staverton Park in Suffolk).

The sward communities that inhabit the permanent grassland beneath the trees can be rich and varied, with vegetation groups associated with semi-natural (but rarely completely 'un-improved'*) grasslands. Traditional orchards are a stronghold for the regionalised populations of the hemi-parasite mistletoe (*Viscum album*). This has six invertebrate species entirely dependent on its presence to complete their life cycle, and as a result all six species have declined through loss of old orchard habitat, including the mistletoe marble moth (*Celypha woodiana)*, a UK Biodiversity Action Plan (BAP) 'priority' species.

The abundance of insects and fruit in a traditional orchard supports varied mammal and bird populations including specialist species such as the lesser spotted woodpecker, bullfinch and flycatchers. Different orchards can be home to different specialised communities, such as lichens and wood-inhabiting beetles, which require a continuity of habitat over time and a network of these sites is therefore critical in sustaining populations across large areas. In recognition of this, traditional orchards were awarded a BAP 'priority' habitat status by Natural England in August 2007, under the UK Biodiversity Partnership.

MANAGING A TRADITIONAL ORCHARD

Any traditional orchard to be managed or restored should be treated sensitively: it is an increasingly rare environment in Britain and one that is not easily or quickly re-created. First, make an assessment of the orchard's condition, its contents and history. Consider historical records and available local knowledge to gauge the age of the site, the reasons for its initial planting and its subsequent use. Decide what you want to achieve with the management regime. Do you want to restore a site to its former extent or diversify with new varieties? Do you plan to cook, juice or ferment the crop, or is it purely a space for leisure and wildlife?

Before any work is undertaken, take some time to observe the orchard's natural habitats. Traditional orchards are used by a diverse range of organisms with some, such as migratory thrushes, only itinerant autumn and early winter visitors. Rotten limbs and other dead wood features should be left to gradually mature unless badly diseased or of immediate danger to people.

Pruning can be very laborious, especially if the trees are very large. Community orchard projects are a great way of mobilising volunteers and transforming the work into a social occasion.

Autumn is the season when orchards really come into their own, and picking fruit to make juice or cider is another great way of involving people.

Pruning fruit trees in the winter is a way of encouraging reactive growth, more fruit and better tree and fruit health. With very old trees that have not been pruned regularly in the past, do not remove too much material in one go as this may stress the tree or even kill it. Spread the work over two or three years to reduce these risks. Also bear in mind that trees which have hardly ever been pruned may well be perfectly healthy and productive if left untouched.

Managing the grass beneath the trees is important. An effective grazing regime will reduce the maintenance requirements of a site and can greatly improve the health of the trees and the quality of many habitats. If the sward is species-rich and contains wildflowers and grasses that you wish to encourage, allowing a period for these plants to flower and set seed may be beneficial. Sheep can rapidly develop a taste for bark and will ring-bark trees and kill them unless the trees are protected or the animals are closely monitored. Cattle can be even more destructive and substantial tree guards will be needed to stop them leaning on younger trees and breaking them.

If mistletoe is present, it should be managed to prevent it from swamping the trees, with both berry-carrying female and berry-less male plants pruned periodically. Try to get fruit trees identified and graft anything rare or unusual onto new rootstocks for the next generation of trees.

Traditional orchards are eligible for funding under the Higher Level component of Natural England's Environmental Stewardship scheme for landowners, providing money to those eligible to offset

costs for restoring or creating traditional orchards. Grants from local councils, government-sponsored programmes and industry schemes like Biffaward (see Useful Websites below) may also be available.

Natural England has produced a series of technical information notes providing advice on the management and maintenance of traditional orchards which can be downloaded from its website (see Useful Websites below). These include several specifically about formative, maintenance and restorative pruning that are essential reading for the uninitiated.

THE ORCHARD CONSERVATION MOVEMENT

For the past 50 years the acreage of traditional orchards has been steadily decreasing, with an estimated loss in area of 60 per cent nationally since 1950, and with some counties, such as Devon, seeing losses of up to 90 per cent. Agricultural intensification is the single greatest cause. For commercial growers, traditional orchards have long been economically unsustainable since large trees require a lot of labour to harvest from and prune and are less productive per-hectare than bush trees.

Small traditional orchards are often found in or near villages and towns, and this has left them highly vulnerable to development. An orchard identified on maps as dating back to 1575 was replaced in 2007 by housing in the village of Bawdrip on the Somerset Levels despite a decade of campaigning from local people. More recently, in the town of Chipping Campden, Gloucestershire plans to replace an ancient orchard with a car park have polarised local opinion. Orchard sites are currently classified as 'agricultural land' and so have only limited legal protection from such schemes.

Generally, traditional orchards are poorly represented among SSSI, National Nature Reserve or Wildlife Trust sites. There are a few notable exceptions such as Lower House Farm, a Herefordshire Wildlife Trust reserve and the Wyre Forest SSSI in Worcestershire.

Charities and non-governmental organisations have played a primary role in mobilising a traditional orchard conservation movement to address these threats. Common Ground was an early pioneer, establishing the Apple Day celebration in 1990, which has steadily accumulated interest and is now a nationwide event. Currently there are orchard groups representing most of Britain, with the common aim of promoting traditional orchard heritage and knowledge. There are also many community orchard projects in the UK that involve groups of local volunteers in the restoration, preservation or creation of orchards. The orchards of Cleeve Prior in Worcestershire were acquired and restored by a locally established heritage trust, with the fruit used to make Prior's Tipple, a cider that promotes the use of old orchards.

Despite this movement, traditional orchards are still severely under-protected by the law and conflicts between developers, farmers and conservationists regularly occur. Protection measures for threatened sites involve the establishment of Tree Protection Orders (TPOs) through local council tree officers, combined with building a case around the ecological, genetic, historical and social importance of the site. A case study for a successful campaign is the perry pear orchard near Brockworth, Gloucestershire. Information about the campaign is available on the Gloucestershire Orchard Group website (see Useful websites below).

Flagship species have been used by various conservation groups to publicise traditional orchard conservation with, for example, Butterfly Conservation concerned about declines in the mistletoe marble moth. The People's Trust for Endangered Species recently undertook a national survey of traditional orchard extent and condition, with the noble chafer beetle as focus species.

In October 2008 the National Trust and Natural England committed £536,000 to establishing a partnership project titled 'Conserving and restoring traditional orchards in England', which has funded restoration work, the creation of new orchards, and surveying and training activities. It is set to continue until March 2011.

Notes

[1] Juniper and Mabberley, 2006
[2] Loudon, 1844
[3] French, 1982
[4] Russell, 2007
[5] Roach, 1985
[6] Clifford and King, 2007
[7] Smart and Winnall, 2006

Recommended Reading

S Clifford and A King, *The Apple Source Book*, Hodder and Stoughton, London, 2007

RK French, *The History and Virtues of Cyder*, Robert Hale Ltd, London, 1982

BE Juniper and DJ Mabberley, *The Story of the Apple*, Timber Press Inc, Portland, Oregon, USA, 2006

JC Loudon, *Arboretum et Fructicetum Britannicum*, Longman, Brown, Green, and Longmans, London, 1844

LC Luckwill and A Pollard, *Perry Pears*, the National Fruit and Cider Institute and the University of Bristol, Bristol, 1963

M Lush et al, 'Biodiversity studies of six traditional orchards in England', *Natural England Research Reports*, Number 025, 2009

FA Roach, *Cultivated Fruits of Britain*, Blackwell, Oxford, 1985

J Russell, *Man-made Eden: Historic Orchards in Somerset and Gloucestershire*, Redcliffe Press Ltd, Bristol, 2007

MJ Smart and RA Winnall (eds), 'The biodiversity of three traditional orchards within the Wyre Forest SSSI in Worcestershire: a survey by the Wyre Forest Study Group', *English Nature Research Reports*, No 707, 2006

C Wedge, 'Traditional Orchards: A Summary', *Natural England Technical Information Notes*, Number 012, 2007

Useful Websites

Biffaward www.biffaward.org

Charingworth Orchard Trust www.charingworthorchardtrust.blogspot.com

Common Ground www.commonground.org.uk

Gloucestershire Orchard Group www.gloucestershireorchardgroup.org.uk

Natural England www.naturalengland.org.uk

Orchard Network www.orchardnetwork.org.uk

People's Trust for Endangered Species www.ptes.org

HENRY JOHNSON set up the Charingworth Orchard Trust in 2008 to conserve threatened traditional orchards in Gloucestershire. He studied ecology on the Natural Sciences Tripos at Cambridge University and currently works part-time in the market garden at Daylesford Organic near Kingham, Gloucestershire. Email henryjohnson@cantab.net.

GLOSSARY

Bryophytes
spore-producing non-vascular land plants that include the mosses, liverworts and hornworts

Dwarfing rootstock
non-vigorous root system used to ensure the trees resulting from grafting stay small (1–3m tall at maturity) and are therefore easier to manage

Grafting
method of vegetative propagation where tissue from one plant (a scion) is attached to the root system of another plant (a rootstock, usually of the same species) in order to replicate the variety of the scion. The tissues of the two parts then grow together producing one tree that is genetically two different plants

Improved pasture
semi-natural grassland that has had fertilizer and/or herbicides applied to it to increase yields resulting in reduced sward diversity

Standard tree
tree grown on a vigorous rootstock that has a crown high enough to allow animals to graze beneath without them reaching the branches

Vigorous rootstock
Root system used to ensure the trees resulting from grafting grow into half-standards or standards (3–10m tall at maturity)

HISTORIC PARKS AND GARDENS IN WALES

PROTECTION, LEGISLATION AND THE ROLE OF THE WELSH HISTORIC GARDENS TRUST

Ros Laidlaw

The freshly-restored Aberglasney Mansion and Cloister Garden in June 2003 (Photo: ©Caroline Palmer)

The system that protects historic parks and gardens in Wales is significantly different from that of England and Scotland. Statutory responsibility for heritage protection lies with the National Assembly for Wales and is administered by Cadw, its historic environment service. The Royal Commission on the Ancient and Historical Monuments of Wales (RCAHMW) maintains the National Monuments Record for Wales and the four Welsh archaeological trusts maintain the regional Historic Environment Records and advise on heritage management and development control. The Welsh Historic Gardens Trust (WHGT) is the only amenity organisation based in Wales specifically concerned with the protection and conservation of historic parks and gardens.

The WHGT was set up in 1989 in response to the very real threat to many historic parks and gardens in Wales. Of primary concern at the time were the historic parks and gardens of Middleton Hall and Aberglasney in Carmarthenshire and the Hafod estate in Ceredigion. The trust was instrumental in setting up the Aberglasney Gardens Trust and the Hafod Trust, and in establishing the Middleton estate as the chosen site for the National Botanic Gardens Wales. Its main aims and objectives are to conserve, document and promote the historic parks, gardens and designed landscapes of Wales and to campaign for their protection. The trust gained charitable status in 1994 and consists of a central body with county branches throughout Wales.

Middleton: the National Botanic Garden of Wales. The dome of the great glasshouse rears out of the landscape. In the foreground the formerly neglected walled kitchen garden was laid out in 2004 to display plants according to their taxonomic affinities. (Photo: ©Caroline Palmer)

Hafod: walkers enjoy the 18th Century Ystwyth Gorge Walk, made accessible in 2002 by the restoration of the original chain bridge. (Photo: ©Caroline Palmer)

PLANNING POLICY IN WALES

The current strategic planning guidance, *Planning Policy Wales (2002)*, supplemented by a series of Technical Advisory Notes (TANs), recognises the importance of protecting the historic environment, encompassing archaeology and ancient monuments, listed buildings, conservation areas and historic parks, gardens and landscapes. The contribution of the historic environment to the Welsh Assembly Government's wider strategic objectives is set out in *Wales: A Better Country, The Wales Spatial and Environment Strategy*. There is also the imperative (introduced in 2009) for Design and Access statements to accompany planning applications which can and should provide the opportunity for outlining historic context and represents a positive step by the Welsh Assembly Government.

Local planning authorities are required by *Planning Policy Wales (2002)* to protect sites listed on the *Cadw/ICOMOS Register of Parks and Gardens of Special Historic Interest in Wales* (para 6.5.23). The *Register* consists of six main volumes, published between 1994 and 2002, and a supplementary volume published in 2007. As in England and Scotland, the inclusion of a site on the *Register* offers no statutory protection, but para 6.5.23 of PPW (2002) states that: *The effect of proposed development on a park or garden contained in the Register of Landscapes, Parks and Gardens of Special Historic Interest in Wales, or on the setting of such a park or garden, may be a material consideration in the determination of a planning application.*

Inclusion in the Cadw/ICOMOS Register is at the discretion of the owners and currently about 30 sites have been omitted from the *Register* at their owners' requests.

A feature of the register, unique to Wales, is the identification of the Essential Setting of a listed site which is a concept developed *to safeguard areas adjacent to the historic parks and gardens which, although outside them, form an essential part of their immediate background and without which, in their present state, the historic character of the site in question would be diluted and damaged*. Interpretation in a planning context of the extent of the setting has proved to be flexible in response to the scale and nature of the impact of proposed development.

One such important precedent was set in the planning inquiry into the appeal against the refusal of planning permission to site a windfarm in the vicinity of the Grade I site of Margam Park, Port Talbot (2003). The Inspector refused the appeal concluding that the turbines would have a major effect upon the park's setting despite being located beyond the outer limit of the park's essential setting. The Inspector accepted that the Essential Setting was an area of particular sensitivity outside the registered area, but that did not mean that '*all development outside the Essential Setting, of whatever nature, must therefore be regarded as not affecting either the park or its setting'.*

THE CONSULTATION PROCESS

The consultation procedure for planning applications affecting register sites in Wales differs fundamentally from that in England and Scotland. Currently, voluntary arrangements exist for consultation with Cadw and the Garden History Society on planning applications affecting parks and gardens and their settings on the *Register* (PPW 2002 para 6.5.23). Local planning authorities are asked to consult Cadw on planning applications impacting Grade I and II* sites and the Garden History Society (GHS) on applications impacting all parks and gardens on the register (Welsh Office Circular 61/96 Annex B). This arrangement has had unintended consequences, not least because the GHS no longer employs a case officer in Wales and therefore no longer responds directly to planning applications affecting sites on the *Register*.

As the Welsh Historic Gardens Trust has effectively taken over the role of the GHS in Wales, an arrangement has been established whereby the WHGT is indirectly informed of planning applications referred to the GHS; but delays can ensue.

Ideally, all planning applications to local planning authorities (LPAs) require weekly monitoring by Cadw and amenity bodies such as the GHS and Welsh Historic Gardens Trust as unfortunately not all LPAs actively seek consultation. The work of WHGT branch conservation officers and the central co-ordinator is undertaken on a purely voluntary basis; there has been no government funding to date. The task is demanding, particularly where branches have to cover several LPAs. The posting of weekly planning application lists and documents online has speeded up this process. However, delays may ensue if documents have to be requested, or if a trip must be made to the planning offices to view plans.

The trust has a central Conservation Committee to co-ordinate casework and

responses by all the trust branches. Detailed local knowledge within the branches has been demonstrated to be of vital importance when identifying planning applications posing a potential threat. Some branches have been regularly monitoring and responding to planning applications since the introduction of protection and have established a good working relationship with planning departments.

Cadw, the key party on historic environment matters, because of its unique and somewhat ambiguous role cannot object but only make comments on planning applications. There is a real danger that, even though Cadw may strongly advise against a proposal, a lack of formal objection could be interpreted as support for the application.

In the recent Government White Paper: *Heritage Protection for the 21st Century* the role of the WHGT is acknowledged. The paper proposes statutory consultation and includes the WHGT as a Statutory Consultee in respect of planning applications affecting registered parks and gardens. As in England, the proposals include simplifying the current national designation system for buildings, parks and gardens and ancient monuments with a new unified system, but with no change in the selection criteria or grading systems within Wales. However, this legislation was not included on the last Queen's List and is unlikely to be introduced to the statute book in the near future.

PROTECTION OF NON-REGISTER SITES

The Welsh Historic Gardens Trust also has a role in highlighting and responding to planning applications affecting gardens of local importance and vulnerable non-register sites not within the protected setting of a listed building, scheduled ancient monument or a conservation area. Several branches have compiled county inventories of parks, gardens and designed landscapes of historic importance. In some cases the trust has been involved in campaigns to spot list sites at risk.

Research was concentrated initially on potential registerable sites in areas where the register had not yet been published. In Ceredigion, where the register did not appear until 2002, sites under threat were prioritised for recording and research. One such was Trawscoed, which lacked adequate protection at the time of its proposed sale by a Government Agency to a private buyer. A tree survey carried out in 1994 formed the basis of a Woodland Protection Order safeguarding important 18th and 19th century tree plantings.

WHGT has been able to make a unique contribution to conservation in Wales. As a result of the in-depth research carried out by its members, it is capable of responding promptly and knowledgeably to planning applications.

Lack of maintenance, wilful or unwitting destruction of garden features and divided ownership can all pose a threat to historic gardens. The local vigilance of WHGT branch conservation officers is one of the few safeguards in identifying such threats.

DEVELOPMENT PLANS

Decisions made by county councils on land use planning in Wales are plan-led: that is to say they should reflect the policies set out in local and regional development plans, which, in turn, should reflect the policy of the Welsh Assembly Government. It is therefore vital for the safeguarding of historic parks and gardens that there are strong policies within these plans offering them protection. Effective responses to planning applications depend upon the strength of these policies. Currently many local authorities still operate under the policies of Unitary Development Plans (UDP) or its predecessor the Local Plan. Now each county council is required under the provisions of the *Planning and Compulsory Purchase Act 2004* to produce a Local Development Plan (LDP). Currently we are in a period of transition in which some local authorities are still working on the preparation of a UDP while others have already started on the preparation of an LDP.

The branches of the Welsh Historic Gardens Trust have participated in the consultation process in the preparation of local plans and UDPs and as a result effective policies are in place in many development plans. The trust is now taking an active role in the consultation process for the preparation of LDPs and, with its locally-based branches, is in a strong position to make informed contributions to achieve protection of historic parks and gardens in Wales.

In some cases land-use designations in these development plans have been successfully contested. A notable example was Gwynedd County Council's UDP proposal for applying a business use designation to the core of the historic Faenol estate. The trust held the view that business development would have greatly harmed the Grade I park and the setting of the historic listed buildings and Faenol Conservation Area. The Inspector agreed, ruling that the proposed allocation of land for business development be deleted from the Deposit Draft of the UDP. The Inspector considered that the proposed business development, even in combination with landscape planting, would very significantly erode the spacious setting of the conservation area and would neither preserve nor enhance its character or appearance in line with the objectives of PPW.

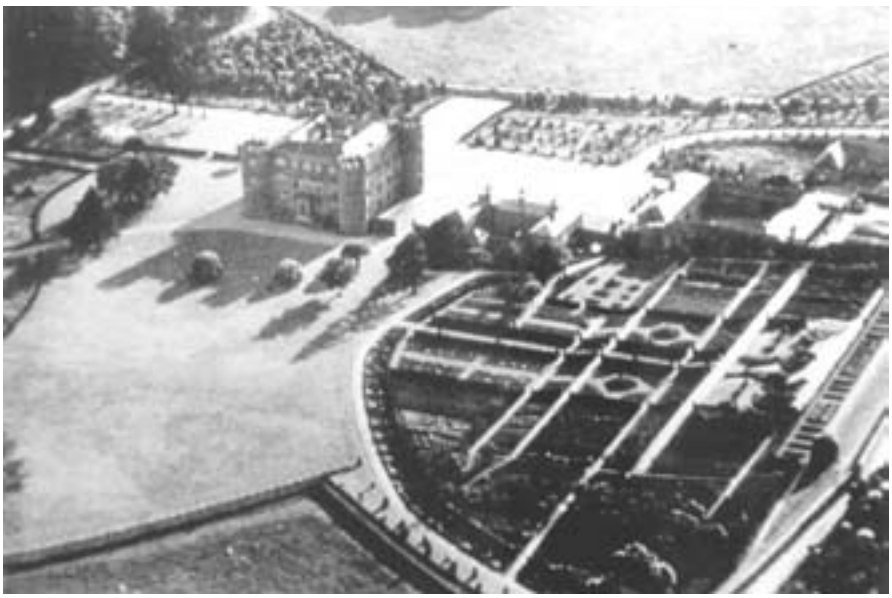
ENABLING DEVELOPMENT

Another recent planning inquiry in which the trust was involved concerned Ruperra Castle near Caerphilly. This case highlights the complex threat posed by enabling development, development which would usually be considered contrary to policy being granted planning permission to enable the owners to fund vital repair work to some historic fabric. In the absence of comparable guidance from Cadw, the policy statements and guidelines issued by English Heritage *Enabling Development and the Conservation of Heritage Assets (2008)* are requested to be adopted in any planning response concerning enabling development. The underlying remit of these guidelines is that significant damage to the historic asset must not outweigh the gain.

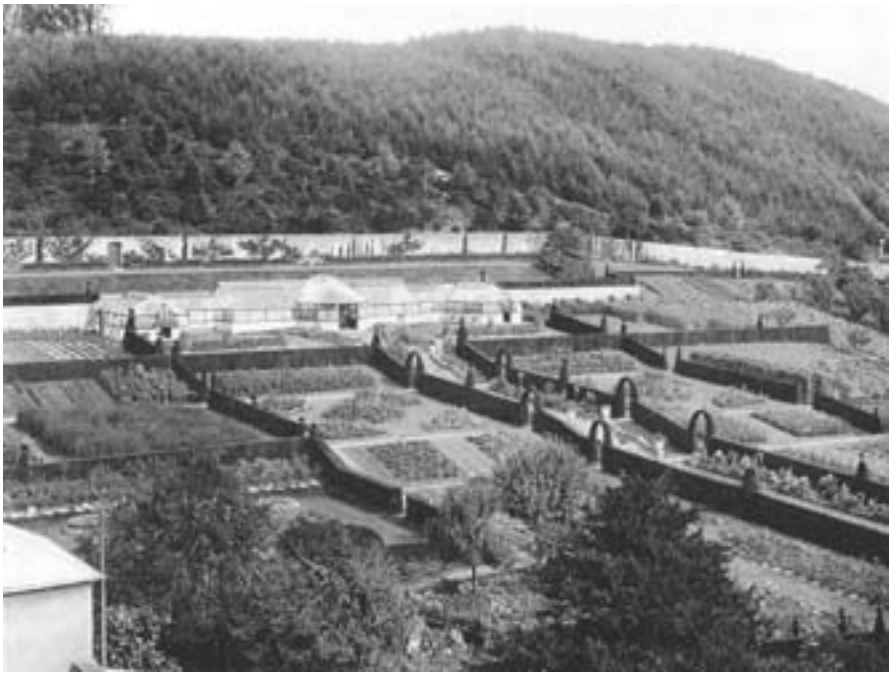
Ruperra Castle's garden is Grade II listed the Cadw *Register*, the primary reason being that it represents *the survival of an unusual early Jacobean mock castle of exceptional historical significance with its attendant deer park and structural remains of contemporary formal gardens* (Glamorgan Register). The castle itself is also a scheduled ancient monument and Grade II* listed building within a conservation area. It might thus be considered worthy of the highest level of protection.

The owner submitted an application for refurbishing the castle, outbuildings and ancillary works for residential purposes which included the construction of 18 new dwellings and an access road.

Aerial view of Grade I listed Faenol Estate situated west of Bangor overlooking the Menai Straits. The inclusion of a business use designation in the Gwynedd Unitary Development Plan for the core of the estate was refused at a public inquiry in 2009. (Photo: Crown copyright RCAHMS)



Aerial view of Ruperra Castle and its grounds in the 1930s. Enabling development, refused on appeal, would have blocked views out from the castle to its parkland, shown at the top of the photograph. Also, the U-shaped outbuilding would have been doubled in size. (Photo: Ruperra Castle Preservation Trust)



The formal terraces at Ruperra Castle, which were well-maintained from 1898 until 1934 by the head gardener, Angus McKinnon. The Grade II listed glasshouse at the rear was designed by Mackenzie and Moncur Ltd. Enabling development, refused on appeal, proposed a pair of residential buildings flanking the glasshouse range to be accessed by a driveway piercing through the garden wall behind. (Photo: Ruperra Castle Preservation Trust)

Caerphilly County Borough Council's planners advised their planning committee to approve the enabling development despite widespread objections from the community, heritage bodies and amenity groups. The planning committee listened to the objections and refused the application, and the owner subsequently appealed.

At the public inquiry the Welsh Historic Gardens Trust submitted that the application had not been accompanied by applications for listed building or scheduled monument consent and therefore the impact of the proposals on their special interest was not clear. The trust held that the application would have a harmful impact on the protected landscape, both on the immediate environs of the castle and its relationship to its parkland setting. It was argued that the development was in conflict with approved policies of the Caerphilly Borough Council's Unitary Development Plan. The appeal was refused on the grounds *that harm to matters of public interest would far outweigh the benefits of the proposed development.* More specifically, the final ministerial decision, which followed the Inspector's recommendations, concluded that the proposed development would not preserve the setting of the listed buildings on the site and would not preserve or enhance the character of the Ruperra Park and Castle Conservation Area.

Although participation in public inquiries has led to some notable successes, they are costly, both in money and volunteer time, particularly for amenity organisations such as the Welsh Historic Gardens Trust which are reliant on donations and membership subscriptions to cover costs. Sharing these costs with other heritage bodies, or the donation of professional expertise can help, but there is a limit to how many public inquiries can be financed in any one year.

LOOKING FORWARD

As in England and Scotland there is, as yet, no statutory protection for historic parks and gardens on the *Register*, but in Wales there is the added disadvantage that consultation arrangements with Cadw and amenity bodies on planning applications affecting register sites are currently voluntary and not statutory. Even more vulnerable are those non-register sites that are of predominantly local importance, but are not the setting of a listed building, scheduled ancient monument or conservation area. Encouragement of the understanding and appreciation of historic designed landscapes through heritage government bodies such as Cadw and the Royal Commission, the archaeological trusts and amenity organisations such as the Welsh Historic Gardens Trust will do much to raise their profile within the wider community.

Further Information

The following Welsh Assembly Government planning policy documents can be downloaded from www.wales.gov.uk or can be obtained from its Publications Centre, Room 3.022, Welsh Assembly Government, Cathays Park, Cardiff CF10 2NQ:

Planning Policy Wales 2002

Welsh Office Circular 61/96

Ministerial Interim Planning Policy Statement 01/2008 on Good Design

Technical Advice Notes

Planning Your Community: A Guide to Local Development Plans

The White Paper – *Heritage Protection for the 21st Century* can be downloaded from the Department of Culture, Media and Sport's website www.culture.gov.uk.

The Registers of Landscapes, Parks and Gardens of Special Historic Interest in Wales can be obtained from Cadw, Welsh Assembly Government, Plas Carew, Unit 5/7 Cefn Coed, Parc Nantgarw, Cardiff CF15 7QQ. The text entries of individual sites can be downloaded from the Coflein database on the RCAHMW website www.rcahmw.gov.uk.

For more information about the Welsh Historic Gardens Trust visit www.whgt.org.uk or contact its office at The Bothy, Aberglasney, Llangathen, Carms SA32 8QH.

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CONSERVATION AND DESIGN

TWO HISTORIC GARDEN CASE STUDIES

Robert Grant

'Step-over' trained apple, 'Tower of Glamis' at Fyvie Castle (All photos: Robert Grant)

Nearly 80 years after its establishment, the National Trust for Scotland (NTS) is responsible for many of the country's most important historic buildings, collections, gardens and wild habitats. Seventy of the trust's 128 properties include large or small gardens, 35 of which constitute major gardens and designed landscapes. They surround the great landed Scottish castles and country houses held in trust for the nation.

NTS first became involved in garden conservation a year after its founding in 1931. With the financial support of its first legacy, the trust purchased Culross Palace in the Royal Burgh of Culross (pronounced Cooross), Fife. Overlooking the Firth of Forth, it is not really a palace at all but earned its name because it was the grandest dwelling in the village at the time of its construction in the late 16th century. The trust's engagement with this property was, however, short-lived. The trust was then unable to care for it and the property was passed into the guardianship of the Ministry of Works (now Historic Scotland), which managed the building and its adjacent garden for the next 60 years.

It wasn't until 1945 that the trust looked at gardens again when the 5th Marquess of Ailsa and the Kennedy family gifted Culzean Castle (pronounced Cullain) to the trust. The castle stands on the Ayrshire coast and has 146ha (350 acres) of picturesque gardens and designed landscape. That same year the Hon Mrs Henrietta Leith-Hay gifted Leith Hall, Aberdeenshire to the trust, including its Arts and Crafts style garden, which she and her husband had created in the early years of the 20th century.

By the mid 1950s NTS had acquired 11 garden properties which, while managed on a day-to-day basis by garden staff, were overseen by a gardens adviser whose role it was to ensure holistic management across the developing portfolio and to agree on appropriate forms of garden conservation.

Bequeaths and acquisitions continued to grow, and with a collection of major gardens and designed landscapes now standing at 35, the trust has established a dedicated team of gardens advisers. The team is led by the head of gardens and designed landscapes whose responsibility it is to help research and understand the significance of the gardens in a local, regional and national context and to develop conservation management plans guided by detailed survey and analysis in line with the trust's conservation principles. The process of evaluation has evolved since the 1950s in tandem with a developing national interest in garden history and a wider appreciation of the potential loss of horticultural heritage.

The trust made a sterling effort in the early 1950s to research, understand and evaluate contemporary schemes for the newly acquired Pitmedden Garden in Aberdeenshire, where the great double-walled garden with its ogee-roofed pavilions was recognised as being of national significance. While the estate records that might have shown the original 17th-century layout were lost in a fire of 1828, a new parterre garden was created by the trust based on contemporary designs of the gardens at the Palace of Holyrood House in Edinburgh dating from 1647. Today the iconic Scottish garden at Pitmedden is internationally respected and represents an outstanding example of a 1950s interpretation of a 17th-century garden design.

Despite relative successes in understanding and valuing garden heritage in its early days of garden management, the trust failed to recognise the significance and cultural value of other important landscape features that have since been lost. Acknowledging this as a significant factor in the organisation's garden management process, a much more comprehensive system for garden study, evaluation and management planning now exists. This includes archaeological investigation, building survey, contour and tree mapping, together with a more rigorous evaluation leading to statements of significance.

CULROSS PALACE

Culross Palace and garden were re-acquired by the trust in 1991. A three-year garden restoration programme followed, which converted a simple amenity site into Scotland's most authentic model 17th-century garden. The village of Culross dates back to the 6th century when it was an important religious centre. The monks were the first coal-miners in the area and over many centuries the mining industry thrived here. Ships carried coal and salt to Scandinavia and the Low Countries, often returning with ballasts of red pan-tiles, which are today a distinctive feature of the village. This exchange probably brought more than roof coverings: ideas about gardening and other cultural pursuits must have crossed the North Sea with them.

The early history of gardening is poorly documented: the first Scottish gardening

The model 17th-century garden at Culross Palace

The new raised beds at Culross Palace

book, *The Scots Gard'ner*, was not published until 1683. Gardening, as we know it today, was apparently rarely practised in Scotland except by royalty, the monasteries and the very wealthy prior to the accession of King James VI (later King James I of England) in 1587. The only vegetable known to have been widely grown in Scotland was colewort or kale, with onions, peas and beans being rarely grown by the general population until the end of the 17th century. Fruit was equally neglected, except in monastic establishments: Dene Matho Tachet of Culross Abbey is recorded as selling 15 'Plowm' trees, probably bullaces (a type of wild plum), to the treasurer of James IV in 1503.

The height of Culross's prosperity was reached during the life of George Bruce, a descendant of King Robert the Bruce, who took over Culross colliery in 1575. In 1597 Bruce built himself the fine new house that became known as 'the Palace'. The building was further extended in 1611, the year in which Bruce was knighted by King James VI. It is uncertain whether Sir George Bruce ever had a garden of any ornamental merit at the rear of his house. It is more likely that it was a kitchen garden or kale-yard with a tethered pig and hens to support the needs of his household, but there is no archival evidence to support this.

Over the years, Culross gradually declined with coal-mining and salt-panning dying out by the early 19th century. Changes to Culross Palace's garden were not recorded again until 1887. In their book, *Castellated and Domestic Architecture of Scotland*, MacGibbon and Ross described the palace in great detail and recorded that the garden 'forms a sort of hanging garden with several terraces commanding a fine view over the Firth of Forth and the country beyond'.

Between 1932 and 1991 the palace garden was developed by Historic Scotland with a simple layout containing conifers, herbaceous perennials, wall shrubs and fruit trees. Following the trust's reacquisition of the property in 1991, a conservation plan was produced analysing known historical documentation including maps, drawings and photographs. A proposal was then developed for the future management and presentation of the garden. Despite the lack of archival material about Scottish gardens of the early 17th century in general and Culross Palace in particular, NTS felt that this was a sufficiently important site and as likely as any to represent the change from the horticulture of the regal or monastic institutions of the 16th century to the more ornamental horticulture being introduced by the developing middle class in the 17th century. To that end, a model 17th-century garden was created on the terraced slope behind the palace under the direction of the author.

During the course of 1993, the garden was transformed from an unremarkable 20th-century layout to a decorative yet productive garden reflecting the style of early 17th century gardens. A series of eight raised plots with interconnecting paths dressed in crushed mussel and cockle shells was created to support a wide range of period vegetables including onions, peas, beans, skirret, kale, scorzonera and salsify. However, most of the vegetables currently grown are the oldest varieties still commercially available, some of which are sourced through Garden Organic's Heritage Seed Library. A covered walkway supporting *Vitis vinifera* 'Ciotat' (a variety of the common grape vine) and mulberries separates the main productive garden from a small orchard of old Scottish fruit varieties and a collection of rare Scots dumpy hens. To assist with the planting palette, reference was made to John Gerard's *The Herball or Generall Historie of Plantes* (1597) and the detailed inventory of plants grown by Charles de l'Ecluse (Clusius) at the University of Leiden in 1593–1594.

Since its reincarnation in 1993–1994, the garden has continued to evolve based on a developing understanding of 17th-century horticulture and garden design, with an even greater emphasis on period features. These include trellis fencing, bowers, covered seats, basket planters and historic tools.

FYVIE CASTLE

The trust embarked on another significant garden makeover in 1997 to increase the horticultural interest of the empty two-acre walled garden close to the renaissance palace frontage of Fyvie Castle in Aberdeenshire.

Fyvie Castle was built on a hillside overlooking the waters of the River Ythan and dates back to 1395 when Sir Henry Preston built the first castle on the site of a royal hunting lodge. During the 16th century Fyvie was described 'as a splendid palace' and probably had an enclosed garden. Whatever grounds there may have been before 1644 they were almost certainly destroyed in the battle fought at Fyvie between the Duke of Montrose and the Covenanters. The Hon William Gordon inherited Fyvie estate in the early 18th century and in 1770 he began extensive improvements to the castle and grounds, which continued for the next 20 years. An estate plan of 1822 shows the improvements made by William Gordon and his son, which included the walled gardens (built in 1777), the large Fyvie Loch (designed by Robert Robinson and later improved by James Giles), the sinuous driveway, and extensive parkland, woodlands and formal gardens.

Fyvie Castle from the south west

The walled kitchen gardens comprised three sections, all of which survive today although their uses have changed. In the 1822 plan, the area was divided into the Ball Green, containing the oldest fig house in Scotland; Rhymers How or Haugh Garden, growing mainly fruit – mulberries, peaches, nectarines and grapes; and the Garden, used as a shrubbery. A magnificent glasshouse range was added to the kitchen garden layout in the late 19th century but little remained of the once spectacular structure at the time of the trust's acquisition of the site in 1984. Vegetable and fruit growing continued until World War II when there were eight gardeners, three of whom worked in the glasshouses. In the latter years of the 20th century the garden's fortunes declined and the areas were grassed over for easy maintenance.

Careful consideration was given to finding a sustainable use for the two-acre walled garden that would complement the property, improve the site's horticultural focus and enhance the visitor experience. With its long tradition of fruit-growing it was felt that the garden at Fyvie should be developed in a way that would reflect its former glory. After many months of careful research and planning it was agreed that a garden of Scottish fruits should be developed to demonstrate both the conservation of rare, unusual and modern Scottish fruits and the craft skills involved in their cultivation and maintenance. Through the generous financial support of the Garfield Weston Foundation and the trust's Great Gardens Appeal, the walled garden development began to take shape.

A design for the garden was developed that took into account the soils, the local microclimate, the physical limitations of the site and the agreed philosophy for the garden: to grow as wide a variety of traditional and modern Scottish soft and top fruits as possible displayed in a variety of styles and complemented by a selection of seasonally varied vegetables. The design for the new garden was not influenced by historical records, quite the contrary: the former layout of the northern section of the triple walled garden was unremarkable and untypical of other gardens of its period. Instead a new dynamic design was created, influenced by the design motifs of the plaster ceilings in the castle's entrance hall and Lord Leith's drawing room, which overlooks (at a distance) the walled garden. The geometric designs were created on the ground using 6,500 granite 'cassies', or cobbles, which form a series of beds. Interconnecting paths link the east and west sides of the garden with a central herb parterre.

The fruit plots accommodate a diverse selection of well-trained Scottish raspberries, blackcurrants, gooseberries, redcurrants and white-currants and various hybrid berries. These are complemented by the most complete collection of Scottish apple trees in Scotland including varieties such as 'Bloody Ploughman', 'Cardross Green', 'East Lothian Pippin', 'Maggie Sinclair' and 'Threave Castle', grown on a variety of rootstocks and pruned in a number of different ways. A small nut-

The Garden of Scottish Fruits in summer 2009

The drawing room ceiling at Fyvie Castle was the inspiration for the design of the central parterre in the Garden of Scottish Fruits.

Fyvie Castle Garden of Scottish Fruits site interpretation

wood, fan- and espalier-trained plum trees and cordon- and espalier-trained Scottish pears, including 'Chalk' and 'Green Pear of Yair', are grown against the south and west facing walls.

In addition to maintaining the top-fruit collection, the garden also supports a varied selection of Scottish-developed vegetables and includes some of the dozens of varieties of potatoes that have been developed over the past 100 years. These include 'Duke of York', bred by William Sim of Fyvie in 1891, a popular early potato with superb flavour and texture, together with selections from the Arran, Pentland and Dunbar potato groups as well as some of the more modern varieties such as 'Brodick' and 'Brodie' that were developed during the 1990s. Other vegetables include 'Balmoral' and 'Castlegrant' cauliflowers, 'Pentland Brig' kale, 'Musselburgh' leeks, 'Ailsa Craig' onions and 'Angus' swede. Today, the significance of Fyvie Castle's garden lies in its plant collection and in the conservation of the heritage skill-set required to maintain such an important fruit collection.

The systematic study and evaluation of historic gardens has evolved a great deal over the past 60 years. The approach taken by the trust during this time has included well-intentioned but sometimes misguided actions. These are offset by many examples of best conservation practice guided by NTS's own conservation principles and those of international conservation charters. In this underlying philosophy the trust's success is planted: it invigorates all of our efforts to understand, interpret and value the significance of Scotland's garden heritage and our determination to ensure that it is accessible to all.

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HG Slade, 'Fyvie Castle, Aberdeenshire, Scotland', *Château Gaillard: Études de Castellologie Médiévale*, vol 12, 1985

AMW Stirling, *Fyvie Castle: Its Lairds and Their Times*, John Murray, London, 1928

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TAKING THE PLUNGE

18th-CENTURY BATH HOUSES AND PLUNGE POOLS

Clare Hickman

One of the defining features of contemporary western society is its obsession with health fads, whether in the form of macrobiotic diets or sweating it out in the gym. However, this is an age-old concern and in 18th-century Britain the health craze of the day resulted in the creation of plunge pools and cold baths in houses and gardens across the land. These containers filled with cold water could be located within the main house or within a purpose-built structure set in the landscape, such as a grotto, where they often formed part of a circuit of garden features to be inspected. Although they were often aesthetically pleasing, their main purpose was to help facilitate a healthy way of life, and their placement, particularly when they formed part of a designed landscape, was as important in terms of encouraging good health as a dip in the cold water itself.

The popularity of cold baths and plunge pools in the 18th century followed both the trend for coastal and spa bathing, and the aspiration of a long and healthy life. The 4th Baronet and 2nd Sir Watkin Williams-Wynn, of Wynnstay in Denbighshire, combined sea-bathing with frequent trips to his very own cold bath. This was sited in the grounds of his Welsh estate and represented both the desire to include a classical garden structure within his landscaped park, as well as the desperate search for a cure for the disfiguring and painful skin condition from which he suffered all his life. The baronet's stone bathing tank was rectangular in form, with elegantly curved steps leading down to it from the bath house itself, which served as an icy changing room. The act of bathing required some Spartan bravery, but then that was all part of the healthy process. Unfortunately for Sir Watkin, despite frequently subjecting himself to the healing powers of the Wynnstay bath, he died of his symptoms on 29 July 1789.[1]

The Corsham Court bath house was originally designed by Lancelot Brown 1761–3 and later remodelled by John Nash at the end of the century. The front is open to three sides giving views across the landscaped grounds.

The view through the grotto and across the lake that Henry Hoare and his rollicking visitors would have enjoyed in the plunge pool at Stourhead, Wiltshire (Photo: Timothy Mowl)

The statue of Neptune in the grotto at Stourhead

However, cold baths were not only viewed as a method of curing disease. Throughout the century there was a renewed interest in following a regimen to achieve good health. According to Virginia Smith, 'between 1700 and 1770 the medical advice book market expanded intermittently but steadily'.[2] The books often described modes of healthy living that, the authors claimed, would extend life expectancy. One of the many types of routine advocated was the cold regimen, which included spending time out of doors, eating cooling foods, taking plenty of exercise and bathing in cold water. One of the great advocates of this regime was the philosopher John Locke. In the 1703 edition of his tract, *Some Thoughts on Education*, he argued that:

> *Every one is now full of the miracles done by cold baths on decay'd and weak constitutions, for the recovery of health and strength; and therefore they cannot be impracticable or intolerable for the improving and hardening the bodies of those who are in better circumstances.*

John Floyer, a Staffordshire doctor, was one of the most high-profile medical men actively promoting cold bathing during this period; his pioneering work, *An Enquiry into the Right Use and Abuses of the Hot, Cold and Temperate Baths in England,* was published in 1697. Floyer's belief in cold water was not confined to the written treatise, for in the 1690s he constructed his own small bathing spa, St Chad's Bath at Unite's Well, about a mile from Lichfield. The restored remains of the spa are in the grounds of Maple Hayes School, near Lichfield.

It is perhaps not surprising that cold baths began to appear in several local gardens soon after. One of the first was constructed at Streethay Manor, north of Lichfield. This is a fascinating moated site with strong Floyer associations, as he was the relative and friend of the family that owned the house, the Pyotts. The remains of a late 17th- or early-18th-century spring-fed, stone-cold plunge bath-house (illustrated right) can still be found in the grounds, no doubt built with Floyer's encouragement. It was placed between the house and moat and is now free-standing, but the stone foundations of a wall running parallel to its south side have recently been uncovered, suggesting that the pyramidal-roofed structure might have been the wellhead to a much larger cold bath room.

COLD BATH HOUSES AND POOLS IN THE LANDSCAPE

Plunge pools and cold baths took several different forms. The plunge pool at the Georgian House in Bristol was built within the actual villa in the 1790s by John Pinney, a man who wanted his house filled with all the latest modern conveniences. This reflects a desire to explore new technologies and possibly also later medical theories concerning the need to regulate the temperature of the water into which one plunged – something which could be achieved more easily indoors. Similarly, the late 18th-century plunge pool at Greenway, Devon, was also fully enclosed, although in this case the bath house was situated away from the main house, on the banks of the picturesque River Dart.

Plunge pools at Painswick in Gloucestershire and Stourhead in Wiltshire, on the other hand, are both external, each differing in their placement. The 18th-century plunge pool at Painswick (illustrated overleaf) commanded open views across the landscape. At Stourhead, in Wiltshire, the pool was set within an ornamental grotto containing statues and purposely sited to exploit a designed view across the lake (top left). In 1765 Joseph Spence described how the jagged opening was 'coverable with a sort of Curtain, when you chuse it', so that the inner darkness could be transformed at the pull of a drape, and plunge pool bathers could be protected from the prying eyes of visitors on the lake'.[3] In fact, the only way to get the view through the grotto opening is to be at the level of someone standing in the cold bath.

The remains of the late 17th or early 18th century bath house at Streethay, Staffordshire, which may well have been designed with advice from cold bathing advocate, John Floyer (Photo: Timothy Mowl)

So the question arises, why were many cold baths set within the landscape rather than in the house, as in the case of the Georgian House in Bristol? The most obvious reason is that the bath was filled directly from a spring and it would be easier to place the bath near the source. There was also a belief that the water should be as cold as possible so that water straight from a spring would be colder and therefore more effective than water that had been piped some distance. It would also be purer and retain its chemical properties. However, this is perhaps not the only reason for the location of the bath within the park. Virginia Smith describes how the 18th-century landscape park was a setting for strenuous activity, with its 'long informal paths that rambled around the estate towards newly built plunge pools, cricket pitches, stables and carriage rides, fishing lakes, archery butts, boatsheds, and carefully placed picnic pavilions'.[4] As today, exercise was certainly highly advocated, with George Cheyne in his 1743 *Essay of Health and Long Life* arguing that 'a due Degree of Exercise is indispensably necessary towards Health and Long Life'. He went on to suggest that 'Walking is the most Natural and effectual Exercise', and that in particular 'House Exercises are never to be allow'd, but when the Weather or some Bodily Infirmary will not permit going abroad; for Air contributes mightily to the Benefit of Exercise'. Therefore, the routine of walking around the landscape in order to reach the bath could be viewed as part of the regimen. Some writers even included walking to and from the cold bath as part of their recommended technique. As late as 1839, James Tunstall in his *Popular Observations on Sea-Bathing, and the General Use of the Cold Bath* stated that 'the individual should walk leisurely to the bathing place' and then on coming out of the water that 'he should then take moderate exercise – half an hours walk, or an hours ride on horseback will add much to the benefit experienced'.

As well as the physical exercise achieved by walking to the bath, the viewing of the landscape en route could also have a beneficial effect on the mind. In the case of Stourhead, taking a bath and viewing the landscape simultaneously could be considered as having a direct impact on both the physical and mental states. In Robert Burton's influential *Anatomy of Melancholy* (1626) he suggested that:

> *… the most pleasant of all outward pastimes is … to make a petty progress, a merry journey now and then with some good companions, … to walk amongst orchards, gardens, bowers, mounts, and arbours, artificiall wildernesses, green thickets, arches, groves, lawns, rivulets, fountains and such like pleasant places, …, brooks, pooles, fishponds, betwixt wood and water, in a fair meadow, by a river side, …*

Likewise, Joseph Addison writing in *The Spectator* in 1712 states that:

> *Delightful scenes… have a kindly influence on the body, as well as the mind, and not only serve to clear and brighten the imagination, but are able to disperse grief and melancholy, and to set the animal spirits in pleasing and agreeable motions.*[5] *These views suggest that there was a philosophical basis for an 18th-century belief in the concept that gardens and beautiful landscapes had the power to lift the spirits.*[5]

In the case of Stourhead, where Henry Hoare took up full time residence in 1741 after a series of bereavements, including that of his son, mother and then his wife in 1743, the garden with its cold bath may well have been designed to help disperse his personal grief and melancholy. He described using the bath in a letter of 1764 during the heat of summer: '… a Souse into that delicious Bath and Grot filld with fresh Magic, is Asiatick Luxury & too much for Mortals or at least for Subjects,…'.[6] Professor Timothy Mowl has described how Hoare 'would bathe here naked with a group of rollicking visitors whom he had met the night before at the hotel built for them in the village, all to the sound of two French horns, playing in near perfect acoustics'.[7] This is all considerably more extravagant than the bracing tonic advocated by Locke and Floyer.

Of course, the landscape surrounding the pools and baths might not always have been enjoyed during the actual immersion. Bath houses often surrounded the pools and thereby partially enclosed the view or blocking it completely, as at Greenway, Devon, and at Bradshaw House in Congleton, Cheshire (illustrated right) where a summer house was placed above a plunge pool. However, these buildings could also provide picturesque incidents within the landscape, whether rustic, as at Wynnstay, or classical, as at Corsham Court in Wiltshire (see first illustration).

The temperature of the water would also mean that plunge pools and small baths would no doubt have been the scenes of brief activity only. Larger pools, however, would have allowed for swimming, something which Locke and others were very keen to promote. In 1834 Mr Haddon wrote that 'it will be observed, that as affording opportunity for gentle exercise, and by the more efficacious immersion of the whole person in the water, of the more certain cleansing, re-establishing and invigorating functions of the skin, the *swimming bath* is mentioned,…'.[8] In this way cold baths, particularly public ones, can perhaps be viewed as precursors of the later fashion for open-air swimming pools and lidos.

Another reason for placing the cold bath outside in the landscape seems to relate to the desire to return to a more natural way of life. In terms of garden design, according to Kenneth Woodbridge, 'behind Addison and Pope was the philosophers' appeal to a natural order; Shaftesbury's 'rude Rocks, the mossy Caverns, the irregular wrought Grottos and broken falls of water with all the horrid Graces of the Wilderness itself' were valued 'as representing nature more'.[9] Given this argument, the grotto at Stourhead can be seen to be symbolic of a natural element within the garden, as can Richard Woods' rustic design for the cold bath at Wardour Castle, Wiltshire, which even had falling water in the form of a cascade running beneath the bath (illustrated right).

Private cold baths were not alone in this relationship to nature. In 1737, John King, an apothecary, wrote a pamphlet expounding the virtues of cold bathing, with particular reference to his spa at Bungay, Suffolk. Towards the end he included a description headed; 'A few lines transcribed from a Letter to a young lady by a Gentleman at your Bath'. The letter stated that:

> *Near the bottom of this is placed the Grotto or Bath itself, beautified on one Side with Oziers, Groves and Meadows, on the other with Gardens, Fruits, Shady Walks and all the Decorations of a rural Innocence. The building is delightfully plain and neat, because the least attempt and artful*

The cold bath house at Bradshaw House in Congleton, Cheshire which has recently been restored. (Photo: Nino Manci, Congleton Building Preservation Trust)

Marion Mako standing in the Bradshaw House plunge bath which, miraculously, had survived sufficiently intact for restoration to be possible. It is lined with carefully tooled ashlar stone and there are steps down to the plunge pool. (Photograph: Timothy Mowl)

Richard Woods' rusticated design for a Cold Bath with cascade and grove of trees for Wardour Castle, Wiltshire, c1766 (By courtesy of Wiltshire & Swindon History Centre: 2667/18/21)

The mid 18th century plunge pool at Painswick, near Stroud is unenclosed, giving views across the Rococco gardens; pool-side activities were originally presided over by Jan Van Nost's magnificent statue of Pan, below. (Photo: John Horsey)

(Photo: Paul Foch-Gatrell)

> *Magnificence, would by alluring the Eyes of Strangers, deprive them of those profuse Pleasures which Nature has already provided.*

Again nature seems to play a prominent role. Although the gardens are created through artificial design, like the grotto at Stourhead, they are seen as more natural than the artifice of the bath house.

This desire for a more natural experience was associated with the knowledge that cold bathing went back to ancient times. Floyer argued that, 'I publish no new doctrine, but only design to revive the Ancient practice of Physick in using cold baths.'[10] Many of the writers use this historical lineage as evidence of the veracity of cold bathing, and at Painswick the statue of Pan used to stand guard over the cold bath. However, one should perhaps not take this association too literally. Pan could relate to both ideologies; classical and natural. As Robin Price has suggested, the link with antiquity 'is likely to have been no more than an added and subliminal recommendation to those already wishing to return to the primal simplicity of nature's laws'.[11] At Stourhead there is a more complex use of classical iconography with statues of the river god and a sleeping nymph behind the cold bath. All of this is complicated still further by the religious meaning found in John Wesley's advocation of cold bathing and Floyer's statement that he saw bathing as a baptismal cleansing. These can be seen in correlation to the growing non-conformist movement and, as late as the 1800s, the Quakers running Brislington House, an elite lunatic asylum on the outskirts of Bristol, were using cold baths as a central therapeutic agent in their attempt to cure madness.[12]

There were also concerns over the weakening of health through the indulgence in luxurious lifestyles. Cheyne and Jean-Jacques Rousseau were among those who raised concerns about the link between mental health and the onward march of civilization. Rousseau postulated that as civilization developed, men alienated themselves from nature and that primitive man was superior, and less likely to develop mental illness, because he was closer to his natural state. A dip in the cold bath in a garden setting could, therefore, be considered a method of connecting with an earlier, more primitive, and ultimately healthier, way of life. Other writers used examples of the hardiness of other nations and to argue in favour of the benefits of cold bathing. Locke wrote: 'let them examine what the *Germans* of old, and the Irish now, do to them, and they will find, that infants too, as tender as they are thought, may, without any danger, endure bathing, not only of their feet, but of their whole bodies, in cold water. And there are, at this day, ladies in the Highlands of *Scotland* who use this discipline to their children in the midst of winter, and find that cold water does them no harm, even when there is ice in it.'

This represents an idea of Spartan living and of hardening one's physical state which is quite different to Henry Hoare's rollicking in the cold bath at Stourhead! However, the utilisation of all these structures represents the age old search for health and longevity, and is still with us in the form of open-air lidos and the annual Christmas day wintry swim of the Serpentine Swimming Club, amongst others.

Acknowledgements

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Notes

1. Thanks to Laura Mayer for permission to include this element of her doctoral research relating to Wynnstay.
2. Smith, 2007
3. Mowl, 2004
4. Smith, 2007
5. *The Spectator*, 411, 1712.
6. Quoted in Woodbridge, 1970
7. Mowl, 2004
8. Anonymous, *The Constant Use of the Cold or Swimming Bath of Great Importance in the Prevention of Disease and Preservation of Health*, J Haddon, London, 1834
9. Woodbridge, 1970
10. J Floyer, *An Enquiry into the Right Use and Abuses of the Hot, Cold and Temperate Baths in England*, R Clavel, London, 1697
11. Price, 1981
12. This latter case is discussed in its political context in Jenner, 1998.

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V Smith, *Clean: A History of Personal Hygiene and Purity*, OUP, Oxford, 2007

K Woodbridge, *Landscape and Antiquity: Aspects of English Culture at Stourhead, 1718 to 1838*, Clarendon, Oxford, 1970

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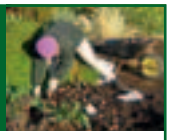

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The traditional skills of a trained gardener can only be truly mastered by practical training. Do you have a gardening team able to pass on their skills to an enthusiastic trainee? The HBGBS can offer significant funding towards the 12 month employment of a trainee keen to gain practical skills in a garden of excellence. The HBGBS will manage the advertising, interviews and training in collaboration with your head gardener. Trainees work full time and undertake research projects that are of direct value to the gardens themselves.

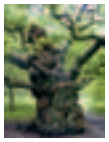
Hosting a keen trainee will stimulate your staff to consider *their* skills and take pride in the responsibility of passing their skills on.

If you would like to discuss the possibility of your garden providing a trainee placement please contact the Scheme Coordinator, Fiona Dennis 01737 244 664 or email fiona.dennis@english-heritage.org.uk.

■ New Series: HBGBS Master Class

Veteran Trees – Perspectives on Habitat and Risk Management:

A one-day seminar by Neville Fay & Ted Green



November 2010

Monday 22nd	Durham Botanic Garden
Tuesday 23rd	Beningbrough Hall
Wednesday 24th	Sheffield Botanic Garden
Thursday 25th	Sherwood Forest

The programme: This series of one day courses will provide a good understanding of the management issues surrounding veteran and ancient trees found in historic garden sites. The morning will be spent indoors looking at illustrations and case studies. The afternoon will be spent outdoors looking at the mature trees on site and discussing issues surrounding their biodiversity value and management.

Audience: This course should appeal to garden staff managing veteran trees.
Cost: A registration fee of £25
Applications: See *www.hbgbs.org.uk/master_classes/veteran-tree-management* to download an application form or email *fiona.dennis@english-heritage.org.uk* to book your place.

To know more about the Historic Botanic Garden Bursary scheme please see www.hbgbs.org.uk

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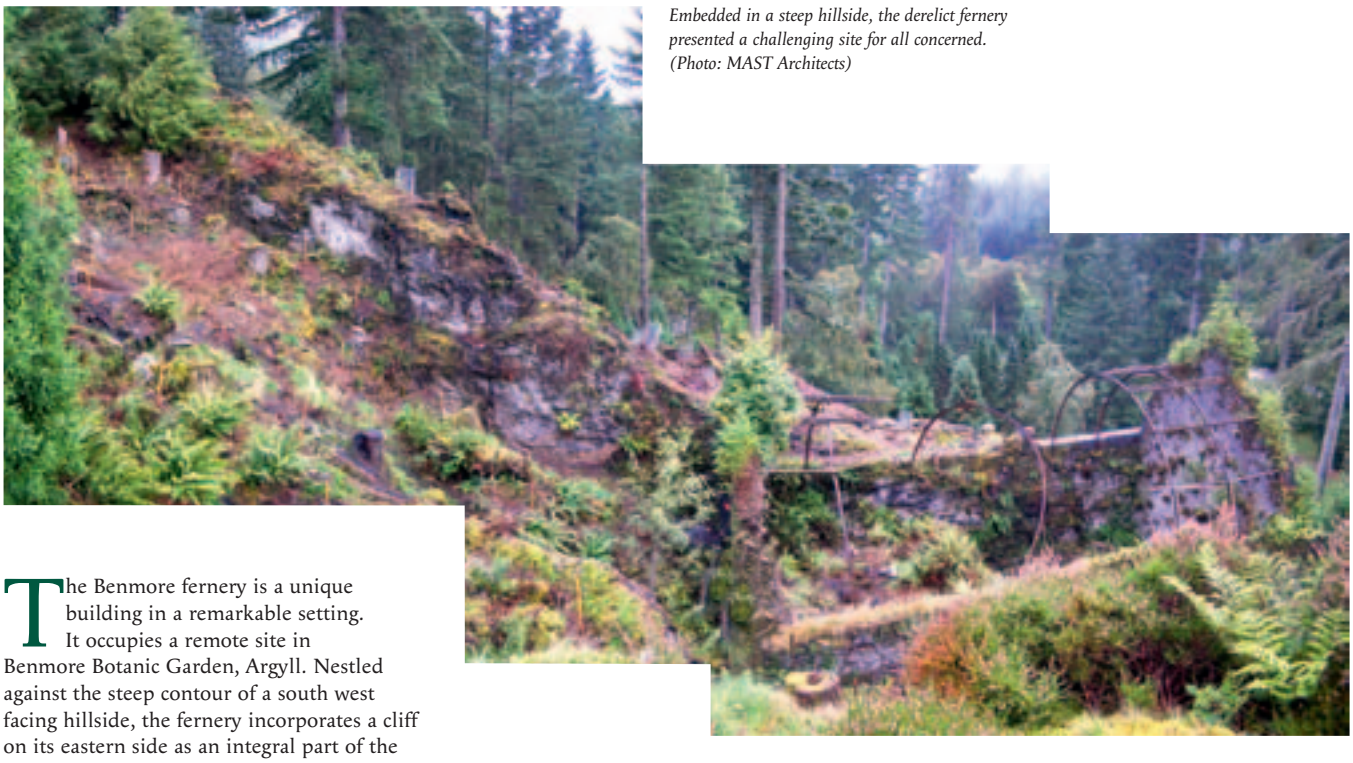
THE BENMORE FERNERY

Mary Gibby

(Photo: Mary Gibby; RBGE)



Embedded in a steep hillside, the derelict fernery presented a challenging site for all concerned. (Photo: MAST Architects)

The Benmore fernery is a unique building in a remarkable setting. It occupies a remote site in Benmore Botanic Garden, Argyll. Nestled against the steep contour of a south west facing hillside, the fernery incorporates a cliff on its eastern side as an integral part of the structure. It was constructed in the early 1870s at the height of the Victorian fern craze, but went into decline in the early 20th century and lay derelict for nearly 100 years.

Ferneries are part of a strong tradition in Britain, one that reached its height in the second half of the 19th century when the country was gripped by 'pteridomania': the fern craze. It was Charles Kingsley, clergyman, naturalist and later author of *The Water Babies*, who coined the term pteridomania in 1855 to describe the fascination for ferns that was gripping the nation. It was manifested not only in the cultivation of ferns but in 'fern ramblings' and in a host of activities involving the identification, collection and exchange of fern species. The craze encompassed both British and exotic varieties, and it involved an impressive array of associated structures and paraphernalia.

Pteridomania was sustained by the publication of a wide range of literature, from short guide books to lavishly illustrated volumes of paintings and exquisite nature prints. Evidence of the passion for ferns remains with us in the form of the decorative fernware that made its first significant appearance at the 1862 International Exhibition in London in the form of fern-decorated pottery by Wedgwood and Dudson, etched fern glassware and fern-decorated wooden 'Mauchline ware'. The Coalbrookdale Company of Shropshire produced decorative cast ironware in fern-like designs, including a range of cast iron garden seats. Unfurling fern fronds embellished grave stones and ornamental garden stonework. The decorated urns at Dawyck Botanic Garden, for example, are encircled by fronds of the hart's-tongue fern and date from the 1840s.

There was a tremendous enthusiasm for cultivating ferns in ornamental Wardian cases (miniature glasshouses), fern gardens and, of course, ferneries like Joseph Paxton's magnificent Tatton Park fernery in Cheshire and Kibble Palace, now gracing Glasgow Botanic Garden but first erected at Coulport, Loch Long.

Unfortunately, the passion for fern growing was accompanied by an obsession with collecting them from the wild, especially rare species. The populations of oblong woodsia (*Woodsia ilvensis*) that grew in the hills near Moffat in Dumfries and Galloway were devastated by collectors following the completion of the Carlisle-to-Edinburgh railway line over nearby Beattock summit in 1848. As the craze continued even the more common species suffered. John Hutton Balfour, Regius Keeper at the Royal Botanic Garden Edinburgh (RBGE), reported in 1870 that:

> *The ferns in Arran are gathered in vast numbers, and nearly all the accessible specimens of the rarer species are taken away… we saw boys and women carrying large quantities of ferns taken up by the roots with a view of making a profit by the sale of them.*

THE ORIGINAL DESIGN

The Benmore fernery was constructed for James Duncan, a wealthy sugar refiner. He had purchased the Benmore Estate on the Cowal Peninsula in 1870. During the 1870s he made many changes, with additions to the main house, the walled garden and the stable block. He also planted over six million trees, mainly conifers, across the estate. Adjacent to the house he built a large picture gallery for his extensive art collection which included contemporary works by the French impressionists, and an experimental sugar refinery.

Duncan's heated fernery was at some distance from the other buildings in an area that had been recently planted with conifers. His picture gallery, sugar refinery and fernery have been described recently by architect Michael Thornley as 'uncompromising buildings... allied more closely to industrial rather than domestic styles of architecture of the time' and as 'strictly functional'. Nevertheless, the setting of the fernery on the hillside, with its thick walls, towering south gable and curved glazed roof is extremely dramatic. The building takes the form of a stone casket embedded into the steep hillside with a glazed barrel roof.

One can imagine Duncan's visitors first marvelling at the stunning collection of paintings in his gallery and then being conveyed across his estate to his other secret treasure house, the fernery. Here they would have climbed the steps to a small doorway at the foot of the massive gable end and entered under a dark vaulted entrance porch. Stairs on either side led up to the broad middle level where the visitor finally emerged into a steamy, green paradise beside an ornamental grotto that arched over an oval pool. Here they would have been greeted by a profusion of ferns in every direction: beside the paths, rising up beside the steps, suspended from the walls and probably with the broad fronds of tree ferns silhouetted against the glazed roof. Steps and paths edged in white quartz formed a winding, figure-of-eight route for exploring the interior. To the left and right of the grotto two further sets of narrow stairs reached up to the highest level, under the short north gable and beside another fern bed constructed above the grotto. From every wall of the fernery cantilevered stones protruded, providing further platforms for plantings, while the damp exposed cliff face inside the fernery provided a further natural habitat.

With its south west aspect, the highest level in the fernery would have benefitted from sun for much of the day, while plants closer to the entrance, below the great

The grotto and stairways before conservation (Photo: MAST Architects)

The derelict fernery with its towering south gable (Photo: MAST Architects)

south gable, would have been in deep shade. Hidden beside the paths were vents from the heating system, connected to an extensive network of underground pipes that conducted warm air from the boiler below. Upkeep of the fernery would have been a costly undertaking: glasshouses were expensive to maintain and the coal-fired boiler would have needed daily attention.

James Shirley Hibberd, a 19th-century horticulturist and editor of *The Gardener's Magazine*, provided long lists of ferns recommended for cultivation under different conditions in his book *The Fern Garden* (1869). Hibberd advised on how to construct and lay out a fernery to achieve a natural effect, recommending building on a slope to gain from the range in temperature that could be realised in a heated fernery. The location and construction of the Benmore fernery reflected these recommendations. It has a large rectangular footprint and was originally covered by a glazed arched roof. The three thick walls – the long west wall and the two rounded gables – are constructed of schist rubble and lime mortar, while the fourth wall is formed largely by the cliff itself. The fernery's position at the side of a steep gully means that its floor is on three levels; the uppermost (north) gable is fairly low, equivalent to one storey, whereas the lower (south) gable towers up out of the hillside, reflecting the considerable change in height within the building. On the west side, at the lower end of the long wall is a small lean-to building where the coal-fired boiler was housed.

Remnants of the original roof of the fernery showed that it was carried on semicircular iron trusses, supported on buttresses capped with substantial padstones to spread the load. The glazing had been supported in wooden overlapping frames, presumably held in place with putty. However, the detailed structure of the frames had been lost, and there was no trace of the 'lantern' that ran along the ridge of the roof, other than the small gablets where it met the top of each rounded gable.

BENMORE IN DECLINE

Following the introduction of a German sugar bounty, Duncan became bankrupt and had to sell the estate in 1889. It was purchased by Henry John Younger as a sporting estate and he introduced an impressive collection of rhododendrons. The fernery, being expensive to maintain, probably started to fall into decline following the change of ownership, but, while the picture gallery and sugar refinery were demolished, the fabric of the fernery remained, its isolated position perhaps helping to ensure its survival.

Through the generosity of Henry Younger's son, Harry George Younger, the Benmore Estate was gifted to the RBGE in 1930. The fernery was already derelict by then and, although it was structurally maintained for as long as possible, some 15 years ago the building had to be closed to public access.

Unfortunately, no written or visual records of the fernery at Benmore in its heyday have been found, nor any reports of the species under cultivation, nor any photographic archive, and so we can only speculate on the diversity of species that were cultivated. Following exposure to the elements for probably a century it is not surprising that the original collection of ferns has long since disappeared. Prior to restoration, with the roof open to the sky, the derelict fernery remained a fernery of sorts nonetheless, having being invaded by a jumble of native species that luxuriated in the cool, moist and shady conditions. And in the year before restoration an exotic brittle bladder fern, *Cystopteris diaphana*, a species more commonly found in Madeira and the Azores, was discovered lurking in the grotto beside the pool; perhaps it was one of the original denizens.

CONSERVATION

In 1992 Historic Scotland designated the fernery a category B listed building, describing it as 'a rare structure and important as an integral part of the gardens at Benmore'. Listing the building proved to be a great stimulus for generating interest in the surviving features, and its restoration was championed by the Friends of Benmore and, in particular, by the Younger (Benmore) Trust. Established by HG Younger in 1930, the trust covered the running costs of the garden and is now used to support projects within the garden. The trust was keen to see the fernery kept and accordingly commissioned a feasibility study by MAST Architects of Glasgow.

The detailed research required for the feasibility study revealed how the building had been constructed. The thick walls, tall gables, and lean-to boiler house appeared relatively unscathed. Much of the internal design was still evident even after 100 years of decay, although the vault over the entrance had been demolished and details of its construction were sparse. There were remnants of the staircases on either side of the porch, the grotto and pool had survived, and there was evidence of the upper staircases that led above the grotto. A few of the iron hoops that supported the original roof were also still in place.

A meeting on site between the architect, Michael Thornley, and Historic Scotland was critical to establishing whether any form of restoration was feasible. To reconstruct the glazed roof to the original design using the rather insubstantial iron hoops and conventional wooden supports would have created enormous problems for long term maintenance. However, as there was nothing left to indicate how the ridge-lantern had been constructed, nor how the structure was ventilated, its restoration would have been largely conjectural. It was therefore decided to put forward proposals for an entirely new glazed barrel vaulted roof constructed with modern materials. Historic Scotland concurred, opening the way forward for the conservation of the surviving features under new glazing; but there was still the matter of funding the project. This was achieved with the support of significant donations by the Heritage Lottery Fund, the Younger (Benmore) Trust, the RBGE Members' Appeal and many private donations.

Restoration work started in May 2008. The site was secured and plant and facilities were brought in, including a crane to raise equipment from the work base at the bottom of the gully to the level of the fernery. The first task was to restore the walls. Scaffolding was constructed inside and out so that every area of wall could be cleared of vegetation and re-pointed. The upper walls and especially the upper gable ends needed particular attention. Significant elements had to be taken down and rebuilt. Regular meetings between the contractors, the architect and RBGE staff ensured that the challenges of reconstruction work were overcome. Despite heavy rain

Work in progress (Photo: MAST Architects)

The imposing exterior of the finished fernery (Photo: Lynsey Wilson; RBGE)

in October 2008, work progressed well during the autumn, and the final critical measurements could be made to allow accurate construction of the metal arches to support the new roof glazing. By early December the arches had arrived from Belgium and were being positioned so that by Christmas most of the glazing was in place.

With the glazed roof and lantern in place, the internal scaffolding could be removed to allow work to start inside the fernery rebuilding the vault over the entrance, repairing the grotto, reinstating the paths and steps, and reconstructing the water supply. There is no electricity in the building; the ventilation in the lantern is operated manually, and the water supply relies on a gravity feed. The barrel vaulted glass roof has a curved ladder on each side to provide access for maintenance, and these ladders can be cranked manually to move them between the gables. The completed structure, with the newly restored walls, wall heads protected by thick lead flashings and newly constructed glazed roof, is stronger today than when it was first erected in 1870, a fact that bodes well for its future.

THE FERNERY TODAY

The fernery was re-opened to the public in September 2009. In the absence of any historical records, RBGE horticulturist Andrew Ensoll has used his knowledge and long experience of fern cultivation to design the plantings, selecting ferns from many parts of the world for their diversity of form, as well as the diversity of their origins. Most have been grown from spores at RBGE, and over 75 per cent are of known wild origin. All are from temperate or warm temperate regions, with many from the southern hemisphere. They include species native to the Juan Fernandez Islands in the Pacific Ocean off the coast of Chile and others from the Azores, Hawaii, South Africa, New Zealand and Tasmania. Some are now rare in the wild and in need of conservation protection.

The Victorian fern craze is now largely forgotten, a curious fragment of Britain's cultural and botanical history, but when visitors find themselves inside the restored fernery, a lush green world apart, they might feel a touch of pteridomania themselves. Furthermore, by preserving historic fabric and promoting biodiversity the project has successfully united two different but related forms of conservation. Both the restored building and the remarkable plants it shelters are the product of a belief that we have a duty to keep such unique treasures alive.

PROFESSOR MARY GIBBY is the director of science at the Royal Botanic Garden Edinburgh and the president of the British Pteridological Society. Her research studies on ferns and their conservation have taken her from the Atlantic woodlands of Argyll to the Macaronesian Islands and Bhutan. She is the author of *The Benmore Fernery: Celebrating the World of Ferns*, RBGE, Edinburgh, 2009. Email M.Gibby@rbge.ac.uk.

Tree ferns flourishing in the renewed fernery (Photo: MAST Architects)

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St Ann's Vestry Hall, 2 Church Entry,
London EC4V 5HB
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www.ancientmonumentssociety.org.uk

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Tel 0845 872 3333
www.archaeologyscotland.org.uk

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www.ahfund.org.uk

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www.artloss.com

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Tel 020 7251 2610
www.gardenstrusts.org.uk

Association of Professional Landscapers
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www.landscaper.org.uk

Botanic Gardens Conservation International
Descanso House, 199 Kew Road,
Richmond-upon-Thames,
Surrey TW9 3BW
Tel 020 8332 5953
www.bgci.org

Botanical Society of the British Isles
c/o Department of Botany,
Natural History Museum,
Cromwell Road, London SW7 5BD
Tel 020 7942 5002
www.bsbi.org.uk

British Archaeological Association
18 Stanley Road, Oxford OX4 1QZ
www.britarch.ac.uk/baa

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Tel 01663 762415
www.sundialsoc.org.uk

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www.doeni.gov.uk

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www.gardenhistorysociety.org

The Georgian Group
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www.georgiangroup.org.uk

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www.cadw.wales.gov.uk/

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43 Woodland Road, Bristol BS8 1U
www.historicgardensofengland.co.uk

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www.historic-scotland.gov.uk

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www.igs.ie

Landscape Design Trust
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Redhill, Surrey RH1 1LY
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www.landscape.co.uk

Museum of Garden History
Lambeth Palace Road, London SE1 7LB
Tel 020 7401 8865
www.museumgardenhistory.org

The National Assembly for Wales
Cardiff Bay, Cardiff CF99 1NA
Tel 0845 010 3300 (English)
or 0845 010 4400 (Welsh)
www.assemblywales.org

National Council for the Conservation of Plants & Gardens *(also known as Plant Heritage)*
12 Home Farm, Loseley Park, Guildford,
Surrey GU3 1HS
Tel 01483 447540
www.nccpg.com

National Heritage Memorial Fund
7 Holbein Place, London SW1W 8NR
Tel 020 7591 6042
www.nhmf.org.uk

National Monuments Record of Wales
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Department of Archaeology,
The King's Manor, York YO1 7EP
Tel 01904 433965
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Tel 01722 342730
www.plantlife.org.uk

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www.landscapeinstitute.org

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Register of Architects Accredited in Building Conservation
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Burlington House, Piccadilly,
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www.royalarchaeolinst.org

Royal Botanic Garden, Edinburgh
20A Inverleith Row,
Edinburgh EH3 5LR
Tel 0131 552 7171
www.rbge.org.uk

Royal Botanic Garden, Kew
Kew, Richmond-upon-Thames,
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Tel 020 8332 5000
www.kew.org

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www.spab.org.uk

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www.spab.org.uk/spab-in-scotland

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Tel 020 7482 6171
www.thetempletrust.org.uk

Town & Country Planning Association
17 Carlton House Terrace,
London SW1Y 5AS
Tel 020 7930 8903
www.tcpa.org.uk

The Twentieth Century Society
70 Cowcross Street, London EC1M 6EJ
Tel 020 7250 3857
www.c20society.org.uk

Ulster Architectural Heritage Society
66 Donegall Pass, Belfast BT7 1BU
Tel 028 9055 0213
www.uahs.org.uk

The Victorian Society
1 Priory Gardens, Bedford Park,
London W4 1TT
Tel 020 8994 1019
www.victoriansociety.org.uk

REGIONAL GARDEN TRUSTS

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CREATE Environment Centre,
Smeaton Road, Bristol BS1 6XN
www.avongardenstrust.org.uk

Bedfordshire Gardens Trust
8 Hooked Lane, Wilstead,
Beds MK45 3DL
www.bedsgardenstrust.org.uk

Berkshire Gardens Trusts
23 St James Close, Pangbourne,
Berks RG8 7AP
www.berks-gardens-trust.org.uk

Buckinghamshire Gardens Trust
Vine Cottage, Thame Road, Longwick,
Princes Risborough, Bucks HP27 9TA
www.bucksgardenstrust.org.uk

Cambridgeshire Gardens Trust
The Grange, Easton, Huntingdon,
Cambridgeshire PE18 0TU
Tel 01480 891043
www.cambsgardens.org.uk

Cheshire Gardens Trust
26 Sandford Road, Sale,
Cheshire M33 2PS
www.cheshire-gardens-trust.org.uk

Cornwall Gardens Trust
Poor House Cottage, Budock Water,
Falmouth TR11 5DJ
Tel 01326 372293
www.cornwallgardenstrust.org.uk

Cumbria Gardens Trust
Rayrigg Hall, Windermere,
Cumbria LA23 1BW

Derbyshire Historic Gardens
Grove House, 141 The Common,
Crich, Matlock, Derbyshire DE4 5BJ

Devon Gardens Trust
c/o Bush and Company,
2 Barnfield Crescent, Exeter EX1 1QT
www.devongardenstrust.org.uk

Dorset Gardens Trust
Pen Mill Farm, Penselwood,
Wincanton, Somerset BA9 8NF
Tel 01747 840429
www.dorsetgardenstrust.co.uk

Essex Gardens Trust
Bramley Cottage, Mersea Road,
Peldon, Essex CO5 7QE
www.essexgardenstrust.org.uk

Gloucestershire Gardens and Landscape Trust
6 Tebbit Mews, Winchcombe Street,
Cheltenham, Glos GL52 2NF
Tel 01285 885256
www.gglt.org

Hampshire Gardens Trust
Jermyns House, Jermyns Lane,
Ampfield, Romsey, Hampshire SO51 OQA
Tel 01794 367752
www.hgt.org.uk

Hereford and Worcester Gardens Trust
Belgate House, Shobdon,
Leominster HR6 9NJ
www.hwgt.org.uk

Hertfordshire Gardens Trust
The Limes, Essendon,
Hertfordshire AL9 6HS
Tel 01707 261400
www.hertsgardenstrust.org.uk

Isle of Wight Gardens Trust
8 Greenway, Binstead, Ryde,
Isle of Wight PO33 3SD
Tel 01983 565878

Lancashire Gardens Trust
Westerly, Easington Road, Cow Ark,
Clitheroe BB7 3DF
www.lancsgt.org.uk

Leicestershire and Rutland Gardens Trust
3 Vicarage Close, Syston,
Leicestershire LE7 1HE
www.lrgt.org

Lincolnshire Gardens Trust
Hope Cottage, 22 Church Street,
Heckington, Sleaford,
Lincs NG34 9RJ

The London Parks & Gardens Trust
Duck Island Cottage,
c/o The Store Yard, St James's Park,
London SW1A 2BJ
Tel 020 7839 3969
www.londongardenstrust.org

Norfolk Gardens Trust
The Tithe House, Peaseland Green,
Elsing, E Dereham,
Norfolk NR20 3DY
www.norfolkgt.org.uk

Northamptonshire Gardens Trust
23 Church Lane,
Newton Bromswold, Rushden,
Northants NN10 OSR
www.northamptonshiregardenstrust.org

Northumbria Gardens Trust
Mallowburn Cottages, Wark-on-Tyne,
Northumberland NE48 3NX

Oxfordshire Gardens Trust
7 Church Way, Iffley,
Oxford OX4 4DY
Tel 01865 777531
www.ogt.org.uk

Shropshire Parks & Gardens Trust
64 Falcons Way,
Shrewsbury SY3 8ZG
www.shropshiregardens.org.uk

Somerset Gardens Trust
Glebe Court, West Monkton,
Taunton TA2 8QT
Tel 01984 656633
www.somersetgardenstrust.org.uk

Surrey Gardens Trust
30 Church Street, Godalming,
Surrey GU7 1EP
www.surreygardenstrust.co.uk

Sussex Gardens Trust
Bowling Alley Cottage, The Green,
Horsted Keynes,
West Sussex RH17 7AP

Welsh Historic Gardens Trust
The Bothy, Aberglasny, Llangathan,
Carmarthenshire SA32 8QH
Tel 01558 668485
www.whgt.org

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