

# Royal Fort & Life Science Gardens Management Methodology and Maintenance Specification 2023



Royal Fort & Life Science Gardens Management Methodology and Maintenance Specification  
Produced for University of Bristol Campus Division as part of Green Flag Application 2022



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Version	Date	Author	Checked
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# 1. What we have

## 1.1 About the Royal Fort

### 1.2 Location:

The Royal Fort can be located at BS8 1UH or National Grid ref: ST5827573373. There is no parking for the garden, although metered on street parking is available adjacent to the site. The garden can then be accessed from Tyndall Avenue.

Pedestrian access can be made from Tyndall Avenue; Tankards Close; Royal Fort Road or St Michaels Hill.

‘Accessible’ paths are available only from Tyndall Avenue; after which most paths are surfaced or created from self-binding stone.

The small plan to the right indicates the area (red line) in which the buildings and gardens are applied for under the Green Flag award. A larger map is shown later in this chapter.



### 1.3 Historic Development:

Royal Fort House is Grade I Listed; and the gardens are included in the gazetteer of historic parks and gardens in Avon, which makes them of national, regional and local significance (appendix 4).

This significance can be summarised as follows:

- The architectural quality of the house is exceptional and it remains one of the most interesting and important C18 houses surviving in Bristol. Its design, although not fully attributed, provides an important link between Bristol and classical architecture. This was an important and fruitful relationship which had a great impact on the townscape of Bristol but is often overlooked in favour of the C18 classicism in nearby Bath. As architectural historian Timothy Mowl points out, each elevation of the Royal Fort House offers a different essay in classicism and thus provides an almost narrative expression of a hugely influential movement.
- The gardens are less easy to read historically as they have been altered many times, but their significance derives from their connection with Humphry Repton and their historic boundaries. Prior to the construction of Thomas Tyndall's mansion, the Royal Fort Gardens appeared on maps as the open space surrounding the original Fort itself which was built in 1644. This makes the area of high archaeological importance and is one of the few remaining sites pertaining to Bristol's involvement in the English Civil War.

- The Royal Fort House and Gardens are significant for the quality of green, open space that they provide within a busy, traffic-burdened city. The route through and the gardens themselves are open to the public, although, on occasions, it may be closed due to University events (e.g. for open days or degree ceremonies). The area is therefore to be retained both for its important place in Bristol's history and also for its current capacity as a 'green lung'.
- George Oatley, while designing his scheme for the H H Wills Physics Building in the gardens of the Royal Fort in the early 1920s, described the existing house as "being the only bit of real flavour we have in connection with the University Buildings". Since the construction of the Wills Building and Oatley's Physics Building, this summation is less true than it was then but it nonetheless has some resonance today.
- The Royal Fort is also a nationally significant archaeological site as there are vestiges of the Windmill Hill Fort and the Royal Fort which, being part of the history of the English Civil War, are an important marker in national history. *NB. For a full history of the Royal Fort Gardens see Appendix 1. This is a chapter extracted from The University Historic Gardens by Marion Mako*

#### 1.4 Recent development (the new garden)

Opening in 2015 the new garden is a significant investment, by the University of Bristol, into developing the natural environment. The garden occupies the space previously employed as a car park.

The garden recognises the importance of history and retains a significant Georgian gateway (appendix 4) which used to lead into the eighteenth century vegetable and glasshouse plot. However it also introduces contemporary beds which are significant for students studying plant science and pollination.

In April 2015 the £50m Life Sciences building and garden were opened by Sir David Attenborough (pictured right). Professor Sir Eric Thomas, Vice-Chancellor of the University of Bristol, said: "Many of the most significant advances will come from the Life Sciences and it is fitting that Sir David joined us for the launch of this magnificent building, which will put Bristol on the map for world- renowned research and teaching in this area for years to come."



The success of the garden and its use of paths to open up University grounds to the general public from Tyndall Avenue and St Michael’s Hill has been recognised by our friends from the Clifton and Hotwell’s improvement Society who presented Professor Sir Eric Thomas, Vice-Chancellor of the University of Bristol with a brass and enamel plaque (pictured right) expressing their view that the garden is excellent.



**To Note:** In the summer of 2018 a new temporary lecture theatre was installed on the circular lawn, in the center of the new Life Science garden next to Ivy Gate (10 map below). This was due to be removed and the garden reinstated in June 2020, however this has been delayed whilst the construction of a new permanent lecture theatre is evaluated.

The map (below) shows how well the new and old interact and ‘flow’. The map is used as part of a walking leaflet and show: (1) The Royal Fort house; (2) the site of one of Humphrey Repton’s key views (3)



Memorial Garden (in development) (4) Art installation “Hollow” (5) High wall suggested by Humphrey Repton (6) Pond (7) Jeppe Heins’ art installation “Follow me” (8) Wrought iron gates and ashlar stone pillars (9) Cedar lawn (10) ‘Ivy Gate’ ashlar stone and brick Georgian gateway (11) Evolutionary bed display. (currently removed). Source of our beloved Horsetail (12) Pollination beds (due to be seeded with perennial pollinator mix spring 2021) and external research site. The map also shows significant buildings: The Royal Fort House (1761); the Physics Building – architect Sir George Oatley (1930); and Life Sciences (2015)

# Where do we want to get to?

## 2.1 Broad objectives

### 2.2 The vision 'within our gift'

The Gardens and Grounds team are very proud of achieving a green flag for the first time in 2016/17 and retaining it in subsequent years. The flag pole and map now stand at the entrance to the gardens, and we hope that members of the public will be curious to find out what lies beyond the historic walls. We also have new signs at all other entrances.

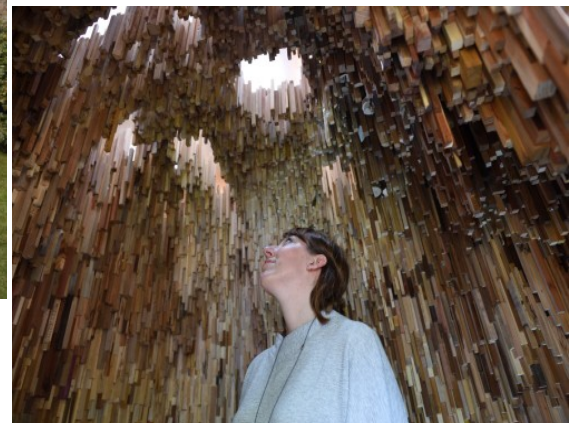
The Royal Fort Gardens have been the focus for a number of art works over the last few years. The installation of a new public artwork 'Hollow' by Kate Paterson (pictured below) is one and has attracted many new visitors:

<http://katiepaterson.org/hollow/>

<http://www.hollow.org.uk/>



Photos: (above and right) credited to web page press release



In addition, there are a number of small metal animal sculptures (by artist Julian Warren) dotted around the garden for visitors to discover, and a new art feature, due to be commissioned, aimed at exploring the relation between the politics of immigration and the politics of the environment through site specific planting in two allotted areas of the new landscaping close to the Ivy Gate, which will be a collaboration between an artist, students, Brigstow, Cabot, External Estates, members of migrant and refugee organisations, with the intention of installation spring 2021.

## New Art Features:

### **(de)bordering**

Two new pieces of art in the garden. One is the participatory project **(de)bordering**, installed during the summer and launched on the 22<sup>nd</sup> September 2021, it explores migration and environmentalism. “ How do we negotiate the politics of environmentalism - which can draw on ideas of invasive vs indigenous - and the politics of migration? How and why does language matter in policy debates over environment and migration?”



<https://brigstowinstitute.blogs.bristol.ac.uk/project/debordering/>

### **Henrietta Lacks**

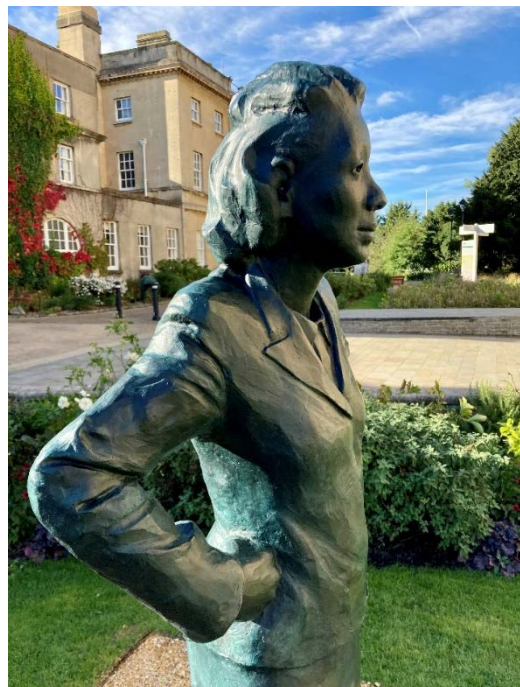
The University of Bristol has commissioned local artist Helen Wilson Roe to create a sculpture of Henrietta Lacks, a Black American woman whose cancer cells are the source of the HeLa cell line

<https://www.bristol.ac.uk/news/2021/october/henrietta-lacks-statue.html>

<https://www.bristol.ac.uk/news/2021/march/lacks-sculpture-commission.html>

These cells changed the course of modern medicine, making possible some of the most important medical advances of all time including the development of the polio vaccine, chemotherapy, gene-mapping, IVF and cloning, and are used in almost every major hospital and science-based University in the world.

The Statue was installed in the Royal Fort Garden in October 2021 on the centenary of Henrietta’s birth, and in the spring 2022 a new planting scheme, with a Red & Black theme, will give the statue a unique floral setting.



**Outputs:**

We also continue to develop landscapes towards the following categories of objective:

- Welcoming ◦ Informative ◦ Consistent & Sustainability

**Welcoming:** through the provision of maps (Appendix 2), signs, leaflets, activities and displaying the Green Flag!

- The garden is geared towards being used and enjoyed by all, whether University staff, students, local schools or the local community. The exceptional numbers of the local community who used this inner city garden in 2020, when the university was mostly closed due to Covid-19, was wonderful.
- We strive to ensure that the paths are accessible to all users; but we know that certain routes can be improved, whilst other historic or art features may never be fully accessible (such as 'follow me' mirror maze, picture below left) and in these circumstances we will endeavour to make them 'virtually' accessible on line. <http://www.aprb.co.uk/projects/all-projects/2009/follow-me> <http://katiepaterson.org/portfolio/hollow/>
- Gardens and Grounds develop the landscapes to be both pleasant which locations such as memorial gardens will be intimate and reflective.
- The garden featured a Gromit (picture below right) as part of the Grand Appeal, 'Gromit Unleashed 2' trail <https://www.grandappeal.org.uk/trails-exhibitions/gromit-unleashed/> which encouraged many new visitors to discover & explore the garden



Photos. Simone Jacobs

- The gardens should be used for activities that are engaging and fun. We have even had a tethered hot air balloon (below left); although the majority of people prefer to quietly relax on the sunny embankments (below right)



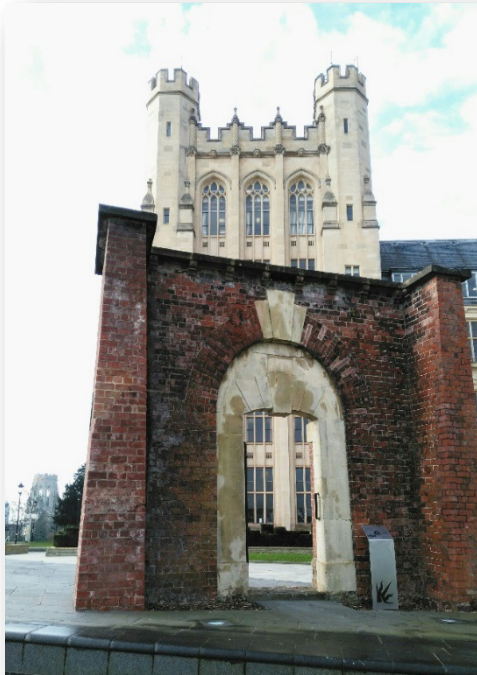
Royal Fort House photo: EMILIE (@club of explores)



Balloon photo: Natalia@natalia.wojicka

**Informative:** through the provision of interpretation boards, self-guided walks and tours

- Protective of its heritage value: by recognising Humphrey Repton’s intentions; identifying and maintaining heritage features (pictured below left)(appendix 4); and introducing new requirements e.g. lighting, hard surfaces, structural ‘interventions’ (picture: below right) and planting in a sensitive and selective manner which engages the user of the garden
- Gardens and Grounds also wish to inform users with educational information boards and, for individual species tags and labels. Recently an interactive tree map, focused on the Royal Fort, but covering all the Universities grounds, has been developed (see page 18).



Ivy Gate

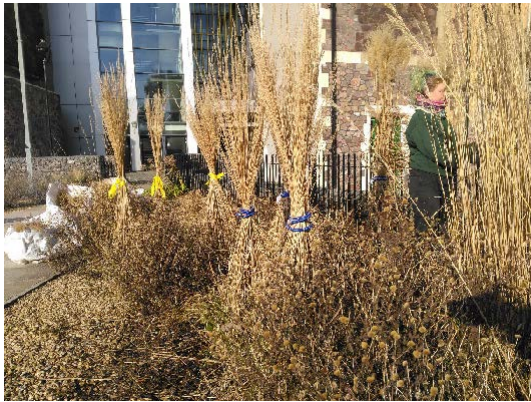


One of a number of unique sculptures in the garden by Julian Warren

**Consistent:** Gardens and Grounds aim to provide a coherent approach to developing and maintaining the Royal Fort gardens, following good ecological and horticultural practices. The expectation is that this approach will not only ensure all staff involved fully understand the parameters of their responsibilities - which makes allowance for individual creativity and personal professional development – but also the shared vision and goals. The developing approach for separate, overarching, management plans for each University garden also allows for new employees to quickly ‘get up to speed’ and, in addition, compliments transferable skills.

Key to this new approach are: gazetteers, to identify and record what we have; monitoring databases, to benchmark and improve; engagement to ensure strategies are sustainable.

**Sustainable:** Our activities in habitat maintenance and development are wildlife friendly and relatively economical to maintain. This common sense approach and, in recording our objectives, clearly defined stratagems are maintainable for future management.



The inclusion of features, such as public art, information boards, tree labels with QR codes linking to the universities tree map and a memorial garden (pictures below left and right); helps to ensure that the work, to engage the community of the University and the wider population, becomes embedded in the social ethics of future management.



## 2.3 Concepts (with dependencies)

The University launched a new vision and strategy which talks about “providing a welcoming, well-maintained and inclusive campus that provides the infrastructure, both physical and digital, that our staff and students need to succeed individually and to flourish as a community”. One key ambition is for the gardens to become “a highly visible, coherent and welcoming heart to our main campus on Tyndall Avenue by providing new facilities, remodeling and integrating existing facilities, and enhancing the external publicrealm”.

Increasingly the Royal Fort has become pedestrian friendly; but the new vision is expansionist; and the aspiration is to increase the footprint of the natural environment and biodiversity into areas – such as Tyndall Avenue – which are currently largely sterile hard landscapes (as visualised below).

Current designs exploit all spaces that are not necessary for emergency vehicles as opportunities.



Image: Nicolas Pearson Associates

# How are we going to get there?

## 3.0 Service Level Agreement

### 3.1 The Service

Gardens and Grounds will:

- Provide a full grounds and horticultural maintenance service to the University in line with the 'Maintenance Specification' and 'Occupiers handbook' which form part of the Estates strategy
- Ensure good practices in the upkeep, rejuvenation and development of the gardens
- Liaise with specialist contractors/sub-contractors
- Utilise in-house landscape design expertise
- Liaise with landscape design consultants for large capital projects connected to the gardens
- Regular monitoring of all grounds maintenance works
- Consult with occupants of respective buildings when considering landscape changes and where works may interfere with access or create noise disturbance
- Provide tree maintenance and emergency response service. Either in-house or with contractors
- Support ceremonies and other University events held in the gardens
- Oversee installations and maintenance of Art Works and Memorial garden
- Support student research projects in the garden, recent ones have focused on pollinators, fungi & invertebrates
- Assist with events and requests to film in the garden

### 3.2 Delivery

Although works are dependent upon seasonal weather conditions, works are broadly:

Spring	Summer	Autumn	Winter
<ul style="list-style-type: none"> <li>• Lawn maintenance and repair</li> <li>• Residual weed control</li> <li>• Planting borders</li> <li>• Division of 'in the green' bulbs</li> <li>• Prune winter flowering and winter stem colour shrubs</li> <li>• Hedge renovation</li> <li>• Plant division</li> <li>• Litter collections</li> </ul>	<ul style="list-style-type: none"> <li>• Mowing</li> <li>• Weed control</li> <li>• Hedge cutting</li> <li>• Pruning climbing shrubs</li> <li>• Division of perennials and hardy annuals</li> <li>• Litter collections</li> </ul>	<ul style="list-style-type: none"> <li>• Lawn maintenance</li> <li>• Leaf collection</li> <li>• Weed control</li> <li>• Planting borders</li> <li>• Pruning summer flowering shrubs</li> <li>• Arboricultural works</li> <li>• Pond maintenance</li> <li>• Litter collections</li> </ul>	<ul style="list-style-type: none"> <li>• Leaf collection</li> <li>• Landscaping projects</li> <li>• Garden development</li> <li>• Snow/ice clearance</li> <li>• Tree pruning</li> <li>• Mulching shrub borders</li> <li>• Prune Wisteria</li> <li>• Arboricultural works</li> <li>• Moss control on hard surfaces</li> <li>• Litter collections</li> </ul>

### 3.3 Customer Obligations

Gardens and Grounds provide an 'Occupiers handbook' (Appendix 3) and would like staff (from whatever department) to:

- Report problems quickly for action. Providing as much detail as possible
- Co-operate with Estates staff and contractors in situations where disruption is inevitable

### 3.4 Legal and regulatory compliance

Gardens and Grounds Services are subject to certain legal obligations and will always endeavour to fulfil these responsibilities. On occasions the necessity to ensure compliance may result in delays to projects or the service provision.

### 3.5 Performance Monitoring and Inspection

The majority of maintenance tasks, performed by Gardens and Grounds services, are based upon 'Time and Motion' studies. Staffing levels are calculated against mapped University estate measurements; and all such works are monitored to ensure an efficient service provision

Value for Money reviews are undertaken on a regular basis by organisations external to the University.

Individual projects are overseen by Project Co-ordinators, with costs and outcomes assessed by the project instigator or client.

### 3.6 Public engagement

The University actively engages with members of the public. The Royal Fort gardens are no exception and every opportunity is taken to make University spaces more accessible and interactive. This takes many forms - interaction with existing groups such as: the local primary school, who use the garden on a weekly basis, and numerous walking groups who use the garden for regular lunchtime strolls. We are also engaging with society's such as the newly formed High Kingsdown gardening group; University heritage garden volunteers who have recently received a £35,000 grant from the Heritage Lottery Fund to recreate a 1750's garden at Clifton Hill House but whose remit extends to all heritage gardens (including the Royal Fort).

Since being awarded the Green Flag, we have seen a dramatic increase in visitor numbers; and this has led to undergraduate studies (Lydia King) into public spaces and their connection with mental and physical wellbeing. And allowing us the opportunity to offer our professional services to the neighbouring St Michaels Hospital; not only to inform patients and visitors that the garden exists and they are welcome to walk around it, but also to help improve the unloved courtyard gardens within the hospital (via the University volunteering scheme).

Gardens and Grounds are now part of the BS9 group who, on an annual basis, apply for Britain in Bloom. The Royal Fort Garden and the new Life Sciences living wall are used to show judges the strong horticultural wealth of the area. And we work with Clifton village to open 'secret gardens and squares'.

The Gardens contribution to public spaces in Bristol was recognised, in 2015, by the Clifton and Hotwell's Improvement Society by the presentation of a brass plaque signifying the excellence of the newly opened Life Sciences area of the Royal Fort Gardens. And Gardens and Grounds have expanded their tours of the garden.

Recognizing that more can be done, since 2017 Gardens and Grounds have been improving their social media presence (Facebook, Instagram, etc), audio walking tours and interviews for the garden and surrounding area. Again it will increase the number of its guided tours including biodiversity walks which are offered by the Bristol Naturalist Society.



Over a number of years Gardens and Grounds have been developing relationships with student gardening and conservation clubs and the Princes Trust, offering to provide space & supervision for gardening and conservation projects, many within the Royal Fort Gardens. Supporting initiatives to produce plants, create & maintain planting borders and (as part of the Avon Wildlife #MyWildCity) assist creating wildlife habitats such as Bee Hotels, Toad Abodes & Annual Meadow. These groups have been active in the creation of the Annual Meadow and combined with support from

the School of Biological Science we were awarded the Bees Needs Champion 2018 & 2019 awards

<http://www.bris.ac.uk/biology/news/2018/rainbow-meadow-supporting-the-bees-needs.html>

In 2019, we worked closely with the student group Roots Community Gardening to collaborate on projects, including the Bees Needs Rainbow Meadow which is still growing strong. We also collaborated with the Bristol University Conservation Group who helped enrich the lawn, below the House, by planting wildflower seeds & plugs and spring bulbs to create a 180msq meadow area. To celebrate National Tree Week and Tree



Charter Day they took part in a ceremonial planting of pear trees in the garden.

### Sunflower Suicide Prevention Collective Summary 2021

- Recognising the positive benefits nature and greenspace can have on mental health we have continued our collaboration with [Loo Fletcher](#), aka The Sunflower Gal, suicide prevention activist and founder of the Suicide Prevention Collective.
- SPC are a charity devoted to supporting and helping, primarily students, to support positive mental health. As part of their awareness campaign, we have developed a garden-based initiatives that features sunflowers as symbols of positive wellbeing. Royal Fort Sunflower signs and maps were used and to promote the symbolic display to thousands of visitors to the gardens and featured on the [SPC social media channel](#) and [Gardens and Grounds social media channels](#) using the hashtag #IAMASunflowerStudentAndStaff.



### Hedgehog Friendly Campus Campaign Summary 2021

- In January 2022 the University was awarded the prestigious Gold Award as well as renewing the Silver and Bronze award by the [Hedgehog Friendly Campus](#) campaign, a hedgehog conservation initiative sponsored by the British Hedgehog Preservation Society. These awards recognise the achievements of staff and students who have worked together on initiatives such as habitat restoration, review of pest controls, training for all gardens and grounds staff in hedgehog first aid, recording sightings and developing sensitive maintenance operation scheduling to ensure the safety and preservation of hedgehogs across our gardens.



- The Royal Fort Garden plays a significant role in demonstrating and promoting this campaign in our community and hosts several HFC events attracting a diverse audience from on campus and the local area, as well as running volunteer work sessions for students demonstrating hedgehog and wildlife conservation.

### Teaching Opportunities 2022

- The Royal Fort Garden is now in its second year of supporting students learning in Population Ecology Year 1 where all practical sessions are run in the garden surveying wildlife populations and habitat and detailed reports and recommendations made for improvements for specific species including local BAP species.

### Media and Filming 2021

- The Royal Fort Garden has been used to film the BBC Drama 'Showtrial' in 2021 The robins of Royal Fort have recently become mascots of the BBC One Show as well as providing great entertainment to garden visitors and featuring on many Instagram Reels.

### Student Engagement Activities 2022

- Throughout the year student activity sessions are run with our on-campus partners in Students Union, Residential Life, Bristol University Conservation Group, Hedgehog Friendly Campus Student Ambassadors and Historic Gardens to promote connectivity with nature and their benefits to wellbeing as well as the importance of conservation and biodiversity. We strongly believe in providing accessible activities that support students who might otherwise feel uncomfortable in joining groups within the city or region but use our sessions as a steppingstone to volunteering in conservation or community farming or similar outdoor nature based activities.
- This year we have winter pruning, meadow planting, dead hedge-laying, bulb planting and surveying planned for 2022



### Other Conservation Campaigns

- Large areas of the garden have been reserved for late mowing to preserve habitat for wildlife and particularly pollinators in the spring to promote and support the 'No Mow May' campaign by Plantlife.



### Exhibitions

- Bristol Photo Festival held an exhibition in the garden by photographer Chris Hoare called 'Growing Spaces' as part of their Summer Festival Trail. This exhibition captured the deep connection between Bristol's urban growers and landscape and looked fabulous against the dark green backdrop of the garden.
- Heart Institute Totem was installed in October 2021 at the third totem in the collection celebrating research achievements across our university. This one is dedicated to work of the Bristol Heart Institute and links human life to nature featuring the blood that circulates and the heart beat within us.



“Engagement activities work best when integrated into research and teaching. It makes more sense of staff time because it’s feeding into a bigger picture and you’re learning at the same time” Dr Shelley Hales

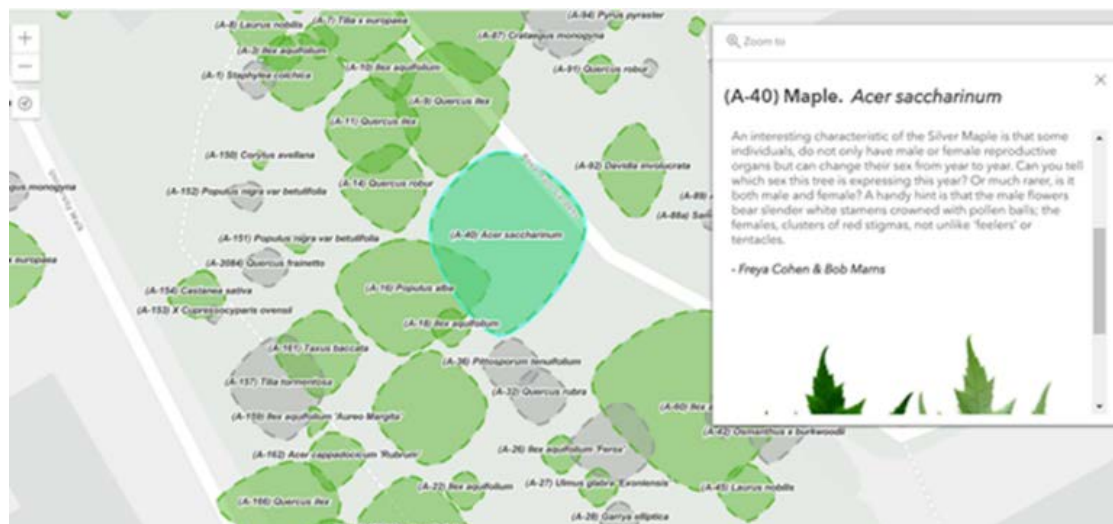
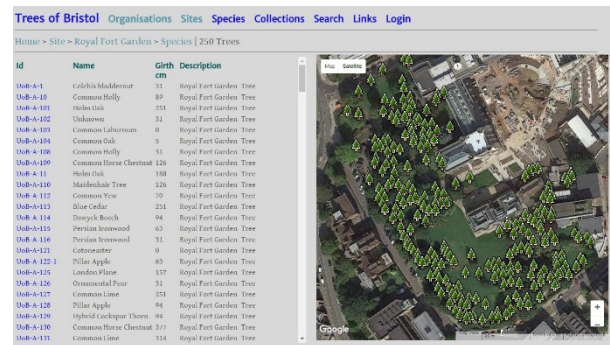
### 3.7 Marketing Strategy

In addition to providing self-guided leaflets within Security Lodge (and a printable copy is being developed for access via social media) Gardens and Grounds market tours on the University web based shop.

The University has to balance public engagement with student security and ability to concentrate on their studies; however it is working hard to fully engage with Bristol City Council to provide a site (the wider University precinct area) which allows everyone to move safely through it. The new planting collections will receive interpretation boards so that their educative value is accessible to all.

Gardens and Grounds are also working with Bristol City Council in the area of web pages. The Council publicise Bristol’s parks and open spaces on: <https://www.bristol.gov.uk/policies-plans-strategies/bristol-parks-and-green-space-strategy> and we have been approached to

advertise our garden – in order to help fulfil the councils strategy to have green spaces within 500m of houses. Gardens and Grounds have already submitted their entire database of trees identifying the location of individual trees and species; which the council reproduce on interactive maps (such as the one for the Royal Fort shown below).



In addition, Gardens and Grounds have developed an interactive tree map with a GIS developer that was launched in 2021. The map is linked via QR codes to mounted tree labels allow visitors to identify and appreciate the diversities of the gardens and the wider university estates tree stock. In addition, many of the tree species have text drawing on various topics from general info, folklore, medicinal usage, poetry & nature provided by two very knowledgeable and creative ex-students. [University of Bristol - Tree Mapper \(themap16mapping.co.uk\)](https://themap16mapping.co.uk)



The Department has published a book about its gardens - the chapter covering the Royal Fort Garden is attached (Appendix 1) to this paper.

The University of Bristol is fortunate in owning several superb historic buildings & gardens, a glimpse of which can be found [Historic Gardens | External Estates | University of Bristol](#) and Historic garden tours will be on offer through the summer, visiting a few of these and bookable via the University online shop, with more information from [Historic Garden Tours | External Estates | University of Bristol](#)

#### **Social media**

**Instagram-** @uobroyalfortgardens- reaching 966 followers

**Instagram-** @unibrisgardens- featuring RF amongst other university gardens-

**Facebook-** <https://www.facebook.com/unibrisgardens/> including events, activities and highlights

**Twitter-** @UniBristolGdns

**Website:** [www.bris.ac.uk/external-estate](http://www.bris.ac.uk/external-estate) **To Book:** [www.bristol.ac.uk/gardens-events](http://www.bristol.ac.uk/gardens-events)

### **3.8 Recent events & successes**

- University open days and tour visits throughout the year
- Bees Needs Award (Greenflag & DEFRA)
- Building Bug hotels with Princes Trust
- Floral Meadow and Toad Abode with Roots Community volunteer group
- Bee Hotels with Roots Community volunteer group- installed on the garden wall by the Hollow
- Cycle clinic every Wednesday during term time
- Lunchtime walking group
- Graduation ceremonies and teas
- Welcome week events for new students
- University Faculties – visit the gardens are part of the tour of the facilities
- Bioblitz, April 2019 (see Appendix 2 for leaflet)
- Hedgehog friendly campus Gold certificate 2022

### 3.9 Provision for the future

Gardens and grounds have significant short and long term plan; and the recent developments demonstrate the level of ambition including the opening of the new garden section (Life Sciences) including a green wall – which is a visual demonstration, suggested by Gardens and Grounds, for the University to express its commitment to nature and biodiversity. All paths are now resurfaced to offer as many ‘accessible’ routes as possible.

Short term ambition is to increase welcome sign at all entrances and interpretation boards within the garden. Including information about the plants/trees and biodiversity that can be seen. This will be communicated in a number of different methods – paper format, online, guided walks, the interactive tree map (section 3.7) etc.

Alongside contemporary features and activities; Gardens and Grounds have long term strategies to conserve Repton’s 1800 plan for the Tyndall family. Generally this will be to retain the mounds, bowls and ‘flow’ of the land forms as well as the hard features (a great deal of work has already been undertaken to rake out and repoint the massive land retaining walls); but we are also determined to remove some of the 1970’s tree planting in order to return species that would have been available to Repton. This is to be accomplished by planting ‘successional’ trees (i.e. planted now so that in ten/twenty years’ time the tree which is to be replaced can be taken down with no detrimental effect on the landscape value).

## 4.1 Maintenance in support of legislation or policy

This section has been written in order to provide an in depth statement of the works currently performed by Gardens and Grounds Services

### 4.2 Maintenance Overview

Gardens and Grounds Services aim provide an excellent landscape maintenance and development service for the University of Bristol.

Based on Productivity Based Budgeting data, this document aims to, comprehensively, set out a service level agreement for the landscape maintenance provided by Gardens & Grounds Services within the Royal Fort Garden and Life Science Landscape to the various University stakeholders, including Facility managers, Departmental Heads and event organisers. Additionally, this document has value to Gardens & Grounds Services staff as a benchmark for the expected/required standard of landscape maintenance they provide.

Current **staffing levels** for the Royal Fort Garden and Life Science Garden are:

- two full-time and one part-time Horticulturists
- weekly visits by the Garden and Grounds mobile mowing team
- daily bin collection by the Garden and Grounds Hard Surface Team

### 4.3 Legislation & Policies

It is an objective of Gardens and Grounds Services to work in full compliance with the latest legislation and University policies. The following list is indicative of (and not necessarily exhaustive) acts, regulations and guidelines which the service provision aims to comply with; to the benefit of staff, students and the general public who may be affected by the work undertaken by Gardens and Grounds Services.

### **Works Legislation**

- Health and Safety at Work Act 1974 (c 37)
- Lifting Operations & Lifting Equipment Regulations 1998
- Manual Handling Operations Regulations 1992
- Offices, Shops and Railway Premises Act 1963 (c 41)
  
- Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 1995
- Control of Substances Hazardous to Health Regulations 2002
- Management of Health and Safety at Work Regulations 1999
- Noise at Work Regulations 1989
- Health and Safety (Display Screen Equipment) Regulations 1992
- The Personal Protective Equipment Regulations (PPE) 1992
- The Provision and Use of Work Equipment Regulations 1998
- Working at Height Regulation 2005

### **Ecological Legislation**

- Natural Environment and Rural Communities Act 2006
- The Convention on the Conservation of European Wildlife and Natural Habitats (BERN Convention 1979)
- The Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention 1983)
- Convention on Trade in Endangered Species of Wild Flora and Fauna (CITES Convention)
- Wildlife and Countryside Act 1981
- Protection of Badgers Act 1992
- The Conservation (Natural Habitats & c.) Regulations (1994)
- Countryside and Rights of Way act 2000

### **University Policy**

- Health and Safety
- Biological Safety and Genetic Modification 2003 (amended 2007)
- COSHH (Chemical) 2002
- Fire Safety (updated 2007)
- Risk Assessment
- Smoking Policy (issued 2007):

## **4.4 Biodiversity**

The University of Bristol, as a major land owner, has a responsibility to conserve biodiversity. Gardens and Grounds Services are proactively managing the land and resources for the benefit of wildlife and the conservation of biodiversity. This is achieved in many ways including, woodland management, grassland management, the minimal use of chemicals and the recycling of green waste. Where it is possible Gardens and Grounds Services endeavour to use native species within new planting schemes.

The University Estate has a diverse range of habitats and ecosystems that require judicious management in order to maintain them so that they are beneficial to biodiversity. There are legislative measures that must be adhered to so as to ensure that the management principles are sympathetic to the environment.

Maintaining and increasing the biodiversity within The Royal Fort Garden is a key aim of the development and maintenance strategy for the garden.

- There are over 250 notable trees within the garden composed of 120 different species (of

which 18 are native) and made up of a wide range of age groups. In recent years there has been a focus on successional planting ensuring there are replacements for the ageing tree stock. A number of the trees are labelled and there is a small proposed tree trail of ten of the notable trees (Appendix 5) with guided walks during certain events (i.e. Bioblitz April 2019)

- The pond was extended significantly in 2011 with the aim of encouraging wildlife. The depth of the pond was increased, meadow strip margins were left unmown & marginal plants introduced to provide cover. In a recent survey Smooth and Palmate newts were found to be present as are common toads and frogs

- Stone walls are maintained free of vegetation to ensure that there is adequate basking opportunities for the small population of Wall Lizards that are resident in the garden

- Bird Boxes have been placed throughout the garden to assist the healthy and diverse bird population. In addition, care is taken to ensure that nesting birds are not disturbed by pruning operations.

- Long grass areas are being developed through the use of mowing regimes and the introduction of Yellow Rattle *Rhinanthus minor* with the aim of producing a species rich summer meadow



- Where possible large dead wood is retained in the garden to encourage invertebrate and fungal communities

- Maintenance of herbaceous planting to ensure that dead plant material such as dead stalks and seed heads are retained throughout the winter months to provide food & shelter resources for invertebrates and other fauna

- Green roofs use native wildflowers to encourage invertebrate

- Green Wall planted with a broad range of evergreen plants and incorporating bat & bird boxes

- Use of herbicide kept to a minimum. Chemical control of pests and diseases is not used in the garden although biological insecticide used to control of Box Moth has been used and is ongoing



The University Estate supports a wide range of flora and fauna, including notable UK Biodiversity Action Plan (BAP) and Avon BAP species, including, brown hare, song thrush, great crested newt and slow worm. The inclusion of these species on the Avon BAP list highlights their importance as a local population and the importance of managing the land in a way that is beneficial for the species.

The Bristol BAP includes 8 Habitat Action Plans (HAPs). These habitats are of importance on both a local and national scale. The University of Bristol Estate contains four habitats for which there are action plans within the Bristol BAP, including, scrub, woodland, species rich grassland, ponds and open water. The HAPs for these habitats outline the current status of the habitat, threats to the condition of the habitat and sets objectives for its management.

### **Hedgehog Friendly Campus Campaign Summery**

In 2020 University of Bristol was awarded a Bronze certificate by the [Hedgehog Friendly Campus](#) campaign, a hedgehog conservation initiative sponsored by the British Hedgehog Preservation Society. Over the last twelve months initiatives such as habitat restoration, review of pest controls and training for all gardens and grounds staff in hedgehog first aid, recording sightings and sensitive maintenance operations to ensure the safety and preservation of hedgehogs across our gardens including Royal Fort Gardens. The Garden has also been used to host several HFC events attracting a diverse audience from our campus and local community.

#### **4.5 Climate change**

In order to create sustainable, low input soft landscapes, new planting scheme incorporate drought resistant plants combined with soil ameliorations practices (mulches, organic matter incorporation etc) to optimize soil water balances, and tree selection to enhance future canopy shading to temper extremes in heat in our urban environment.

To reduce CO2 emission, we have largely moved over to electric equipment and shortly the site will be serviced by an electric van. In the wider arena, University of Bristol declared a climate emergency in April 2019 [2019: University of Bristol declares a climate emergency | School of Biological Sciences | University of Bristol](#), and University of Bristol is working towards net zero carbon <https://www.bristol.ac.uk/sustainability/net-zero-carbon-bristol/> by 2030

#### **4.6 Historical Garden**

Historically the Royal Fort garden was landscaped by Humphrey Repton around 1800 (see the University of Bristol Historic Gardens book by Marion Mako) which creates a fine setting for the Georgian classical Royal Fort House circa 18<sup>th</sup> C. The new Life Sciences landscape was designed by Nicolas Pearson Associates and completed in 2015 when it was opened by Sir David Attenborough.

The chapter referring to the Royal Fort is contained in this report as Appendix 1. Appendix 4 identifies the listed buildings within the curtilage of the Royal Fort house.

Any alterations to the garden which have direct physical, or visual, effects within the curtilage of the gardens are subject to listed building consent. Gardens and Grounds have frequent conversations with Bristol City Council Conservation Officers (David Martyn and Peter Insole) concerning landscape integrity, through maintenance and development.

#### **4.7 Health & Safety and Site Security**

Gardens and Grounds comply with all legislative Health and Safety requirements and endeavour to comply with University policy and procedures. A full review/audit of Health and Safety has undertaken on a two yearly basis.

Gardens and Grounds additionally recognise the responsibility for staff, students and visitors to the University estate and make every effort to ensure that the grounds are both safe and enjoyable to use.

Adjacent to the main entrance to the Royal Fort Lodge is the Universities Security lodge. Visitors to the garden are welcome to drop into the office if they have security concerns or they may use the numbers below (24hrs). There is CCTV coverage of many of the entrance ways into the garden and members of the security staff regularly patrol the garden whose presence greatly reduce any incidents of anti-social behavior & vandalism. Security services will assist with visitors concerns with safety, their contact details are:

24 hour **EMERGENCY ONLY** - 0117 331 1223 (internal 112233) **Non Emergency** security issues please call 0117 928 7848 (internal 87848)

## 4.8 Adverse Conditions

### Exceptional Work

Gardens and Grounds schedule work to ensure that all the required jobs are completed appropriately. However, certain circumstances are beyond the control of the department and may affect the schedule of works. These occasions require flexibility from both Gardens and Grounds Services Staff and clients alike. Whenever it is possible and/or necessary emergency remedial work is carried out to make areas safe.

### Adverse weather conditions

Many of Gardens & Grounds tasks are often weather dependant. Lawn maintenance, for instance, is often not possible during periods of rain or immediately after rainfall. Similarly, much of the weed control throughout the University is also not possible during periods of wet weather. Whilst every effort is made to work around adverse weather there will be occasions when scheduled work will have to be postponed to a time when it can be completed both safely and efficiently.

### Winter gritting

Gardens and Grounds coordinate an external contractor to apply grit when necessary, determined by weather forecast, etc. The contractor works to predetermined routes/maps and this is supplemented by Campus Division.

### Emergency tree work

Trees within the University Estate are surveyed regularly to identify potential hazards and to ensure that any work is scheduled to deal with these risks. However, there are, occasionally, exceptional conditions that may cause unforeseen situations. These remedial works are either dealt with by skilled operators in the Gardens and Grounds staff or by an external contractor.

### Emergency walls and hard surfaces

Walls and hard surfaces within the University of Bristol Estate are surveyed/inspected to assess their condition and structural safety. Priority is then given to maintenance and repair works on walls and hard surfaces assessed as a higher risk category. Whilst every effort is made to identify and repair potentially hazardous walls and hard surfaces, there are, occasionally, exceptional conditions that may cause unforeseen situations. In these cases every effort is made to ensure the safety of people using the area and schedule remedial repair work.

## 4.9 Events

### University Degree days and Open Days

The aim is to provide the best possible display of external grounds to visitors during these times. The specific areas where these events will take place need to be identified and a particular regime of maintenance (described below) should be employed:

- Use of noisy equipment to be restricted for the duration of the event taking place during the day (generally 9am-5pm).
- Litter collection to be carried out daily during the event, ideally at the beginning of the day before the events commences and during the event if necessary.
- Fly posters to be removed daily during the event.
- Hard surfaces (paths, steps, patios and car parks etc) to be swept or blown clear of leaves and debris prior to the event to ensure that the need to carry out this work during the event is reduced.
- Moss, algae and mould control of paths, steps and hard surfaces to be carried out

in good time (approximately 1 month) prior to the event.

- Lawns to be cut prior to the event. Further lawn maintenance during the event restricted to early mornings, before the events/proceedings take place.
- Weed control to be scheduled to be undertaken approximately three weeks prior to the event to ensure maximum effectiveness.
- Shrub and herbaceous borders to be checked prior to the event and any remedial maintenance carried out in good time, before the event. All other maintenance should comply with good horticultural practices.
- Plant growth, encroaching on paths, steps and lawns etc to be trimmed back prior to the event.
- Cultural control of weeds, involving hand weeding, forking out and hoeing of planted areas (beds, borders etc) to be carried out a week prior to the event.
- Mulches (bark chippings, compost or leaf mould) applied to the surface of beds to be checked a month prior to the event and topped up if necessary.
- All staff will ensure to maintain a flexible approach to cover issues and events if they should arise

As a matter of course Gardens & Grounds staff will provide a flexible approach to work to facilitate additional events such as exams, weddings, photographs, films, conferences, high profile visitors etc. Although we do require notice in good time of these events, to ensure we can identify the resources required.

## 5.1 Specific maintenance of the natural environment and features

### 5.2 Trees

#### Tree Maintenance

Trees to be regularly visually inspected to ascertain the general health of the trees within the University grounds, and to note dead, diseased or damaged timber, branches etc. All the tree stock will be surveyed on a three yearly basis, whilst high risk trees will be surveyed on more frequent basis (refer to University of Bristol Strategy for tree management).

Planting new trees will be undertaken when deemed necessary or desirable; i.e. as replacements for maturing trees, as commemorative or memorial trees (currently restricted) or as part of an ongoing planting schedule. Stakes and ties of young trees will be checked up to maximum age of four years after planting, in the spring and autumn, after which they should be removed or replaced as necessary.

Formative pruning of young trees will be carried out at the appropriate time to raise crowns, check double leaders, thin as necessary, and remove stem growths and suckers. Stem growth and suckers to be removed from mature trees, and water shoots on trunks of mature Lime trees to be cut off annually. Undesired volunteer (weed) tree saplings will be removed or (if too large to physically remove) cut down and treated with ecoplugs (herbicide within a Self-contained weedkiller capsules) to prevent stump re-growth. Ivy will be removed from trees as necessary; cutting back unwanted growth to ground level on an annual to biennial basis.



A customised arched prop supporting a Black Mulberry

Remedial pruning works will be in line with arboricultural good practice and alternatives, such

as propping, preferred if applicable. Dead, dangerous or windblown trees/branches will be removed in good time, either by Gardens and Grounds Services or by an external contractor. Windblown tree debris will be removed after storms, firstly from hard surfaces such as roads, paths and steps, and secondly from lawns and gardens. All pruned or felled material will be chipped on site or removed, whilst timber will be stacked neatly within the grounds, if possible (to encourage wildlife) otherwise removed, if this is felt appropriate. Diseased material will be removed and burned in the North Somerset site.

### **5.3 Shrubs**

#### **(a) Shrubs and shrub borders**

All shrubs and shrub borders should be annually checked to ascertain their condition. Shrub beds will be re-stocked when they become over-mature. Seasonal pruning to remove damaged, diseased, dead and dangerous growth and to remove any growth causing obstruction to pathways, roads, car parks and seating areas etc. Approximately two to three visits to each shrub border during the season. Arisings to be chipped on site and spread around the base of the shrubs as mulch, or removed and chipped elsewhere, to be composted and used as mulch at a later date. Diseased material will be removed to be burnt.

Shrub borders to be kept weed free, using either cultural, or, in respect to bindweed, Japanese knotweed and other pernicious weeds, chemical methods.

Shrub borders beside paths should be planned and maintained with the security of passers-by in mind. Please refer to the sketch on shrub planting beside paths.

#### **(b) Climbers**

Climbers will be pruned annually, to promote flowering, control growth and remove dead, diseased and damaged plant material. Additional pruning may be necessary to remove growth from doorways, steps and paths where it may cause an obstruction.

The winter protection of tender plants to be erected in the autumn and removed in the spring.

Unwanted ivy growth to be cut down to ground level on an annual to biennial basis as necessary.

Where applicable, summer growth to be tied into and trained on support wires, support wires to be replaced as necessary. The height of climbing plants to be kept within a safe working height from the ground.

#### **(c) Roses**

Shrub & climbing roses to be pruned twice annually. A basic reduction of approximately 50

% of the rose in autumn. A second prune in spring, to create an open framework for the new season's growth.

Base of Roses to be kept reasonably weed free throughout the growing season. Annually a slow release fertiliser will be applied and forked in at the base of the plant and the soil top dressed with leaf mould to suppress weed growth.

Monitoring for pests and diseases will be carried out throughout the growing season to mitigate problems. Use of pesticides to be kept to a minimum, ideally only relying on the usage of soft soap, used early on in the infestation in order to catch the problem and minimize the need for further spraying. Herbicide used only to combat persistent weeds (i.e. ground elder, bindweed). Additionally, the pruning regime will reduce the risk of diseases overwintering within the old wood. Carry out dead-heading and clear away after the first flush.

**(d) Ground cover plants**

Ground cover plants that encroach on paths, steps and lawns etc will be pruned back twice yearly, or as necessary. Encroaching ground cover plants to be trimmed back and bare soil surface to be mulched to a depth of at least 50 mm on a three year cycle, or more frequently if applicable.

Particular ground cover plants (e.g. *Hypericum*, *Lamium*, *Rubus*) to be cut down annually, in the spring, to encourage re-growth.

**(e) Herbaceous borders**

On a three year cycle, the plants in one third of a herbaceous border to be lifted in early spring and divided, retaining the best quality plant material. The empty herbaceous bed to be dug over and enriched using compost or leaf mould. The retained plant material to be replanted and firmed in. Newly planted herbaceous beds to be irrigated as necessary.

In spring, borders to be cleared of dead plant material and support provided for plants that require it. Slow release fertiliser to be applied in early spring.

Beds will be kept weed free using cultural means (e.g. hoeing and/or hand weeding). Systemic herbicide used, if it is necessary, to combat persistent weeds (e.g. ground elder, bindweed). Dead heading and removal of diseased, damaged and dead plant material to be carried out when necessary.

Leaves to be raked out and removed after the autumn leaf drop and after the summer leaf fall from evergreens.

Leaf mould to be applied as mulch on a yearly to biennial basis in spring, to act as a weed suppressant and soil improver.

## **5.4 New planting schemes & design**

Planting schemes and designs will aim to enhance the natural aspects of the various garden areas and the historic heritage of the garden. Consideration will be made to ensure that vistas are maintained, focal points formed and elements of 'surprise' created. The garden will be developed to have all year round floristic interest, however there will be an emphasis given to the autumn, winter, spring and early summer months as these are when the garden is mostly used by visitors and for events. When applicable successional tree planting will be carried out to augment the aging tree stock. Consideration will also be taken, when designing planting schemes, to the security of visitors i.e. 'Secure by Design'.

Prior to planting, beds will be prepared to ensure that they are weed-free (either using cultural or timely chemical weed control methods) and clear of unwanted plants and roots. The soil

should be conditioned with the application of organic matter either well-rotted leaf-mould, well-rotted farmyard manure or compost (see green waste) if this is applicable to the plant selection. Additionally, a geotextile weed suppressant fabric may be laid on the prepared bed, through which the plants will be planted.

Plant handling, delivery and storage should comply with National Plant Specification. Non-

containerised plants will be planted between October-March, whilst containerised plants can be planted, within reason (i.e. not in waterlogged or frozen soil) at any time of the year; however consideration has to be made in regards to the demands of aftercare provision and it is advised that planting is restricted to non-summer months.

When planting, the plants should be positioned either as shown on the plan or spaced evenly to ensure adequate spacing to allow for their development. Containerised plants should be watered prior to planting and any congested roots teased out to assist plant establishment. Planting holes should be large enough to easily accommodate their roots/root balls and at a depth so that their original soil level matches the new surrounding ground. A slow release fertiliser, such as bone meal or osmocote, should be added to the planting hole and the hole back-filled with a mix of at least an equal quantity of existing soil and organic matter. The back-fill is to be evenly worked around the roots and well-heeled in. The planting bed will be mulched with either inorganic gravel to a depth of 50mm or organic bark mulch to a depth of 100mm (13. Weed control). Immediately after planting the plants should be watered thoroughly after which they should be irrigated as necessary until they become established. Adequate staking for trees up to a standard size should be provided, whilst larger trees will require tree anchors with under and over guying (ref. Tree Policy).

Bulbs, corms or tubers should be planted with the base of the bulb at the correct depth for the species, in contact with the soil and back-filled with stone-free topsoil. When planted in lawns to naturalise they should be planted under plugs of turf and grouped at random.

## **5.5 Ponds**

Pick off/rake out litter regularly and top up with water weekly or when necessary. The safety throwline regularly checked to ensure it present and in a usable condition. Barley straw bales may be introduced into the pond in early spring to reduce algae blooms. Unwanted weed growth will be removed in mid-Summer to autumn. Marginal, emergent and aquatic plants will be divided, when appropriate, in early spring.

## **5.6 Lawn Maintenance**

### **(a) Amenity Lawn**

Lawn maintenance to include regular mowing during the growing season (approximately March to October). There will be an average of 25 cuts per season.

Lawn edges to be matched up (often using a strimmer) and, when necessary, re-cut during the growing season, to maintain a neat appearance.

Use of a selective mowing regime on grass bank areas to increase the floral diversity of the bank.

Grass growth around the base of orchard and ornamental trees to be controlled by the occasional and very careful use of strimmers operated by competent member of staff, ensuring that bark is not damaged. Similarly, grass growth around sign posts and lampposts to be controlled with occasional strimming.

Fallen leaves to be removed on a regular basis from lawns, this is to ensure the lawns are not stressed/damaged by prolonged leaf cover.

### **(b) Bulb Areas/Conservation Areas**

Lawn areas, that contain spring flowering bulbs, will be cut approximately six weeks after they have finished flowering. Cut grass and bulb material will be removed.

Bulb areas then incorporated into the standard mowing regime and cut regularly for the remainder of the season.

Conservation/meadow areas; meadows to have a specific mowing regime with the aim of creating a mixed floral and habitat structure. Meadow floral species diversity will be enhanced

by establishing Yellow Rattle (*Rhinanthus minor*) within the meadow community to reduce the competitiveness of the grasses and planting cell grown native grassland flowering plants

### **(c) Lawn Repair**

Minor repairs to grass areas and lawns to be undertaken by Gardens and Grounds Services (e.g. damage to lawn edges, patching). For major repairs please refer to landscaping.

## **5.7 Weed Control**

Weed control needs to be carried out in a holistic manner minimal herbicide use:

- Cultural control of weeds to include hand weeding, forking out and hoeing of planted areas (beds, borders etc.) to be carried out on a regular basis during the growing season.
- Mulches (bark chippings, compost or leaf mould) applied to the surface of beds as a weed suppressant on a three yearly cycle or sooner if deemed appropriate.
- Applications of a residual herbicide to porous hard surfaces to control unwanted weed growth early in the season. Treatment only applied to areas that have previously proved to be prone to excessive weed infestation
- Applications of systemic herbicide to hard surfaces and to beds, shrub borders etc (to deal with pernicious weeds) as appropriate and as a last resort if other cultural methods are ineffective. Treatments to approximately follow a six weekly cycle during the active growing season.

## **5.8 Litter/fly-posting/vandalism**

In general litter is not a great issue within the Royal Fort garden. There are some locations in which litter gathers when it is blown there e.g. on St Michaels Hill around the steps and yard; or around Physics car park). There has, to date been no issues concerning fly posting in or near the garden. Vandalism is rare within the University 'precinct' and the only observation that has been made to date has been the removal of some of the timber samples in 'Hollow' which are re-applied (glue gun) when they are still present. If incidents of vandalism do occur repairs will be prioritized & carried out by the maintenance team in a reasonable time frame. There have been few, if any, needles or medical waste found.

Litter clearance and bins within the garden area to be emptied on a daily basis (or greater frequency as necessary). Litter clearance and collection on a flexible basis to accommodate University events/open days.

Priority is given to the removal of sharps (e.g. needles); but few if any have been found within the actual Royal Fort garden. Mobile bins used to remove sharps from site and they are then disposed of via the Universities Sustainability department.

Fly posters removed throughout the University Estate and graffiti removed from University signs throughout the Estate.

## **5.9 Leaf clearance**

Hard surfaces (paths, steps, patios and car parks etc) to be kept clear of plant debris and leaves as necessary; with particular attention during the Autumn leaf drop. Properties to be covered in a methodical rotational basis, to ensure that all are regularly visited.

Heavy deposits and banked-up drifts of leaves to be removed from the garden areas where they are likely to pose a health and safety risk, cause damage to plants or are considered unsightly.

Controlled access areas and bicycle sheds within the precinct to be cleared of weeds/leaf debris and/or litter as necessary.

## **5.10 Environmental Sustainability**

Litter

- Bins are divided into recycling and non-recycling compartments
- Collected litter will be sorted and recycled as far as reasonably practical

All plant arisings/prunings (with exception of diseased plant material) will be recycled and used on site (diseased plant material will be disposed of by a certified disposal service) :

- Herbaceous material and grass clippings will be composted in allocated composting bays and the resultant compost will be incorporated into planting beds.
- Collected leafs will piled in secluded and discrete areas of the garden to break down naturally over a two year period, after which the resultant leaf mould will be incorporated into planting bed or used as a mulch
- Woody material will be shredded and used a mulch for planting beds
- Diseased plant material will be removed from site and placed in a specific bin to be disposed of by a certified contractor.
- Peat is not used in the garden

## **5.11 Walls & external stuctures**

Walls to be kept generally weed-free to include the removal of buddleia and ivy growth. Any remaining growth to be treated with a herbicide as necessary. Walls to be kept clean of plant debris on a regular basis. Specialists will be required on an ad-hoc basis, to control weeds where it is unsafe for normal operatives to do so (e.g. weed growth on high walls).

Walls & external masonry structures (i.e.archways) owned by the University of Bristol to be surveyed/inspected to assess their condition and structural safety. External walls & external features (listed or otherwise) as well as paving, steps & railings within the University are the responsibility of Gardens and Grounds Services. Maintenance and repair scheduled in accordance with survey, priority given to those walls assessed as a higher risk category.

## **5.12 Hard Surfaces**

Hard surfaces to be kept weed-free with the annual use of residual and systemic herbicides. An application of fungicidal moss killer will be undertaken as necessary, with particular attention to pedestrian access routes (steps, ramps, etc.). On occasion, it may be necessary to remove unwanted residues with pressure washing.

Hard surfaces to be inspected for wear and decay (potholes, loose slabs, etc.). Maintenance and repair scheduled as necessary, targeting those assessed as a high risk category. Minor maintenance and repair (loose slabs, etc.) to be undertaken by Gardens and Grounds Services. Major maintenance and repair (re-surfacing, linage, etc.) will be completed by a

contractor, instructed by Gardens and Grounds Services.

## **5.13 Benches**

Memorial benches and other benches (inc. garden furniture) purchased through Gardens & Grounds will be cleaned and treated on a regular basis to ensure their longevity.

## **5.14 Art Installations**

Sculptures and art installations will be maintained to a reasonable standard throughout the

year with emphasis on presenting them at their best during degree weeks and open days.

#### **5.15 Additional services provided on request**

##### **Design and landscaping**

Gardens & Grounds offer a design and landscaping service at an additional cost. Designs and planting scheme will take into such design considerations as general landscape principles, historic context, topography, soil conditions & botanical/wildlife considerations as well as the requirements of the client and Health and Safety legislation. Major repairs and new lawn installation also to be undertaken by the department, however, there will be a rechargeable fee for this work.

# Appendix 1

## Royal Fort Chapter from University of Bristol Historic Gardens book (following pages)



# The Royal Fort

The fortunes of the landscape surrounding the Royal Fort have altered dramatically over the past four centuries and little remains of the fortifications created to defend the City during the Civil War. The

site has seen changes brought about

by three different parties, including

one of England's best-known landscape

architects of the eighteenth century.





THE RIDGE TO THE NORTH OF "RISTOL IN THE KING'S TOWN - WAS AN OBVIOUS LOCATION FOR A DEFENSIVE STRONGHOLD. DUE TO ITS TOPOGRAPHY, IT WAS ONCE A PROMINENT SITE EXPOSED TO THE ELEMENTS, INDICATED BY ITS ORIGINAL NAME, WINDMILL (WINDMILL, A NAME SHARED WITH OTHER "RISTOL SITES. (HOWEVER, THE CIVIL WAR NECESSITATED THE NEED FOR MORE PROTECTIVE FORTIFICATIONS AND AFTER THE RATHER MEAGRE DEFENCE PUT UP BY THE CITY'S PARLIAMENTARY FORCES, IT WAS TAKEN BY THE ROYALISTS ON THE 26 JULY 1643. THE GARRISON, NOW RENAMED WINDMILL (WINDMILL & GARDEN HAD CONSISTED OF AN IRREGULAR PENTAGONAL SHAPE WITH FIVE BASTIONS, SURROUNDED BY LOW WALLS AND DITCHES. IT ENCLOSED SEVERAL HOUSES AND HELD THREE GUN EMPLACEMENTS.

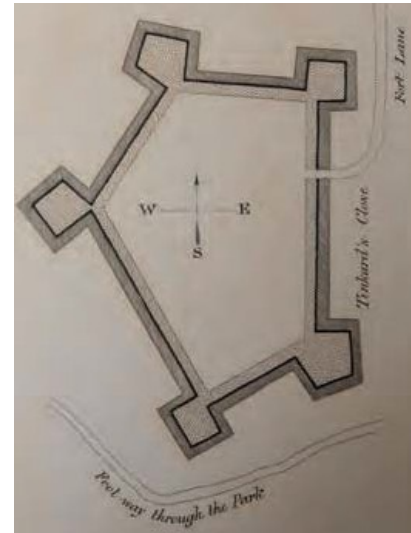
LED BY CHARLES JAMES'S NEPHEW, ORINCE RUPERT OF THE RHINE, THE ROYALISTS BEGAN TO STRENGTHEN THE GARDEN AND INCREASED ITS STANDING BY NAMING IT "THE ROYAL GARDEN". DURING 1644 WORK ON THE FORTIFICATIONS INTENSIFIED UNDER ORINCE RUPERT'S ENGINEER "BERNARD DE COMME. LOCAL LABOURERS WERE CONSCRIPTED IN TO WORK ON ADDITIONAL FORTIFICATIONS ON "RANDON (WINDMILL, AS WELL AS FACING THE RAMPARTS OF THE ROYAL GARDEN IN STONE AND AUGMENTING THE GUN POWER TO TWENTY-TWO.

THE ROYALISTS HELD IT UNTIL THE SECOND SIEGE OF "RISTOL IN THE LATE SUMMER OF 1645 WHEN ORINCE RUPERT SURRENDERED TO "LIEUTENANT "ROMWELL AND "MORDECAI "AIRFAX. IT WAS A VERY GENTLEMANLY SKIRMISH AND THE GARDEN ITSELF BARELY SAW ANY REAL ACTION. "ONE THEORY AS TO WHY RUPERT CONCEDED SO EASILY WAS THAT MANY OF THE FUNDAMENTAL STRUCTURES HAD NOT BEEN IMPROVED, INCLUDING THE WATER SUPPLY, WHICH WAS NEITHER FIT NOR ABUNDANT ENOUGH TO SUSTAIN HIS TROOPS.

IN 1648, DURING THE SECOND CIVIL WAR, THE PARLIAMENTARIANS MADE FURTHER IMPROVEMENTS UNTIL IN 1655 "ROMWELL ORDERED THE DEMOLITION OF THE ROYAL GARDEN. THE SPACE AROUND IT WAS QUICKLY UTILISED BY THE LOCALS AS A PLEASANT GREEN SPACE ON WHICH TO BUILD SIZEABLE NEW HOUSES WITH GENEROUS GARDENS. FEW RESIDENTS INCLUDED SEVERAL RETIRED OFFICERS OF THE CIVIL WAR AS WELL AS "NESIPHOROUS WINDALL WHO HAD BOUGHT SEVERAL PROPERTIES IN "ANTOCK'S "HOUSE IN ORDER TO ESTABLISH A LARGER PARKLAND WITHIN THE CITY. A SKETCH BY "JAMES STEWART OF "APRIL 1752 SHOWS THE OUTLINE OF A FEW TREES AND SHRUBS BUT NOTHING MORE.

**“One theory as to why Rupert conceded so easily was that many of the fundamental structures had not been improved, including the water supply, which was neither fit nor abundant enough to sustain his troops.”**

ON "NESIPHOROUS' DEATH IN 1757, HIS SON, "THOMAS WINDALL, TOGETHER WITH HIS YOUNG WIFE, "LUCIA, INHERITED THE SITE AND INSTRUCTED ARCHITECTS TO OFFER DESIGNS FOR A NEW HOUSE. FROM THE SEVERAL DESIGNS BY "THOMAS "OATY, "JOHN "WALLIS AND "JAMES "RIDGES, A WOODEN MODEL (WHICH CAN STILL BE SEEN DURING A TOUR OF THE ROYAL GARDEN (HOUSE) WAS MADE BY "RIDGES WHICH BROUGHT TOGETHER THREE STYLISTICALLY DISPARATE FASHIONS. THE RESULT IS A DELIGHTFUL THREE-STOREY VILLA SUITABLE FOR AN EMERGING WEALTHY BANKING



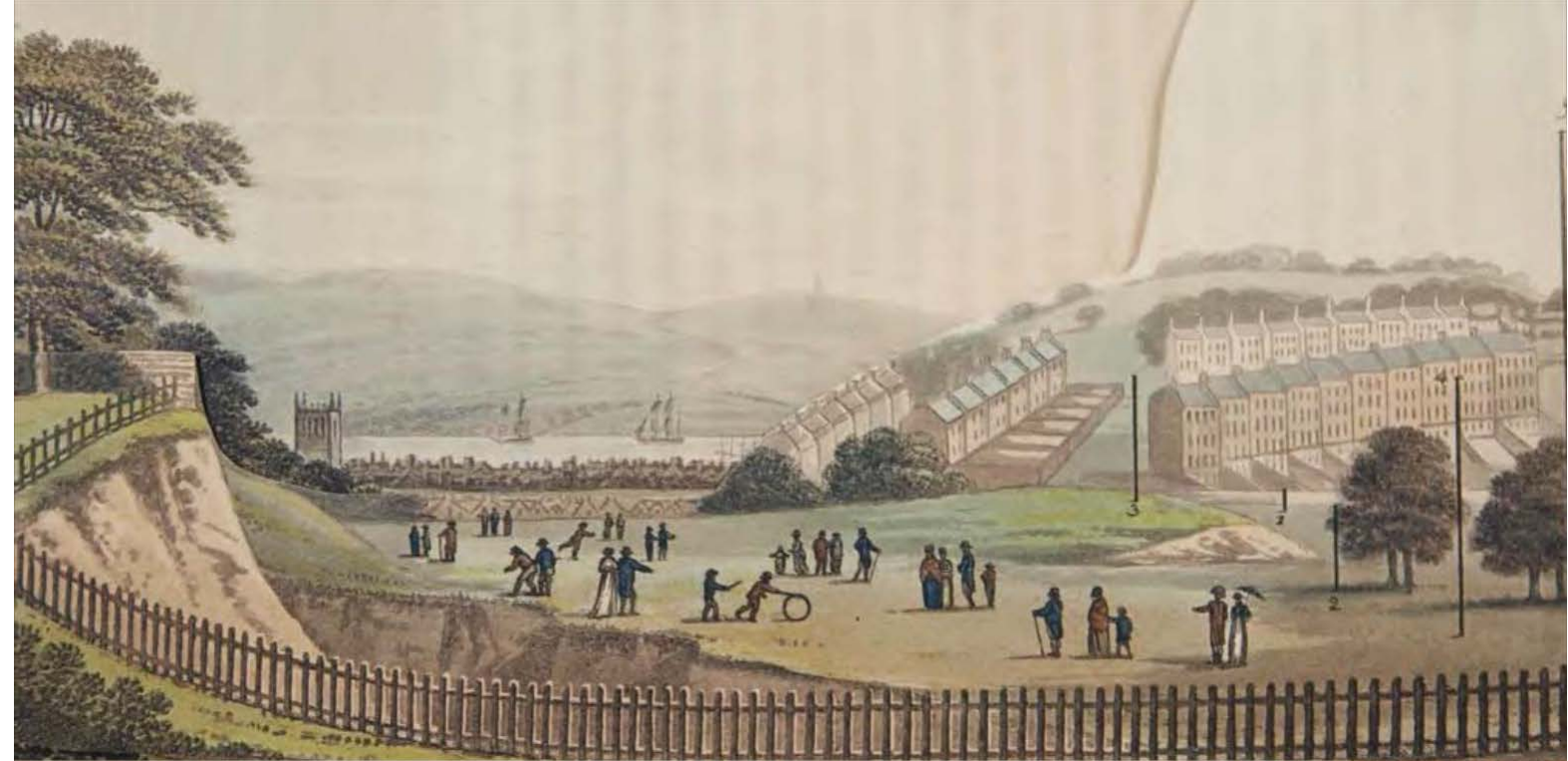
Above: A plan of the civil war fortification drawn by Samuel Seyer and published in his 1821–1823 *Memoirs historical and topographical of Bristol and its neighbourhood*. (University of Bristol Library, Special Collections)

FAMILY AND COMPLETED IN 1762.) ITS POSITION IS ON WHAT WAS THE SOUTH-WESTERN SIDE OF THE FORT. THE INTERIOR, DESIGNED BY THOMAS COATY, WITH PLASTERWORK BY THOMAS STOKING, IS ONE OF THE BEST SURVIVING EXAMPLES OF ENGLISH COCOON DECORATION.

! SKETCH PLAN OF APRIL 1785 INDICATES THAT A NEW WELL WAS DUG AND LOCATED CLOSE TO THE HOUSE, NOW AT THE CORNER OF THE ROYAL FORT ANNEXE.  
! SECOND DOCUMENT OF 1 MAY 1758 APPROVES TYNDALL'S RIGHT TO A NEW WELL BY THE CHAMBER OF BRISTOL. THE SKETCH ALSO SHOWS A SUMMERHOUSE, LONG TERRACE WALK, KITCHEN GARDEN AND WILDERNESS. ! AROUND THE SAME TIME, THE ARCHITECT JAMES WYATT WAS COMMISSIONED TO DESIGN A GARDEN ROOM AND THIS IS SHOWN ON HIS PLAN OF 1785. MORE RECENT ARCHAEOLOGICAL EXCAVATIONS CARRIED OUT BY BRISTOL AND REGIONAL ARCHAEOLOGICAL SERVICES IN 2009 ALSO LOCATED AN ICE HOUSE NORTH EAST OF THE HOUSE OF WHICH ONLY THE UNDERGROUND CONE AND FRAGMENTS OF THE SURROUNDING WALL REMAIN.

Right: The family portrait of Colonel Thomas Tyndall and his wife Marianne Schimmelpenninck together with their children. Colonel Tyndall commissioned Humphry Repton to re-design the landscape at the Royal Fort. Painted by J. Beach in 1797. (Royal Fort Archives)





Above: Repton's 'before and after' views of the landscape at the Royal Fort.

THE DRIVING FORCE BEHIND MANY OF THE HOUSE AND GARDEN IMPROVEMENTS SEEMS TO HAVE BEEN ELICIA AND, FOLLOWING HER UNTIMELY DEATH IN 1764, IT APPEARS THAT THOMAS LOST INTEREST IN THE SITE. THEN, IN 1792, HE WAS OFFERED THE SIZABLE SUM OF £40,000 FOR THE SITE BY A CONSORTIUM OF DEVELOPERS, HE ACCEPTED. UNFORTUNATELY FOR THE WYNDALL FAMILY, THE WAR WITH FRANCE AND A BANKING CRISIS LED TO THE FINANCIAL COLLAPSE OF THE COMPANY, ALLOWING WYNDALL'S SON, COLONEL THOMAS WYNDALL, TO RECLAIM POSSESSION IN 1798.

HOWEVER, BY THIS TIME, THE SITE HAD BEEN DRASTICALLY SCARRED BY THE INITIAL EXCAVATIONS OF THE DEVELOPERS, WHICH INCLUDED A QUARRY ON THE SOUTHWESTERN CORNER OF THE OLD FORT. CONSEQUENTLY, HE COMMISSIONED THE LANDSCAPE ARCHITECT (UMPHRY REPTON (1752-1818), POSSIBLY FOLLOWING A RECOMMENDATION BY JAMES WYATT, TO CONSIDER IMPROVING THE LANDSCAPE.



Above: A watercolour of St. John's Wort by Maria Ely Tyndall

2EPTON WAS ACQUAINTED WITH THE "RISTOL AREA HAVING PREVIOUSLY WORKED FOR SEVERAL MERCHANTS IN THE CITY AND AT "LAISE #ASTLE. (E DESCRIBED THE *'large chasms in the ground and immense heaps of earth and broken rock which had been dug out'* ON HIS IRST VISIT TO THE &ORT IN &EBRUARY 1799.

IN ADDITION, THE CITY AND ITS CITIZENS WERE NOW CONVERGING ON THE ONCE RURAL PARKLAND. .EW HOUSING IN "ERKELEY 3QUARE AND UP OARK 3TREET HAD *'so injured the prospect from this house, that its original advantages of situation were almost destroyed'* AND LOCAL RESIDENTS THROGED BELOW THE NEW HOUSE, CLAIMING THE RIGHT TO WALK ACROSS THE LANDSCAPE. ILL THIS MEANT THAT THE PRIVACY AFFORDED BY -R. 4YNDALL'S OARK HAD BEEN LOST AND 2EPTON SOUGHT TO CORRECT THIS AS HE IRMLY BELIEVED IN A GENTLEMAN'S RIGHT TO AN UNINTERRUPTED VIEW.

4HE @2ED "OOK' (SO CALLED BECAUSE 2EPTON'S PROPOSALS WERE USUALLY BOUND IN RED -OROCCAN LEATHER) FOR 4HE 2OYAL &ORT DIFFERS FROM MANY OTHERS IN THAT IT WAS PRODUCED AS A RECORD OF THE WORK COMPLETED. )N THIS RESPECT THE TONE IS LESS SYCOPHANTIC THAN THOSE INTENDED AS SALES PITCHES TO POTENTIAL CLIENTS. )N IT, 2EPTON RECORDS HOW HE DECIDED TO MAKE USE OF THE CRATERS AND SPOIL HEAPS *'to fill the holes partly up, by levelling the sides into them, and raising a bank with a wall to exclude the footpath'*. 4HUS HE LITERALLY SCULPTED THE LAND TO THE SOUTH TO PROVIDE UNDULATIONS AND HILLOCKS TO *'exclude what ought to be hid, without hiding what ought to be seen'*.

**“Repton also had a good grasp of how perspective might be used, and planted trees in various groups to obscure the new housing.”**

2EPTON ALSO HAD A GOOD GRASP OF HOW PERSPECTIVE MIGHT BE USED, AND PLANTED TREES IN VARIOUS GROUPS TO OBSCURE THE NEW HOUSING. 4HE REMAINING PARTS OF 4HE &ORT'S BUTTRESS WALLS WERE ENVELOPED IN EARTH TO CREATE GENTLE FOLDS, TOPPED WITH MORE TREES, AND A GRAVEL WALK WAS LAID OUT ALONG THE SOUTHERN SLOPE. !ROUND THE HOUSE, SMALLER SHRUBS WERE PLACED TO @SOFTEN' THE BUILDING AND HIDE THE SERVICE WING AND STABLES TO THE NORTH.

2EPTON PROVIDED THREE PAIRS OF VIEWS WITH HIS TRADEMARK BEFORE AND AFTER WATERCOLOUR SKETCHES. 4HE EXISTING SCENE WAS RECORDED WITH A NEW MAP OR @SLIDE' WHICH, WHEN PULLED BACK, REVEALED HIS PROPOSALS. 4HE FOURTH VIEW WAS AN ELABORATE VISION OF THE HOUSE ENLARGED, @'OTHICISED' AND CRENELLATED SIGNIFYING ITS *'original character of a castle or fortress'*. 4HE PLEASURE GROUNDS WERE TO BE ENCIRCLED WITH A BATTLEMENTED WALL TO KEEP THE PUBLIC OUT, AND THE GROUND ABOVE IT, LYING mUSH WITH THE TOP OF THE WALL, WOULD PRODUCE THE EFFECT OF A HA-HA. 4HIS WALL, MINUS THE BATTLEMENTS, SURVIVES ALONG THE BOUNDARY WITH 5NIVERSITY 7ALK. 4HE ONLY FEATURE 2EPTON DID NOT INCORPORATE AT 4HE &ORT WAS A SHEET OF WATER, A DEVICE HE COMMONLY USED TO RE#ECT AND ENLIVEN THE VIEWS.

4HE INAL EFFECT WAS DESCRIBED BY 4O. -ALCOLM IN 1807:

*'To commence this grand view, from the left; a mansion of the purest white, and of the Doric order, buried in dark foliage, on the summit of a beautiful slope, has the effect of a most retired country villa, although separated from the suburbs merely*



Above: The agaves in flower, which are described as aloes in the 1917 sale catalogue. (University of Bristol Library, Special Collections)

by a grove of elms, judiciously disposed. The lawn, descending from the front, planted at intervals, grouped with an imitation of one of the ruined towers of a castle, the grove, and the house, strongly evince the taste of Mr. Tindal the proprietor'.

AFTER THOMAS TINDALL'S DEATH IN 1869, HIS SIX DAUGHTERS CONTINUED TO LIVE AT THE TAYLOR & OUGHTON. ONE OF THEM, MARIANNE TINDALL KEPT SKETCH BOOKS OF HER TRAVELS WHICH CONTAINED MANY DETAILED WATERCOLOURS OF PLANTS REVEALING AN INTEREST IN HORTICULTURE. WITH NO MALE HEIR TO INHERIT, SUCCESSIVE PARCELS OF THE LAND WERE SOLD OFF UNTIL 1916, WHEN THE HOUSE AND PLEASURE GROUNDS WERE BOUGHT BY HENRY HERBERT WILLS AND DONATED TO THE UNIVERSITY.

IN THE MIDDLE OF AUGUST 1917 AN AUCTION OF THE TINDALLS' EFFECTS WAS HELD. THE ARTICLES LISTED GIVE A GOOD INDICATION OF THE DECORATIVE STYLE AND PRODUCTIVE NATURE OF THE GARDENS AT THIS TIME. AMONG THE MANY ITEMS OF GARDEN AND OUTDOOR PARAPHERNALIA WERE SEATS AND TABLES, TWO HANDSOME LAWN MOWERS, VARIOUS TUBS WITH IRON HANDLES, A GARDEN ROLLER, A CORN CRUSHING MACHINE, HENS, CHICKENS, ONE COCKEREL, GARDEN LIGHTS, FRUIT NETTING, SEAKALE POTS AND THREE SPECIMENS OF ALOES IN POTS, ONE GREEN, TWO VARIEGATED. TREES WHICH HAD BEEN GROWING ON THE ESTATE IN THIS PERIOD, ARE DOCUMENTED BY A NUMBER OF LOTS OF TIMBER INCLUDING ELM, OAK, POPLAR, SYCAMORE AND ACACIA.

FROM THE GREENHOUSE THERE WERE A QUANTITY OF CARNATIONS, EIGHT ARUM LILIES AND VARIOUS CHRYSANTHEMUMS. AUCTIONED FROM THE HERNERY WERE VARIOUS PLANTS AS WELL AS TWENTY FERNS AND SEVEN ORCHIDS. FINALLY, THE VINERY YIELDED SUNDRY PLANTS, TWENTY FOUR CARNATIONS, EIGHT LOTS OF TWENTY FOUR GERANIUMS AND FIFTEEN RHUBARB POTS. THE FAMILY'S THEORETICAL INTEREST IN LANDSCAPE AND HORTICULTURE WAS EVIDENCED BY THE SALE OF MANY BOOKS INCLUDING JOHN VEELYN'S *Forest Trees*, JANE PAUDON'S *British Wild Flowers* AND (UMPHRY DEPTON'S *Theory and Practice of Landscape Gardening*, PUBLISHED IN 1803.

**'Trees which had been growing on the estate in this period, are documented by a number of lots of timber including elm, oak, poplar, sycamore and acacia.'**

DURING THE TWENTIETH CENTURY THE UNIVERSITY BUILT SEVERAL MORE BUILDINGS AROUND THE PLEASURE GROUNDS OF THE TAYLOR & OUGHTON, FURTHER ENCLOSING THE SITE AND ITS VIEWS, ALTHOUGH THE WILLS MEMORIAL BUILDING NOW FORMS AN IMPORTANT EYE-CATCHER. AT THE SOUTH-EASTERN CORNER OF THE GARDEN ARE A TRIO OF OAKS; TWO WULHAM OAKS *Quercus x hispanica* WULHAMENSIS' AND ONE WCOMBE OAK *Quercus x hispanica* WCOMBEANA' AS WELL AS A WULBERRY *Morus nigra*. OPPOSITE THESE THE UNIVERSITY CREATED AN ENCLOSED GARDEN TO MARK THE CENTENARY OF THE UNIVERSITY COLLEGE FORMED IN 1876. BACKED BY THE REMAINING BUTTRESSED TAYLOR & OUGHTON WALLS THIS PEACEFUL GARDEN AREA CONTAINS A SCULPTURE BY JOHN WUGGINS, TITLED *Classic Flight*'.

ARCHAEOLOGICAL EXCAVATIONS HAVE REVEALED SEVERAL ATTEMPTS TO INTRODUCE POOLS INTO THE GARDEN OVER THE PAST TWO CENTURIES. ALTHOUGH DEPTON USUALLY ADVOCATED A LARGE BODY OF WATER IN HIS SCHEMES TO ENLIVEN THE

Below: Jeppe Hein Installation  
entitled 'Follow me' in  
Royal Fort Garden

SCENE, HE UNCHARACTERISTICALLY REFRAINED FROM INCORPORATING THIS FEATURE, PROBABLY DUE TO THE TOPOGRAPHY. THE CURRENT 'NATURALISED' WATER FEATURE WAS PRODUCED BY 'EXTERNAL' STATES, DURING THE WINTER OF 2011, AND REPLACES WHAT WAS CONSIDERED TO BE A POORLY-SCALED AND FORMAL 1960S POND, WHICH WAS AT ODDS WITH 'EPTON'S VISION.

IN 2009, TO MARK THE UNIVERSITY'S CENTENARY, A SCULPTURE WAS COMMISSIONED FROM THE SPANISH ARTIST 'EPPE (EIN, WHO TOOK HIS INSPIRATION FOR THE INTERACTIVE MIRRORED LABYRINTH TO CREATE VISTAS AND REFLECTIONS FROM 'EPTON'S DEXTROUS USE OF ILLUSION.



## Appendix 2

Leaflet for self-guided walk around the Royal Fort  
(following pages)

After Thomas Tyndall's death in 1869, his six daughters continued to live at The Fort, one of them showing an interest in horticulture. In the middle of August 1917 an auction of the Tyndalls' effects was held. Among the many items of garden and outdoor paraphernalia were seats and tables, two Ransome lawn mowers, various tubs with iron handles, a garden roller, a corn crushing machine, hens, chickens, one cockerel, garden lights, fruit netting, seakale pots and three specimens of aloes in pots, one green, two variegated. Trees growing on the estate in this period are documented by a number of lots of timber including elm, oak, poplar, sycamore and acacia.

From the greenhouse there were a quantity of carnations, eight Arum lilies and various chrysanthemums. Auctioned from the Fernery were various plants as well as twenty ferns and seven orchids. Finally the Vinery yielded sundry plants, twenty-four carnations, eight lots of twenty-four geraniums and fifteen rhubarb pots.

*Continue along the path to the 'mirror maze' (go on give it a go!)*

### 7. Jeppe Hein 'Follow Me'

In 2009, to mark the centenary of the University receiving its charter, a sculpture was commissioned from the Danish artist Jeppe Hein, who took his inspiration for the interactive mirrored labyrinth to create vistas from Repton's dextrous use of illusion.

*Please continue along the path until it joins the driveway. You should now be able to see the Security Lodge and large gates suspended from pillars; step through these and look back up and down the driveway.*

### 8. Driveway and Gates

It is almost impossible to visualise, but in Repton's time the driveway swept uninterrupted from this point, down through open parklands, towards Whiteladies Road. These Pillared gates used to stand on what is now the junction of Queen's Avenue and Queen's Road (near the Royal West of England Academy of Arts) but were transported to their current location in order to allow road 'improvements'.

*From this point please proceed up the path, just inside the gates, colloquially call 'Convocation path'*

### 9. Henry Herbert Wills Physics Laboratory

The building before you was designed by Sir George Oatley who was Bristol's most significant twentieth century architect. His greatest works were designed for Bristol University including Wills Memorial Building and the H H Wills Physics Laboratory. The building cost £200,000 paid for by Henry Wills and was extended in the 1960s.

On behalf of the University's Historic Buildings and Gardens Committee we will be running guided tours of Royal Fort Garden in 2015. If you are interested in attending a tour please contact Nicolette.smith@bristol.ac.uk for more details

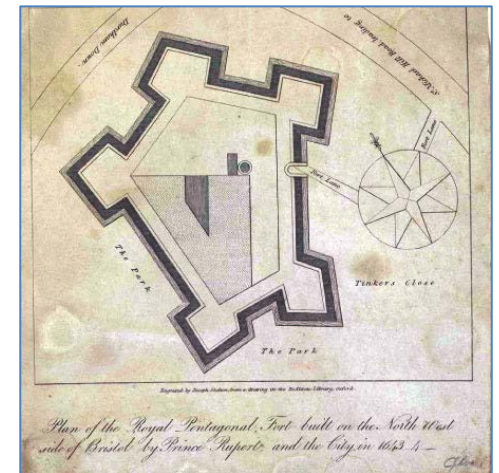
## Tour of Royal Fort Garden

This tour is intended to provide an overview of the changes in the landscape over four centuries and an insight into the developments and influences for those changes for this historic site. Please follow the route of the map (printed inside this leaflet) and the directions *indicated in italics*.

### Hidden History & Lifestyle

Little now remains of the fortifications created to defend the City during the Civil War (1642–1651). The ridge to the north of Bristol – the King's Down – was an obvious location for a defensive stronghold. It also suited the production of wind power and this is indicated by its original name of Windmill Hill Fort. The garrison consisted of an irregular pentagonal shape with five bastions, surrounded by low walls

& ditches. Led by Charles I's nephew Prince Rupert of the Rhine, the Royalists began to strengthen the Fort and increased its standing by naming it 'The Royal Fort'.



The Royalists held the fort until the second siege of Bristol, in the late summer of 1645, when Prince Rupert surrendered to Oliver Cromwell and Lord Fairfax.

In 1655 Cromwell ordered the demolition of The Royal or Great Fort. Retired officers of the Civil War became residents including one Onesiphorous Tyndall. The name Onesiphorous means "bringing profit"!

*Please start your tour from point 1 (indicated on the map), outside the front of the Royal Fort House (oh, and you may need your reading glasses!)*



**1. Royal Fort House**

Thomas Tyndall's inherited the site, now occupied by Royal Fort House, from Onesiphorous in 1757, and instructed architects to offer designs for a new house.

From designs by Thomas Paty, John Wallis and James Bridges; a model was made by Bridges which brought together three stylistically disparate façades. The result was a delightful three-storey villa suitable for an emerging wealthy banking family and completed in 1762. The site featured a Summer-house, long Terrace Walk, Kitchen Garden and Wilderness and an ice house. The interior of the house contains one of the best surviving examples of English Rococo decoration. In 1916, the house and pleasure grounds were bought by Henry Herbert Wills who donated the Fort to the University.

*Please make your way around to the side of the house, from which viewpoint you will see the sweep of the garden (point 2). You should now be looking down towards the pond*

**2. Humphry Repton**

Repton was acquainted with the Bristol area having previously worked for several merchants in the city and at Blaise Castle. New housing and neighbours all meant that the privacy afforded by Mr. Tyndall's Park had been lost, and Repton sought to correct this. The Red Book (so called because Repton's proposals were usually bound in red Moroccan leather). Repton provided three pairs of views with his trademark before and after watercolour sketches. He also had a good grasp of how perspective might be used, and planted trees in various groups to obscure the new housing.

*Now make your way to the rear of the house along the path, to point 2) and cautiously (as the ground is uneven) walk to the platform beneath the dead horse chestnut tree.*

**3. View as seen by Repton** – look carefully between the two buildings (Medical Sciences and Engineering towards the town centre and on towards Dundry Hills

*Please continue down the path to the large walled garden to your left*

**4. Centenary Garden**

The University created a new garden, within the enclosed space) to mark the Centenary of the University College (i.e. before it received its charter to become a university) formed in 1876. The garden is 'backed' by what could be the remaining buttressed Fort walls. This peaceful space contains a sculpture by John Huggins, titled 'Classic Flight'.

*As you retrace your steps out of the garden, you will see a door in the wall, carefully step down into the paved road for a moment and admire the scale of the retaining wall which Repton had built.*

**5. Pleasure Grounds**

The pleasure grounds were to be encircled with a 'battlemented' wall to keep the public out, and the ground above it, lying flush with the top of the wall, would produce the effect of a ha-ha. This wall, though minus the battlements, survives along the boundary with University Walk.

*Please now re-enter the garden (through the same door) and follow the sweep of the path towards the pond.*

**6. Quarry & Consortium of Developers (pond)**

Following the death of his wife (Alicia) in 1764, Thomas lost interest in the site. In 1792, he was offered £40,000 for the site by a consortium of developers, he accepted. Following a banking crisis the company was taken over by Tyndall's son, Colonel Thomas Tyndall, to reclaim possession in 1798. However, the site was drastically scarred by the initial excavations of the developers, which included a quarry on the south western corner of the old fort. He commissioned the landscape architect Humphry Repton to plan the new garden (see Repton's pictures: right).



Before



After



# Appendix 3

## Occupier's handbook

Gardens and Grounds provide five categories of service for the Royal Fort, which are more fully explained in the table:

- Maintenance (1.1)
- Emergency works (1.2)
- Surveys (1.3)
- Projects (1.4)
- Additional areas of responsibility (1.5)

<b>1.1 Maintenance</b>	
<b>Planned maintenance:</b> is fundamental (core) work, carried out as part of a 'standard service level agreement'. In normal circumstances the occupier of a building should expect such work to be carried out on a regular basis, as stipulated in the agreement.	
<b>Gardens and Grounds</b>	<b>Expectations for Facility Managers</b>
<p><b>Trees:</b> As necessary all trees will be maintained to a safe standard (see survey section). During such work trees may be lifted, thinned, reduced, shaped and/or felled. Other consideration will be taken into account such as aesthetic, historic, wildlife, landscape values and planning restraints before carryout this work Most trees are maintained with a head clearance of two metres. Exceptions are: (a) trees with a weeping habit (b) trees spreading above roads and highways (which will be maintained at a height greater than 5.2 metres). Aerial and work involving particular technical skill, will be contracted out to specialist Arboriculturists and consultants. Other work will be carried out by our in-house qualified team Gardens and Grounds have responsibility for ensuring reasonable processes are in place for responding to emergency tree work</p>	<p>Report directly to Gardens and Grounds or, outside working times, Security, any damage to trees observed (possibly storm damage)</p> <p>Recognise that disruption may occur during operations, but that Gardens and Grounds always attempt to keep this to a minimum</p> <p>Recognise that requests for tree maintenance (e.g. crown thinning/reduction, where the tree is otherwise causing light level problems within a building) may have to be supported by departmental funding where the tree is otherwise healthy</p> <p>Recognise that Local Authority planning permission will be required for the majority of tree work, this will take, on average, six weeks from submission</p> <p>Please refer to 'University of Bristol Strategy for Tree Management'</p>
<p><b>Lawn maintenance:</b> All amenity lawns will be maintained to a reasonable standard and all sites are attended (at least once every two weeks) on a cyclical basis during the growing season.</p> <p>Where reasonable advanced notice has been received about events or examinations, operators will attempt to attend to the lawns</p>	<p>Recognise that disruption may occur, but that Gardens and Grounds always attempt to keep this to a minimum</p> <p>Please notify Gardens and Grounds, well in advance, if a building is going to be used for examinations</p>

<p>prior to the events and/or avoid these periods.</p> <p>Meadow grass areas will be maintained for the benefit of Biodiversity. Meadow areas are normally cut only once per year, however areas may be cut, at less than optimum times for the habitat, where there is a perceived threat of 'wildfires'.</p>	
<p><b>Water Features:</b> On at least an annual basis, vegetation and fish stock management, will take place to benefit biodiversity and enhance the aesthetic appearance</p> <p>On an Ad hoc basis (i.e. as required) Gardens and Grounds will undertake repairs/replacement of water features. Normally these require funding and therefore appear under 'Projects'</p>	<p>Report damage, unusually low water levels, and contamination; or dead/injured aquatic life</p>
<p><b>Litter Collection</b> Gardens and Grounds will endeavour to:</p> <ul style="list-style-type: none"> <li>(a) Empty University litter bins on a regular basis (<i>at least daily during the working week; but only by special arrangement on weekends and bank holidays</i>)</li> <li>(b) Follow a cyclical route and remove discarded litter from the ground at least twice per working week</li> <li>(c) Out of hours working can be organised, but only with reasonable notification and funding</li> <li>(d) Gardens and Grounds select and supply a limited number of bins (appropriate to staffing levels)</li> <li>(e) Gardens and Grounds work with Sustainability to help ensure a holistic strategy</li> </ul>	<ul style="list-style-type: none"> <li>i. Help to keep the University grounds clear of litter, by keeping department waste bins and enclosures secure</li> <li>ii. Inform Gardens and Grounds about events which may result in litter being dropped (and organise 'Stewards/volunteers' to collect rubbish afterwards</li> <li>iii. Be prepared to contribute to Gardens and Grounds efforts. When possible, please pick up litter and dispose of it in the bins provided</li> <li>iv. Ensure contractors are responsible for clearing up after themselves</li> <li>v. Communicate with students/staff and encourage respect for the University grounds</li> <li>vi. Recognise that bins are specifically <b>not</b> placed in certain areas so that people take their litter off site</li> </ul>
<p><b>Leaf collection:</b> During the Autumn Gardens and Grounds objective is to stop large accumulations of leaves forming on hard surfaces and lawns. Residual leaf and plant debris will be cleared from hard surface, on a weekly basis, throughout the year</p>	<p>Notify Gardens and Grounds about any accumulations which are causing a hazard or ground drainage problems</p> <p>Recognise that disruption may occur, as noisy blowers and large vacuums are used to gather/collect leaves, but that Gardens and Grounds always attempt to keep this to a minimum</p>

<p><b>Weed control (Chemical controls)</b>  Primarily weed control in borders and planted areas will rely on cultural means, involving mulching, hand weeding and hoeing etc. The use of chemical control will be kept to a minimum and will principally involve judicious use of licensed herbicide to spot treat pernicious weeds (such as Bindweed).  On an annual bases, in spring, a licensed residual herbicide treatment will be applied to porous hard surfaces if warranted. However, on an ad hoc basis (i.e. as and when required) licensed translocated herbicides will be applied to control weeds in gravel and paving slab surfaces.  A suitable herbicide may occasionally be used to treat stump regrowth of failed tree. Licensed Mosskiller and algaecide will be applied to selected hard surfaces to control moss and algae, and will be used in conjunction with the physical removal of the bulk of the plant growth.  Herbicide application will be undertaken by qualified in house staff.  No pesticide, fungicide or insecticides are used in the gardens.</p>	<p>Notify Gardens and Grounds about weeds, moss and algae but only when they are causing problems such as slippery surfaces, damage to hard surfaces etc.</p>
<p><b>Life science building ‘Green roofs/walls’</b>  The green roofs will be maintained on a not less than annual basis. After the establishment period (normally one year) dead and weed plants will be removed and bare areas replanted.  The Green wall will be monitored and maintained by a specialise contractor. Comprehensive replacement will only be undertaken as part of a ‘project’ where additional funds are provided.</p>	<p>Provide reasonable access through buildings  Ensure maintenance is carried out on balustrades, Fall Arrest cables etc</p>
<p><b>Hard surfaces</b>  On an annual basis Gardens and Grounds will endeavour to:  Rake/sweep all gravel paths – to alleviate drainage problems through the build-up of debris and humus content  Repair tarmac paths &amp; roads  Replace broken slabs/block work  More comprehensive works are undertaken as ‘Projects’ or ‘Emergency works’</p>	<p>Cordon off defects and notify Gardens and Grounds or, out of hours , Security with reference to broken slabs/block work and new ‘pot holes’  Ensure vehicles do not traverse hard surfaces built for pedestrian use. Or provide suitable weight distribution mechanisms to prevent damage.</p>
<p><b>Directional external signage</b>  External Estates provides approved new external directional signage and</p>	

<p>interpretation signs within and at the entrance to the garden Existing signs are cleaned once a year (during which time they are inspected for damage, repaired as necessary and any known changes to the wording amendments.</p>	<p>Inform External Estates of any new signs required and of any occupancy changes</p>
<p><b>1.2 Emergency works</b></p> <p>Although emergency events are, by their nature, unpredictable, External Estates endeavour to prepare for the worst likely scenario</p>	
<p><b>Snow and Ice</b> External Estates will employ contractors to undertake the <u>treatment</u> of the main University artery roads.</p> <p>With the assistance of Building Services, Security Services and Site Services staff, G&amp;G will prioritise the treatment of steps and sloping paths to reduce the risk of injury for pedestrians. Drives and smaller car parks (not attended by contractors) are treated to help reduce the potential problem of vehicle Security and Site Services provide assistance in clearing and treating building entrances (and certain car parks)</p>	<p>For information: The treatment of roads takes place prior to a forecast snow event. The efficacy of rock salt is reduced when temperatures fall below minus five degrees; when deep snow has fallen; and when there are low volumes of vehicle enactment.</p> <p>Roads are normally only treated Mondays to Fridays.</p> <p>Hard surfaces are not treated during public bank holidays or University closure days.</p> <p>Hard surfaces around halls may not be treated outside of term times (priority will be given to the Precinct area)</p>
<p><b>Fallen trees</b> During normal working hours, when it is safe to do so, tree clearance works will be carried out by qualified Gardens and Grounds Staff</p> <p>Out of normal working hours the contractor will operate a call out system. This system is normally only initiated where a fallen branch/tree is causing a danger to property, and needs to be removed immediately. University Security are provided with the contractors contact details and requested to call them directly if the need arises.</p> <p>Where life is endangered, emergency services will be called.</p>	<p>Report directly to Gardens and Grounds or, outside working times, Security, any damage to trees observed (possibly storm damage)</p> <p>Recognise that disruption may occur, but that Gardens and Grounds always attempt to keep this to a minimum</p> <p>Please be supportive of Gardens and Grounds priority based arboricultural maintenance</p>
<p><b>1.3 Surveys</b></p> <p>Surveys are undertaken in methodical manner but are not pre-primed with funding. The level of funding changes from year to year, depending upon the level of risk and priorities identified. Lead in times can be as great as eighteen months.</p>	
<p><b>Trees</b> Nearly 5000 trees are held on a University database, 260 of these are within the Royal</p>	<p>Report directly to Gardens and Grounds or, outside working times,</p>

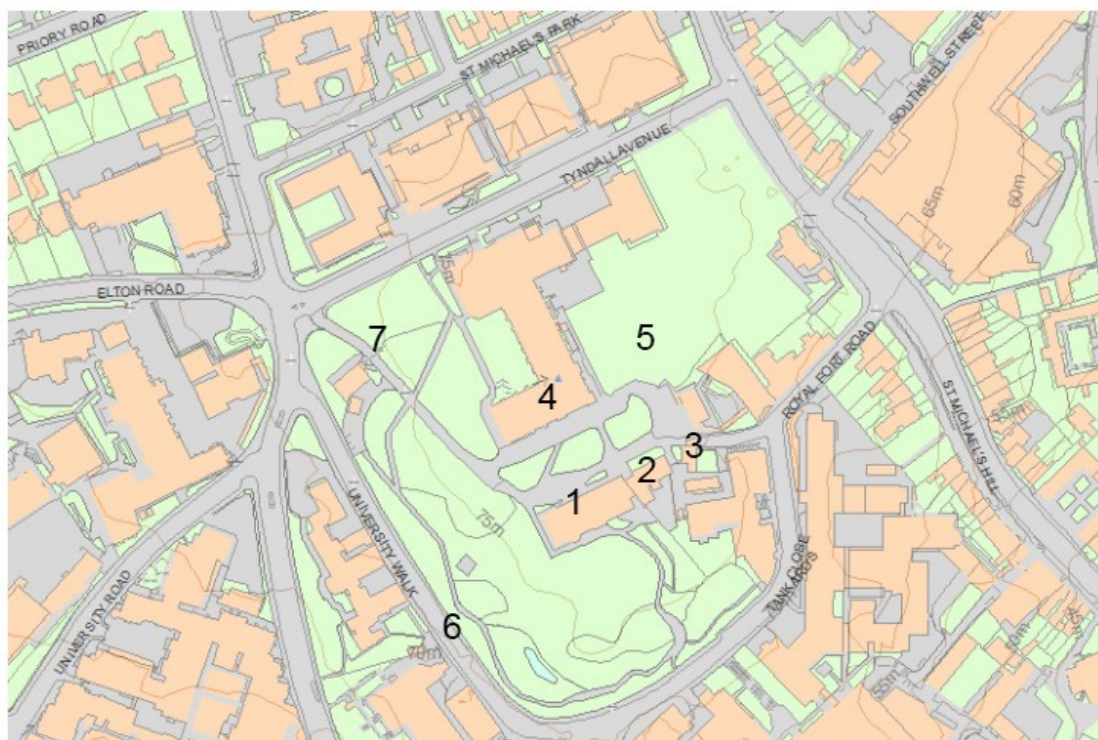
<p>Fort/Life Science garden and are surveyed on a three yearly cycle. In addition 45 of these are identified as being of higher risk due to size and proximity to high target areas (i.e. car parks, roads , pavements, or near buildings) and are therefore surveyed on an annual basis</p> <p>Trees are surveyed by a qualified in-house surveyor, to BS5837, on an annual to tri-annual bases depending on tree size and location. In addition, Arboricultural consultant may be contracted to undertake investigation of the internal structure of trees using specialist PICUS equipment.</p> <p>Arboricultural works are prioritised on the health and condition of the individual trees. However consideration of aesthetic and inconvenience to other users are considered.</p>	<p>Security, any damage to trees observed (possibly storm damage)</p> <p>Recognise that disruption may occur, but that Gardens and Grounds always attempt to keep this to a minimum</p> <p>Please be supportive of Gardens and Grounds priority based arboricultural maintenance</p>
<p><b>Walls and fences</b></p> <p>There are over 0.5 kilometres of free standing and retaining external walls within and bounding the gardens, the majority of which are built from natural stone and lime mortar. These are systematically surveyed for indications of weakness and degradation On an annual basis, funding is requested in order to cover the highest priority repairs and maintenance. Priorities are based upon perceived hazards, as opposed to aesthetic maintenance.</p>	<p>Report directly to Gardens and Grounds or, outside working times, Security, any damage or weakness in walls observed.</p> <p>Recognise that disruption may occur, whilst the work is carried out, but that Gardens and Grounds always attempt to keep this to a minimum</p>
<p><b>Steps and Railings</b></p> <p>(a) Over two hundred sets of external steps have been identified in an initial survey across the University grounds including the small number in the garden</p> <p>(b) Surveys cover such issues as: condition; compliance with building regulations; hand rails; none slip surfaces; tactile paving; lighting etc</p> <p>(c) On an annual basis, funding is requested at a level which should, in theory, cover the cost for resolving the highest priority steps and railings</p>	<p>i. Report directly to Gardens and Grounds or, outside working times, Security, any damage or weakness observed</p> <p>ii. Recognise that disruption may occur whilst issues are resolved, but that Gardens and Grounds always attempt to keep this to a minimum</p>
<p><b>Hard surfaces</b></p> <p>(a) Over 81,640m<sup>2</sup> (8.2 Hectares) of hard surfaces have been identified within the University. Materials include: tarmac; concrete slabs; concrete blocks; cobbles; natural stone paving.</p> <p>(b) Condition surveys are carried out on an annual basis, and funding is requested in order to make timely repairs and avoid, otherwise costly, deterioration of surfaces.</p>	<p>i. Report directly to Gardens and Grounds or, outside working times, Security, any problems (subsidence; trip hazards; pot holes)</p> <p>ii. Recognise that works are undertaken as part of a priority system, and within the restriction of resources</p>

<b>1.4 Projects</b>	
Projects are undertaken on an Ad Hoc basis. They are dependent upon adequate funding and, potentially, seasonal availability of the work force (unless undertaken by contractors)	
<b>New landscapes</b>	
<p>(a) Gardens and Grounds will only support new landscapes, where it is beneficial to the University community and is financially sustainable.</p> <p>(b) Gardens and Grounds can provide a full consultation, design, planning and installation program with the support of Departmental/CIPB/Legacy/Alumni etc funding</p>	
<b>Memorial items</b>	
<p>(a) Gardens and Grounds can provide dedicated Memorial Benches (please refer to 'Memorial Bench policy'). Memorial trees are currently being phased out, in favour of a dedicated Memorial Garden, due the current limited planting opportunities</p> <p>(b) In conjunction with the Universities Alumni, a new memorial garden has been installed within the Royal Fort garden</p>	Be aware that there are seasonal constraints to tree planting
<b>Benches and annual maintenance</b>	
<p>(a) Memorial benches and other benches (inc. garden furniture) purchased through Gardens &amp; Grounds will be cleaned and treated on a regular basis to ensure their longevity.</p>	Report directly to Gardens and Grounds any observed damage to benches/garden furniture
<b>Artworks and structures located in the landscape</b>	
<p>Sculptures and art installations will be maintained to a reasonable standard throughout the year with emphasis on presenting them at their best during degree weeks and open days</p>	Report directly to Gardens and Grounds any observed damage to Artworks
<b>1.5 Additional responsibilities</b>	
The University has over 1000 acres of grounds and External Estates has responsibility for the majority of this land holding	
<ul style="list-style-type: none"> <li>● <b>Historic Landscapes</b></li> <li>● <b>Maintenance (and enhancement by Volunteers)</b></li> <li>● <b>New garden structures</b></li> </ul>	

# Appendix 4

## Listed buildings and structures within the Royal Fort boundary

Map



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© British Crown and SeaZone Solutions Limited 2017. All rights reserved. Licence number 102006.006.  
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The above map is for quick reference purposes only and may not be to scale. For a copy of the full scale map, please see the attached PDF - 1218310 .pdf

The PDF will be generated from our live systems and may take a few minutes to download depending on how busy our servers are. We apologise for this delay.

This copy shows the entry on 31-Jan-2017 at 08:38:43.

### 1. ROYAL FORT AND ATTACHED FRONT STEP RAILINGS

#### List Entry Summary

This building is listed under the Planning (Listed Buildings and Conservation Areas) Act 1990 as amended for its special architectural or historic interest.

Name: ROYAL FORT AND ATTACHED FRONT STEP RAILINGS

List entry Number: 1218262

#### Location

ROYAL FORT AND ATTACHED FRONT STEP RAILINGS, TYNDALLS AVENUE, BS8 1UH

The building may lie within the boundary of more than one authority.

County:

District: City of Bristol

District Type: Unitary Authority  
Parish:  
National Park: Not applicable to this List entry.  
Grade: I  
Date first listed: 08-Jan-1959  
Date of most recent amendment: 30-Dec-1994

#### Legacy System Information

The contents of this record have been generated from a legacy data system.  
Legacy System: LBS  
UID: 380730

#### Asset Groupings

This list entry does not comprise part of an Asset Grouping. Asset Groupings are not part of the official record but are added later for information.

#### List entry Description

##### Summary of Building

Legacy Record - This information may be included in the List Entry Details.

##### Reasons for Designation

Legacy Record - This information may be included in the List Entry Details.

##### History

Legacy Record - This information may be included in the List Entry Details.

##### Details

ST 5873 SW, 901-1/10/304

BRISTOL, TYNDALL'S AVENUE (South West side), Royal Fort and attached front step railings (Formerly Listed as: TYNDALL'S PARK Royal Fort House)  
08.01.59

#### I

House, now university department. 1758-61. By James Bridges. For Thomas Tyndall. Built by Thomas Paty; plasterwork by Thomas Stocking; wood carving by Thomas Paty. Limestone ashlar with 4 ridge stacks and a slate hipped roof. Double-depth plan. 3 storeys; 7-window range N front, 5-window ranges to S and W fronts. 3 symmetrical facades linked by a plat band and first-floor sill band, modillion cornice and parapet. Attached to the E is the pre-existing house, converted to a service block. N entrance front has a projecting 3-window centre under a blind balustrade, a doorway with attached Ionic columns to an entablature and pediment, fanlight and 6-panel door. Semicircular-arched middle first-floor windows linked by an impost band, and second-floor windows with 5 stepped voussoirs. 6/6-pane sashes, 3/3-panes to the second floor. The W front has a pedimented centre broken forward with a rusticated ground floor, a finely-carved tympanum and balustrades each side. Semicircular ground-floor arches to the centre contain flat-headed windows, with 6/9-pane ground-floor sashes, eared architraves on the first floor with outer cornices and inner pediments to 6/6-pane sashes, and architraves on the second floor, with corner ears to the centre, to 3/3-pane sashes. S front has a projecting centre containing a canted, full-height bay with a balustrade and rusticated ground floor. Outer doorways have architraves, moulded consoles to pediments and 9-pane glazed doors, with fine rocaille carving over the heads. Venetian windows above with triple keys, semicircular-arched ground-floor windows to the bay, 5 stepped voussoirs above with carved female keys, all with 6/6-pane sashes, and 3/3-pane sashes to the third floor. Attached to the E side is the earlier house, rendered with a slate mansard. A linking late C18 two-storey; 2-window range with parapet and bowed sides has French windows and 6/6-pane first-floor sashes. Connects with an early C19 three-storey; 5-window range house to the right. Irregular fenestration, including a right-of-centre Venetian window, 6/6-pane sashes and second-floor casements.

INTERIOR: a very fine and complete scheme of interior decoration, with much excellent Rococo and Classical plasterwork, wood carving, and good fireplaces. Entrance hall and central passage flagged with slate and marble, has a Doric frieze with metopes; screen of 3 semicircular arches with fluted fronts and panelled soffits, and flanking niches and rocaille corbels. Stair hall to the left has an elliptical arch with carved soffit, and plaster vines to each side, with a good ceiling rose of 3 putti; fine open-well stair has a moulded soffit, curtain, and sinuous wrought-iron balusters. Dining room has an exceptional rocaille ceiling, marble fireplace, and overmantel and door surround of rocaille wood carving, including entwined door columns. Drawing room has a similar ceiling, and a marble fireplace with carved corbels possibly of Thomas and Alicia Tyndall. Panelled shutters, 6-panel doors.

**SUBSIDIARY FEATURES:** attached front steps, wrought-iron railings and lamp holders, with snuffers. A very fine design on an exposed site, with 3 good elevations. Attribution of the design and execution is not certain, and the 3 facades may have been the work of separate architects. The grounds were landscaped by Humphry Repton in early C19. The interior is in good condition, and remains '...the best eighteenth-century domestic interior to survive in the city' (Gomme).

(Gomme, A., Jenner, M. and Little, B.: Bristol, An Architectural History: Bristol: 1979-: 155; Mowl, T.: To Build The Second City: Bristol: 1991-; The Buildings of England: Pevsner, N.: North Somerset and Bristol: London: 1958-: 418).

Listing NGR: ST5828373372

Selected Sources

**Books and journals**

Gomme, A H, Jenner, M, Little, B D G, Bristol, An Architectural History, (1979), 155

Mowl, T, To Build a Second City, (1991)

Pevsner, N, The Buildings of England: North Somerset and Bristol, (1958), 418

National Grid Reference: ST 58283 73372

End of official listing

## 2. STUART HOUSE AND ATTACHED RAILINGS AND GATES

### List Entry Summary

This building is listed under the Planning (Listed Buildings and Conservation Areas) Act 1990 as amended for its special architectural or historic interest.

Name: STUART HOUSE AND ATTACHED RAILINGS AND GATES

List entry Number: 1282079

### Location

STUART HOUSE AND ATTACHED RAILINGS AND GATES, TYNDALLS AVENUE

The building may lie within the boundary of more than one authority.

County:

District: City of Bristol

District Type: Unitary Authority

Parish:

National Park: Not applicable to this List entry.

Grade: II

Date first listed: 04-Mar-1977

Date of most recent amendment: 30-Dec-1994

### Legacy System Information

The contents of this record have been generated from a legacy data system.

Legacy System: LBS

UID: 380731

### Asset Groupings

This list entry does not comprise part of an Asset Grouping. Asset Groupings are not part of the official record but are added later for information.

### List entry Description

#### Summary of Building

Legacy Record - This information may be included in the List Entry [Details](#).

#### Reasons for Designation

Legacy Record - This information may be included in the List Entry [Details](#).

#### History

Legacy Record - This information may be included in the List Entry [Details](#).

Details

BRISTOL

ST5873SW TYNDALL'S AVENUE 901-1/10/305 (South West side) 04/03/77 Stuart House and attached railings and gates (Formerly Listed as: TYNDALL'S AVENUE Stuart House)

## GV II

House. Early C19. Stucco with limestone dressings, pantile hipped roof and gable stacks. Double-depth plan. Late Georgian style. 2 storeys; 4-window range. Pilasters to a cornice and parapet, ramped down to the left-hand end. Moulded semicircular-arched doorway with key and impost, batswing fanlight and 6-panel door. 8/8-pane sashes, 6/6-panes to the pair over the door. INTERIOR not inspected. SUBSIDIARY FEATURES: attached front garden wrought-iron railings and gates with urn finials.

Listing NGR: ST5831473391

### Selected Sources

Legacy Record - This information may be included in the List Entry Details  
National Grid Reference: ST 58314 73391

End of official listing

## 3. THE GATEHOUSE AND ATTACHED RUBBLE WALL

### List Entry Summary

This building is listed under the Planning (Listed Buildings and Conservation Areas) Act 1990 as amended for its special architectural or historic interest.

Name: THE GATEHOUSE AND ATTACHED RUBBLE WALL

List entry Number: 1291399

### Location

THE GATEHOUSE AND ATTACHED RUBBLE WALL, 9, ROYAL FORT ROAD

The building may lie within the boundary of more than one authority.

County:

District: City of Bristol

District Type: Unitary Authority

Parish:

National Park: Not applicable to this List entry.

Grade: II

Date first listed: 04-Mar-1977

Date of most recent amendment: 30-Dec-1994

### Legacy System Information

The contents of this record have been generated from a legacy data system.

Legacy System: LBS

UID: 380385

### Asset Groupings

This list entry does not comprise part of an Asset Grouping. Asset Groupings are not part of the official record but are added later for information.

### List entry Description

#### Summary of Building

Legacy Record - This information may be included in the List Entry Details.

#### Reasons for Designation

Legacy Record - This information may be included in the List Entry Details.

#### History

Legacy Record - This information may be included in the List Entry Details.

#### Details

BRISTOL

ST5873SW ROYAL FORT ROAD 901-1/10/237 (West side) 04/03/77 No.9 The Gatehouse and attached rubble wall (Formerly Listed as: ROYAL FORT ROAD No.9 The Gatehouse)

## II

Gatehouse. C17. Red Pennant rubble with brick and limestone dressings. Single storey; 1-window

range. An elliptical-arched gateway with limestone quoins, 2-leaf wooden gates, a C20 mullion window above, and parapet. The rear has a brick arch. INTERIOR not inspected. SUBSIDIARY FEATURES: attached rubble wall extends approx 6m from SE corner, with rusticated ashlar piers. One of the gates to the Civil War fort which stood on the site of Royal Fort House (qv).

Listing NGR: ST5833273404

Selected Sources

Legacy Record - This information may be included in the List Entry [Details](#)

National Grid Reference: ST 58332 73404

End of official listing

## 4. UNIVERSITY OF BRISTOL, PHYSICS BUILDING

### List Entry Summary

This building is listed under the Planning (Listed Buildings and Conservation Areas) Act 1990 as amended for its special architectural or historic interest.

Name: UNIVERSITY OF BRISTOL, PHYSICS BUILDING

List entry Number: 1218310

### Location

UNIVERSITY OF BRISTOL, PHYSICS BUILDING, TYNDALLS AVENUE

The building may lie within the boundary of more than one authority.

County:

District: City of Bristol

District Type: Unitary Authority

Parish:

National Park: Not applicable to this List entry.

Grade: II

Date first listed: 04-Mar-1977

Date of most recent amendment: Not applicable to this List entry.

### Legacy System Information

The contents of this record have been generated from a legacy data system.

Legacy System: LBS

UID: 380732

### Asset Groupings

This list entry does not comprise part of an Asset Grouping. Asset Groupings are not part of the official record but are added later for information.

### List entry Description

#### Summary of Building

Legacy Record - This information may be included in the List Entry [Details](#).

#### Reasons for Designation

Legacy Record - This information may be included in the List Entry [Details](#).

#### History

Legacy Record - This information may be included in the List Entry [Details](#).

#### Details

BRISTOL

ST5873SW TYNDALL'S AVENUE 901-1/10/306 (South East side) 04/03/77 University of Bristol, Physics Building

II

University department. 1929. By Sir George Oatley. Limestone ashlar with a slate mansard roof. L-shaped double-depth plan. Tudor Gothic Revival-style fenestration and Baroque style details. Tower of 5 storeys; 3-window range, with 2 storeys and attic wings of 8 bays to the N and 4 bays to the W. A large, square tower has massive, plain ashlar clasping buttresses, with octagonal turrets to the top storey, and ogee-headed broach finials. Central doorway has a tall porch with fluted Doric columns, entablature and cornice, a semicircular-arched doorway to a 2-leaf door. Square giant mullions separate the windows above, through a transom cornice with carved heads at the third floor, a cornice

with carved animals, and twisted attached finials to the stepped crenellated parapet. 3-light mullion and transom windows separated by blind panels, upper windows have Tudor-arched heads with sinuous tracery. The wings are articulated by giant square fluted Ionic attached columns on pedestals to a cornice breaking out over the capitals, supporting large fluted inverted consoles to a tall, blind attic with moulded coping, and large patera. Full-height mullion and transom windows, with copper suns between the floors. A Tudor-arched doorway with panelled jambs and lintel. INTERIOR: entrance hall, with a large open-well stair to the tower with steel stick balusters. (Gomme A, Jenner M and Little B: Bristol, An Architectural History: Bristol: 1979-: 325).

Listing NGR: ST5827273433

Selected Sources

#### Books and journals

Gomme, A H, Jenner, M, Little, B D G, Bristol, An Architectural History, (1979), 325

National Grid Reference: ST 58272 73433

End of official listing

## 5. IVY GATE, NORTH EAST OF ROYAL FORT HOUSE

### List Entry Summary

This building is listed under the Planning (Listed Buildings and Conservation Areas) Act 1990 as amended for its special architectural or historic interest.

Name: IVY GATE, NORTH EAST OF ROYAL FORT HOUSE

List entry Number: 1392702

### Location

IVY GATE, NORTH EAST OF ROYAL FORT HOUSE, TYNDALL AVENUE

The building may lie within the boundary of more than one authority.

County:

District: City of Bristol

District Type: Unitary Authority

Parish:

National Park: Not applicable to this List entry.

Grade: II

Date first listed: 12-Aug-2008

Date of most recent amendment: Not applicable to this List entry.

### Legacy System Information

The contents of this record have been generated from a legacy data system.

Legacy System: LBS

UID: 505442

### Asset Groupings

This list entry does not comprise part of an Asset Grouping. Asset Groupings are not part of the official record but are added later for information.

### List entry Description

#### Summary of Building

Legacy Record - This information may be included in the List Entry Details.

#### Reasons for Designation

Ivy Gate has been designated at Grade II for the following principal reasons: \* It is an interesting and important survival of a mid-C18 garden structure which remains intact. \* It has distinct architectural presence. \* The quality and combination of materials used, the gate's design, as well as its monumental scale, convey the wealth and ambition of the residents of St Michael's Hill during the C18. \* It has group value with other listed buildings further down the hill, such as Royal Fort House, which relate to the C17 and C18 suburban development of the area. \* It makes a positive contribution to the overall character of this part of the university campus.

#### History

Legacy Record - This information may be included in the List Entry Details.

### Details

## BRISTOL

901-1/0/10189 TYNDALL AVENUE 12-AUG-08 (South side) IVY GATE, NE OF ROYAL FORT HOUSE

II Monumental gate, of mid-C18 date, constructed of red brick laid to English Garden Wall bond, coursed stone rubble and ashlar detail, on a coursed rubble plinth. The gate is flanked by massive brick piers with clear entasis and topped with projecting concrete coping supported on moulded brick corbels. The north-east elevation is of brick and has an ashlar triple keystone to the round-arched opening. The south-west elevation is more decorative with central brick projection against the stone rubble face. This is surmounted by an open pediment. Beneath this is the round-arched opening with large single ashlar keystone and impost blocks. Within the arch, to both elevations, is an inner gate of ashlar with quintuple-keystone, the middle three sections of which are sequentially dropped. The gate stands on a slight slope and stone steps to the south-west elevation accommodate this.

**HISTORY:** Ivy Gate is depicted on Roque's map of 1742 and provided the entrance to a garden which formed part of the holdings associated with Cromwell House. The house (demolished in the late-C19) was one of five built on this part of St Michael's Hill in the latter half of the C17 and stood approximately 40m to the west of the gate.

**SOURCES:** Roger H Leech, *The St Michael's Hill Precinct of the University of Bristol*. (2000) Bristol Record Society Vol. 52. 45, 57 Andrew Foyle, *Bristol*. (2004) Pevsner Architectural Guide.

**REASONS FOR DESIGNATION DECISION:** Ivy Gate is designated at Grade II for the following principal reasons: \* It is an interesting and important survival of a mid-C18 garden structure which remains intact. \* It has distinct architectural presence. \* The quality and combination of materials used, the gate's design, as well as its monumental scale, convey the wealth and ambition of the residents of St Michael's Hill during the C18. \* It has group value with other listed buildings further down the hill, such as Royal Fort House, which relate to the C17 and C18 suburban development of the area. \* It makes a positive contribution to the overall character of this part of the university campus.

### Selected Sources

#### Books and journals

Foyle, A, *Pevsner Architectural Guides: Bristol*, (2005)

Leech, R, 'The St Michaels Hill Precinct of the University of Bristol' in *The St Michaels Hill Precinct of the University of Bristol*, , Vol. 52, (2000), 45, 57

National Grid Reference: ST 58312 73445

End of official listing

## 6. ROYAL FORT PERIMETER WALL

### List Entry Summary

This building is listed under the Planning (Listed Buildings and Conservation Areas) Act 1990 as amended for its special architectural or historic interest.

Name: ROYAL FORT PERIMETER WALL

List entry Number: 1202653

### Location

ROYAL FORT PERIMETER WALL, TANKARDS CLOSE

ROYAL FORT PERIMETER WALL, UNIVERSITY WALK

The building may lie within the boundary of more than one authority.

County:

District: City of Bristol

District Type: Unitary Authority

Parish:

National Park: Not applicable to this List entry.

Grade: II

Date first listed: 04-Mar-1977

Date of most recent amendment: 30-Dec-1994

### Legacy System Information

The contents of this record have been generated from a legacy data system.

Legacy System: LBS  
UID: 380758

#### Asset Groupings

This list entry does not comprise part of an Asset Grouping. Asset Groupings are not part of the official record but are added later for information.

#### List entry Description

##### Summary of Building

Legacy Record - This information may be included in the List Entry [Details](#).

##### Reasons for Designation

Legacy Record - This information may be included in the List Entry [Details](#).

##### History

Legacy Record - This information may be included in the List Entry [Details](#).

##### Details

##### BRISTOL

ST5873SW UNIVERSITY WALK 901-1/10/316 (North East side) 04/03/77 Royal Fort perimeter wall (Formerly Listed as: WOODLAND ROAD (East side) Garden wall of Royal Fort House)

##### GV II

Perimeter wall. C18. Red Pennant squared and polygonal rubble. Perimeter wall round Royal Fort (qv) estate to E and S, approx 300m from the entrance lodge.

Listing NGR: ST5822973318

##### Selected Sources

Legacy Record - This information may be included in the List Entry [Details](#)

National Grid Reference: ST 58229 73318

End of official listing

## 7. ROYAL FORT GATE PIERS AND GATES

#### List Entry Summary

This building is listed under the Planning (Listed Buildings and Conservation Areas) Act 1990 as amended for its special architectural or historic interest.

Name: ROYAL FORT GATE PIERS AND GATES

List entry Number: 1220414

#### Location

ROYAL FORT GATE PIERS AND GATES, WOODLAND ROAD

The building may lie within the boundary of more than one authority.

##### County:

District: City of Bristol

District Type: Unitary Authority

##### Parish:

National Park: Not applicable to this List entry.

##### Grade: II

Date first listed: 04-Mar-1977

Date of most recent amendment: Not applicable to this List entry.

#### Legacy System Information

The contents of this record have been generated from a legacy data system.

Legacy System: LBS

UID: 380915

#### Asset Groupings

This list entry does not comprise part of an Asset Grouping. Asset Groupings are not part of the official record but are added later for information.

#### List entry Description

##### Summary of Building

Legacy Record - This information may be included in the List Entry [Details](#).

##### Reasons for Designation

Legacy Record - This information may be included in the List Entry [Details](#).  
History

Legacy Record - This information may be included in the List Entry [Details](#).  
Details

BRISTOL

ST5873SW WOODLAND ROAD 901-1/10/353 (East side) 04/03/77 Royal Fort gate piers and gates GV II  
Piers and gates. Mid/late C18. Limestone ashlar and wrought-iron. Large square rusticated piers, spear-headed railings and attached spear-headed 2-leaf gates and railings.

Listing NGR: ST5818873444

Selected Sources

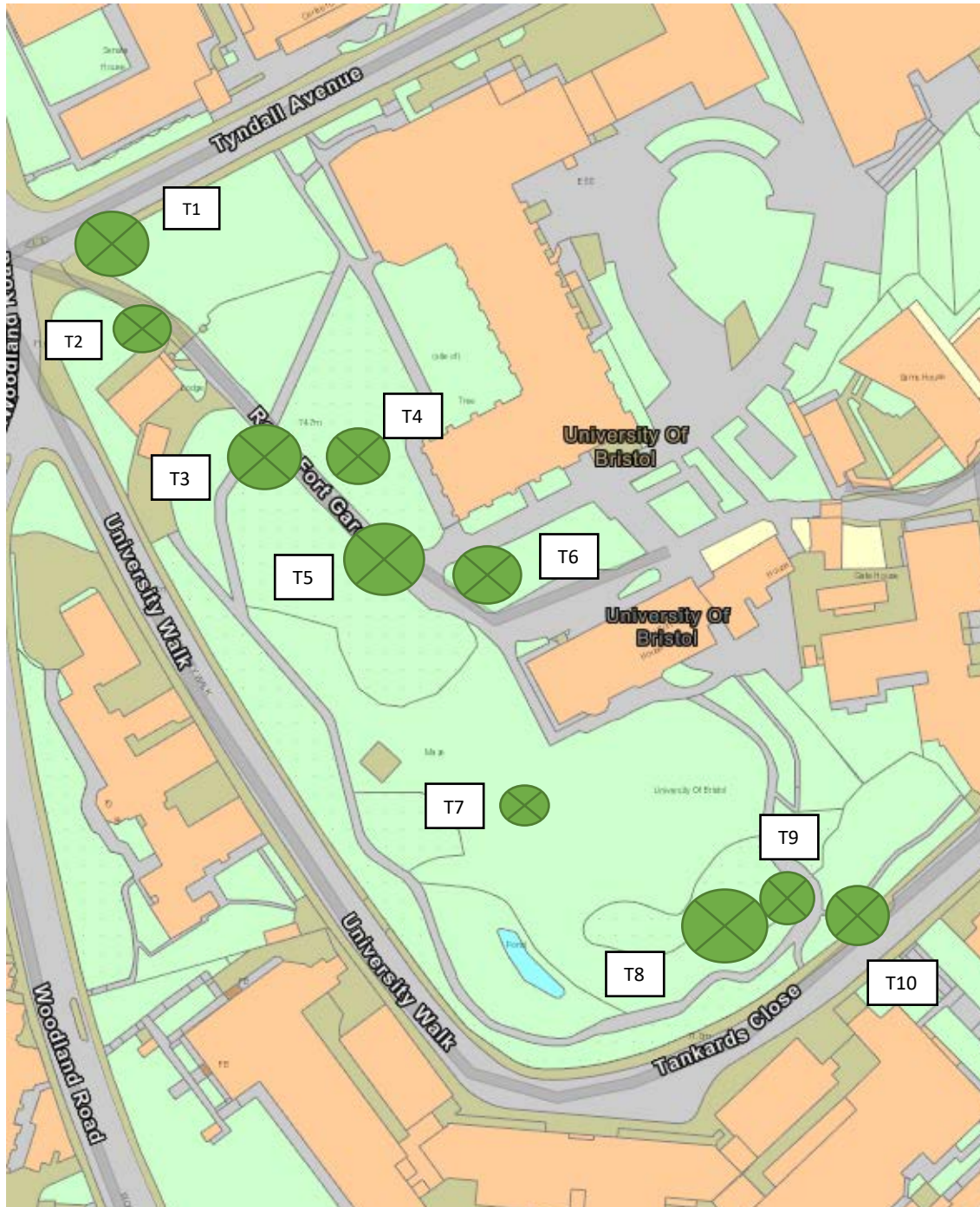
Legacy Record - This information may be included in the List Entry [Details](#)

National Grid Reference: ST 58188 73444

End of official listing

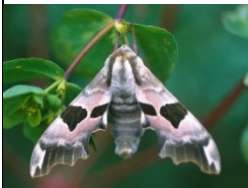
# Appendix 5

Tree locations. Tree walk Royal Fort Garden



Id.No.	Tag No.	Common Name	Latin Name
T1	A-130	Common Horse Chestnut	<i>Aesculus hippocastanum</i>
T2	A-131	Common Lime	<i>Tilia x europaea</i>
T3	A-9	Holm Oak	<i>Quercus ilex</i>
T4	A-92	Dove Tree	<i>Davidia involucrata</i>
T5	A-61	Common Yew	<i>Taxus baccata</i>
T6	A-41	Oriental Plane	<i>Platanus orientalis</i>
T7	A-228	Dawycck Beech	<i>Fagus sylvatica 'Dawycck'</i>

T8	A-228	Lucombe Oak	<i>Quercus x hispanica 'Lucombeana'</i>
T9	A-222	Common or Black Mulberry	<i>Morus nigra</i>
T10	A-311	Maytenus	<i>Maytenus boaria</i>

A-130	Common Horse Chestnut	<i>Aesculus hippocastanum</i>
<p>Introduced in the late 16<sup>th</sup> C.  Lots of cultural uses conkers, sticky buds opening, common street name etc.  Ecologically it's interesting as it's got a relatively new leaf miner species on it that has invaded the country and is causing a lot of damage. People probably won't plant them any longer as they look pretty tatty by summer now.</p>		
A-131	Common Lime	<i>Tilia x europaea</i>
<p>Sweet smelling blossom which is very popular with bees (you can generally tell when one is in flower because of the buzzing noise. The flowers are used to make tea, not so much in the UK, but certainly other parts of Europe.  Limes are used for Morris Men's sticks (it doesn't split so is good for hitting!)  It has a very nice hawk moth that feeds on it – the lime hawk, found in the Bristol area</p>		
		
A-9	Holm Oak	<i>Quercus ilex</i>
<p>Mediterranean species  Its Latin names refers to the fact it looks like holly  ‘‘In ancient Greece the leaves of the holm oak were used to tell the future and they were also used to make crowns to honour people’’.  Need to check, but I think it's allelopathic and it's difficult for other plants to germinate underneath it. It's a pest in the Avon Gorge where it has self seeded.</p>		
A-92	Dove Tree	<i>Davidia involucrata</i>
<p>I know this tree as the Hankerchief tree.  ‘‘The genus <i>Davidia</i> is named for Father <a href="#">Armand David</a> (1826–1900; ‘‘Père David’’), a French <a href="#">Vincentian</a> missionary and keen naturalist who lived in China’’ (and presumably he named Pere David deer as well)  There is a big one of these at Bristol Zoo  Lots of people notice this tree flowering – people in Senate house used to notice it for sure, doesn't seem to have much of a history here, presumably because it's a fairly new species to the UK.</p>		
A-61	Common Yew	<i>Taxus baccata</i>
<p>Its wood can outlive iron apparently  Yew wood was used for making longbows traditionally  Commonly planted in churchyards  Its foliage provides Taxol which is used to treat some cancers</p>		

A-41	Oriental Plane	Platanus orientalis
<p>Mediterranean in origin  Tough city tree which does very well in urban habitats  I would like to know the history of the plane trees on the roundabout at the bottom on Jakob's Wells Road – someone will know this.  Has an alien leaf miner on it, similar to horse chesnut  You can use the fuzz inside the seeds as itching powder</p>		
A-228	Dawyck Beech	Fagus sylvatica 'Dawyck'
<p>Beech was used as fuel in iron and glassworks in the UK historically  Good for carving autographs – autograph tree at Coole Park in Ireland is a copper beech (signed by George Bernard Shaw, Yeats etc.  Beech leaf gin (like sloe gin but green!)  Good example of a tree that masts – a way of reducing seed predation.  Dawyck – presumably refers to the Scottish Botanic Garden, lots of interesting trees there and lots of history too about plant collectors.</p>		
A-228	Lucombe Oak	Quercus x hispanica 'Lucombeana'
<p>Originally raised in Exeter in 1763 by Mr Lucombe from acorns which were hybrids of <i>Quercus cerris</i> and <i>Quercus suber</i></p> <p>“William Lucombe liked his oak so much that he felled the original tree in 1785 and kept the boards under his bed so his coffin could be made from them. By the time he died, aged 102, the planks had decayed and an alternative Lucombe Oak, from one of his early graft propagations, was used instead”</p>		
A-222	Common or Black Mulberry	Morus nigra
<p>Round &amp; round the mulberry bush is an obvious one here (though not obvious in some ways as mulberries are trees not bushes)  Silk moths feed on white mulberry not black mulberry, many trees are here as people mistakenly believed that they would be food for silkworms  The fruit is edible: jams, crumbles, syrups etc.</p>		
A-311	Maytenus	Maytenus boaria
<p>Never heard of this one and can't find out much about it either.</p>		

Appendix 6:

UoB Royal Fort Guide



External Estates



T: +44 (0) 117 4282400  
E: [external-estates@bristol.ac.uk](mailto:external-estates@bristol.ac.uk)  
[www.bristol.ac.uk/external-estate](http://www.bristol.ac.uk/external-estate)

f @unbristgardens

🐦 @UnBristolCads

📷 @unbristgardens

## Why not visit... The University Botanic Garden

Located in Stoke Bishop, Bristol, the 1.77 hectare garden, managed by the University of Bristol, is home to 4,500 species. Arranged in four core collections: Evolution, Mediterranean, Local Flora, and Rare Native and Useful Plants, each collection has been designed to be attractive as well as educational, with some displays allowing visitors to walk through and be 'immersed' in the plantings.

For information and opening times:  
[www.bristol.ac.uk/botanic-garden](http://www.bristol.ac.uk/botanic-garden)



Oct 2019

Design: [www.greethdesign.co.uk](http://www.greethdesign.co.uk) | Instagram: [www.unbrist.ac.uk](https://www.instagram.com/unbrist.ac.uk)



## Royal Fort A guide



University of  
BRISTOL  
External Estates

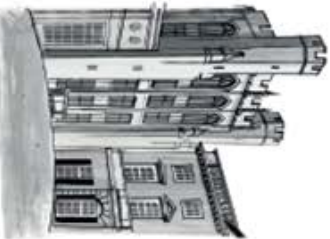


## 1 / Tyndall's gates

English landscape designer Humphrey Repton had cut the main gate in 1800. It is almost impossible to visit it now, but in Repton's time the drive of swept unimpaired from this point, down through open parklands to Queen Road. The wrought-iron gates and some palm gates (grade 21 steel) stood at that point, but were no longer.

The listed status identifies the feature, it must be the 18th century having large square rusticated piers and spear-headed railings and attached gates.

The main gates are permanently open, but there is an ambition to make them operational again.



## 2 / Physics Building

This gothic style building - HH1 with Physics Laboratory to give it its full title - was designed by Sir George Gilbert Scott, who also designed many University edifices including the Memorial Building at the top of Park Street. It was the first part of a conceived series of buildings, which if realised, would have destroyed most of the gardens under their foundations!

The building was opened in 1927 and used materials that Harry Wilds stipulated should be of 'such quality that no repairs are required for 50 years; then to be renewed in iron frames to avoid rust... the best brick with cement mortar; and Keen's cement plaster... as it does not flake like lime'.



## 3 / Hollow

In 2016 a new public artwork called 'Hollow', made from tree stumps from across the world was installed within Royal Fort Garden. 'Hollow' was commissioned to mark the opening of the University's Life Sciences building in 2016 and is produced by Bristol-based public art producer, Situations.

Created by a firm, Katie Paterson, the stumps took three years to amass, many of which have been donated by private collectors, art centres and botanical gardens across the world. Over 10,000 unique tree species have been gathered spanning millions of years, representing a miniature forest of all the world's forests and telling the history of the planet through the immensity of tree specimens.



## 4 / Nature pond

A gate way to introduce blood was by into an area is to build a pond. The pond in the Royal Fort has been extended in recent years and supports sun oaks, and palm trees, as well as frogs and toads. There are also wall lizards in the area, which are of interest even though they are nocturnal.

The water-walled limestone in the rockery to the rear of the pond probably came from above Cheddar Gorge. This was the result of an unfortunate landscape decision from the Victorian era and one which can be seen in gardens across Bristol.



## 5 / Follow Me

In 2009 a new public sculpture by internationally acclaimed artist, Jeppe Hein, was unveiled as part of the University's centenary celebrations. Entitled 'Follow Me', the work is permanently sited in Royal Fort Gardens. The artwork was produced by Bristol-based public art producer, Situations.

The artwork comprises a square labyrinth of 76 vertical polished steel plates sited at the base of a fan in the building down from Royal Fort House. Visitors are encouraged to enter the labyrinth to experience the effect of the work. Jeppe Hein was inspired by the University as a place of self-deception as well as by the history of the gardens - particularly the design of 18th-century landscape gardens at Repton.



## 6 / Ivy Gate

In 2016 the University celebrated the official opening of the external realm of the Life Sciences Building and received an award in recognition of excellence in garden design from the Clifton and Howarth Improvement Society (CHS).

Officially opened by natural history filmmaker Sir David Attenborough, who planted the first tree in the new landscape garden, the area includes paving, a variety of seating and the renovated Grade II listed Ivy Gate. The detailing of Ivy Gate's new setting is inspired by the light reflecting prism motif carved in stone above the south door of the Physics Tower.

## Royal Fort Tour route

To get the best from the tour please follow the route marked on the map starting from position 1.



For more information about the University of Bristol Heritage Gardens a book is available to purchase, written by Alison Moka. Please visit:  
[www.its.bris.ac.uk/external-website/gardensandparks/our-heritage-gardens/](http://www.its.bris.ac.uk/external-website/gardensandparks/our-heritage-gardens/)

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# Appendix 7: Royal Fort Biodiversity guide



External Estates

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Facebook: [facebook.com/unibrsgardens](https://www.facebook.com/unibrsgardens)  
Instagram: [instagram.com/unibrsgardens](https://www.instagram.com/unibrsgardens)

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For information and opening times:  
[www.bristol.ac.uk/botanic-garden](http://www.bristol.ac.uk/botanic-garden)



Design: [www.greenstateltd.co](http://www.greenstateltd.co) Illustration: [www.adrianbarry.co.uk](http://www.adrianbarry.co.uk)



Royal Fort

## Bioblitz Guide





1

**1 Oriental Plane Tree**

**A-41 *Platanus orientalis***

With mottled shedding bark and hairy leaves, this tree is well adapted to the pollution of city living. Hanging flowers and seeds can be seen all year round.

**2 Amur Maple Tree**

**A-273 *Acer tataricum* ssp. *Ginnala***

A County Champion Tree for trunk girth with its unusual branching structure.

**3 Maytenus Tree**

**A-311 *Maytenus boaria***

A County Champion Tree for height and girth. This rare Chilean tree is the only one of its kind in Bristol.

**4 Bee BnB**

A multi-stony development built in collaboration with Roots Community Gardening students, especially designed for solitary bees!

**5 Lucombe Oak Tree**

**A-228 *Quercus x hispanica*  
*Lucombeana***

This species of semi-evergreen oak is a natural hybrid between the Cork Oak and the Turkey Oak. This specimen was planted in the early 1900's.

**6 Toad A bode**

An underground home where toads, frogs and newts can find safe lodgings during the winter chill.



4



6

**7 Pond**

Home to a multitude of wildlife from ducks to amphibians and aquatic invertebrate species like dragonflies and damselflies.

**8 Wall Lizards (Boundary Wall)**

***Podarcis muralis***

A rare colony of lizards occasionally spotted in sunny patches.

**9 Manna Ash Tree**

**A-170 *Fraxinus ornus***

A County Champion Tree for height with two distinctive bark types displaying the unusually high graft point.

**10 Bug Hotel**

This grand construction combines multiple habitats for a variety of occupants. Built with the help of The Princes Trust Fairbridge Programme.

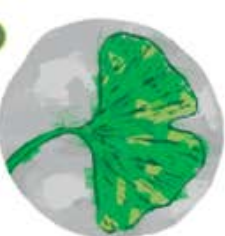
**11 Maidenhair Tree**

**A-110 *Ginkgo biloba* (female)**

This is a female example of the species, which has existed for over two million years. Surviving the ice age, earth quakes and atomic bombing this species is very resilient.

**12 Urban Fox**

Our resident urban fox lives in the Ivy Gate garden and enjoys city life!



11



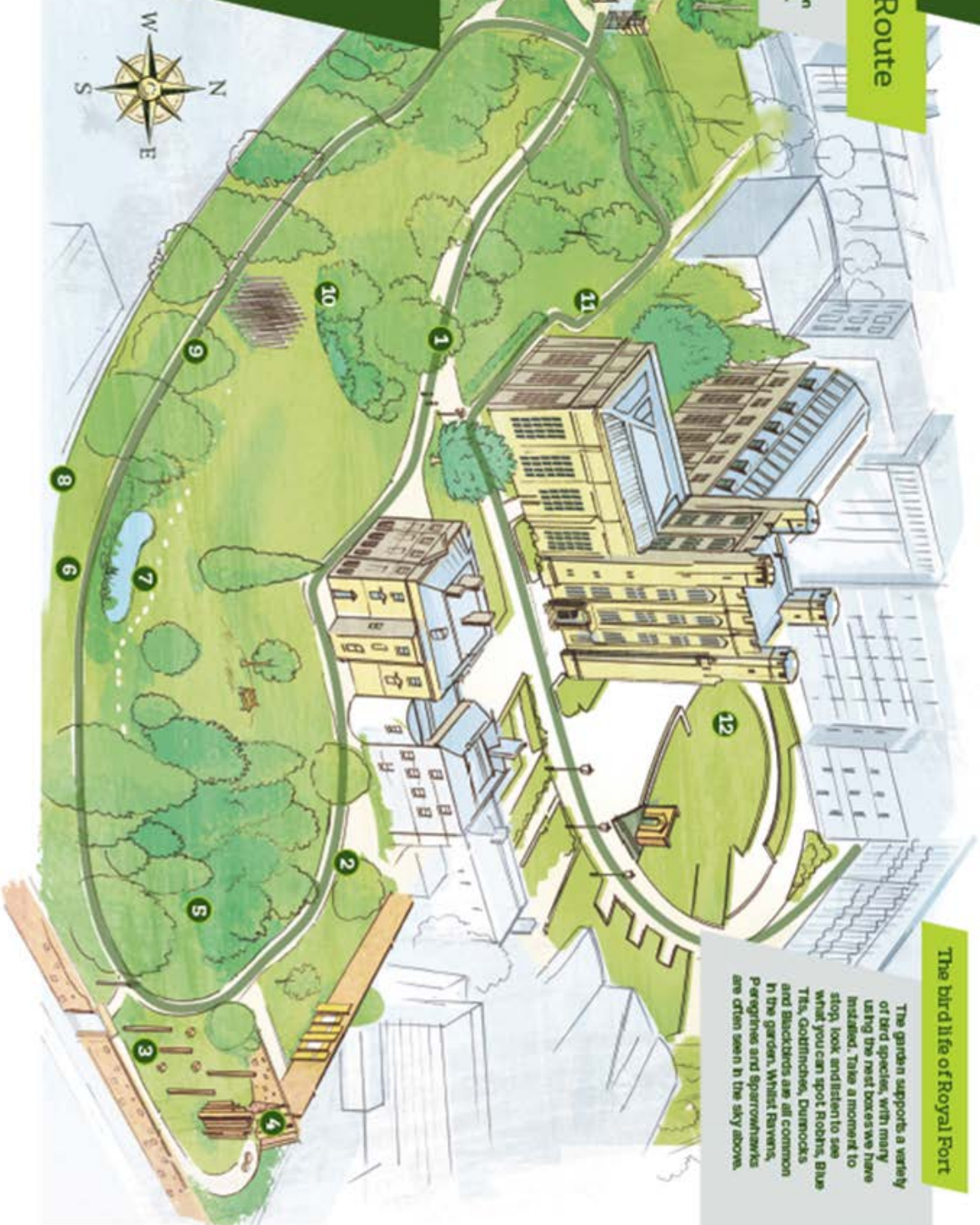
12

## Royal Fort

### Bioblitz Route

To get the best from the tour please follow the route marked on this map starting from position 1.

- 1 Oriental Plane Tree
- 2 Arnur Maple Tree
- 3 Maytenus Tree
- 4 Bee BnB
- 5 Lucombe Oak Tree
- 6 Toad Abode
- 7 Pond
- 8 Wall Lizards
- 9 Marna Ash Tree
- 10 Bug Hotel
- 11 Maidenhair Tree
- 12 Urban Fox



### The bird life of Royal Fort

The garden supports a variety of bird species, with many using the nest boxes we have installed. Take a moment to stop, look and listen to see what you can spot. Robins, Blue Tits, Goldfinches, Duncocks and Blackbirds are all common in the garden. Whistl Thrushes, Peregrines and Sparrowhawks are often seen in the sky above.

