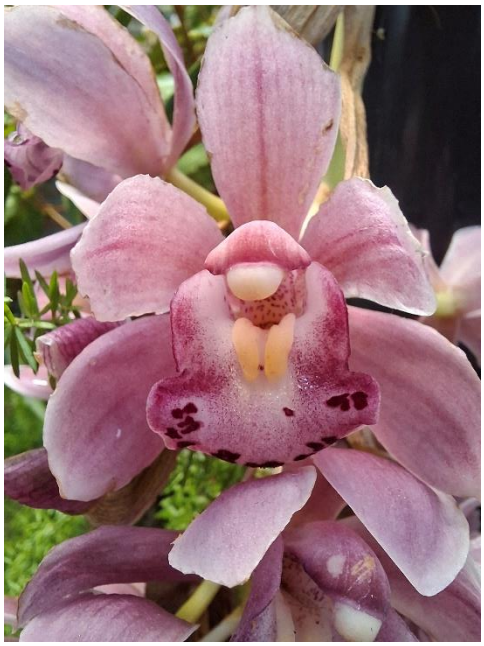
Berlin Study Trip

February 2026

Sophie McKilligan



Acknowledgements

I would like to thank The Merlin Trust for providing the funding for this trip and thus giving me the opportunity to develop as a horticulturist, gain confidence and learn new skills.

I would like to put on record my thanks to my line manager, Iain Govan, for supporting me in this opportunity and to the NTS for providing a small contribution towards this adventure.

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About the Author

I had an unusual route into Horticulture. Studying online, distance learning through the Royal Botanical Gardens in Edinburgh whilst working full-time in another industry in Aberdeen. With the strong desire to move into Horticulture as soon as possible, I compressed my studying into 1 year from 2019-2020. After successfully completing RHS Level 2 Principles of Horticulture, I obtained my first horticultural job at Culzean Castle & Country Park, run by the National Trust for Scotland.

My first role at Culzean Castle was as a Gardener in the North Walled Garden where I was responsible for Herbaceous borders, Fruit cages, Orchards and Cut Flowers. I then successfully gained a promotion to my current role as Propagator. I am responsible for a range of glasshouses, the plant collections and a range of propagation. I also oversee for the Peach and Vine production along with the annual vegetable and flower seed sowing.

It has been identified by myself and my Head Gardener that my confidence is lacking in my ability and my wider plant knowledge out with a Culzean setting, therefore it was identified that a study trip would be the best thing for me.

Objective of Trip

- To boost my confidence that I am a professional horticulturist with an abundance of skills and knowledge.
- To take back plant options suitable for the development of two glasshouse rooms in my vinery which have been under renovation.
- To visit other glasshouse sites to improve my knowledge and plant identification skills.

Challenges

Initial communication and been made with Berlin Botanical Gardens to arrange a meeting, however due to circumstances out with my control we were unable to have a meeting on my visit, therefore I was unable to get most of my questions answered prior to arriving.

The language barrier also made it difficult to get full answers to my questions.

Unknown to me the public sector went on strike on Wednesday 11th February, therefore I had to re-arrange my itinerary.

Unfortunately, due to a medical emergency on the berlin railways, it made the journey to Potsdam difficult and a lot longer. What should have been an hour's journey took 3 hours, thus restricting the time I had available to look around University of Potsdam Botanical Gardens.

Itinerary

Monday 9th February

- Travel Day.
- Edinburgh-Berlin (1230-1535)
- Check in to hotel

Tuesday 10th February

- Berlin Botanical Gardens (9am- 6pm)
- House N
- House I
- House A
- Lunch
- House B
- House F
- House H

Wednesday 11th February

- Rest Day (due to public sector strike)

Thursday 12th February

- Berlin Botanical Garden (9am-6pm)
- House C
- House D
- House E
- House K
- Lunch
- House L
- House M
- House O
- House P

Friday 13th February

- Train from Schoneberg to Potsdam
- University of Potsdam Botanical Garden
- Sanssouci Park (Vines & Orangery)
- Train Back to Schoneberg

Saturday 14th February

- Travel Day
- Berlin – Edinburgh (1655-1810)

1. Berlin Botanical Gardens

Berlin Botanical Gardens (BBG) was first developed over 100 years ago when Adolf Engler designed Dahlem Garden (now Berlin Botanical Garden) with the concept of 'The World in a Garden'. Now one of the largest in the world, it hosts fifteen magnificent greenhouses, ten different outdoor garden areas and 20,000 plant species. The outside gardens take the shape of an Arboretum, Plant Geography Garden, Italian Garden, System of herbaceous plants, Medicinal Plants Garden, Scent & Touch Garden, Moss Garden, Swamp & Water Garden and a Kitchen Garden. A visit around the outside gardens was taken, however due to the time of year of my visit and weather conditions, one could not appreciate the beauty of the garden in its full glory.

Two days were spent at BBG to fully immerse myself in the glasshouses, culture and obtain all the information required. The following sequence of reporting on the glasshouses from BBG is in order of importance to the glasshouses and plant collections at Culzean.

1.1 Camelia House

The main purpose for visiting this glasshouse was to research new Camlia species that could extend our season in the Camelia House at Culzean Castle. Our current collection is only cultivars of Camelia japonica, which all flower roughly at the same time giving it a very short display season.

There is quite a contrast between the two styles of glasshouses at BBG and Culzean. Berlin's Camelia House is modern, with built in heating and vents which are automatically set to a computerised system. Whereas Culzean's is a traditional stone-built 1850's house, albeit it has had a little restoration. There are minimal ventilation and no electricity therefore, we are very limited on what species we can grow.

Entrance to BBG Camelia House

As you walk into this house you are immediately greeted by tall Camelia japonica cultivars underplanted with Japanese, oriental native plants, such as Serissa japonica and Rhododendron simsii.

Serissa japonica

Rhododendron simsii

What struck me the most was the many cultivars of Rhododendron simsii in full bloom. They are great compact bush species of Rhododendrons, growing no bigger than 2.5 meters which is ideal for an area in our Camelia House and prolong the display to May/June.

Rhododendron simsii 'Weibe Schame'

Rhododendron simsii 'Rosifolium'

Rhododendron Simsii 'Otto'

Camellia salicifolia

Camellia sinensis

I was hoping to see more species Camelias, however most of the camelias on display were hybrids. The species I did find were Camellia salicifolia, Camellia x vernalis and Camellia sinensis. Camellia x vernalis is worth investigating as it flowers in the winter which would extend the display to earlier in the year.

It was excellent to see another Camellia sinensis being grown. As part of Culzean's production garden, we have a section for growing Camellia sinensis (Tea Plant). Our plants are much younger and outside, therefore further behind in terms of size and scale, however we do not have one located in our Camellia house. This would be fabulous as it would showcase alternative camellias and extend the season and link the Camellia house to the Walled Garden. I have been able to locate cultivars of Camellia sasquana which will expand flowering time to autumn and winter months.

From the visit I was able to learn about the naming of Camellias. In 1753 Carl Linnaeus gave the genus name of Camellia after Georg Joseph Kamel, the first European to explore Philippine flora.

Camellia japonica 'Maria Moreen'

1.2 Cacti & African Succulent Houses

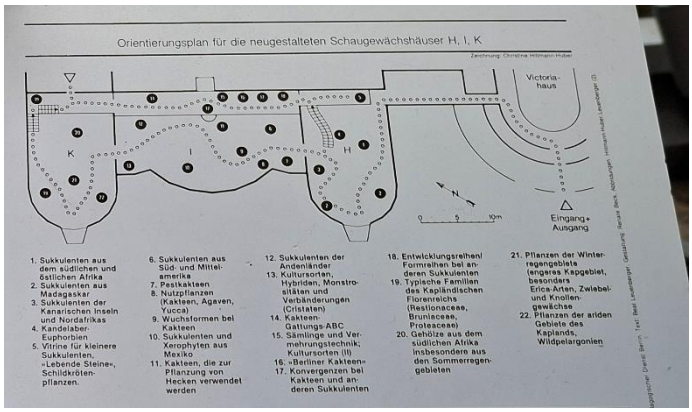
These two houses were of upmost importance to me as one of our rooms in the vinery at Culzean prior to renovation works was a cacti house and I would like to keep it this way. Due to the similarities of the two houses merging into each other, this section of the report will cover House H (African Succulents) and I (Cacti). In both sections there was a much dryer atmosphere compared to other houses. There was a dry warmth about the environment, and the soil was very dry and gritty.

I was able to speak with a gardener regarding the watering regime as I tend to struggle with over watering. For the Cactus house they do nearly no watering in the winter months with their main watering season from April to September/ October, dependant on seasonal weather. The Succulent house gets no watering at all in the months of January to December and the temperature in this room must be kept at 12oC.

Succulent House

Cacti House

From the Diagram below you can see the layout and journey between two the two house which in turn, which merge into House K the South African House.

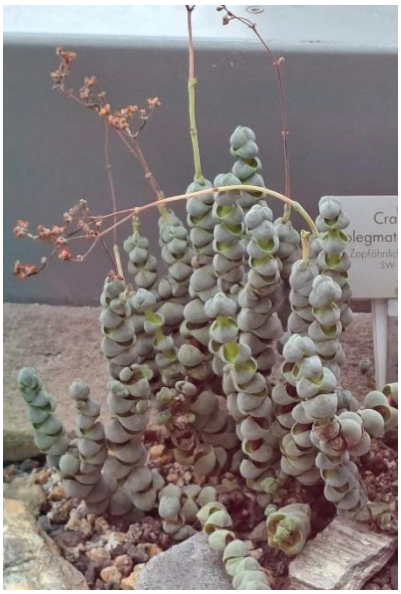


During my exploration of these houses I was able to identify species which were new to me and didnot have on display at Culzean for example Opuntia galapageia and Opuntia inamoena. We do not have as many Opuntias as BBG has therefore identifying and locating these species back in the UK will help build up our collection and add variety to our display.

BBG had a large Crassula and Kalanchoe collection which I have taken inspiration from and would like to build up our collection. There are some really beautiful, delicate flowers on display.

Kalanchoe blossfeldiana

Kalanchoe gracilipes



Crassula plegmatoides

Crassula deceptor

I would like to play around with different height forms. Prior to redevelopment there was either low growing cacti and succulents or really tall species. Adding in Crassula ovata to the main display bed would help to build different heights. Another aspect seen at BBG is variation in colours. Using the likes of Senecio serpens, senecio haworthii or Kalanchoe pumila would add a contrasting silver grey against green opuntias.

Senecio harworthii

Kalanchoe pumila

Multiples of the following genus' were on display (which I would like to incorporate if height restrictions and time to final height allow me to). Echonocactus, Cleistocereus, Piloceceus and trichoceurus.

A range of tall cacti

What was interesting and helpful was BBG had an information board regarding Cacti as useful and cultivated plants. Having opuntias and other productive species will help link the glasshouse to the production garden and thus providing a full round story of the walled garden at Culzean.

Opuntia galapageia

1.3 Mediterranean House

One of the highlights of the visit was visiting the Mediterranean house. I have been able to take away many ideas to improve our display and the maintenance of our Orangery.

The glasshouse was a lot cooler than others and arid the soil was too. The temperature of the glasshouse was being kept at 10oC. This can be achievable for the Orangery at Culzean over the winter due to the upgrade in heating system thus giving me more scope to grow less-hardy plants. Display beds were grouped by geographical region or into forms such as West Mediterranean, Canary Islands and shrubland.

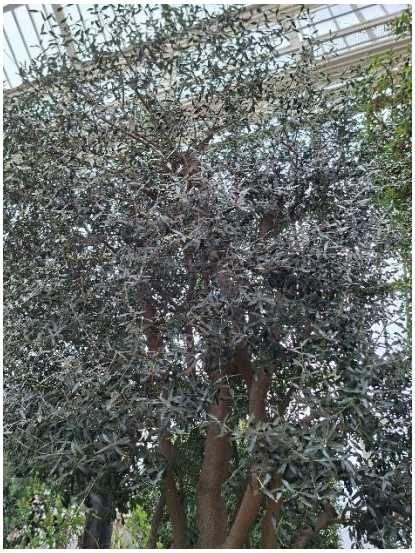
Geographical area of Mediterranean House

I was surprised to find most of BBG's Aeoniums located in this house as there are a South African plant.

Aeonium arboreum var. arboreum

Some of the plants we grow as Half-Hardy's were located in the Mediterranean House, for example Argyranthemum gracile. An idea which I have taken away to think about is putting some of our Half Hardy's down to the orangery for seasonal display.

BBG had a lovely Olea europea on display alongside an information board allowing me to learn more about the synonymous Mediterranean plant. Olea europea subsp. Europea has the greatest economic importance. It was cultivated from the wild thorny subsp. Oleaster. Culzean did have a semi-mature Olive tree however due to scale infestation we are now left with one young tree, but I would like to work it into a display as I feel it fits the feel of the Orangery.



Olea europea

One plant I came across which I immediately wanted to use in my display in the orangery was Pericallis webii. As the name suggests the flower heads are web-like and bright with colour. This would be a great tall architectural plant, adding variety to the display.

Pericallis webii

Aechmea's being lifted.

1.4 Bromeliad House

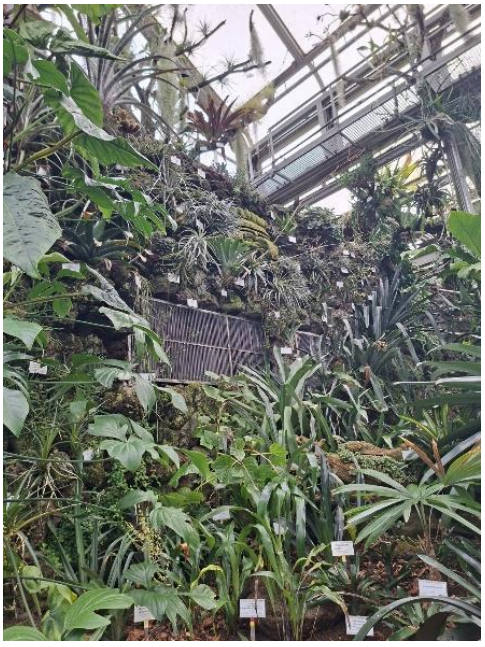
I found this house really interesting as this is what I would like to base a room in our vinery on. The environment was warm and humid, and the soil kept moist and the paths damp too. As I walked into this house it looked like a sea of luscious green, waxy, strappy leaves.

A view in the Bromeliad House

There was a beautiful living wall at the back of the Glasshouse which had a numerous Tillandsia species growing which is definitely a plant we would be able to grow.

A view from the Bromeliad House.

Many Neoregelias, Cryptathus and Aechmea's were on display throughout, the later at the time was getting lifted and propagated by two gardeners.



The living wall in Bromeliad House.

Due to our unheated glasshouse conditions, we would have to adapt the display to include hardy tropical plants to emulate a lush tropical look. Plants such as Neomaricas, Clivia's, and Aspididras can be used to portray the same effect.

One plant which caught my attention was Ananas comosus (the Pineapple). This is one Bromeliad which would be possible to grow at Culzean and would be a great story to tell linking back to the initial Victorian craze of growing pineapples. Culzean, once upon a time did have a Pineapple house. This would work well in our production garden as not only would it add to our fruit collection but, from this visit, I have been able to learn which aspects of the pineapple are used in production, making it a good story to portray.

1.5 Aroid House

This house had similar conditions to the bromeliad house where it was warm and humid, the soil was damp and paths regularly hosed down. At the time of visiting the temperature was around 20oC. I would be able to provide this in the height of our summer but not year-round, therefore it is knowing what species can take fluctuations in temperature.

Despite the large Begonia collection, what struck me the most about this glasshouse was the variation in variegated foliage, it really caught my eye. I was immediately attracted to Peperomia griseoargentea. The beautiful grey-silver leaves with very dark green veins and Peperomia argyreia, watermelon-like foliage, would provide stunning contrasts to the traditional monotone green of tropical like plants. This has given me a real desire to include plants with striking foliage in the design.

Fittonia albivenis was another plant I liked with the striking foliage. At a hardiness rating of H1A they would not survive over winter and therefore if they were to have any success, we would have to grow them as annuals in our greenhouses.

Fittonia albevenis

1.6 Other BBG Glasshouses

The following glasshouses have been summarised into one section, primarily focusing on the pictures due to their unsuitability for my projects or glasshouse conditions but nonetheless was important to see and expand my horticulture knowledge.

Tropical House

Drosera capensis from Carnivorous House

Paphiopedilum gratrixianum from Orchid House

Fern House

Grevillea rosmarinifolia from Australia House

2. University of Potsdam Botanical Garden

On my 5th and final full day, I visited the botanical garden of the University of Potsdam which is located roughly 20 miles south-west of Berlin. The garden itself is located within Sanssouci Park which will be referenced later in this report.

The botanical garden was founded in 1950; part of the garden and greenhouses originate from the Horticulture facilities of Sanssouci Park.

With particular attention to the Glasshouse area of the garden, there are nine open to the public and are listed below.

- Palm
- Victoria
- Fern
- Orchid
- Succulent
- Useful Plants
- Leaf Varieties
- Cold
- Epiphyte
- Bromeliad

Visiting this botanical garden, I took away four really interesting aspects which I would like to incorporate into Culzean's glasshouses, or it has

expanded my knowledge of plants I may not have known prior to my visit.

In the Bromeliad House, there was a really good use of space. A lot of air plants were anchored around tree stumps which compelled you to look up and explore the plants above your head. A path led through the middle of the main display bed allowing the visitors to get up close to the plants rather than having to view them from afar. I wouldn't be able to include an accessible path through the planting in our design, but I can absolutely take advantage of the height of the glasshouse and add hanging baskets with Tradscantia species or Chlorophytum comosum or ephytic plants such as Tillandsia usneoides.

A view in the Tropical Crops house

I was fascinated by two crops being grown in the Tropical Crops glasshouse. The first one was Orza sativa, Rice, and the second Gossypium hirsutum, Cotton. I just wasn't expecting to see these types of crops.

Orza is a frost-sensitive, water -intensive perennial however it is now cultivated as an annual. It was interesting to learn that the whole plant can be harvested and used in production, which I never knew. Part of the plant waste is used in animal feed and the straw for brooms and wicker work.

Orza sativa

Cotton was another plant I wasn't expecting to find in the glasshouse. Not only that, but it had also produced several seed heads and sprouted its iconic white fluffy strands.

Seed pods of Gossypium hirsutum.

Potsdam had a large Begonia collection within the Leaf Varieties House. Culzean does have a number of Begonia species at Culzean, and I will be using them for our conservatory display. Some

of which have distinct foliage like Begonia luxurians and Begonia 'Marmaduke'. Begonia luxurians will also add great height to the display.

Begonia 'Olei Silver Spot', B. 'Tiki Jade' and B. 'Tiger Paws' all on display at Potsdam would be a fantastic addition to our collection at Culzean and can be used in the cool tropical design.

Begonia 'Tiger Paws'

Begonia 'Tiki Jade'

The fourth element I took away from this visit was the range of Passiflora species Potsdam had on display. We grow Passiflora's but has mainly been molissima. I would like to introduce new species to the Vinery.

Seeing all these different species on display has provided me with lots of choice for climbers against our walls in the vinery.

3. Sanssouci Park

As previously highlighted, Uni of Potsdam Botanical Gardens lies within Sanssouci Park which is a garden and Parkland estate. Granted UNESCO World Heritage status in 1990, here for more than 250 years, it has distinct terrace gardens, fountains, architectural follies and grand palace buildings.

Two places were of interest here; The Orangery and the terraced Vineyard. We grow vines in our vinery, located in the walled garden whereas Sanssouci's is outdoors but, it was still interesting to see how they are grown.

The Orangery was the last and largest palace building constructed in Sanssouci Park. Erected between 1851 and 1864, designed by King Federick William IV, with a Mediterranean flair.

The Orangery

Unfortunately, at the time of the visit the palace was closed due to restoration work being carried out, however I was able to have a sneak peak in the window of the west wing where the plants were being stored. The range included citrus trees, agapanthus and palms.

One spectacle of the designed garden landscape is the terraced vineyard outside Schloss Sanssouci. It is made up of 6 long terraces, 32 vines per terrace and other southern trained fruit trees. Unfortunately, no labels were present on the vines to see what varieties they were growing. The other trained fruit trees did have winter protection in the form of glass cabinets.

One of the many vines on display

Schloss Sanssouci & Vines

The vines had also been recently pruned within a day or so of visiting as the pruning's were still on the ground. There was obviously no requirement to lower and peel the vines as there would not be the problem of mealy bugs due to the harsh winters Potsdam can witness.

Despite not being able to fully explore the two areas of Sanssouci Park it was still a wonderful experience to see the vines being grown on such a mass scale and would be a spectacle in the summer when in full foliage and fruiting.

Conclusions

The fundamental aim of this trip was to identify plant genera and species which could grow in the glasshouses at Culzean. This has been successfully carried out by identifying numerous species which can be used in the planting of the new cacti and succulent house, for example Crassula plegmatoides and Senecio haworthii. Identified from the trip to University of Potsdam Botanical Gardens, Begonia 'Tiki Jade' and Begonia 'Tiger Paws' would be a great addition to our displays and enhance the use of different foliage colours. Along with utilising our half-hardy collection and space available in the Orangery will help create a Mediterranean feel and have a variety of plants on display.

This visit has helped me to improve my plant identification skills out with the comfort of a Culzean setting. This therefore sets me in good stead for visiting and potentially working in future gardens.

In conclusion this trip has been a wonderful experience and has boosted my confidence as a propagator and person enormously and I will be eternally grateful.

Gallery

Echinocactus grusonii

Pachystachys spicata

Crinum purpurascens

Peperomia griseoargentea

Rhododendron simsii 'Inga'

Coelogyne cristata

Kohleria digitaliflora

Piper ornatum

Cacti House University of Potsdam BG

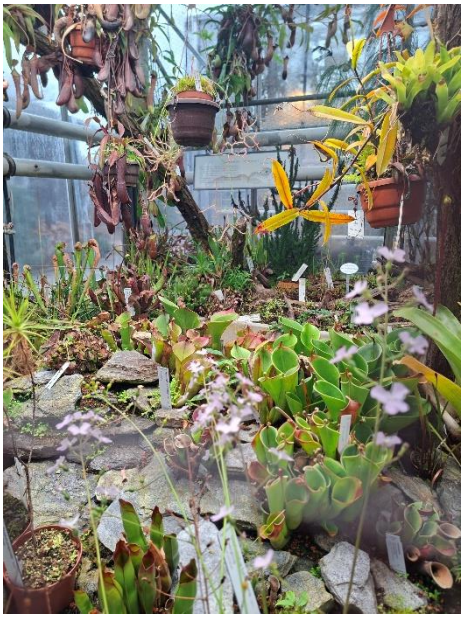
Fern house University of Potsdam BG

Cynbidium hybride

Orchid House University of Potsdam BG

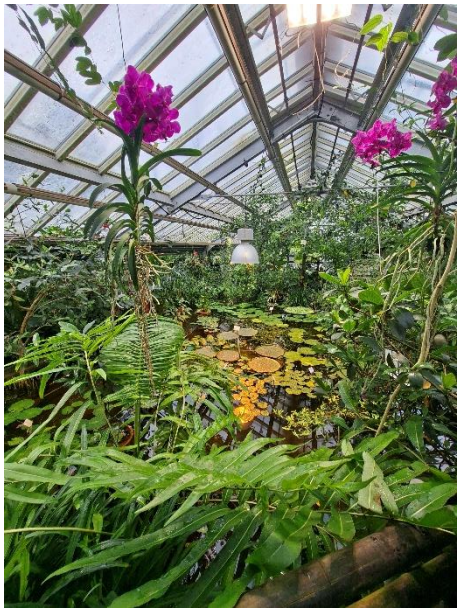
Begonia Rex Hybrid

Flowers of Begonia hydrocotylifolia



Carniverous House University of Potsdam BG

Brillantaisia soyauxii



Victoria House University of Potsdam BG

Cleistocactus samaipatanus

References

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2. University of Potsdam Botanical Garden, 2026. Available at Botanical Garden of the University of Potsdam - University of Potsdam
3. University of Potsdam Botanical Garden, 2026. Greenhouses. Available at Greenhouses - Our Garden - Botanical Garden of the University of Potsdam - University of Potsdam
4. SPSG, 2026. Available at Schloss Sanssouci - Refugium auf dem Weinberg | SPSG
5. SPSG, 2026. Palaces and Gardens. Available at Palaces and Gardens | SPSG

Appendix 1

Cost Breakdown

Item	Cost
Flights	155.82
Hotel	343
Atol Fee (booked as a package)	2.5
Petrol	26
Visitor Tax	16.26
Total Costs	£543.58

The Merlin Trust

Item	Cost
Berlin Botanical Entrance Fee for 2 days	20
Train Ticket to Airport (Saturday)	5
Berlin Travel Card 5 days	48.22
Total Costs	£73.22

NTS Funded