

An investigation into how gardens of North East USA manage their plant collections in relation to display, conservation and public engagement. How is this interpreted in order to promote community involvement and appreciation of horticulture in its widest sense?

I have always wanted to go to America, things that went on there has always fired my imagination. In relation to horticulture it was when I first heard about the dystopian city of Detroit and how it was growing and community projects that was bringing that city back out of the darkness when the car industry collapsed. It has always seemed that the historical new world and pioneer attitude there has brought about bold ventures and experimentation in all sorts of areas.

It was training at Great Dixter gardens and their close relation with America and their scholarship for North American students that gave me an awareness of grand gardens like Longwood, Chanticleer, the Highline, the work of Piet Oudolf, community gardens of New York, Wavehill, that the East Coast was a rich hubbub of American historical gardens, which increased my desire to see that part of the world even more.

So when I started the Wisley Diploma, and Longwood trainees came to visit and did a short presentation on their garden, and that the Wisley trainees were equally excited and wondered why we don't do a similar trip the other way round, I took advantage of the pro-activity of our year group, and took part in the instigation and process of sourcing funds for an ambitious group trip to the East Coast of America.

There were other shared reasons for wanting to go to America, as stated in my application:

*To further my understanding of temperate plant collections and North American native flora. I am also interested in how this knowledge is translated to the public and what is being done to involve the community in conservation of their flora and involvement in horticultural projects.*

*North East USA shares a similar climate to the South East of England, and therefore plants that grow there can generally be seen to be of a suitable constitution to those that can be grown here, i.e. hardiness. For this reason I would like to investigate the types of plants they are growing and increase my own knowledge of the range of plants potentially suitable for our climate.*

*With an ever greater shift towards public and professional education within horticulture, many if not all of the gardens I plan on visiting share the same objective of not only being a destination for great horticultural skill, display and plantsmanship, but also in the necessity of educating the public in the floral kingdom in its widest sense. This encapsulates sustainability, the need for conservation (plants and heritage), community gardening as a means of bringing people together (ethno botany) and educating children to look after our planet and the importance of plants and local flora. How is educating the professional sector, e.g. students, different from here, and are they focussing more towards the plant world as a whole and public engagement, or is the focus still solely on the practice, art, science and skill of horticulture?*

Everything worked on our side. Seeing the keen and seriousness of intent from

the students, Colin Crosbie the curator of Wisley was instantly supportive, Doug Needham the Head of Education at Longwood kindly took time out from his busy schedule when visiting the UK to meet us, advise us on our itinerary and getting the most out of the trip as well as generously helping us make connections with the gardens we were interested in. Before long we had an exciting and extensive itinerary where tours and programmes were offered in each garden, and thanks to the funding of the Merlin Trust, Wisley and the RHS we were able to make the trip a reality.

### **America**

We landed at New York Newark Airport on Saturday 2nd May 2015 after an 8 hour sleepless flight. As it was late afternoon our first stop was to collect our hire cars, go straight to Philadelphia and to the hotel we were going to be based from for the week. It was a day to try and get over some of our jet lag, assimilate that we were there in the US and all things American. As we came out of the industrial outskirts of New York and entered the green Brandywine region, the highways were lined with tall, thin and lofty trees, *Cornus florida* in flower and purple *Wisteria* clambering rampantly at great heights. Spring had come early in Surrey and was in full swing, here spring had just begun. There was an unique sensation that two different times had overlapped, and jetlag must be one of the those rare moments where you physically feel you are concurrently in two different time zones at the same time. The weather was fine, we had hit the East Coast with perfect timing for its spring ephemerals.

### **3rd May 2015 - Morris Arboretum**

The first place on our itinerary was Morris Arboretum, part of the University of Pennsylvania. It was formerly known as 'Compton' and started by the Quaker Morris family in the late 1800s, as well an educational space, its intention was to serve as an escape place to the dirty, polluted environment of the urban. I am not usually interested in arboretums and my perception of them are a collection of trees randomly juxtaposed, sometimes in a theme in one area, but Morris was different and was set out like a garden. One of the first things we noticed was the curving driveway uphill intaking flowering magnolias and the view below. Barry Jefferies was our guide and at the front entrance there was an instant dell filled with Virginian bluebells - *Mertensia virginiana* making interesting combinations with plants like emerging wild asparagus. We got the first sense of the distinctive palette of plants that they like to use here, plants native to the country like *Fothergilla major* and *Halesia carolina*/ *H. diptera*, *Lindera sp.* of which there are three native species in N. America like *L. benzoin* is like the equivalent of the European beech *Fagus sylvatica*, and their cultural fondness for plants like lilacs and lagerstroemia.

Characteristic of the garden as a whole was the presence of water from the Wissahickon Creek and the use of the special Wissahickon schist - a steely grey

glittery stone. One of the things that struck me was how they let wildflowers run freely in the walking grass areas, although it would be the first of most of the gardens, that I was assured that the lesser celandine *Ranunculus ficaria* was much of a weedy problem. Porous pavement paths that they were very proud of meandered a circuit around the garden. Their woodland perennials looked immaculate, perfect *Epimedium* and *Hosta* leaves - their winters are too cold and the climate is not as wet as ours to have the same slug and snail problems.



**Figure 1** Wissahickon rock and creek

There was a tree top walkway with netted areas so that children could feel suspended over the canopy (see Fig. 2 overleaf)



**Figure 2** Underneath the treetop walkway

Floodplain areas where trees like the beautifully rugged bark Chinese Toon *Cedrela sinensis*, that can take having their feet stand in water for a short period of time were planted. There were many ornamental features including more formal garden areas like woven sculpture houses by an artist, the Rose Garden and Japanese Garden - there is a strong Japanese, British and American connection here probably because the great world fairs took place in these countries (in America it was in Philadelphia), and these features stem from manuals of How To Create A Japanese Garden and How To Create An English Garden.



**Figure 3:** Water through the path in the Japanese Garden

My favourite sections were the Japanese Hill Garden where I have seen the best use ever of *Lamprocapnos spectabilis* trailing over the pathways, first in a teasing way then in great abundance as you get to the top of the hill (see Fig. 4 overleaf)



**Figure 4** *Lamprocapnos spectabilis* hanging over the path

And the Fernery was the best I have ever seen using the glittering rock of the Wissahickon Creek as the foundations (see Fig. 5 overleaf).



**Figure 5** Fernery

There were beautiful specimen trees including native oaks like *Quercus montana* and *Quercus alba* (the states have about 58 species), their native redbud tree *Cercis canadensis* (Fig. 6, pg 9) which was flowering now, the best group planting of *Metasequoia glyptostroboides* (Fig. 7, pg 10) we had ever seen (which for them is fast growing and grows 3ft a year), and huge specimens - the biggest we have ever seen of trees like *Pinus bungeana* aka the Tree of Enlightenment and *Cercidiphyllum japonica*. It would be the first and not the last we came across the Western Hemlock tree *Tsuga heterophylla* troubled and slowly killed by the woolly adelgids - an insect related to aphids that feed on the sap and suck out the nutrients of the tree. They are a foreign invasion that started appearing in Eastern U.S. in the 1950s. There is a strong connection between N. American tree associations and China here, and they have a full time Chinese propagator, growing exciting trees like *Corylus fargesii* which they deem as the next best street tree. There is generally a good feeling of cohesion, this is probably down to the fact that there has been a good continuity of head gardeners.



**Figure 6** *Cercis canadensis* in flower



**Figure 7** Group planting of *Metasequoia glyptostroboides*. Weaved sculptures in the background.

On the edge of the arboretum near the front there was also a more wild area - a wetland where many interesting wildlife could be sighted including terrapins and geese.

#### **4th - 5th May Longwood - Inspiring through education**

Longwood being the main impetus of our trip was one of our centre focus gardens. It is a huge epic pleasure and display show garden, with big floral exhibits and extravagant plantings that barely take root and then they are changed again. As well as aiming to display the art of horticulture at the highest level, they are strongly a space/ venue for performances and has a strong emphasis and focus on education. Like the RHS they have a big push to 'improve the public perception of horticulture' and to produce a culture of well-educated and well-trained horticulturists. This is due to the legacy of Pierre S. du Pont, a philanthropist who descended from a french family who made their riches in America from gunpowder manufacturing in the 1800s. He originally bought the land that Longwood is on as a conservation project as it was formerly called Peirce's Park and included an arboretum and a farm. It became his home, and a place where he would host parties and events and entertain his friends and

family.

The Professional Gardeners programme there is very similar to the Wisley and Kew Diploma, so it was of much interest to us to see how that was ran and how it compared. As part of our visit we had the opportunity to work with the trainees, helping them with their show gardens and we gave a talk on the RHS, Wisley and our own training programme during one of their brown bag lunch lectures.



**Figure 8** Front entrance, balls over *Nemesia* sp.

The entrance to Longwood speaks for itself, where instantly you are met with an impeccable horticultural display. Tall upright foxgloves like soldiers flanked the opening of the car park on either side and perfect yellow balls of *Nemesia* (Fig. 8 above) stood outside the visitor centre. The garden as a whole is 1077 acres. When we were there, they were in the middle of an enormous \$90 million fountain restoration project (see Fig. 9 overleaf).



**Figure 9** Construction of the new Main Fountain Garden

This has always been one of the big features at Longwood as Pierre was fascinated with them (see Fig .10 overleaf)



**Figure 10** The Italian Water Garden - the first fountain

There was their seasonal 56,000 tulips display and their 4 acre display glasshouses & conservatories are a continuous spectacle.



**Figure 11** Inside the Conservatory

Their big seasonal displays begins with an orchid extravaganza, a summer spectacle festival that features their famous victoria lily *Victoria* 'Longwood', a hybrid of *V. amazonica* and *V. cruziana* to their Chrysanthemum festival that features their Thousand Bloom Mum, which involves that many grafts onto a rootstock and takes 18 months to create, the Japanese lady who takes care of this this has only just recently surpassed her master of the amount the blooms she can graft onto one (Fig 13, pg 15).



**Figure 12** Waterlilies grown in tanks



**Figure 13** Grafting of the thousand bloom mum

I was personally particularly interested in their 86 acre meadow garden, where they had moved a highway (route 52, a road that Pierre once got built to get to his mansion anyway) to make the area more complete, clever mounded areas were created around the area to buffer the sound from the road. It is an enhanced meadow, rather than a restoration. It consists of warm and cool season grasses and wildflowers - many plugs of local area plants has been installed into it. It is always of interest to me how meadows in contemporary times are managed, as they have become more ornamental features and less part of a cycle or a whole system (e.g. grazing). Here they cut it with 20ft flail cutters as opposed to burning it which the Native American Indians did, which isn't practical now because of laws and it it being too big for it to be able to be managed safely. In the surrounding area - Kennett Square they still do burning for managing small ornamental grass areas. It is also a hotbed for wildlife and there is a lot of work in growing plants to attract the type of animal they would like to draw to the area, like field sparrows, redwing blackbirds and red hawks/ turkey vultures. There was so much to learn about the different layers and what a land managed like this can offer ecologically as well as aesthetically. As part of it they had a lovely information centre using herbarium pieces to demonstrate the different flora there.



**Figure 14** The Meadow Garden out of season

They take their work very seriously here, planthunting trips are funded to bring back new and interesting plants of ornamental value, lab work and micro-prop are done on their important plants like chrysanthemums which can be prone to disease, plant trials and research, for example looking into trying to find a blight resistant boxwood or 'non-visible' blight cultivars e.g. *Buxus microphylla* var. *japonica* 'Green Dragon'. Nothing is left to chance that could affect or jeopardise displays, they even have a department dedicated to integrated pest management. There is a strong drive towards sustainability and being able to still make a big impact, including having a 1.5 million watt solar field.

The student programme there is also two years, they also live on site and have accommodation provided for them with facilities like their own glasshouse for their trainee or own projects/ interests and one of my favourite aspects, their own growing space to play around with, and it was great to see people's personalities and individuality through these. More like Kew - they do so many months of practical work and training and then an academic block with lectures on areas like soil science, introduction to landscape design and business management. One of the best features in the programme is that they learn about garden design

and construction and then get to practice what they've learnt and are given support and funds to create their own show gardens for display in the main garden at the end of it.



**Figure 15** Working with PG trainees Adam and Nick on their show garden

### **6th May Mount Cuba Center**

Mount Cuba in Delaware was probably one my favourite gardens, it belonged to Lammot du Pont Copeland family, Mrs Lammot du Pont Copeland took a strong interest in conservation when they started noticing a strong changing land ethic around them and created a garden that primarily uses and promotes the use of native plants. It was probably one of the most exemplary woodland gardens at its peak that we saw there whilst we were there and representative of most of the spring woodland ephemerals used and that grew naturally there.

When you first enter the garden from the back of the house, there is initially a small formal section, where there was there was the most lollipop display I have ever seen of tulips around a striking blue pool (see Fig 16, pg 20) and a lilac allee.



**Figure 16** The formal part of the garden Mt Cuba



**Figure 17** Tulip display in formal section at Mt Cuba

But soon after you enter into the woods and what felt like the real garden, a mantle of contrivedness drops away. The trees that they aptly call their cathedral of trees (which would not be the first time we hear this description used for their tall towering trees that consisted of *Liriodendron tulipifera* - the tallest specimens that we have seen and ever imagined them to grow) and other native trees like white chestnut, just had their new spring leaves on and still made a light canopy that created the most perfect dappled light for their abundant groundcover flora that flowed and thread through the feet of these giants and in clearings and glades and for the small early flowering shrubs underneath that delicately lit up areas.



**Figure 18** A cathedral of trees

Upon closer look and the way the plants sit together just so, it was like the place had been tweaked by tweezers (Fig 18, pg 23), but maybe it was because the subtle palette of plants being all species plants and mainly native to the Piedmont region of the Eastern US, that made it feel very harmonious, tranquil and at one with its environment. It is the most sophisticated way of gardening I have ever experienced.

Water again played a presence here, where streams met and culminated into four ponds at the bottom of a valley, it was like a magical fairytale land (Fig. 17, pg 22)



**Figure 19** Streams at the bottom of a valley at Mt Cuba



**Figure 20** A perfect tree circle, it is as though the garden has been tweaked by tweezers

It would be the garden that I would be most excited about the plants. *Phlox stolonifera*, *P. divericata*, *Polemonium reptans*, low lying *Iris cristata*, *Podophyllum peltatum*, *Claytonia virginica*, *Geranium maculatum* and *Tiarella cordifolia* that spread and ran into each other, and punctuated moments of the gentlest & light but prominent sprays of *Mitella diphylla*, *Orontium aquaticum* perched upon the water surface, *Helonias bullata*, the punchy foliage of *Diphylleia cymosa* a momentary hotness of *Zizia aurea* and *Aquilegia canadensis*, and the bold purple of *Delphinium tricorne*. It was a feast for the eyes many of which I would be introduced for the first time and not necessarily what I would associate with America flora, like the delights of the simpler forms of rhododendrons *R. vaseyi* and *R. periclymenoides* with its honeysuckle like flowers. It was like a soothing book list of books you would like to read, seeing the best use of them gave me ideas and potential for their uses or jolted thoughts about plants that would be more suitable in our own environment and climate and offer a similar effect. There were also the more exotic fares that grew easily and freely there. Plants that I have wondered about the point of their appeal as in order to grow them successfully in the U.K they have had to be more coveted like *Arisaema triphyllum*, trilliums, *Dodecatheon meadia*, the allspice bush *Calycanthus floridus* and *Asima triloba* (paw paw).



**Figure 21**



**Figure 22** Trilliums, *Polemonium reptans*, *Tiarella cordifolia*, *Mertensia virginiana* and *Aquilegia canadensis*

The only darkness that disturbed this peaceful idyll was the unpredictability of the weather, where warmer weathers were anticipated from climate change, longer, colder winters have occurred, and this year it had been particularly long and cold, killing plants like their *x Gordlinia grandiflora*, makes it hard to know what to do for future planting and how to approach and manage the garden, an issue shared across the country and the world all over. Also an asian earthworm is causing a problem, they only leave worm casts and is changing the soil structure as well as the PH to 8 (alot of their woodland flora needs a more acidic soil). For this they are trying an different kinds of mulches to see if this can help keep them at bay.

An interesting thing that they do there is that they do their own plant trials of particularly genus they use in the garden. The assessments & judging of the plants are done in house, using a simple 1 - 5 scale marking system. They are checked every week and are condoned generally for a period of three years. They put updates on their website and then produce a report at the end of it which is given and sent out for free to visitors, different institutions, organisations, businesses and people who are interested. Chicago Botanic Garden do similar trials and on the ones that overlap it is interesting that the top and lower end

scale of the plants are often similar whilst the scale in the middle can vary quite a bit. Whilst we were there they were doing a trial on Baptisias (Fig 23, below), Phloxes, Monarda, Amsonias, native clematis (vit 1 types - most species are from East U.S.A) and native bulbs.



**Figure 23** Plant trials of *Baptisia*

Outside of the main garden they have 100s of acres of land outside that they manage quite differently, some of this is rural farmland with meadows (there is a 3 acres warm season meadow in the garden proper) and there are forests and shrubland. The wilder areas is a more hostile environment, walking through them would almost guarantee you to be bitten by ticks, a battle ensues between the rangers defending the land from an overwhelming population of eastern white tailed deers, fighting noxious and invasive weeds like *Lonicera japonica*, whilst trying to restore & conserve characteristics of the regional landscape, natural habitats for desired wildlife including a 50 year reforestation project, reforesting 6 different parts in 6 different ways (Delaware use to be 100% forested and is now only 30% forested), beauty here has to be perceived differently. But it is this thin line between the naturalistic and nature, aesthetics and ecology at Mount Cuba that is of much interest to me.



**Figure 24** The natural landscape areas

We had the opportunity to speak to and ask questions to a panel including the director Jeffrey A. Downing. It is still a fairly new public garden - it started in 1930, becoming a botanic garden in a private estate that allowed limited tours in the 1980s and professionals to visit, but it was only in 2001 when it officially became a public garden, the family is still much invested in it and it is still at the beginning of where it wants to go and uncertain to what direction it wants to go in, though the potential of it can be seen. Education will underpin what it does, as the intention of the place is outlined by Mrs Lamot du Pont Copeland line:

*'I want this to be a place where people will learn to appreciate our native plants and to see how these plants can enrich their lives so that they, in turn will become conservators of our natural habitats.'*

They are comfortable with the amount of visitors (just over 10,000 p/a, around 3000 of these attends their wildflower weekend in April, they broke the record this year), which is good for a garden like this as it is the intimacy and quietness that makes it special. There is a good endowment left to the centre so they do not have the pressure of having to raise visitors numbers or rush any decisions because of financial constraints. It feels that Mt Cuba is well placed and it is at

the tip of the tongue but not quite able to be vocalised yet what it is able to offer, but possibly has the potential to be revolutionary for the future.

### **7th May The Laurels Preserve and Winterthur**

Very early one morning me and fellow trainee Robert Bradshaw decided to take a quick jaunt to a nature reserve called The Laurels Preserve not so far away. There had not been room on our itinerary to see more plants out in the wild, but we really felt the urge for even just a glimpse of the natural landscape. It proved worthwhile and in the short trek that we did, we saw close up wild *Cornus florida* in flower, *Rhododendron vaseyi* in bud, a carpet of *Podophyllum peltatum* (Fig. 25), *Erythronium americanum* and *Arisaema sp.* (Fig. 26) and also getting a better idea of the natural rock & land formations. There is nothing so exhilarating as seeing plants in the wild little or not tampered with or even in a ditch to see what colonises an area and grows unassumingly, lending a deeper understanding of it's use in the garden context.



**Figure 25** A carpet of *Podophyllum peltatum*



**Figure 26** *Arisaema sp.* in the wild

#### Winterthur

After seeing the epic garden of Mt Cuba and so many features of interest I did not think I could not conceive that I would be any more impressed than I have been, but every garden we continued to see thereafter had something unique and different to offer that was almost amazing that added to our experience. Winterthur was a very different beast, it was more traditional, more established as a public garden (it had a visitor centre from 1960) also from a legacy of a strong endowment. It was the garden of Henry Francis du Pont (1880-1969), who turned out to be one of the eccentrics of the du Pont dynasty, who turned his house into a museum even whilst he was alive and living there and created a world particularly his house where he could indulge in his obsessions and compulsions. The place would also be a model farm for the gentleman farmer, which would provide much of the food for the family even when they were away.



**Figure 27** The museum house of the Henry Francis du Pont, the floral arrangements were important and had to match the furniture and the furnishings

The garden itself was inspired by William Robinson, and one of its most prominent features is again large trees of the forest came right up to the house from all sides, even through the formal garden, in which there was also one of the best *Davidia involucrata* trees I have ever seen and also reminded me of being a tree of interest in Robinson's own garden Gravetye back in the U.K. I wondered if this was a coincidence or if there was a link. What that place had was age, we were again in perfect timing with their 8 acres royal kurume azalea display (the garden is around 100 acres altogether), some of the first that were brought into the country and are 60 - 70 years old. The azaleas were bright and colourful and except for some gradation were more or less kept at the same height around 5 - 6ft, and are pruned at different stages at different years.



**Figure 28** The Azalea Woods, Winterthur

Where in Mt Cuba the groundcover had a sense of control, here underneath the feet of the azaleas through years of self sown accumulation a multitude of flora grew with riotous abandonment again *Phlox divaricata*, *Polemonium reptans*, trilliums, lilac *Anemone apennina* (not commercially available in the US and ferns like *Onoclea sensibilis* (sensitive fern).



**Figure 29** Trilliums grow with abandon underneath the azaleas

Successional waves that starts with *Chionodoxa* and *Scilla*, then *Mertensia virginiana* for two weeks and then hostas take over. There are once a week paths where a different azalea comes into flower, small and wide paths run through the grove. The azaleas are not named but numbered, and defined by their flower types - single and hose in hose. In later years, the RHS colour chart has been used to help identify the different cultivars. Henry Francis du Pont had a lot to do with setting up this garden as he was head gardener and was known to be seen out of the window doing his thing to music being belted outside from ahead of it's time outdoor speakers. As he orchestrated his floral displays and crockery tightly in his household, it was not unknown for him to move plants in flower to perfect the scene.

Some of the other impressive scenes of accumulation were the quarry governed by chandelier type primulas (Fig 29, pg 33) and the 100 years amassed vale of *Matteuccia struthiopteris* (this area is apparently cut, cleared and mulched before the snowdrops come out) - one of the few moments where monoculture works (Fig 30, pg 34).



**Figure 30** The Quarry Garden, Winterthur



**Figure 31** 100 year old vale of *Matteucia struthiopsis*

Another highlight was their incredibly sophisticated and enchanting children's garden (see Fig. 32 overleaf), that consisted of a thatched stone cottage with beautiful wooden furniture, a giant weaved nest with wooden eggs, trees and rocks with suggestive shapes, a mini roman coliseum surrounded by trees and shrubs and mushroom sculptures that blew out mysterious mist. Even around the children's garden the planting was immaculate.



**Figure 32** Enchanted Woods - the children garden, Winterthur

### **8th May 2015 Chanticleer**

Chanticleer was one of the gardens I had most looked forward to seeing, being renowned as one of the best ornamental gardens in the world and where the gardeners are the creatives and uniquely the head & designers of their own sections, but overseen by Bill Thomas Executive Director and Head Gardener, who keeps the unity of the garden as a whole. It is a very generous approach and for a gardener who wants to be creative but hands on, it was a curiosity to witness how this could work. We had the ideal opportunity to do this as we were invited to help out the gardeners for the day.



**Figure 33** Chanticleer

The placement of every plant, path, stone, blade of grass felt like it had been considered and almost scarily so. Pots, borders, beds were perfectly, cleverly arranged and composed, sometimes to sublime effect. It made you aware of the minutiae, everything as separate elements as well the macro. When you have such a heightened awareness of everything, when it works it is almost seamless, but if there are any imperfection or flaws they really stand out. But one has to give the gardeners merit for their bravery to take risks, play and experiment, as it was obvious from the offset that this wasn't your average garden, rare cultivars, unusual plant combinations, creativity and high artisanship was strongly prevalent as soon as you walk through the entrance.



**Figure 34** Pot displays at Chanticleer

It's a pleasure garden but I was surprised to hear that it was also a demonstration garden, showing what people have or can do in their own gardens but demonstrated at the highest level of course. Even if visitors didn't have such high skill sets, I thought that maybe they could still be encouraged to be more imaginative and use a wider range of plants and different techniques. Or if they have money be philanthropists for more creativity and interesting gardens and help create interesting avenues for talented gardeners out there.

The house and gardens belonged to the Rosengartens, and are modest compared to some of the grand estates we have seen so far. The garden has been gardened like this since 1990 and there are 7 gardeners in total plus 5 - 7 assistant horticulturist who rotate around the areas. Many gardeners had almost signature plants that helped them underpin and meld the section together more, either it be the red foliage of *Penstemon digitalis* 'Husker's Red' or the yellow grass of *Nasella tenuissima*. The areas can't help but become personal to the gardeners, and it is intriguing that in recent years Chanticleer shook things up by changing people around and putting them in different areas. Their staffroom is set in a house and is just like someone's home, break times and meetings are a lively affair, this was very indicative of how it operated here. It is also another

garden that also has a strong leaning towards learning for visitors and for their staff, where professional development opportunities are supported and encouraged. They like Longwood are striving towards a more sustainable practice but without compromising the wow factor of their displays.



**Figure 35** The front porch of the house, Chanticleer

Whilst we were there, there was construction going on to build an elevated walkway because the garden has different contours and levels, some areas being quite steep. As well as making areas more accessible to disabled people, you can't help but feel that they would be doing it their own way and make it into an interesting feature. There was also craftsmanship in their garden furniture and hard landscaping, with their own facilities and resources like a metal workshop, many of were made in-house (see Fig 36 & 37 on next two pages).



**Figure 36** Iron hand rail made in-house



**Figure 37** Stone work at Chanticleer

One of the many effective features was walking through Minder Woods with *Pieris japonica* flowers overhanging onto the path (see Fig 38, overleaf), which looked like they have been pruned so the flowers faced and arched perfectly to give a veiled view which then suddenly gives way to reveal an impressive ruin.



**Figure 38** A veil of *Pieris japonica* flowers

It's the sort of garden that makes you appreciative of plants that you might not have before. A good example were these *Acer negundo* 'Kelly's Gold' in pots, a Canadian visitor commented that how back at home these were weeds but seen like this with everlasting sweetpeas trailing on dead vines behind it and underplanted with oxalis and nemesias made him appreciate them differently. And it is the type of place that make features out of what is usually perceived as weeds and see the potential in them. I was heartened to see *Senecio aurea* which was deemed as a weed at Mount Cuba purposely used here to brighten up an area under some shrubs. All plants are given a chance and the foliage of vegetables are characteristically used in equal value to more conventional ornamental plants. In this respect Chanticleer and Great Dixter are very similar.

Their take on of a ruin was manicured and slick, and looked like it could be lifted and placed straight into a style magazine (see Fig 39). It was the first time we had seen a snake bark maple espaliered against a wall. It reminded me that one thing the British did do well is untidy and rough around the edges that has its own romantic charm. This is also a garden where even if you don't like elements of it you can still admire the quality and skill put into it.



**Figure 39** The Ruin, Chanticleer

My favourite sections were the Gravel Gardens (see Fig. 40 overleaf) and Asian Woods - another exemplary woodland garden example, where amazing fluffly banks of *Equisetum sp.* (Fig. 41, pg 44) ran along the edge of the creek (again the presence of water - particularly cooling on a hot day) and the woods, and made me wonder if it had already been growing there and that they had chosen to work with it or if they purposely planted it. It showed me that a garden can have a plant collection and look good. There were so many curiosities in this section - *Cypridium japonica*, *Calanthe takane*, rare arisaema and trillium cultivars, which were cleverly presented, so that they didn't get lost in the lush green understorey for e.g. planting rarities close or creeping them over the edge of the path, subtly defined and protected by a low bamboo fence.



**Figure 40** The Gravel Gardens, Chanticleer



**Figure 41** Asian Woods, Chanticleer



**Figure 42** *Equisetum sp.*, Chanticleer

The garden as a whole has the feel of someones private garden, there are still family members on the board. One of the nice things that they do is have a picnic night on Fridays, which is a great way to engage visitors and enable them to see and enjoy the garden at one of the best times in the day.

**9th May 2015 Scott Arboretum**

Scott Arboretum was also another arboretum with a difference. It is part of Swathmore College founded by Quakers.



**Figure 43** Scott Arboretum



**Figure 44** Black board wall, Scott Arboretum

There are 1400 students here and they are the 10 percentile. It had traditional plant collections like lilacs and peonies, but also green roofs and bioswales, native flora is widely used in plantings and is experimenting with growing different types of native grasses as lawn alternatives like different kinds of carex.



**Figure 45** Using native plants, *Zizia aurea* around hydrant

The most interesting aspect of this garden is how it goes about integrating horticulture into the lives of the students, by just the surroundings, by giving them a houseplant to look after when they first join, they can optionally help plant a tree whilst they are there, then for their graduation it is customary for them to choose a rose from the rose garden and their graduation ceremony is held in a beautifully designed outdoor amphitheatre with stone terraces and grass surfaces, with the woods as the backdrop of the stage itself.



**Figure 46** Amphitheatre at Scott Arboretum



**Figure 47** Bioswale at Scott Arboretum. Plants like *Strobilus heptilus* can really uptake water.

#### Charles Cresson's House

Before we left Philadelphia we took a quick visit to a private house garden. Charles Cresson use to be a Wisley Diploma trainee (1977-78) and he loved Wisley Gardens so much, he created his own version of it in his back garden and invited us over whilst we were in the vicinity. Like a mini Battleston Hill his garden was filled with Rhododendrons and Azaleas. He took pride in showing us his personal triumphs like his cluster of *Cyprimum japonicum* (Fig 49, pg 52) which was the best plants of those we had seen. He even his own plant records, every plant whether dead or alive has its own index card.



**Figure 48** The house that Charles's father built in 1911 originally as a gentlemen's farm



**Figure 49** Charles's *Cypridium japonica*

My favourite thing of his was his innovation of using pre-portland cement that they use for pavements here to build his rock garden, using the upside down concrete bit as it was like tufa. These he had wheelbarrowed back to his garden bit by bit, when they were doing renovation nearby and were going to be thrown away.

His love of the gardens was so that for a scree area he changed the bed soil of clay to sand that he got from the bottom of a stream. His was the old style of gardening (e.g. trying to grow camellias in a chalk area), where you wanted something else so much whether or not it fits into your environment, that you would change your environment to meet the requirements. This was emphasised by his attempt to grow Camellia in a climate that is just too cold in winter to do so, but the grand finale ended with him showing us a Camellia he had succeeded in growing - *C. oleifera* 'Lu Shan Show'.



**Figure 50** Charles's rock garden

### **New York 10th - 16th May**

After the leafy greenness of the Brandywine region and adjacent areas, with their big gardens and estates and lots of rolling space, we went to the harsh grey gritty city of New York, here we would see that the horticulture worked very differently.

For our first day we were invited to a basic rooftop garden which gave us a chance to take in this intense city a bit from above. With all the talk about green roofs, rain gardens, a surge in the interest of rooftop & vertical growing in America and around the world, I was surprised to see that New York city was very grey.



**Figure 51** View of New York from a rooftop

### **Urban planting and community gardens**

We had one free day, so me and trainee Alison Legg decided to walk around certain parts of the city, we took in their more casual, utilitarian park spaces like a raucous park in Chinatown mainly frequented by the chinese community with a card gambling pavilion to boot (see Fig 52 overleaf).



**Figure 52** Chinese park

We observed the different types of urban planting going on and went to some of the community gardens in the East Village, stemmed from a legacy of a guerilla gardening movement that took place in the 1970s, who one of the key known figures is a lady called Nancy Spero. The gardens were very varied and in different states, some were almost a bit derelict and some were very well done and well maintained, providing a little haven and escape from the chaos of the city.



**Figure 53** One of the community gardens in the East Village

It made me realise that little spaces like these were incredibly vital in an environment like this. I stared and stared at a small garden at the back of a bookshop, the planting was incredibly simple, there was some roses, a hosta and some bulbs, but the lady who owned the space was incredibly proud that she had managed to make anything grow in this harsh environment, where the soil was thin, light was scarce (often obliterated out by tall buildings), the climate was unforgiving - harsh cold winters and hot humid summers, not to mention the pollution, and the lack of time of many city people for looking after a garden. Futile as some of the attempts may seem, they became important in their even little success.

Some of the community gardens were bigger, well organised affairs, with little amphitheatre spaces, ornamental sections and even chickens. On the plush side we went to see a community garden on the West Side who had just won the status of Land Trust Preservation (a process that community gardens can go through to protect the land that they're on for example from property developers trying to buy it up and kicking people out. This has been part of a social movement of helping maintain green spaces in the city in which Bette Midler the actress has been very active in). Here they were having a tulip festival where they had planted 15,000 bulbs.



**Figure 54** West Side Community Garden, New York

### **Wavehill**

Wavehill was a great garden to get to after the hustle and bustle of New York. On the outskirts out in the dramatic palisades cliff area along the Hudson River, it provided a get away as well as being close enough in proximity to easily reach from the city. The garden as a whole had traditional elements but had a stylishness about it too. It makes a point of being a public garden rather than a park to emphasise the focus on the planting of the plants, flowers and trees being carefully cultivated and arranged and is also about plant collections, and hence to perceived and treated so by visitors. As well as a garden it is also a cultural centre which holds exhibitions and art & performing arts related activities and events, and there is a strong responsibility on the Executive Director for them not to impose upon each other.



**Figure 55** *Wisteria floribunda* at Wave Hill

Some of the best bits of the garden was the views of the long and linear basalt cliffs across the river, and the city of New York in the distance. They had the most amazing alpine troughs and display that I have ever seen made of concrete (Fig 57, pg 60), and they had three main glass areas with quirky pot displays, one of alpines, one of tropical plants (see Fig 56 overleaf) and one with a great collection of cacti and succulents. They were set out like a collection but then mixed and matched and played around with to make interesting combinations also.



**Figure 56** Their tropical plant collection



**Figure 57** Their alpine troughs

The set up of alot of the gardens in New York are different to the endowment ran gardens of Philadelphia. Wave Hill is state owned though it has its own board of directors and private money going into it and the family is still involved. It is what they call a private public collaboration. 18% of their annual budget is from the government. To be a member of the board you have contribute \$25,000 dollars and be an active ambassador to the garden and there is a changeover every two years. There are 22 members and they are a diverse group. They need \$5.8 million to run the garden and centre, and money comes from all sorts of sources. A small percent is from earned income and even smaller from art commissions (2%), they do two big fundraisers per year including a plant auction (even selling whole trees), they do weddings (about 20 per year), this year they will have a big gala for being 50 years a public garden. General membership is \$50 per year, they have 3300 members. They work on the basis of being nationally distinctive and are part of the Cultural Institutions Group which 30 gardens in New York are part of in total and they lobby as a group. They had great support from Michael Bloomberg who has been mayor for the last three terms but not sure yet where Devazzio the current mayor will stand in his support of gardens, green spaces and the art.

Their mission statement is 'Bringing people closer to nature', and their aim to do this is through art and education, by supporting emerging artists and doing education programmes with city school children.

### **New York Botanical Gardens**

NYBG use to be where the Rockefeller centre is and now it is in the Bronx  
The most interesting parts of NYBG for me was that it also ran a similar training programme to Kew and Wisley and in fact the Head of Education in recent years has been over to the UK to see how the schemes were ran in these institutions and at the Royal Botanic Garden of Edinburgh. One of the things they have adopted is for trainees to do an allotment for a year. Life for a NYBG trainee is hard though, the quality of training seems high, but they have to pay to do it (though not as expensive as some college/ university schemes \$7500 per year), they have to work still as part of for their practical training, and they have to find their own accommodation and pay for themselves to live in New York. Some students have to travel an hour each way to get to the gardens. It basically costs trainees about \$30,000 to do the programme and live in New York. They can get some support, they try and get a grant of \$6000 to pay towards the program and \$10,000 can be borrowed.



**Figure 58** New York Botanical Garden Conservatory

They are the third ranking botanic garden in the world, Kew being the first, Missouri the second. Tropical conservation and ethnobotany are their specialism, one of their big questions for example is looking at large immigrant Cuban and Vietnamese populations in the States who are using certain kinds of plants from their country of origin and putting them at risk, and how best to tackle this issue.

They also provide a plant information service and have a FAQ online.

The size of the gardens is 250 acres and 50 acres of that is the last remaining and original forests of New York before the city was built. It use to be the case that you can roam around freely in this area, but there are now formalised paths to protect the trees from compaction. The garden as a whole is quite grand and classical. one of the interesting areas for me was a designed area using native plants by Sheila Brady of the renowned American landscape architecture firm Oehme van Sweden. It was a good example like Swarthmore college of how it can be used effectively on an aesthetic as well as functional level in modern times.

They boast of having one of the world's largest Horticulture, Botany and Landscape Design libraries (all of these areas in one). In which they have a very hi-tech temperature controlled room that houses very special rare books and prints like the first edition of Charles Darwin's Origin of the Species and where we were partial to being shown a little of the amazing original prints of Bank's floriflegium of New Zealand flora. They also have an impressive herbarium that was started in the 1890s (125 years ago) and has 7 million specimens of algae, flora and fungi (except medicinal ones).



**Figure 59** Print from Bank's Floriflegium of New Zealand flora, New York Botanical Garden

The garden is more or less independent, it takes \$65.72 million to run and the state funds 22% of their budget. Their ticket price is \$25 but it is free every Wednesday.

### **The Highline**

The Highline was another must see space for me. It is a seductive and romantic tale, that an originally little known and frequented old rail line right in the middle of the city, becomes a haven for wildflowers and a secret refuge for the small percentile in the know. Then the threat of it being demolished and the Friends of the Highline being set up including local residents to save, conserve and develop the railway line to becoming one of the world's renowned and influential aerial greenway and rails to trails park and one of New York's top attractions, from September 2014 it has 5 million visitors per year.



**Figure 60** A hint of the original flora in the not yet fully developed section three of the Highline

The last train of the elevated trainline stopped in 1980 carrying a few cars of frozen turkey. It's repurposing as a urban park began in 2006, over a mile long work and the opening of it was done in three phases. They got Piet Oudolf on board to design it and the planting pays homage to the wild plants that had colonised there.

When we arrived it was like being in the midst of a big building site, the noise of the building work and construction was intense. The Highline had made the area highly attractive and popular. Bloomberg the mayor had changed crane lifting rights for property developers to be able to build around it.

The structure of the railway had two levels and Oudolf utilised both, using the lower layers to implement larger trees like *Magnolia macrophylla* and more woodland type shade planting and prairie planting in the more exposed areas of the top level. It was here that I really got an understanding of Oudolf's work, that it's very much about a flow especially in his later designs, as I walked along it I could see that the planting of things like amsonias, grasses and salvias had a rhythm and had to be view as a whole rather than in isolated sections, though as

the scenes changed around you, the planting would reflect the movement into different spaces also. Piet's design itself is flexible and will move where it needs to go, which is good that this is the case, because buildings get knocked down and buildings get erected creating new exposed spaces as well as shadowed ones. Being long and linear the highline was a constant change of different view, into the window of a school room, down a dark alley, industrial estates, the sea etc.



**Figure 61** The Highline



**Figure 62** Woodland based planting on the Highline

It is the most epic community project, it has instigated more green projects in the surrounding areas in response to it (including an ambitious new project called Pier 55, where a whole new floating pier and performance will be erected), but it has also caused the allure of 10s of thousands of housing to be built there and new skyscrapers have been erected here in the last five years. It is multi-faceted as well as being a horticultural revolution, it is an interesting social space, the residents have become tired of the amount of visitors that come to the park, but because of it's 'sexiness', it appeals to a diverse range of people, businessmen in suits, joggers, school children etc. all intermingle here. It is like the park is a beast that is moving beyond the hands of the founders.



**Figure 63** Good and bad - preservation of the view of the avenue where the 'Gangs of New York' was based



**Figure 64** Inspiring growing projects it

The plants have a tough time though, with all the traffic and limited space, the soil is very shallow (18" depth), so plants especially tree roots spread out horizontally which can undermine their stability. This year with the cold winter, trees have literally just died on the spot all around New York and it was present here too. When a whole structure has to be renovated all the tracks have to be taken up and the ballast stripped out, then a waterproof layer is put in and a special membrane that they use for green roofs that allows water to percolate but also be retained. If they are planting trees, the tree is put in first (some have anchoring systems), then the growing media consists of a thin layer of sand, a thicker layer of sub-soil, loam and then a layer of sandy loam on top. In terms of maintenance there is top dressing with organic matter (they have been trialing this this year). To control the size of the plants, they do dropped crotched pruning (especially to their cotinus), the roots are compromised in this setting, so when a plant is cut back like this, it doesn't come back to ready either. The gardeners who each attend to a particular zone have a tough job on their hands. Then there is a spray and drip irrigation.

It has a licensed agreement with city parks, New York contributes 10% towards their budget and looks after the capital costs, e.g. painting the railings. The operations cost is covered privately. Like Central Park and Wave Hill it follows the public and private model. It has ran a public art programme right from the beginning, including putting on performances and commissioning artwork.

### **Central Park**

After the Highline, it was interesting to go and see the first original park, which designed by Frederick Law Olmsted was also an innovation and an engineering feat of its time.



**Figure 65** A view of the city from Central Park

The main aim of this park was to help transport people from the city and at the time cleverly cut the eyeline of the buildings around it. Now it is at once enveloping the visitor as well as giving them a teasing view of the city.

### **Brooklyn Botanic Gardens**

Brooklyn Botanic was not as grand or as glamorous as NYBG but it was a very down to earth garden. The most interesting work for me that it does there is helping to support community gardens in which they gave us a tour around of a

couple that they have been involved with. It was great to meet the people themselves and tell us about their projects and how they have benefited from the support of the botanic garden.



**Figure 66** A community garden in Brooklyn, New York



**Figure 67** Watering saving system at Prospect Heights Community Farm, Brooklyn



**Figure 68** Ingenious soil sieve contraption at Prospect Heights Community Farm

They also run schemes like The Greenest Block in Brooklyn, a little like the RHS Britain in Bloom, Greening Grey Britain and It's Your Neighbourhood projects.

In the aftermath superstorm Sandy, they have been playing an active part in educating community gardens how to make their gardens more resilient and minimise damage, and how to deal with storms before and after. Including telling them about rain water harvesting, permeable paving, bioswales and rain gardens.

### **Brooklyn Grange Rooftop Garden**

We took the opportunity to take a glimpse at a rooftop farm whilst we there.



**Figure 69** Brooklyn Grange Rooftop Farm

We were led by Annie from 'Mompost' project (see Fig 69 overleaf) who told us about how business of encouraging people to do composting and teaching them how to etc. Unfortunately we didn't get a direct guide from the farmer itself, so we didn't get a chance to ask about the technicalities, e.g. how much weight a roof can take, irrigation etc.



**Figure 70** Annie from Mompost

### **Battery Park**

We also went to see a last public park at the end of the trip, one of the main interest about this park is seeing an example of Piet Oudolf's early design which was more in blocks rather than a matrix like at Highline. A big aim of the park was to educate, inspire and encourage the public to use perennials and native plants in their own gardens and to understand their environmental importance, again in the light of storm Sandy, which they were undergoing a lot renovation and new planting because of the damage it caused there.



**Figure 71** Battery Park

### **A brief summary**

I was very excited to see all the spring ephemerals and native plants. We use a lot more American plants in the U.K than I realised and there was the potentials of using plants from there that we don't use or use so commonly. I was impressed with the high level and quality of horticulture and the pioneering and experimental nature that I expected from them and wasn't disappointed. I loved how they embraced the use of native plants in their planting and design, which make so much sense to me on so many levels, in terms of practicality, aesthetics and conservation. Although the European native plant palette is not so diverse, I feel we can still take a few leaves from their books, and look at the potential of our own flora. It really peaked my interest in woodland gardens and I have brought these inspirations back and have applied them in thinking about how I would redesign the Wild Garden at Wisley which is going through a development and almost restoration stage. With the view that one day I will create and manage my own woodland area/ garden.

I gained more insight in the impact a community garden/ project can make, how

they can make a difference for people but even the small scale projects can contribute to the growing economics of an area.

It is always interesting to see how a garden is set up and what they try to do in terms of public engagement, there is still a focus on horticulture as a skill but all heads and attitude are in the right direction of keeping horticulture relevant to modern times and people. The big estates still serve as escapes, and what they do are contributing to a wider whole of the development of horticulture, but it was the city I looked to, as cities are where the main demographics of people are, so it was of particular interest to me to see how horticulture can exist in these places and how they tackled the problems.

There is a possibility that I might want to train more/ work in the States for a period, so it was interesting for me to see what training schemes/ opportunities were available, and to get a good sense of what American horticulture is all about and what's out there.

## Breakdown of final costs

<b>Travel</b>	
Air Fare	£553.16
Shuttle Bus to/from Airport	£19
Car hire vehicle contribution (cost divided between group)	80.00
Mileage: 916 miles @ 25p per mile / 8	£28.62
<b>Total Travel Costs</b>	<b>£680.78</b>
<b>Administration</b>	
Insurance @ £18.95 per person	£18.95
Visa @ £8.86 (\$14) per person	£8.86
Permits	£ N/A
<b>Total Administration Costs</b>	<b>£27.81</b>
<b>Accommodation</b>	
Accommodation	
Springfield, PA @ £30.81 pp/per night (7 nights)	215.67
Astoria, NY @ £31.64 pp/per night (7 nights)	221.48
Food/stores - £10 per person, per day for 14 days	£140.00
<b>Total Subsistence Costs</b>	<b>£577.15</b>
<b>TOTAL COSTS</b>	<b>1285.74</b>