



WORKSHOP REPORT

Taking gardens and landscape to a new level Palmstead Soft Landscape Workshop 2018

Palmstead Nurseries kicked off their 50th year in style with their biggest and most successful Soft Landscape Workshop to date on Wednesday 24th January, featuring some of the greatest names in horticulture.

Dan Pearson, Nigel Dunnett, Laura Gatti, Tim O'Hare, Nicola Spence, Alex Piddington-Bishop, Dr Louisa Boyer, Adam White and Andrée Davies were among the speakers on a day that focused on 'taking gardens and landscapes to a whole new level'. The important trend of greening podium spaces and landscapes over structures was discussed at length referencing important projects such as the Kings Cross redevelopment and the Barbican.

Our plants - your design

Nick Coslett, marketing manager at Palmstead Nurseries, welcomed 400 delegates to the tenth annual Palmstead Soft Landscape Workshop then spoke about the award-winning gardens that feature Palmstead plants including Marian Boswall's supreme award at the APL Awards and the triple award winning Zoflora Cauldwell Children's Wild Garden at RHS Hampton Court 2017, designed by Adam White and Andrée Davies.

Nick explained how Palmstead has gone from strength to strength and now in its 50th year is able to offer the kind of diversity and range that designers and landscape architects seek for landmark projects such as their supply for Beech Gardens, Barbican by Professor Nigel Dunnett.

Nick Coslett said: "The workshop marks the start of what will be a special year for us at Palmstead and we felt it was entirely fitting that we should have some of the best speakers currently working on some of the most exciting projects in our industry. Dan Pearson, Tim O'Hare, Laura Gatti and Nigel Dunnett are leaders in their field and today working on some of the most interesting projects."

Managing the Barbican: a case study by Professor Nigel Dunnett, Professor of Planting Design, Sheffield University

Nigel Dunnett's work has helped move the garden design and landscape world forward over the last decade thanks to his ground-breaking naturalistic plantings for large-scale projects such as the Queen Elizabeth Olympic Park with Professor James Hitchmough, his colleague at Sheffield University.

The duo have helped to underline the importance of designs that address climate change and a sustainable future while still delivering cosmetic appeal and function. His work has included bold and dramatic urban plantings; 'modern meadows'; Water-Sensitive Urban Design and SuDS applications; biodiversity-enhancing design; and green roofs and roof gardens.

His work on the Barbican Beech Gardens formed the focus of his talk at Palmstead's Soft Landscape Workshop. He said: "The Barbican is an icon. It was designed in its entirety by architects, there was no landscape architecture. At the time it was pioneering, forward-thinking, a modern, urban village where people could live. It was the largest arts complex in Europe; a



development with no cars where all car parking was found underground. All roads would go either underneath or around so that the spaces were there for people to use.

"The original landscape was minimalist, modernist in the extreme, and bleak. In the 1980s a new scheme was put in and the spaces were filled with planting; this layout from the 1980s was subsequently listed and protected so the new design we created had to work within that listed space.

"The Barbican is impressive and grows on you, I love brutalist 1970s architecture wherever I see it now, but, working with these sort of landscapes is very challenging. If we look at a photograph of the development you can see all the things happening below ground - there's a road running below, a gym, car parking etc. And although the topic today is 'podiums' it's

much more wide-scale than you'd imagine - the majority of landscape that you think of as 'on the ground' has something beneath it. The things we talk about today have widespread application - and the sort of plantings we will talk about will have huge application for sustainability."

Nigel went on to look at the plans he designed for the Barbican Beach Garden

"The opportunity to redesign the garden arose because the 1980s waterproofing's time was up - there was leaking below the gardens in to the arts complex and gym. It was decided that the only way to re-waterproof was to strip the landscape off, waterproof and start again.

"The existing Barbican landscape is still there. It consisted of the block planting of trees and shrubs with bright green lawns that acted as neat edges. The lawns had no function - they were too slim to sit on or sunbathe on. Without being derogatory; it was the typical municipal landscape. The beach gardens as they were put in in the 80s wouldn't pass building regulations today - structural engineers now have the veto on this and you couldn't put the trees and plants they had in there back in the structure today.

Buy-in

"We undertook a huge consultation with the residents. We were taking away their municipal landscape and proposing something radically different. Residents said they loved the trees and shrubs - which was unfortunate because we couldn't replace them. We spoke to them and asked them what they loved about the spring and summer bedding and the answers that came back were: they didn't want "dead or brown landscapes" and they loved the wildlife attracted by the trees and shrubs. When we talked further it became apparent that it wasn't the actual trees and shrubs they loved, but the thing they loved was the colour and the wildlife.

"We didn't want to create an industrial landscape - there's nothing worse than brutal landscape with brutal architecture combined. And, if we take the *scrub model* - a mix of perennials, euphorbias, berberis and shrub roses - you have a lovely model of naturalistic planting beyond just perennials.

"I took my inspiration from natural steppe grasslands found in dry climates; places with low rainfall, dry summers, cold winters, windy and exposed soils, you basically have a roof garden or high rise landscape.

Main design concepts:

- No automatic irrigation.
- Hand water in extreme dry periods only.
- 'Climate-change adapted'

- Diverse, naturalistic plantings, as a contrast (and complement) to the extreme architecture
- Dramatic flowering impact from spring to autumn with 'waves of colour' erupting across the whole site.
- Use of evergreen perennials, seed heads and strong forms of winter interest
- Overwhelming immersive experience of being in nature

"With the Barbican we had to think about:

- shade (some have shade all winter)
- micro climates
- partial shade
- sun zones
- half sun

and take that as the starting point to work out the different plant mixes for the different zones - it's a rich diverse mosaic, a jewel-box like mix of perennials and grasses.

"To achieve dramatic colour I used two or three plant species to make a big impression across the area - with lots of other plants waiting to come up over time, but at any one time there are just two or three plant species 'doing their thing'.

Some simple principles:

- up to 20 species in a mix
- 9-11 plants per square metre
- clump-forming species rather than spreaders
- limited soil fertility
- more later-flowering species, fewer early flowering species (reduces the amount of input to keep things going over time)
- short-lived quick flowering species vs longer-term slower developing species (it's dynamic and it changes and you don't have in year 1, 2 or 3 to what you have in year 6, 7 or 8 but a challenge in terms of maintenance thinking)
- planting area - two mixes going in - slightly deeper in the middle.
- 9.5 plants per square metre and bulbs going in on top of that.



“As you will hear later from Tim, the soil and substrate is important. It’s not actually soil, it’s mostly recycled, crushed brick with green waste compost and fine to give structure. We put this into the planting areas and up to the edges where the soil depth was a shallow 1cm. In the middle of the beds we were able to pile higher - you need a metre for big trees to grow but you can plant in 300mm with this substrate.

“I’m not a huge fan of random planting - there needs consideration of the plants that go together well with each other - it’s a more considered than completely random planting. I tend to mingle plants but then have more substantial plantings of a species to give an impression. I liken it to putting layers of paint on a painting and by doing one species of plant at a time I can see how it’s going to appear in that area. We work in layers; woody plants go in first then structural plants (euphorbias) then bulbs.

“I used one tulip last year - a multi headed red tulip that flowered for 4 - 6 weeks. I love the red and green combination in spring. The red tulips popped up throughout the whole of the planting providing a long display.

Steppe planting: with cowslips, sea thrift in these shallow depth plantings and my favourite grass - *Sesleria nitida* which stay on until winter. Mixing in shrubs *Amelanchier* (multi season multi stem shrubs) and the euphorbia - which is one of the longest performing and will still be looking great into June. In May the *Sesleria* and the *Alliums* start to come through along with *salvia caradonna*. We used a lot of *Alliums* (‘globe master’ and ‘purple emperor’), *Salvias*, *Sisyrinchium* and *Kniphofia* ‘green jade’. Towards the end of the summer; *Aster amellus*, *Echinops* then *Miscanthus* clumps or bigger groupings. Into the autumn and the winter we have the seed heads and the mix of evergreens, grasses and foliage makes it look as fresh in the winter, to me, as in the summer.

“All of these things are experimental and it’s been just as good, to me, to see the winter effect as the summer one.

Don’t panic!

“The more short lived plants are self seeders and good colonisers and this is something to work with - it’s something that you see a lot in the first few years when there’s more fertility in the soil but over time that fertility goes down (we don’t fertilise or compost) and that initial big explosion of seedlings reduces. I say; ‘don’t panic’ - there’s an ecological phenomenon called

'self-thinning'. There's a temptation to go in and weed them out, but actually over time they will thin themselves out and the dominant will survive. In the second year after planting we saw a lot of seeding but this past year there has been a lot less. Don't panic immediately - panic a bit later when you know you have to panic!"

Maintenance

"Maintaining an urban garden like this is very different so I did a training day with the garden team and we walked through what needed to be done. I've been going back regularly.

"Individual treatment of individual species is important you can go through the whole area taking down or pruning one species at a time. Rather than leaving all the perennials and grasses standing up we take the scruffy ones out at the start of winter, then you go in a bit later and take the next set out and so on.

"Successful maintenance comes down to training, and that's why I've kept such a strong interest in the project. Keeping the involvement is important because everything I do I see as learning - you learn all the time, and how to do it next time."

Nigel introduced Alex Piddington-Bishop from the City of London. Alex supervises garden maintenance in the City and is responsible for the Barbican.

Alex Piddington-Bishop, City of London gardens supervisor

"The City of London Corporation manages 11,000 hectares of open space, serving a population of 600,00 on a daily basis. We have a total of 30 operational staff and a resident population of 6,000 with many of the residents living in the Barbican estate.

"The Barbican has been an interesting project. Nigel's planting has reduced the need for watering by 70% and all the watering on site is done by hand. There are many positives about the design the self colonisation of plants within the substrate ensures continuous plant replenishment and no gapping. The self-seeding is marvelous, and we can take out what we don't need. Getting the planting medium and substrate correct to begin with was essential and this is the best planting substrate I've come across; it had to be very light for the roof structure and it's proved fantastic for drainage.

Increased skills

"The biggest job we undertake is weeding and cutting back spent foliage - we use 25 man hours a week with volunteers (this peaks in spring and summer).

"We needed to increase the staff skills and knowledge and also get the team to 'buy in' to the idea. Many members of the team had been in their post for a long time and voiced concerns

such as 'it's not going to work'. It has worked though, and we need to show the team the photographs that Nigel has taken so they can better appreciate the work they do.

To weed or not to weed?

"It's sometimes hard to explain to the team that they need to leave things sometimes - we have to keep an eye on some of the weeds that come in. We have experienced a really wet winter so we had to adjust the maintenance to suit - we couldn't leave things to rot.

"There's a lot of talk about perennial planting in urban landscapes and maintenance of these spaces. I've seen gardens in the Netherlands cut and shredded to smithereens but this wouldn't work on the Barbican estate.

"Nigel's constant interest in the project is good - it provides reassurance to the team. It's a constantly evolving process that needs tweaking and we will keep data and records for Nigel to aid further projects such as these.

Conclusion:— maintenance has reduced water by 70%

self colonisation of plants within substrate ensure continuous plant replenishment - no gapping

25 man hours of work every week, weeding, this is an increase

20 volunteer hours per week

total 45 hours peak in spring to autumn

increase by 25 man hours a week

increased staff skill and knowledge.



Why soils matter in podium landscapes

Tim O'Hare, the UK's leading soil consultant

Soil design has gathered momentum and has received serious focus over the last ten years thanks to the work of soil scientists like Tim O'Hare. His work on the Olympic Park saw him involved from the initial outline design through to completion as the principle designer for the soil systems. His practice was also responsible for testing all the imported soils, and monitored the construction of the landscape throughout the park.



“A podium landscape is anything that sits on a structure. When we think about the athletes village at the Olympic Park, the Shabas Park which sits on top of a multi-storey, the Jubilee Park at Canary Wharf the same principles apply. The unifying idea is: we are building on a slab with no natural drainage in an engineered environment; essentially we are trying to build a natural landscape on concrete.

“Spaces such as these sum up the value of urban landscapes with fantastic green spaces; they exist for social value, for SUDS, biodiversity and for wildlife.

When we think about designing these spaces we need to look at soil.

main soil considerations

- site constraints
- soil types
- soil profiles
- drainage provision
- membranes
- testing requirements

“Looking at the Barbican Beech project, the engineering of the soil had to work from day one, we tipped the soil in then we put plants in. In between these two events though we had different trades accessing and working through the landscaped area. Machinery may be stored on it and it may become a trafficking route for different trades before the plants arrive. It's essential to get it right at this part of the project - once the cranes have gone there's no

way to get it all out again and replace it. It's expensive and embarrassing to get it wrong and you are left with that legacy.

soil texture is responsible for

- water retention
- drainage
- aeration
- compaction resistance

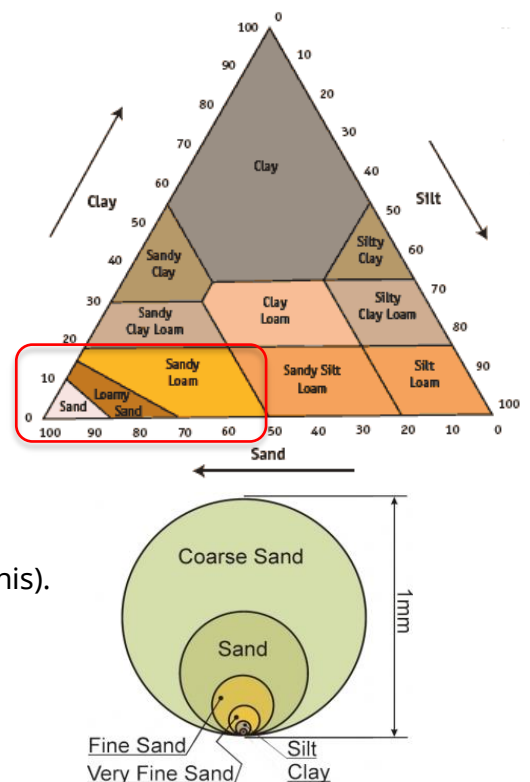
For podium landscapes you need: high sand content

- compaction resistant
- not reliant on soil structure
- good porosity and drainage
- easy to handle and spread
- workable all year round
- easy to cultivate
- easy to ameliorate

Limitations of sand soil include:

- lower water rendition
- nutrient leaching risk
- (we have to address this but there's ways around this).
- 'Sand' is not just 'sand'

most people don't perceive talcum powder to be a sand!
 Sand can be anything from talcum powder to grit- makes a huge difference on how that behaves.



Keeping up standards

"It's important to get the sand right and specify the right grade. A lot of people use the British Standard for topsoil, I can categorically say it's not intended for this highly engineered podium landscape - the British Standard is there for back gardens, lawn areas, typical parks, and is not designed for high performance unique end users such as this. The critical issue is down to the sand content. If you want free-draining soil you use medium to coarse sand, if you want to retain moisture then you're dealing with fine sands. Very fine sands are problematic and behave more like a silt.

Green waste

"The most widely used component is 'green compost' and by introducing this into the soil you're dealing with the biological requirements as well as the chemical requirements.

Green compost

- bulky organic matter
- major plant nutrients
- secondary nutrients
- trace elements
- soil microbes
- water dentation
- weed seed free

"People worry about the compost running out - and ask how often do we need to add it? But, if the landscape is stable then the landscape itself will re-feed and supply the nutrients. We find that nutrient levels are quite high to start with and there's a flush of nutrients in the first two years but this then trickles out.

"I'm not a fan of irrigation - you find there are more problems from over irrigation rather than under irrigation. If you stick your hand in the ground and it's saturated; often soils are full to capacity and can't take any more water.

Soil Depths

"The biggest killer of plants is lack of oxygen - if plant roots don't have oxygen they can't suck up water.

It's essential you make sure you have air in the system and it can to move through it. If the topsoil depth is too much you'll have problems - there's a huge misconception that top soil is the best bit and it's overused, but top soil should only be on top.

Planting Type	Topsoil Thickness	Subsoil Thickness	Total Soil Depth
Trees	300 - 400mm	300 - 700mm	600 - 1000mm
Hedging	300 - 400mm	0 - 300mm	400 - 600mm
Shrubs Groundcover Herbaceous	300mm	0 - 300mm	300 - 600mm
Amenity Grass	150mm	0 - 150mm	150 - 300mm

"Drainage is important. There are two main drainers used, a plastic 'egg crate' (drainage mat) system or a granular drainage layer. Geotextiles favoured by landscape architects block up and become impermeable. The key with interface between top soil and subsoil is a blinding layer - you want to stop the fines from the topsoil getting to the drainage layer and blocking up the geotextile and you want to maintain the hydrologic connection. To get good drainage, the binding layer needs to be coarser, so the pores intermix. The depth of the binding layer needs to be a minimum of 100mm.



L-R: Tim O'Hare, Nigel Dunnett, John Langman (Palmstead's founder), Nick Coslett, Dan Pearson, Adam White, Laura Gatti, Louisa Boyer

A model for future urban development: planting and maintaining the 'Bosco Verticale' in Milan

Laura Gatti, landscape consultant and visiting professor at Milan University

The Boeri Studio in Milan worked with Italian agronomist Laura Gatti to produce one of the most talked about and exciting projects of recent years - the *Bosco Verticale* in the Porta Nuova Isola area of Milan. The project consists of two towers of 80 and 112 metres, hosting 480 large and medium trees, 300 small trees, 15,000 perennials and ground covering plants and 5,000 shrubs. The equivalent - over an urban surface of 1,700 m² - of 20,000 m² of forest and undergrowth!



This vertical forest which put trees and plants at the very epicentre of its build is no longer a one-off. Gatti has further collaborated with the Boeri Studio on *Le Tour du Cedre* in Lausanne, Switzerland and is working on an emerging project in Najing in China as well as a social housing project in Eindhoven named Toren K.

What's striking about the *Bosco Verticale* build is that the agronomist and plants person was involved from the very beginning. Laura Gatti was on hand to talk about the plants at the start, to help the designers understand how the trees and plants would behave and how best to formulate the planting plans. She said:

"The Bosco Verticale comprises two towers, located in the Porta Nuova area of Milan, covered in vegetation; 180 large to medium trees, 300 small trees, 15,000 perennials and 5,000 shrubs. The Bosco is a living symbol and a new standard for sustainable housing. It was designed to increase greater biodiversity and respond to climate change.

- Total land area over 290.000 m²
- The biggest pedestrian area in Milano with more than 160.000 m²
- Public park 90.000 m²
- Cultural and civic hub more then 10.000 m²
- A mix of features for 400 families and 3.000 workers
- An intermodal hub consisting of 4 subway's lines and 2 railway's stations (high velocity trains)
- An Institutional hub with new location for Regione Lombardia and Milan's Municipality



“For decades tall buildings, towers and sky scrapers have been a waste of energy and provoked a sharp increase in energy needs.

“For the Bosco, we took inspiration from nature. Trees adapt to their site - they have adaptive growth. In areas with thin layers of soil and wind, only gravitational force can kill them.

“When my colleague and I started to talk about Stefano Boeri’s idea we had very few doubts that we could integrate this within a high density tower block.

“We undertook abundant research and testing - the engineering project lasted 3 years with the focus on the tree as the main component of the project. We undertook wind channel tests and lab tested soils and these led to integrated strategies and solutions. Every single solution was debated.

- 94 different plant species
- 60 different species of trees and shrubs
- 33 different evergreen species
- 66 useful species for pollinators

“The trees were the most important part of the project and we selected them 3 years before the start of the construction so that we could provide good quality trees; a good tree is a safe tree and safety was the main objective in the first phase of the design process. After selection the trees were moved for 2 years at the nursery and were given extra spacing, fertilised, watered and regularly checked.

“Wind is the main factor that we need to take into account - wind stress transmits forces to the building and these have to be carefully evaluated. Studies were undertaken in a wind tunnel in Miami where we tested real trees.

“The planting was realised during the construction of the building; trees were planted as the facade coating was completed.

Maintenance: or abseiling?

“As an eco system, it needs high professional maintenance; once a year arborists climb the building and check the trees are healthy. A staff of agronomists advise and revise maintenance plans, dedicated staff maintain the plants and make sure they’re correctly installed and maintained. Management is centralised; the area of the balcony isn’t sold to the resident, it belongs to the property so the resident can’t ‘take care’ of the trees.

- tree pruning - first intervention/visit (2014) 900 hrs
- second intervention/visit 480hrs (12 days)
- 2016/2017 maintenance visits 448hrs
- shrubs perennial pruning, cleaning and weed removal
- 2014/15 5 - 6 interventions/visits
- 2016 /2017 - 4 interventions/visits
- monitoring plant health - 144hrs 2014,2015 - 110 hours in 2015 /2016

“Counters detect if irrigation is working or not. Irrigation works all year round except on the coolest days of the winter.



Residents benefits

“Since the first day in 2014 when the Bosco opened its doors to the residents we have seen that residents are proud and collaborative. They become anxious about their ‘own’ trees. No one has ever asked for a tree to be removed - they’ve asked for more. The trees make it comfortable to live in the building - the reduction of temperature can be around 30 degrees and the trees also provide protection from strong winds while producing oxygen and reducing pollution.

The future

“The problem of CO2 is a problem of the urban environment and one that has to be solved by the city. Bringing more trees into the city may be one of the solutions.

“The Bosco is a hotspot for biodiversity and a model for next generation cities which establishes an urban eco system and an environmental network. 60% of the plants are native and distributed along the facade composing a green surface of 12,000 sq metres. The towers are a magnet for animal life and colonisation of nature was almost immediate.

- Actual water use
- 8 km of dripline, dripper 2 lt/h, drippers spaced at 200mm centres
- All-year round distribution (also in winter)
- Year 2014 (warm summer) - Water use 3.150 m3
- Year 2015 (hot summer) - Water use 8.400 m3
- Plantings completed in 2015
- Irrigation regulated by Terrasens D sensors

The project can be seen as an international call for creativity. We are replicating this experience in different cities around the world. We have completed the *Tour Des Cedres* close to Lausanne in Switzerland - the building is mostly covered with evergreen. We have *Toren K* in Eindhoven, an important project that I'm very proud of because it's social housing.

We have two vertical forests planned for Najing in China. The city has created a nightmare but they've finally realised that they can't keep going in the direction they're going - they need to face the dramatic problem of air pollution. It will be a small contribution in that particular urban environment but it provides a change of perspective. Mega cities can't proceed in the way they have - they need to embrace a new urban model for living.

“In Najing we are working with a local designer and the buildings will follow the prototypes with winds tests, engineering tests, feasibility, sustainability tests, mock ups of the green wall and constructor selection.

“One of the most challenging issues has been finding the vegetation - we are working with a botanist and have made several trips to identify useful species - most of them known - but the main problem we have found has been availability. Market availability in China has been stressful because the quality isn't good - we have had to show nurseries how to prune a tree the correct way and it has been a challenge.

In conclusion

“I don’t know if we need more technologies in the field of roof gardens, but I think we have to move towards wise and low-cost options to bring this solution to all the people; as we are doing in Eindhoven with our low cost social housing. Choosing the right plants there meant that there didn’t need to be too much maintenance - it was a challenge, but it can be done.



“We hope that this model of green architecture can be copied - along with the vision of how the city might look if we consider biodiversity and quality of life.”

Mycorrhiza: an aid to success

Dr Louisa Boyer, the technical director of PlantWorks, spoke on the topic of Mycorrhiza as an aid to success. She said:

“I’m going to try to convince you that below ground is as important as above ground. People have been talking about soil for a very long time - Franklin D Roosevelt famously said:

“a nation that destroys its soils destroys itself”.

There are lots of technologies that enable you to use soils in different environments and the chemistry is well understood but ‘soil biology’ hasn’t been trendy, however it’s a massively important part of the science; without anything living in the soil you have a soil that doesn’t work.

What can Mycorrhiza do for me?

- reduced mortality
- soil stabilisation and health
- improved establishment of your planting
- a single application protects for the life of the plant
- green credentials
- drought tolerance

“We are starting to consider what we see in the dark brown bit at the bottom of the plant and what damages it: poor soil management, addition of fungicides, water-logging, breeding out of mycorrhizal traits.

What are mycorrhizae? An ancient asexual organism, the hyphae penetrate the roots of a plant and form arbuscules and spores which fill a whole plant cell and the site of transfer between the plant and water. The fungus cannot survive without a living plant (it can't be grown in a petri dish).

role of mycorrhiza:

- nutrient uptake primarily P,N and Zn
- protection from biotic stress (stop other fungus and bacteria harmful to the plant penetrating the system)
- protection from abiotic stress (drought, senility and heavy metal tolerance)
- soil stabilisation

“A trial was undertaken in Kent - we saw a statistical increase in growth and girth of the trees within a couple of years of them being planted. We lost none of the trees from the inoculated group and early plant establishment was greatly increased by adding mycorrhiza.

“Current management systems lead to a reduction in soil mycorrhiza. Mycorrhiza play an important role in the healthy establishment of plants and trees, the relationship is natural and ancient.”

Biosecurity update: *Xylella fastidiosa* and other threats, Professor Nicola Spence, Chief Plant Health Officer

Professor Nicola Spence took to the stage to provide the Workshop with an update on *Xylella fastidiosa*. She said:

“We all love plants and that’s why we are here today. My job is to lead the government response to protect plants against invading pests.

“Our work comes down to five simple things:

- we try to predict what’s out there, seeing what’s going on all over the world,
- prevent them entering the UK - stopping them at the border and making sure we’re working with the supply chain to make sure there’s not pathway
- if they do enter we have to protect what we have, eradicating them where possible
- be prepared and anticipating a threat and having a plan
- working in partnership with lots of organisations who have a passion for plants, trees so we can make much more progress together



“We have devised the **plant health risk register** - it’s the only one in the world. We are up to 1,000 pests - which shows the volume of pests out there. Most of the new threats are lower risk, but nevertheless we are looking at 40 - 50 high risk threats.

What is Xylella?

“*Xylella fastidiosa* will kill trees quickly. It has devastated olive plantations in the heel of Italy. But what is Xylella? It’s a bacteria that blocks the xylem, and essentially the plant is droughted. The disease has a massive host range and several subspecies, there are at least three that we know of: *pauca*, *fastidiosa* and *multiplex*.”

“The heel of Italy is a red zone and I doubt they can eradicate this from Italy. We have all three species on the Balearics and on the mainland in Spain we have a spreading cluster, in southern France the disease has established in a range of plants. In Germany there’s been a single outbreak but that’s been contained. It can be controlled if you have a plan and you’re determined to do it. Our ministers are very determined to do everything we can to have the legislation to keep it out.

“There are various controls that we have in place. All the high-risk hosts are now passported so we can go and inspect them. Citizen science and awareness raising has been important. The industry has been fantastic and taking voluntary action - making sure where you understand where your plants are coming from.

Brexit

“Half the work of our team is planning for various different Brexit scenarios - we aren't sure whether they'll be a negotiated outcome but in the event there's a non-negotiated one we have a plan. What we want is an enduring import regime that works for us.”

Planting on podium decks and creating urban gardens : Adam White & Andrée Davies

Adam White & Andrée Davies work together as Davies White Landscape Architects. They specialise in creating children's play areas. Adam is the youngest Fellow of the Landscape Institute and will become their President next summer.

Adam and Andrée first came to Palmstead 10 years ago in 2007 when they were building their gold medal winning show garden at RHS Hampton Court. In 2017 the duo followed up their initial success by winning 'the triple' at RHS Hampton Court: a coveted gold medal, 'Best in Show' and the 'People's Choice' Award' for their innovative Zoflora and Caudwell's *Children's Wild Garden* featuring plants from Palmstead.

Adam: “Andrée and I decided to return to RHS Hampton Court last year to create a wild garden driven by playful planting that would work for children who are hyper sensitive and have AD and ADHD.

“We knew how important it would be to make the space calm so we used a lot of green. We used lots of soft colours and natural colours along with natural materials - these both have an affect on children's behaviour. We know that in areas with bright colours, children run around and get over stimulated. Anecdotal comments from parents we've met say that using calm greens really work.

“When it came to planting - we created a natural woodland and used plants suitable for children - ones that you could use for craft and play.

“The garden started at one end with an open space and single texture and single colour so that it worked for children who are hyper sensitive. As you walked through the garden we added in plants.



Andrée: “As you moved further into the garden there were little pods for children with anxiety to sit in and feel calm. We used lots of different mediums to communicate the garden including CGI. It’s sometimes a battle using this computer stuff but we had a good version which helped bring the garden to life. Adam had always wanted to have a mushroom cave and it’s always been rejected before!

“We had accessible features - a ground level trampoline, nests connected with talky tubes, a hollow log and willow pods grown by Jim Buchanan in Scotland and there were little bubbles that the children could climb inside.

Adam: “We had a short time scale to deliver the garden so we weren’t able to grow anything specifically for the garden, instead we went to Nick at Palmstead with our plans and spent the day looking round the nursery for plants that fitted the philosophy.

“Andrée and I decided we’d plant 4,000 shrubs on our own but we also put a shout-out on twitter and it was amazing to see how many people responded.

“Our next project will see us create a wild garden at RHS Wisley - promoting this reconnection with nature.”

Dan Pearson, landscape and garden designer, plantsman and writer

London has led the world over the last fifteen years in creating public spaces that add real value to the community and the city at large. One of the leading designers at the heart of this renaissance is Dan Pearson. He has a working relationship with some of the best-known architects in the country and has been involved in headline grabbing projects in central London including: The King's Cross redevelopment, the Garden Museum and the Garden Bridge project.

"My natural habitat is on the ground, but as a gardener I've found myself working on podium landscapes. Our gardens need to be adaptive spaces that can allow people into landscape.

"My very first garden that was my own was the Vauxhall roof garden - a space four and a half by five metres. It got me interested in gardening in an environment that wasn't the usual place. What was interesting was using my adaptive skills. I used plants that were accustomed to seaside situations, arid situations and created something. At first it was just me on the roof - then other gardens spread around me so that there were six in the end.

"In the late 90s I was approached by Sir Terence Conran to create 15 roof gardens on a 15 acre site in Roppongi Tokyo. The spaces were created to provide the residents with an opportunity to go into a living breathing environment which invited the season into the heart of Tokyo. We were then approached to make podium gardens/courtyards over subterranean car parks with the buildings locked around them.

"Often podium gardens are up in the air where we are able to create forests which invite the natural world into the heart of these buildings. These spaces allowed people to go outside and be part of something; be they a series of magical courtyards with a naturalistic feel that provided a contrast to the heart of the city.

The Garden Bridge

"When I was asked to do this talk we were full steam ahead on The Garden Bridge, a project that was going to bring excellence to the very centre of London. Gardens are important places they allow people to decompress and wind down. It seemed like a wonderful idea and could have been amazing. I want to talk you through what we were aspiring towards, and I hope that elements of the project will be taken forward into future work.

"We had a long vision with a long lead-in time; Palmstead were going to grow things for us en-masse for the planting. We were planning two forests linked by sinuous plants which

formed a figure of eight across the river. We wanted to tell a narrative where the north bank was an older part of London and the south bank being the younger marsh and wetland going from wild on the south to something more mannered on the north.

“Trees are very emotive things, but we needed to educate everybody that the trees needed to evolve as the time-lapse of the bridge moved on.

“We looked at the airport system and all the trees were going to be air potted so that we had the opportunity to have them acclimatising on the nursery in windy situations.

“We looked at the choice of trees and shrubs and how they would fit in the soil depths. The infrastructure running through it was massive so we had to imagine and model the plans carefully with the subterranean systems mapped so we could map the planting above. We produced a series of layers in the planting. We used radial hedges to create mini windbreaks behind which you could grow a wider range of plants.



“We had an extremely long planting plan - in five layers, trees, shrubs, hedges, perennials and bulbs. We used a bead plan that allowed me to zone those areas and produce a series of plant mixes that would go into those spaces.

“We need to ask what’s the shallowest depth of soil? 100mm can be scary - but it’s not impossible, just limiting. It’s not scary if you have a deeper section of soil alongside of it and if you have the opportunity to ‘mound’; there’s no reason why you have to limit yourself to sedums.

“I was very interested in Nigel’s process of layering. I use a similar system - mapping them out on the plan with mixes that I know will work together. It’s absolutely key that plants work together emulating a natural plant community and creating an environment that’s interdependent which very quickly becomes a balanced thing. It does need steering but there’s nothing like steering it - we are the conductors of this thing and we have to keep a close reign on how it develops over time.

King's Cross Development

"We've been incredibly lucky to work on the King's Cross Development. Arguably our clients were interesting - here was a developer who knew the value of high quality horticulture within public realm.

"With Handyside Park at Kings Cross, the underground runs right beneath it. In fact most of these spaces run over a complex network of built structures under the ground, and you need to pay close attention to this.

"Handyside is a long linear site. We looked at historical records and found that Kings Cross was a hub for produce that came in from the countryside; we created a series of networks and paths to emulate those old tracks. We wanted to use the kind of pioneer vegetation that you see along railway tracks - buddleia and asters. We were given a strict brief to integrate 'play' into the space so we extended the 'play' down through the site with a silvery rill of water so that kids could play pooh sticks and walk through the space. We created hedges throughout the site and we used corten steel to make the raised planters.



"The weight loading, waterproofing and soil depths were all incredibly important. We were able to plant woody material and soft perennials, creating a space that enabled people to move through this part of Kings Cross. The garden is now full of birds, it's no longer the bleak hard

environment it once was. “The developers quickly saw this was something they wanted to expand throughout the site.

“For the rest of the site I used naturalistic planting, juxtaposing it with static hedges to provide structure. The colour palette moves through from silver and blue (cool) through green into hot reds and yellows at the far end. The planting goes down to the canal ledge, using a mix of natives and non-natives to comply with the environment agency.

“This space became very popular very quickly - it is mobbed in the summer with people desperate to get outside and happy to be in this green environment.

“I have to take my hat off to Argent for their commitment to this green space which runs right throughout the site. It’s a really exciting project with a real commitment from the client to create a series of spaces that allow people to be part of the urban realm and be linked to horticulture that’s looked after in a committed way.

“With more complex planting like Nigel’s at the Barbican you have to work with the team - that’s key - there’s nothing like standing there and looking at how a project is evolving. A lot of it’s about dialogue and knowing your plant material and what it does. For me I’ve always been gardener; I have to garden to feel normal.

“I think it’s worth pushing the boundaries with planting: projects like the Highline have shown the world that it’s possible to do something that’s very complex and have a life that’s sustainable because people become interested in the complexity and the viability. If you can get people switched on then people will care about the space and it will take on a life of its own.

“We all have a responsibility to really believe in the fact that we are doing something incredibly worthwhile. We are able to make a big difference to public spaces in the world and create spaces that enable us to be in touch with the seasons and act as an antidote to this incredibly fast paced life we are living in. It’s possible to do something that’s very complex and also have a life that’s sustainable. If you can get people switched-on then people will care about these sorts of gardens and they will take on a life of their own.

“We are all interdependent on each other - it’s wonderful today to be standing here to be part of this team of great people who have spoken to you and doing something that’s really meaningful and wonderful.”

