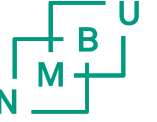


Urban Nature- the small scale

Sally O' Halloran

21 april 2023



Contents

What are the challenges facing landscape architects?

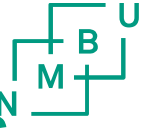
What is Urban Nature?

Is Urban Nature the solution?

What can landscape architects do on the small scale?



2023 The Challenges of planting in urban green spaces



- Climate change and extreme weather
 - Increased urbanization and movement of people to cities
 - Loss of biodiversity and habitats
 - Biosecurity issues with sourcing of plants
 - The fear of an 'unknown' plant palette
 - Lack of skilled labour
 - Lack of resources for management
-

Does Urban Nature solve all those challenges?

Økende bruk av naturlig beplantning i byen sammenfaller med større bevissthet omkring en naturmangfoldkrise. Den såkalte bynaturen kan ikke håndtere denne problematikken, men kan betraktes estetisk og som uttrykk for et rådende natursyn. Dermed kan bynaturen være bærer av et moralsk budskap som handler om å ta vare på natur.

Nina Marie Andersen er
førsteamanuensis ved institutt for
landskapsarkitektur, NMBU

[Bynatur – et uttrykk for vår tids natursyn](https://kunstavisen.no)
(kunstavisen.no)

Bynatur – et uttrykk for vår tids
natursyn



Den frie og artrike beplantningen i Sommerparken fremstår som en feiring av naturen. Foto: Nina Marie Andersen

What is Urban Nature?



Inspired by nature

Option 1

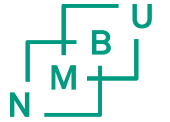
It's literal and focuses on re-creating the essence of specific named landscapes or plant communities.

(Naturalistic Planting Design, 2019, Dunnett p.15)

Example- Gata Grønland and Kirkegata

<https://www.sla.dk/cases/gata-gronland-and-kirkegata/>

Can Option 1 cope with Climate Change?



Research states that by 2050 the climate of **Oslo** will be more in line with **Bratislava** and **Vienna**. The need to rethink plant selection has already begun.

<https://crowtherlab.pageflow.io/cities-of-the-future-visualizing-climate-change-to-inspire-action#210424> and <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0217592> - pone.0217592.s001

What does Option 1 look like all year round?



Juni 2022



September 2022

What is Urban Nature?

Inspired by nature

Option 2

Plant communities of a region of the world are studied and adapted in a stylised way to be used in ecologically suitable conditions elsewhere.

(Naturalistic Planting Design, 2019, Dunnett p.15)

Example- James Hitchmough's South African trials at RHS Wisley, Surrey, UK



What does Option 2 look like in a Norwegian landscape?



North American Prairie in the Queen Elizabeth Olympic Park, London, UK

Are we confident that these ‘alien’ plants will not cause problems?



The Asia Garden in the Queen Elizabeth Olympic Park, London, UK

What is Urban Nature?

Inspired by nature

Option 3

The top structural layer is designed but beneath is left 'wild' to allow for urban ruderal plants to seed in (or be planted). A form of urban rewilding.

Example- Poblenou neighbourhood,
Barcelona, Spain



How is Option 3 managed?



What is Urban Nature?

Inspired by Nature

Option 4

It is not about trying to recreate something in the wild, but using the forms, textures, colours and aesthetics that reflect the way plants arrange themselves in natural plant communities.

(Naturalistic Planting Design, 2019, Dunnett p.16)

Example - Urban traffic island, Lund, Sweden by Peter Korn

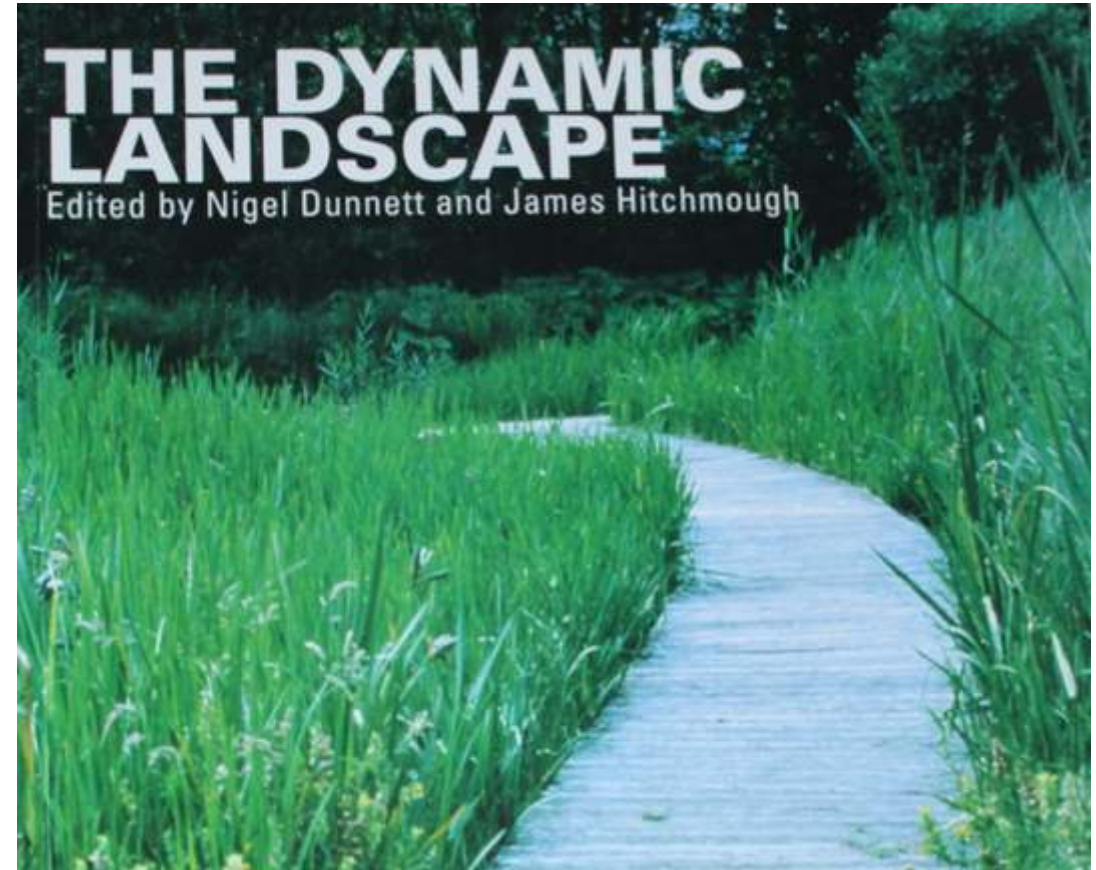


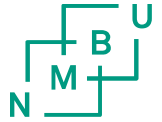
Option 4 brings Options 1, 2 and 3 together



How to make these types of plantings?

- Naturalistic herbaceous vegetation differs from conventional herbaceous vegetation in that it mimics the spatial and structural form of semi-natural vegetation
- There will sometimes be distinct canopy layers; shade tolerant near the ground with spring interest
- The decline of early flowering species is masked by the growth of the next 'layer'
- Individual species are generally not planted in clearly defined groups or blocks





Who are the leading designers using this approach in urban areas?

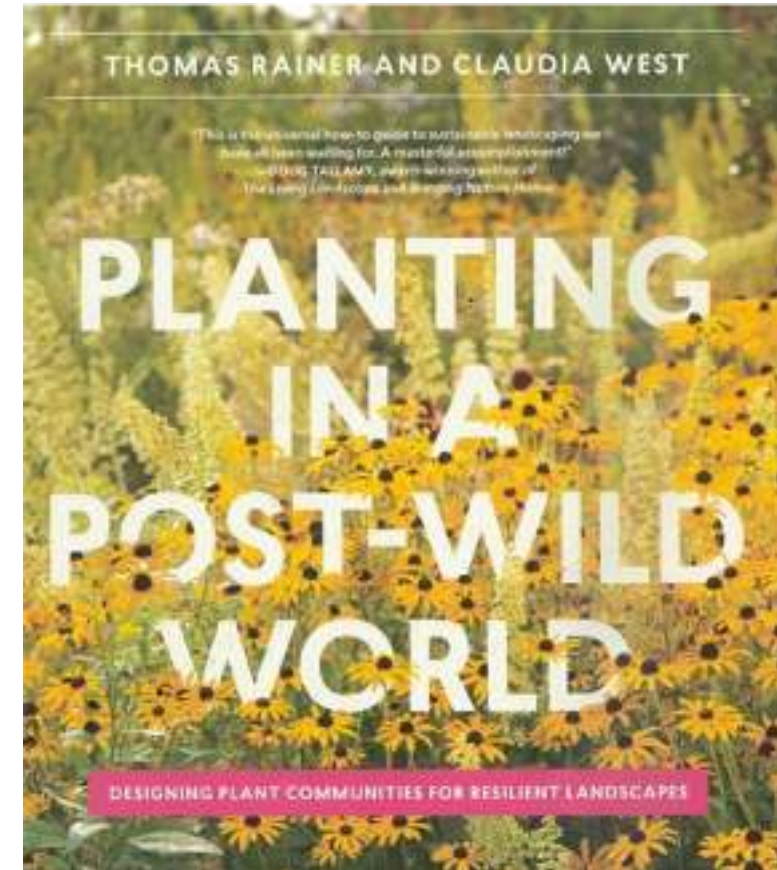
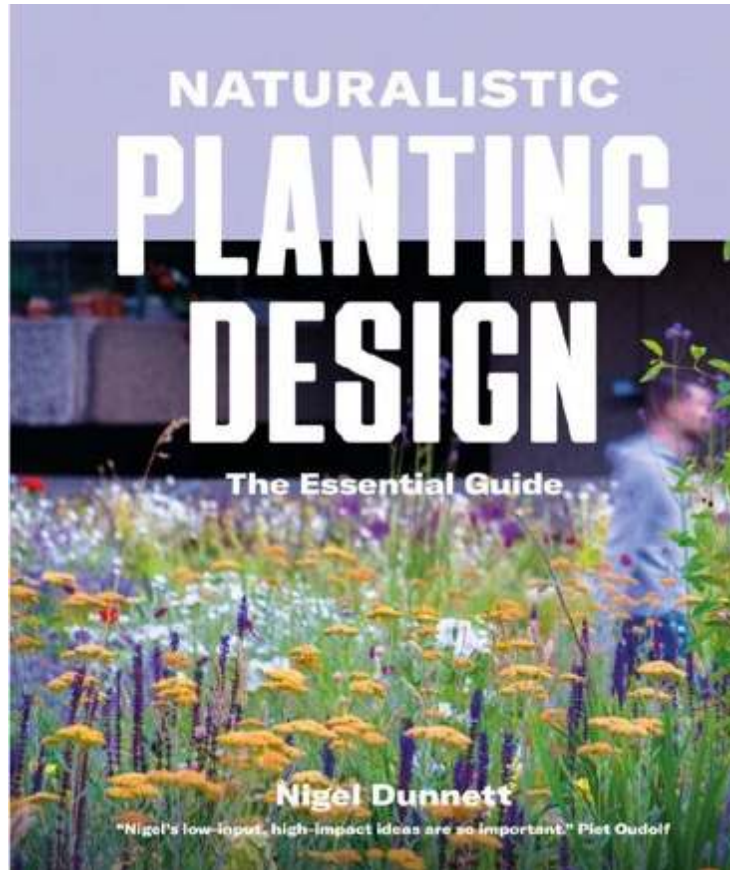
Taking a scientific approach

- Nigel Dunnett
- James Hitchmough
- Cassian Schmidt
- Bettina Jaugstetter
- Peter Korn
- Roy Diblik
- Thomas Rainer

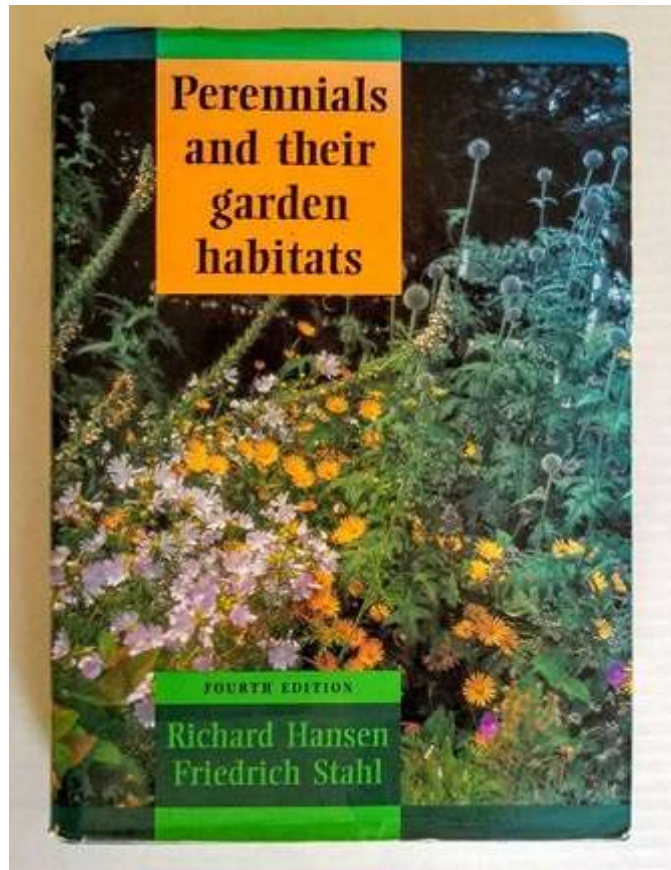
Taking an artful approach (there are many more)

- Sarah Price
 - Dan Pearson
 - Giacomo Guzzon
 - Jon Hazelwood
 - Ton Muller
 - Amy Langron
-

Key literature on this approach



Ideas originating in Germany



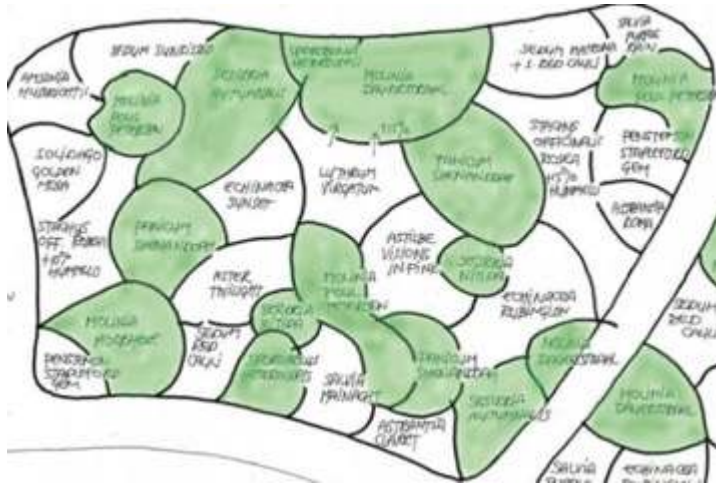
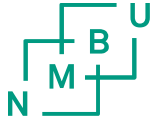
Published in English in 1993

- Prof. Richard Hansen classified plants according to their habitats and plant sociology –how they co-exist in the wild
- Sichtungsgarten Hermannshof was established in the 1980s to establish new directions in German planting design, especially in naturalistic planting styles
- Experimental Garden -it uses academic research to inform design
- Schau- und Sichtungsgarten Hermannshof (sichtungsgarten-hermannshof.de)

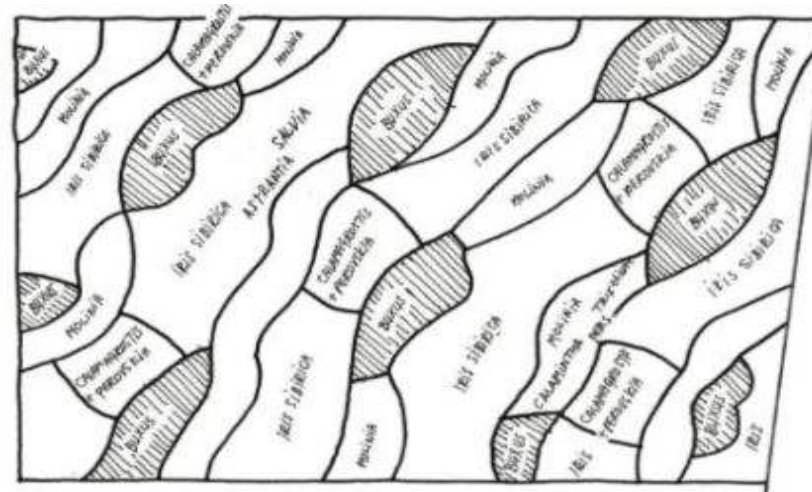
Woodland plant community for moist soils- Hermannshof



The move to naturalistic perennial planting



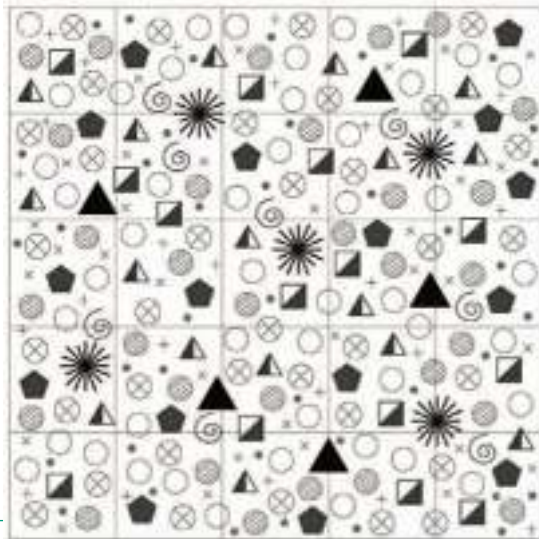
Block Planting



Drift planting

Create rhythm,
order, movement
Easy to plant

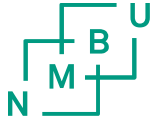
Not resilient?
Not low
maintenance?



Mixed perennial planting

No specific arrangement of plants
All year-round interest
Seen as ecologically stronger
Dynamic as it changes over time
Public approval is high
Can also be achieved through seed

How to make a resilient perennial planting



- Choose plants that are suited to the site
 - Ensure that plants are suited to each other:
 - They need to be able to live together
 - Design the planting in layers:
 - ground layer
 - main foliage layer
 - taller emergent layer
 - **Ensure maximum ground coverage**
 - Plantings need to look good
 - do not rely on flowers
 - exploit variety of leaf shapes, texture and colours
 - use new foliage of summer-leaving species to hide untidy spring ephemeral
-

Naturalistic Planting Mixes



- Leddplanter (over 70 cm) (ca.1-10%)
- Støtteplanter (40-70 cm) (ca.10-40%)
- Bunndekkere (5-40cm)(ca.30-50%)
- Fyllstauder (kortvarige arter) (5-10%)
- Density 9-11/m².

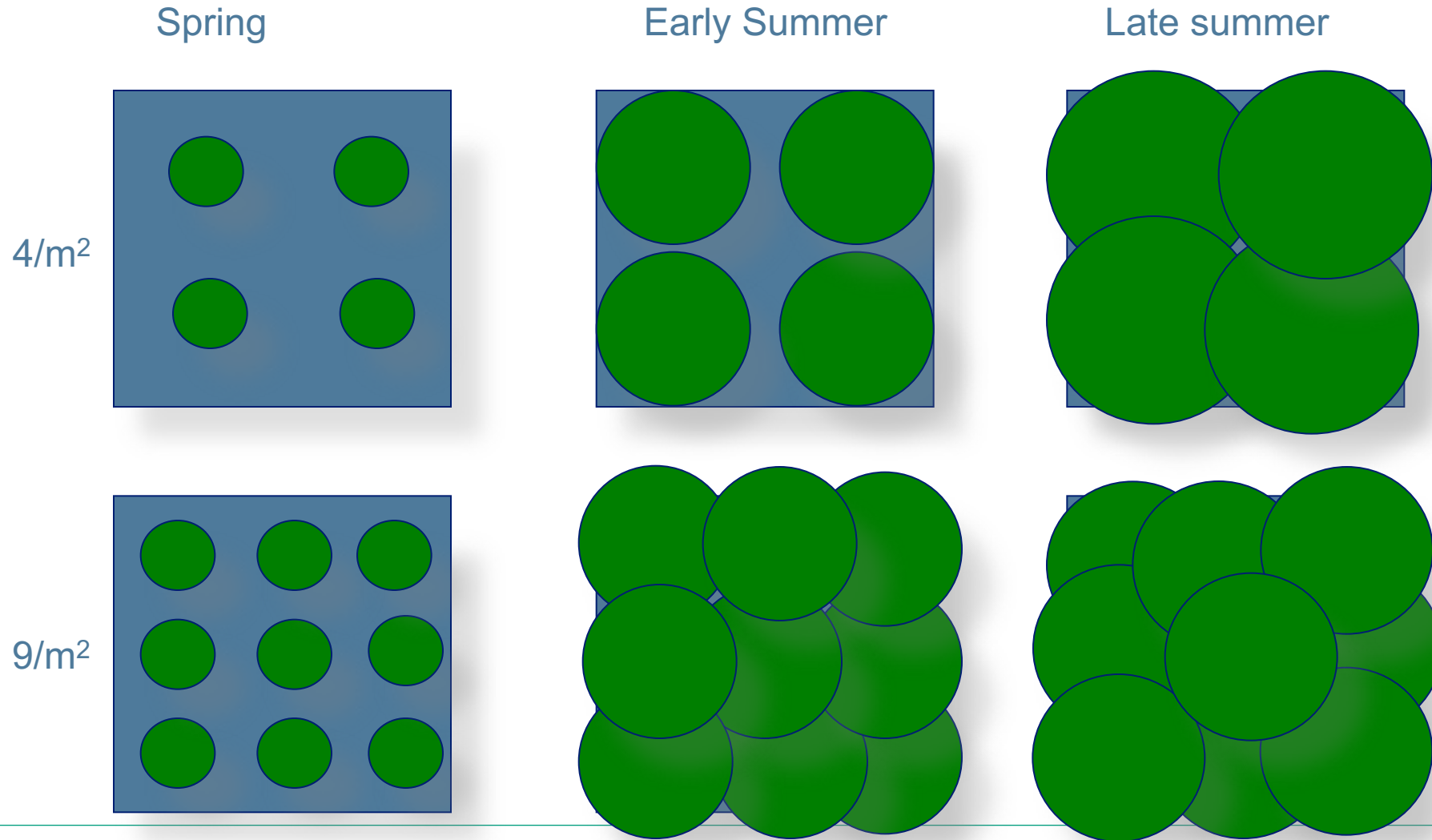
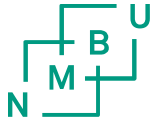
Planting Mix Guidance

Structural (Emergent/Anchor) Plants	+/- 10%
Supporting (Satellite) Plants	+/- 40%
Ground covers	+/- 45%
Space fillers (short-lived)	+/- 5%
Total	100%

Based on the calculation of 9/m² for perennials e.g. if you have 10m² you have 90 plants.

Compiled based on Dunnett (2019), Rainer and West (2015), but mixes originally designed in Germany by the Arbeitskreis Pflanzenverwendung in the early 2000s

Planting Density- Increasing density reduces weeding



Grey to Green- Phase 1 and Phase 2 in Sheffield, UK

- Sustainable Drainage System (SuDS)
 - to reduce and treat stormwater runoff
 - in a way that is closer to or mimics natural systems
 - **functional but also beautiful**
 - functional but also has **recreational value**
 - functional but also **has ecological value** (increase biodiversity, create habitats)

Proposal in 2015 for Phase 1



Similar to Bjørnstjerne Bjørnsons Street, Drammen



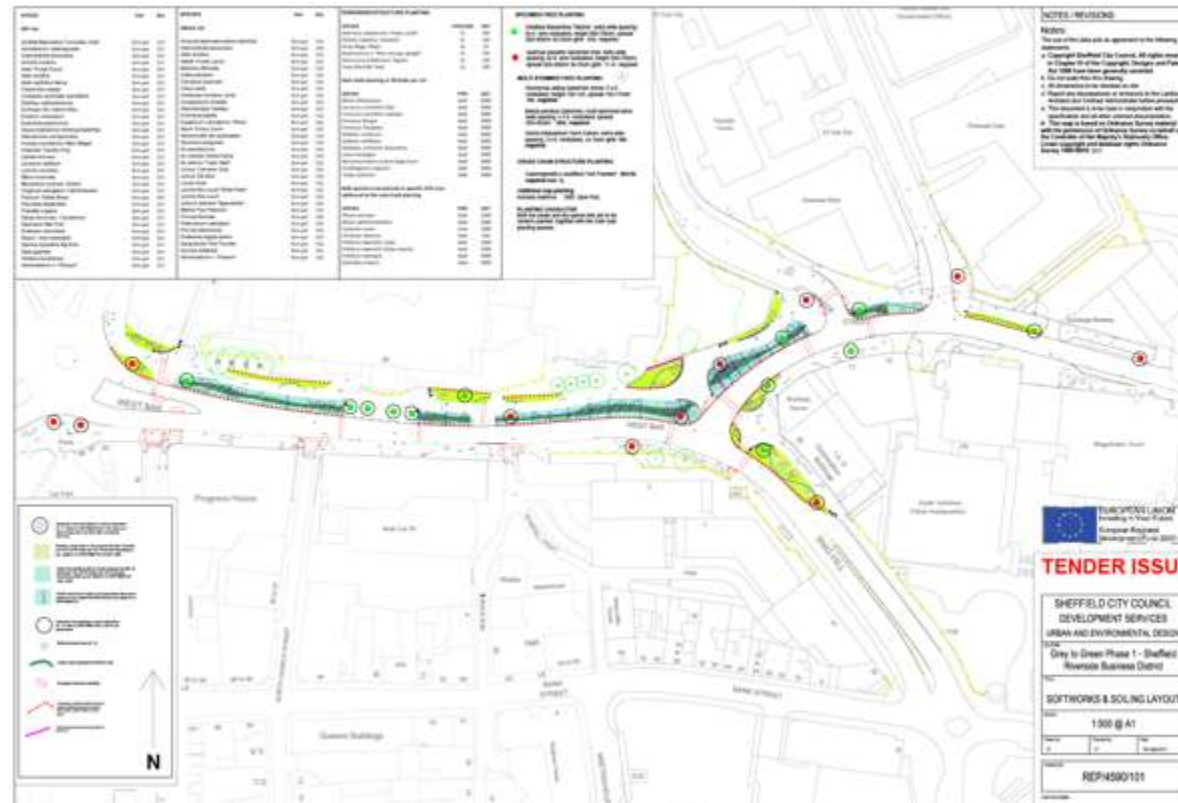


Block Planting

Nigel Dunnett is inspired by plant communities in the wild

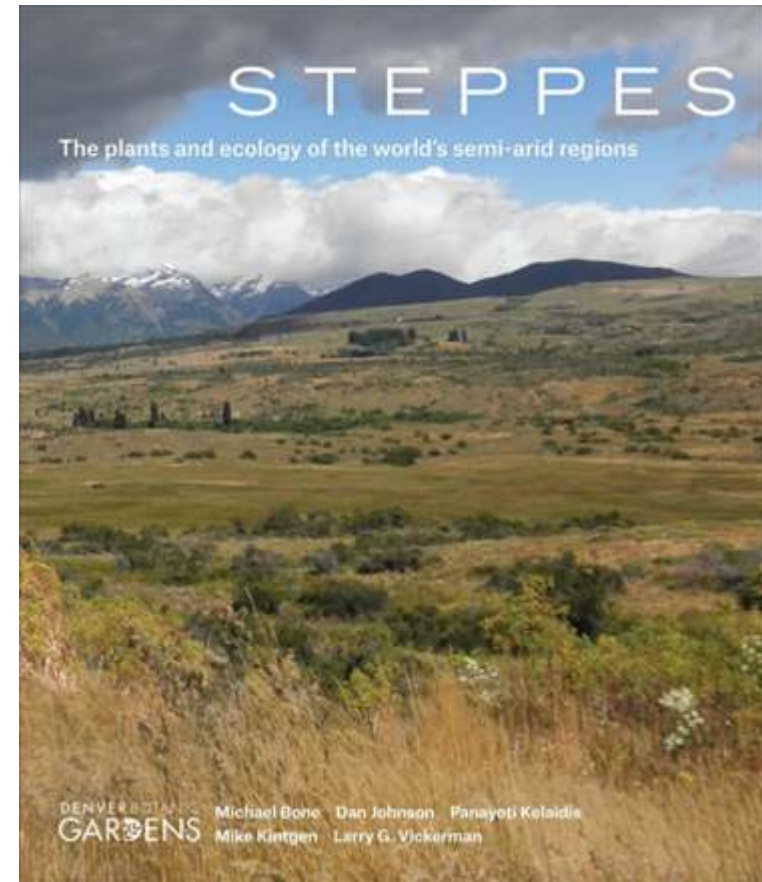
P3 Rule





Stauder – Dry List

SPECIES	Size	Qty
DRY List		
Achillea filipendulina 'Coronation Gold'	9cm pot	317
Achnatherum calamagrostis	9cm pot	317
Anemmanthele lessoniana	9cm pot	317
Armeria maritima	9cm pot	317
Aster 'Purple Dome'	9cm pot	317
Aster amellus	9cm pot	317
Aster sedifolius Nanus	9cm pot	317
Calamintha nepeta	9cm pot	317
Coreopsis verticillata 'grandiflora'	9cm pot	317
Dianthus carthusianorum	9cm pot	317
Echinops ritro Veitch's Blue	9cm pot	317
Erodium manavescii	9cm pot	317
Euphorbia polychroma	9cm pot	317
Gaura lindeheimeri Whirling Butterflies	9cm pot	317
Helicotrichon sempervirens	9cm pot	317
Knautia macedonica 'Mars Midget'	9cm pot	317
Kniphofia 'Tawney King'	9cm pot	317
Libertia formosa	9cm pot	317
Limonium latifolium	9cm pot	317
Lychnis coronaria	9cm pot	317
Malva moschata	9cm pot	317
Miscanthus sinensis 'Undine'	9cm pot	317
Origanum laevigatum 'Herrenhausen'	9cm pot	317
Panicum 'Dallas Blues'	9cm pot	317
Perovskia atriplicifolia	9cm pot	317
Pulsatilla vulgaris	9cm pot	317
Salvia nemorosa 'Carradonna'	9cm pot	317
Saponaria 'Max Freil'	9cm pot	317
Scabiosa columbaria	9cm pot	317
Sedum 'Jose Aubergine'	9cm pot	317
Stachys byzantina Big Ears	9cm pot	317
Stipa gigantea	9cm pot	317
Verbena bonariensis	9cm pot	317
Veronicastrum v. 'Roseum'	9cm pot	317







***Achillea filipendulina* 'Coronation Gold'**
***Verbena bonariensis* (Fyllstauder)**
Lychnis coronaria

P3 Rule

Støtteplanter/ Supporting



Juli 2019

Stauder – Swale list



Centaurea montana 'Jordy'	9cm pot	515
Cynogolssum amabile	9cm pot	515
Deschampsia 'Goldtau'	9cm pot	515
Echinacea pallida	9cm pot	515
Eupatorium cannabinum 'Plena'	9cm pot	515
Geum 'Emory Quinn'	9cm pot	515
Hemerocallis lilio asphodelus	9cm pot	515
Heuchera sanguinea	9cm pot	515
Iris pseudacorus	9cm pot	515
Iris robusta 'Gerald Darby'	9cm pot	515
Iris sibirica 'Tropic Night'	9cm pot	515
Juncus 'Carmens Grey'	9cm pot	515
Juncus 'Elk Blue'	9cm pot	515
Luzula nivea	9cm pot	515
Lychnis flos cuculi 'White Robin'	9cm pot	515
Lychnis flos-cuculi	9cm pot	515
Lythrum salicaria 'Zigeunerblut'	9cm pot	515
Molinia 'Poul Petersen'	9cm pot	515
Primula florindae	9cm pot	515

Lythrum salicaria 'Zigeunerblut' juli 2017

Primula
flowered
in May





Mai 2019 *Lychnis flos-cuculi*

Iris



***Iris sibirica* 'Tropic Night' mai 2019**

Eupatorium

***Veronicastrum virginicum* 'Album'
with *Eupatorium cannabinum* 'Plenum'**

august
2020

Eupatorium cannabinum 'Plenum' august 2020



Trees- Trær

- 40 trees
- 30 semi mature trees:
 - 12 *Gleditsia triacanthos* 'Skyline'
 - 11 *Quercus palustris*
 - 7 *Cercis siliquastrum*
- 10 multi-stemmed *Betula pendula*

SPECIMEN TREE PLANTING

- *Gleditsia triacanthos* 'Skyline' extra wide spacing; 5x tr. wire rootballed, height 500-700cm, spread 200-300cm 30-35cm girth 12nr. required
- *Quercus palustris* Specimen tree; extra wide spacing; 4x tr. wire rootballed, height 500-700cm, spread 200-300cm 30-35cm girth 11 nr. required

MULTI STEMMED TREE PLANTING



Euonymus alatus Specimen shrub; 5 x tr. rootballed, height 100-125, spread 150-175cm **7nr. required**

Betula pendula Specimen, multi stemmed extra wide spacing; 4 x tr. rootballed, spread 350-400cm **10nr. required**

Cercis siliquastrum Semi mature, extra wide spacing; 3 x tr. rootballed, 14-16cm girth **7Nr. required**

Cercis siliquastrum- tolerates drought



A photograph of a landscaped area. In the foreground, a light-colored paved path leads from the bottom center towards the middle ground. To the left of the path, there is a silver metal bollard. The area is filled with various plants, including tall grasses, purple flowers, and yellow flowers. In the background, there are several trees with green and yellow leaves. Behind the trees is a multi-story brick building with many windows. The text "Quercus palustris" is overlaid in yellow on the right side of the image.

*Quercus
palustris*

A paved walkway made of grey rectangular stones leads through a landscaped urban area. On both sides of the path are various plants, including tall, feathery ornamental grasses and dense green shrubs. In the background, several multi-story buildings are visible, including a modern brick building with large windows and a taller glass skyscraper in the distance. The scene is brightly lit, suggesting a sunny day.

Betula pendula

Extensive bulb planting

- 45,000 bulbs including: *Allium*, *Camassia*, *Cyclamen*, *Eremurus*, *Fritillaria*, *Galanthus*, *Galtonia*, *Gladiolus*, *Lilium*, *Nectaroscordum*, *Nerine*, *Ornithogalum* and *Tulipa*





Eremurus robusta

Allium cvs in June 2019



Nigel Dunnett is inspired by plant communities in the wild



Liatris spicata

- Native Range: Central and Eastern United States
- Habitat: Grown in damp meadows, the edges of marshes and savannahs
- Stiff, upright stems
- Photo showing it in North-East Illinois in a [mesic sand prairie](#) in the Kankakee Sands Region. Sandy soil but does get wet.



***Liatris spicata* in the Grey to Green in Sheffield**

Urban Nature in 2023

- Resilience is essential
 - It should provide an enriched human experience
 - It should support as much non-human life as possible
 - Facilitate desirable processes; for example, urban heat island mitigation and storm-water management
 - Be capable of being managed as sustainably as possible in the longer term; i.e. resilient at low resource levels
 - Using plants to create space not to fill space
-

Takk

