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 naturlik 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 (kunstavisen.no)]

Bynatur – et uttrykk for vår tids natursyn

Den frie og artsrike beplantningen i Sommerspaken 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.

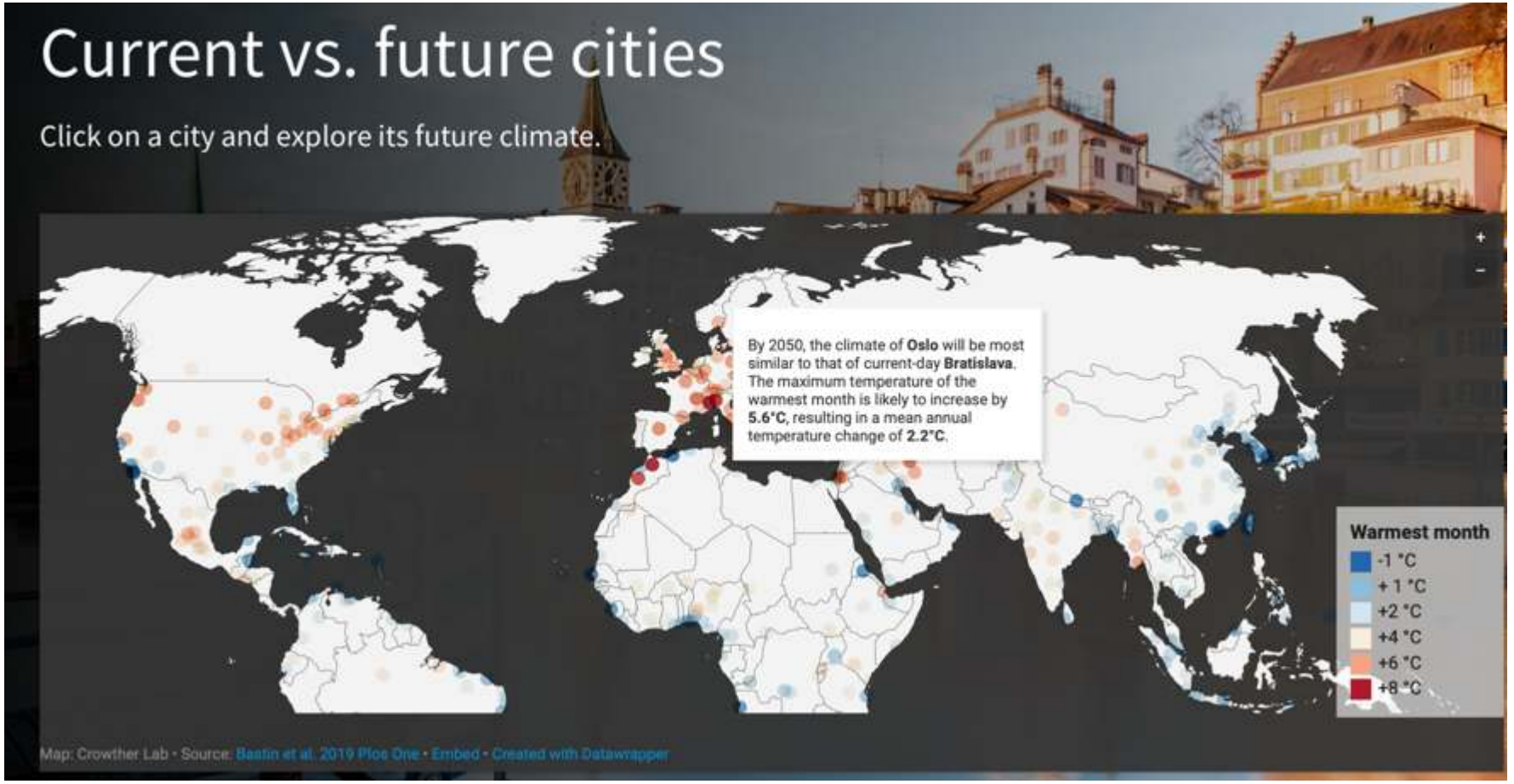
(Naturalistic Planting Design, 2019, Dunnett p.15)

Example- Gata Grønland and Kirkegata

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

Urban nature – an expression of today's view of nature (kunstavisen.no)

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

The Mother - Kunst og kultur - Oslo kommune

Photograph by Kristin Stubberud, NMBU

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

Nigel Dunnett (@nigel.dunnett) • Instagram photos and videos

How is Option 3 managed?

Nigel Dunnett (@nigel.dunnett) • Instagram photos and videos

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

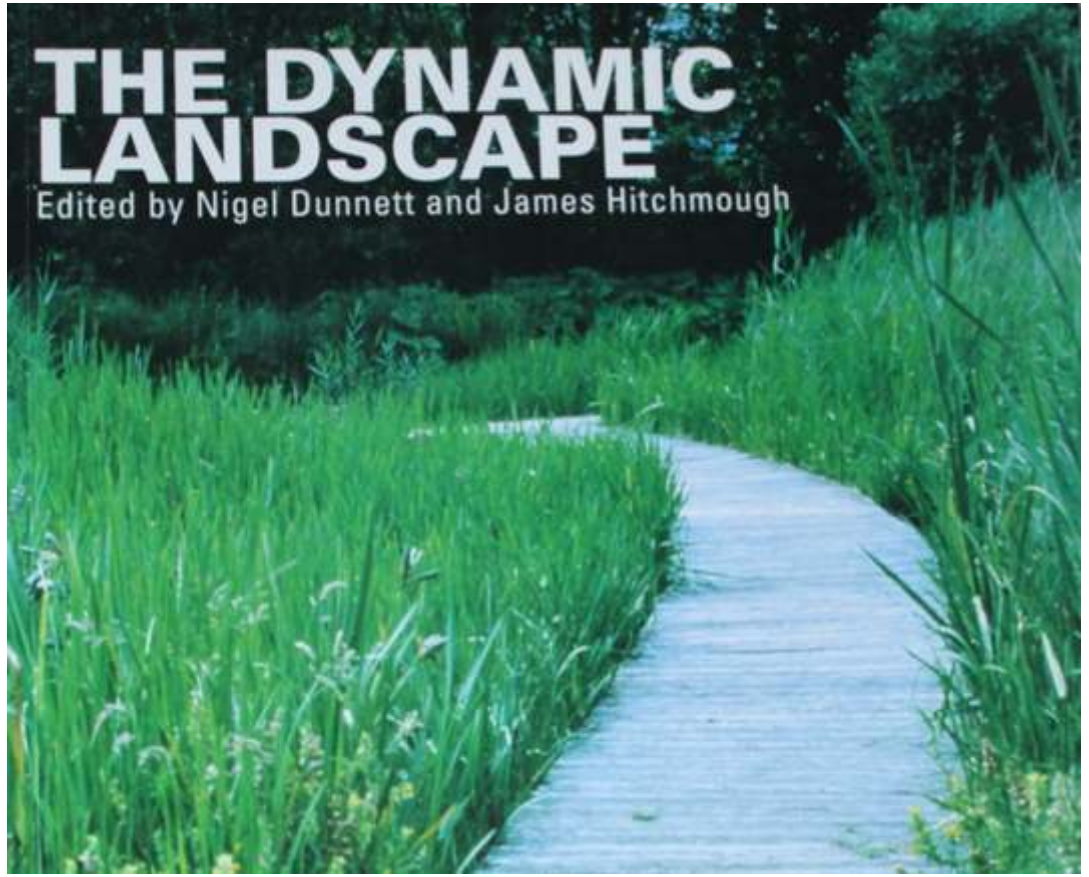
Photos by Nigel Dunnett August 2012

Option 4 brings Options 1, 2 and 3 together

https://www.sla.dk/cases/sankt-kjelds-square-and-bryggervangen/

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?

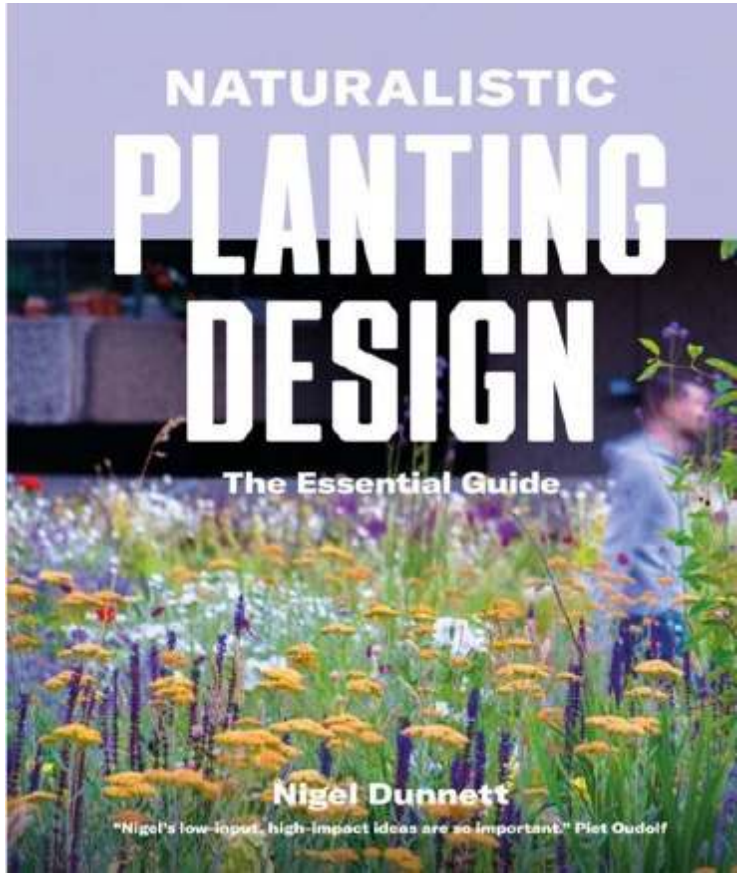
Taking a scientific approach

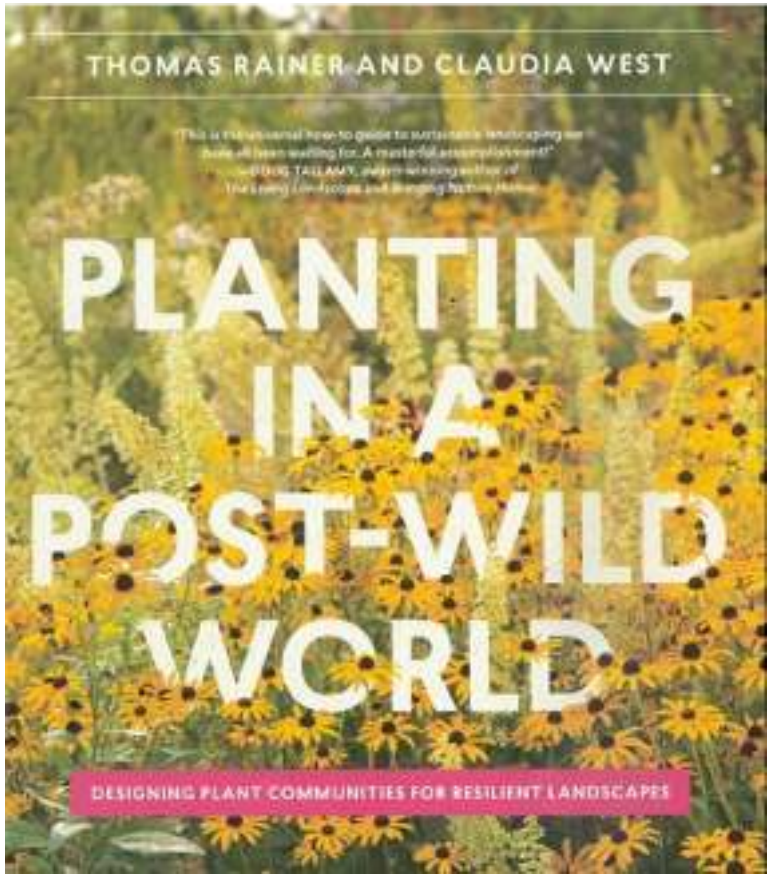
- Nigel Dunnett
- James Hitchmough
- Cassian Schmidt
- Bettina Jaugstetter
- Peter Korn
- Roy Diblik
- Thomas Rainer

Taking an artful approach (there are many more)

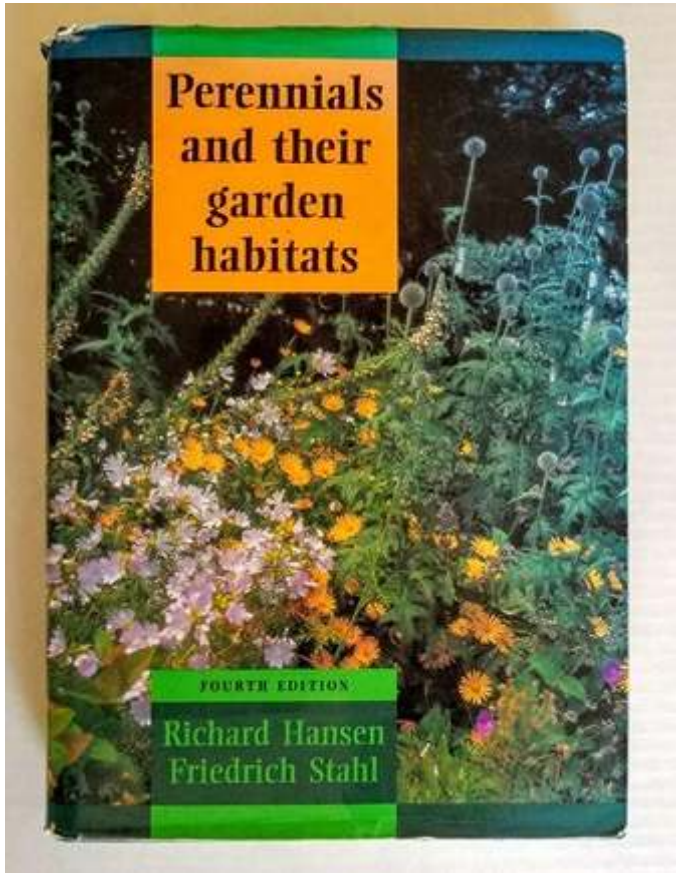
- Sarah Price
- Dan Pearson
- Giacomo Guzzon
- Jon Hazelwood
- Ton Muller
- Amy Langron

Key literature on this approach





Ideas originating in Germany



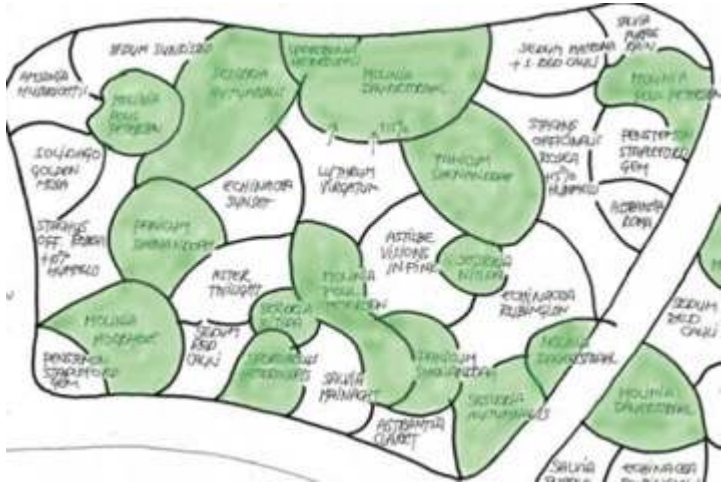
Published in English in 1993

- Prof. Richard Hansen classified plants according to their habitats and plant sociology –how they co-exisit 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)

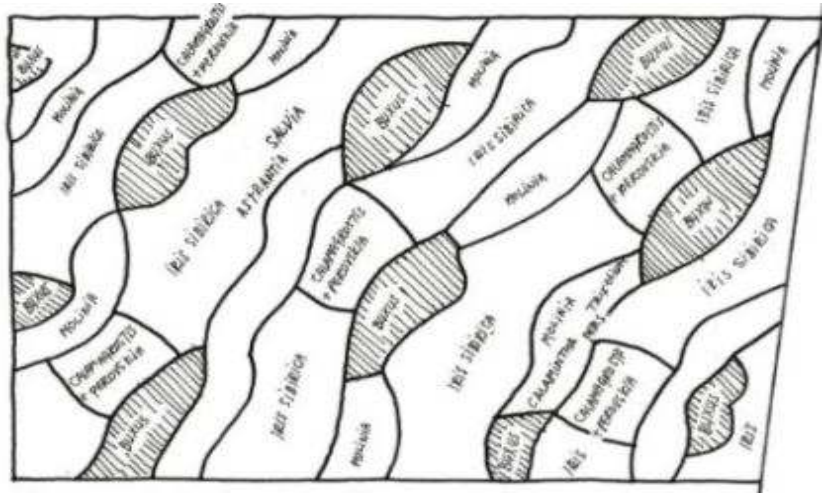
Woodland plant community for moist soils- Hermannshof

Cassian Schmidt - an interview from Gartenpraxis — View from Federal Twist

The move to naturalistic perennial planting



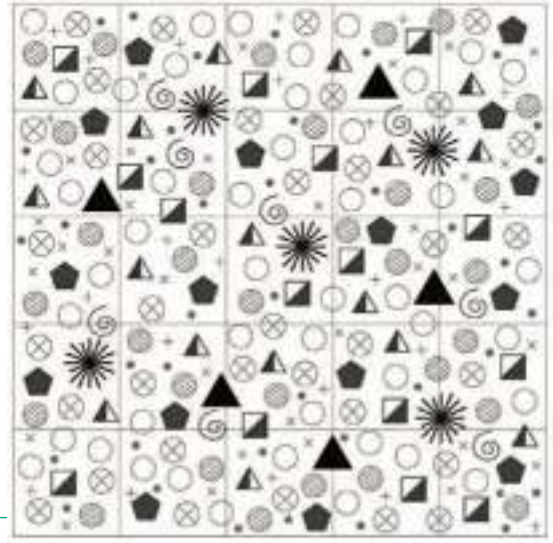
Block Planting



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-leafing 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.

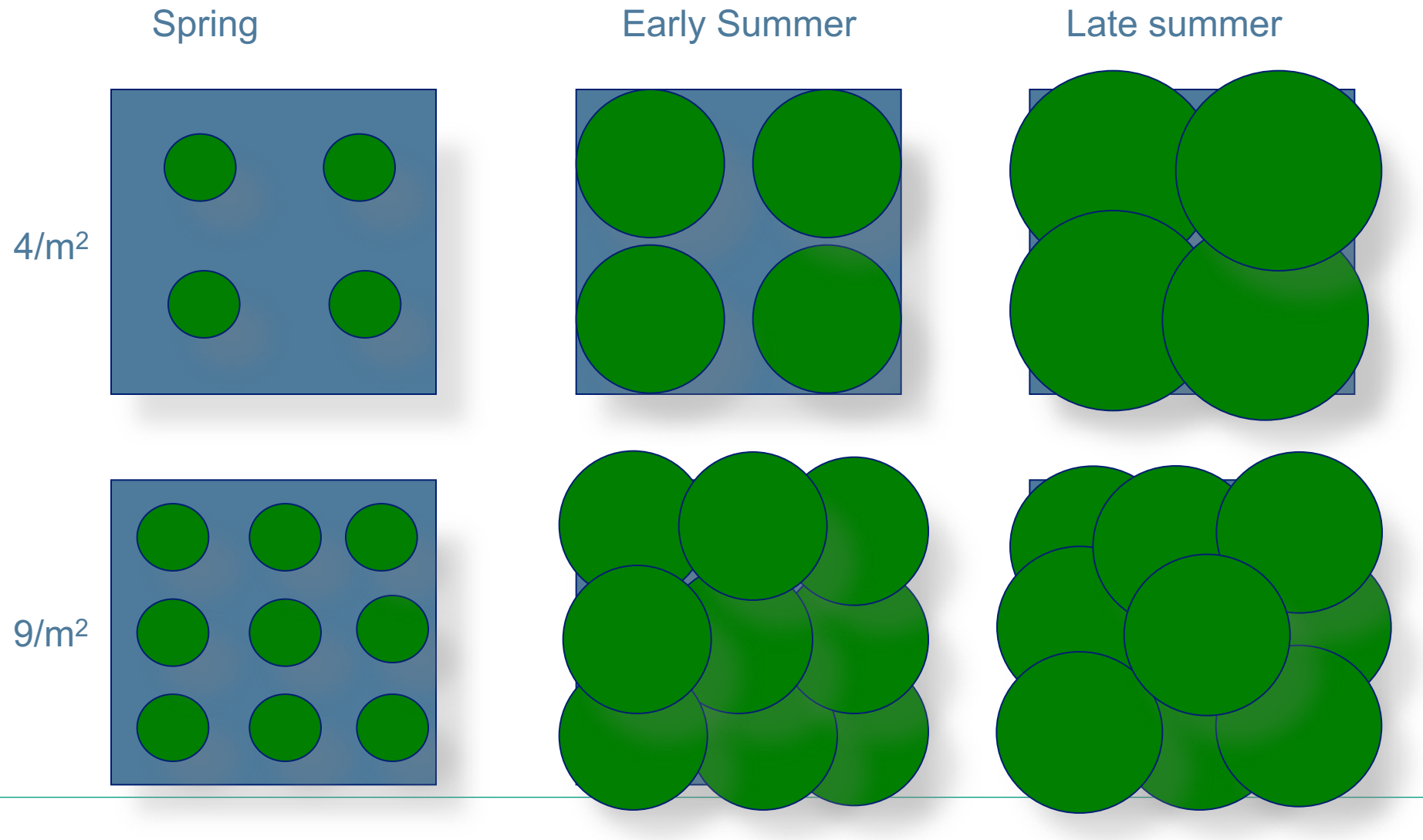
Planting Mix Guidance

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/m^2 for perennials e.g. if you have 10m^2 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

Grey to Green – Nigel Dunnett

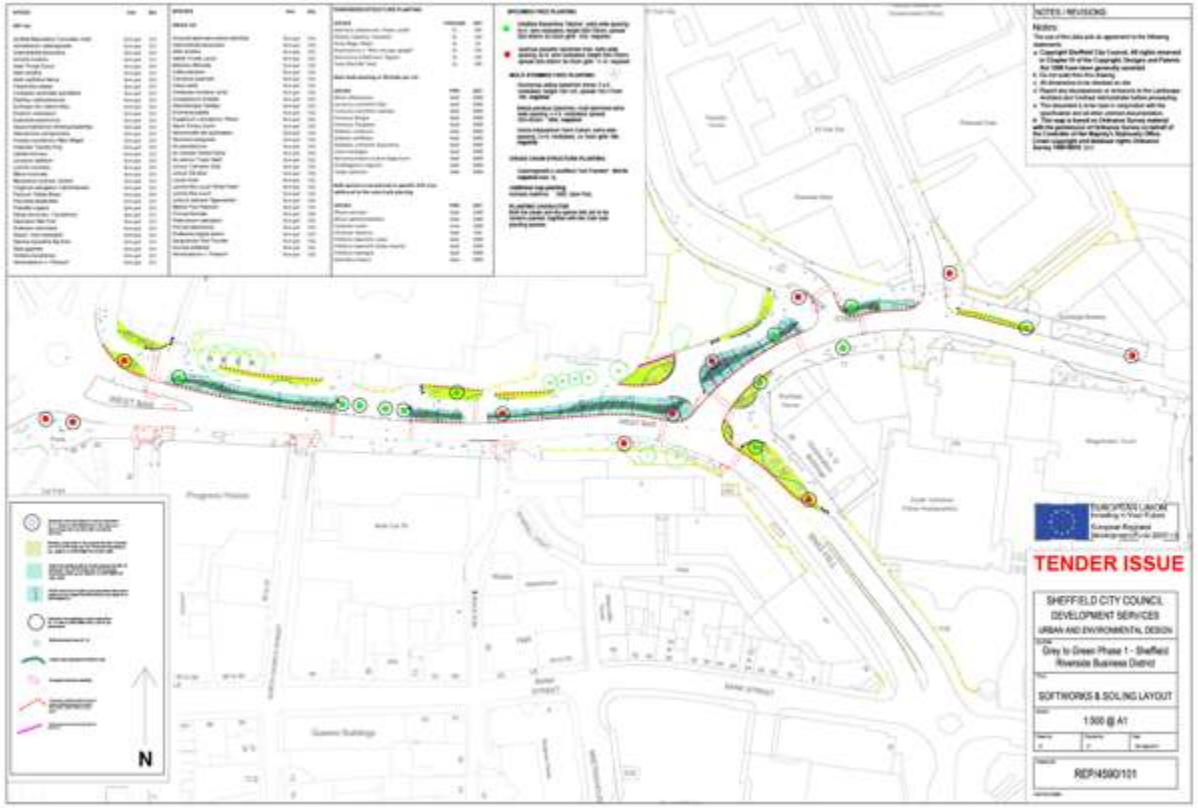
Similar to Bjørnstjerne Bjørnsons Street, Drammen


Block Planting

Nigel Dunnett is inspired by plant communities in the wild

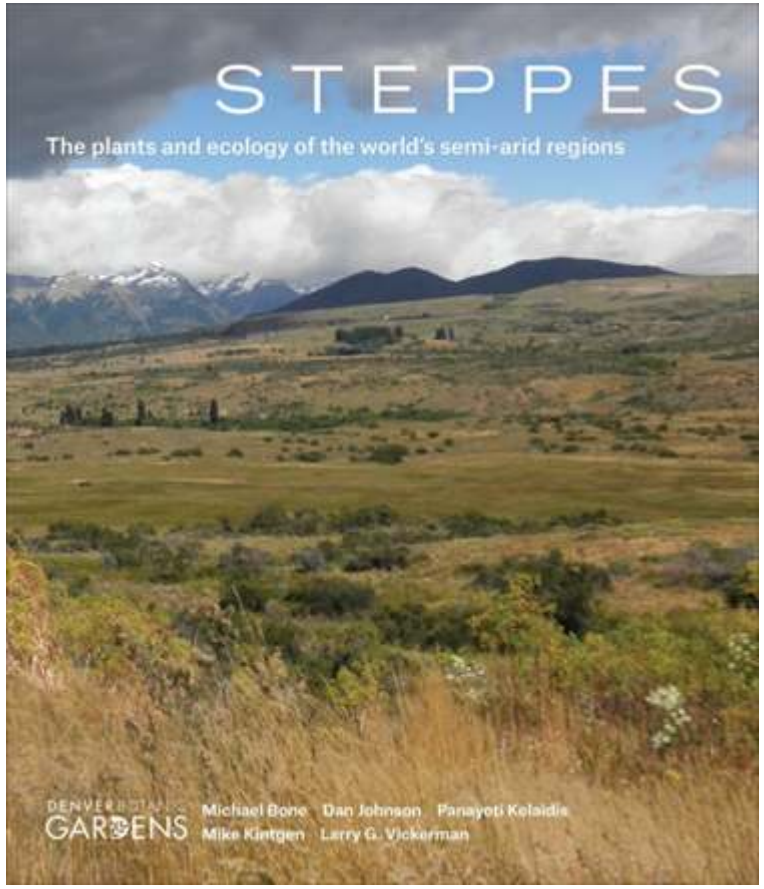
P3 Rule

2 Mixed Plantings- Dry (yellow) and Swale-moist (blue)



Stauder – Dry List

SPECIES	Size	Qty
DRY List		
Achillea filipendulina 'Coronation Gold'	9cm pot	317
Achnatherum calamagrostis	9cm pot	317
Anelmanthele lessoniana	9cm pot	317
Armeria maritma	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 carthusionorum	9cm pot	317
Echinops ritro Veitchs 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
Lyhtrum 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
Grey to Green – Nigel Dunnett v

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

From Southern Europe


Quercus
palustris


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
Grey to Green – Nigel Dunnett


Allium cvs in June 2019
Norges miljø- og biovitenskapelige universitet

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
Norges miljø- og biovitenskapelige universitet

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