

# Ecological Enhancement Scheme

Project	The Hop Exchange
Document Reference	200624-ED-03b
Date	13/08/2020
Updates	Version A – 10/02/21 Updates to reflect changes within the proposed landscaping scheme. Version B – 20/04/21 Updates to reflect changes to local planning policy, biodiversity action plans and landscape scheme.
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## Summary:

To maximise the biodiversity value of the proposed development, the following features will be included within the design. This document includes further details on the following enhancements;

- Wildlife friendly planting scheme
- Extensive green roofs
- Bird, bat and invertebrate boxes

## Purpose of this document

This Ecological Enhancement scheme outlines the ways in which the proposed development at The Hop Exchange, Southwark will seek to enhance the biodiversity value of the site and the surrounding area.

The Southwark Core Strategy 2011 Policy 11 *Open Spaces and Wildlife* states that the LPA will “Require new development to avoid harming protected and priority plants and animals and help improve and create habitat.”. The New Southwark Plan, Proposed Submission Version 2017 Policy P59 Biodiversity states “Development must contribute to net gains in biodiversity through including features such as green and brown roofs, green walls, soft landscaping, nest boxes and habitat restoration”.

Biodiverse roofs are Priority Habitats under the Southwark Biodiversity Action Plan – Built Environment Habitat Action Plan, which states: “Green roofs offer a good alternative to

brownfield (open mosaic) habitats which are declining. Nesting and roosting sites can be installed into buildings to enhance them for bats and birds, either built into the fabric of new buildings or retrofitted to existing ones. Climbers and other forms of green walls can provide nectar for bees and nesting sites for House Sparrows, and other birds. Streets can be greened with trees, hedges and planters full of nectar-rich flowers and be incorporated into flood alleviation and traffic calming schemes.”

### **Opportunities for Ecological Enhancement**

Due to the nature of the site and the proposed development (extension of an existing building), the opportunities for ecological enhancement within the site are very limited. As such, the following opportunities for ecological enhancement have been identified:

- Wildlife friendly planting on roof terraces and green walls
- Biodiverse green roofs
- Bird, bat and invertebrate boxes (various locations)

The ecological enhancements detailed in this document are intended to maximise the ecology of the site itself and also link to habitats and species likely to be found within the local area.

The following considerations and references have driven the design process:

- Southwark Biodiversity Action Plan 2020
- New Southwark Plan Proposed Submission Version 2017 and Amended Policies 2019
- London Biodiversity Action Plan
- Royal Horticultural Society ‘Plants for Pollinators’ garden planting guidance and wildflower list
- The GRO Green Roof Code of Best Practice (2011)
- Buglife ‘Creating Green Roofs for Invertebrates’ Best Practice Guide
- BlackRedstarts.org.uk Green Roof design for Black Redstarts

### **Wildlife Friendly Planting**

The top floor includes an area of accessible roof terrace (see appendix 1 for location). This will be enhanced for wildlife by various planters including species found on the Royal

Horticultural Society's 'Plants for Pollinators' lists, including lavender (*Lavandula species*), *Geranium* species, *Allium* species, and *Ceanothus* species

Approximately 100 m<sup>2</sup> of green walls will also be included within the landscaping scheme throughout the site (See Appendix 1 for locations). In order to maximise the biodiversity value, the following species found on the Royal Horticultural Society's Plants for Pollinators list will be used; *Ceanothus* species, *Rosa* species, firethorn (*Pyracantha rogersiana*) and *Clematis* species.

### **Biodiverse green roof**

An area of flat roof approximately 43 m<sup>2</sup> to the north of the site and a small areas on the 6<sup>th</sup> floor roof approximately 18 m<sup>2</sup> (see Appendix 1 for location) will be used to create 'extensive' green roofs, designed with reference to the GRO Green Roof Code 2011, to contribute towards enhancing biodiversity. In accordance with the Southwark Biodiversity Action Plan, the extensive green roof will aim to meet the definition of 'open mosaic habitat'. The brown-banded carder bee (*Bombus humilis*) is a Priority Species in the Southwark Biodiversity Action Plan. In order to enhance the green roof for this locally important species, its foodplants will be included in the planting list: red clover (*Trifolium pratense*), black knapweed (*Centaurea nigra*) and red bartsia (*Odontites vernus*).

It is recommended that the average substrate depth should be approximately 135 mm, contoured between 80 mm and 200 mm across the roof. Variation in substrate depth is recommended by Buglife as it encourages a mosaic of less-vegetated and more-vegetated areas, providing a habitat for a wide variety of invertebrates.

In order to maximise the biodiversity value of the green roof, it will be vegetated with a wildflower blanket, or wildflower seeding combined with plug planting of wildflower bulbs. At least 20 native wildflower species will be included, to attract a variety of pollinating insects including bumble bees and butterflies.

An installation and maintenance programme will be produced and implemented for the extensive green roof, to include monitoring to ensure the successful establishment and persistence of the intended plant species.



### Bird, Bat and Invertebrate Boxes

The wildlife boxes below have been chosen specifically to benefit species that are found in the local area and have been identified as conservation priority species for the Borough. The locations of boxes have been chosen to meet the requirements of the species concerned and maximise the chances of successful occupation. The indicative locations of the boxes are shown on architect's drawings. To maximise the lifespan of the boxes and minimise visual impact, all models chosen are designed to be incorporated into the masonry of new buildings during construction rather than fitted externally. All boxes are available at [www.nhbs.com](http://www.nhbs.com) or direct from manufacturers.

#### Bat box

Bats are listed on the Southwark Biodiversity Action Plan as priority species for conservation.

**One** of the following two models of bat box (or a suitable equivalent) will be incorporated into the structure of the new building. The box will be located away from artificial lighting as far as possible. These boxes are designed specifically to accommodate *Pipistrelle* species of bat, which are the most common species in urban locations (See Appendix 1 for proposed location).



<b>Bat box:</b>	
1 x Ibstock Enclosed Bat Box 'C'	Or) 1 x Ibstock Enclosed Bat Box 'B'.
	 <p>Large Bespoke 215 x 290 mm</p>

House sparrow terraces

House sparrows are listed on the Southwark Biodiversity Action Plan as a priority species for conservation.

In Greater London, house sparrow numbers have dropped by 68 per cent between 1994 and 2009 (BTO Breeding Bird Survey data) and sparrows are now absent from many areas of central London where they were once common. House sparrows are sociable and prefer to nest in colonies.


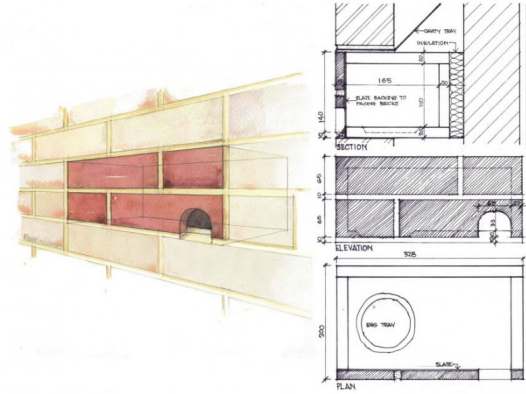
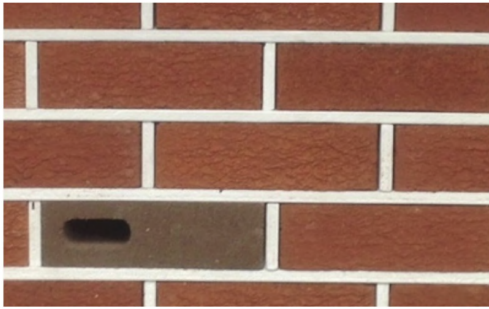
**Two** boxes of one of the following two models of sparrow terrace (or one of each) will be incorporated into the structure of the new building. Suitable equivalent boxes may also be used. The boxes should be installed a minimum of 2 m above ground. (See Appendix 1 for proposed locations).

<b>House sparrow terraces:</b>	
2 x Vivara Pro Woodstone House Sparrow Nest Box.	Or) 2 x Schwegler 1SP Sparrow Terrace.
	

Swift box

Swifts are listed on the Southwark Biodiversity Action Plan as a priority species for conservation.

Swifts are an iconic urban bird species typically using buildings as nesting places. This species is listed as an Amber Species of conservation concern in the UK due to population declines. **Seven** of the following three models (or suitable equivalent) of swift nest box will be incorporated into the structure of the new building. The location must provide sufficient height for swifts to access the box, with a clear flight path to the entrance and out of prevailing winds and strong sunlight. (See Appendix 1 for proposed locations). The boxes must be installed in groups of at-least three boxes with each individual box located approximately 1 m apart.

<b>Swift box:</b>	
Ibstock Eco-habitat for Swifts.	Swift Box – Smooth Brick
	
Vivara Pro Cambridge Brick Faced Swift Nest Box	
	

Black redstart boxes and habitat

Black redstarts are listed on the Southwark Biodiversity Action Plan as a priority species for conservation. The black redstart is a small robin-sized bird that has adapted to live at the heart of industrial and urban centres. This species has a preference for high song perches and nesting in derelict buildings.

The area of extensive green roof will be made suitable for feeding black redstarts by including areas of sparsely vegetated rubble or rocky terrain.

In addition to the area of biodiverse green roof, It is recommended that **one** nest box specifically designed for black redstarts such as the **Schwegler 2HW open-fronted woodcrete nest box** is installed on the building between 3 m to 50 m above ground, adjacent to the proposed extensive green roof. (See Appendix 1 for proposed location).

Invertebrate Boxes

In order to provide additional habitat for invertebrates to shelter, over-winter or nest in, **two** invertebrate boxes will be installed within the site. (See Appendix 1 for proposed locations). See below for recommended models.

Invertebrate Boxes:	
Insect Tower	Conservation Solitary Beehive
	

## Appendix 1 – Location of Proposed Ecological Enhancements



**SPECIFICATION NOTES**

- 1. General landscaping.**  
 i. All landscape works to be undertaken by competent persons, with appropriate training and equipment.  
 ii. All arisings to be removed from site at contractor's expense unless noted otherwise.

- 2. Services.**  
 The contractor must ascertain for himself/herself the exact location of underground services before commencing work.

- 3. Soil Materials Generally.**  
 i. A specialised roof garden topsoil will be specified at detailed design stage.  
 ii. Purity: Soils shall be free from roots, stolons, rhizomes, propagules of perennial or invasive weeds such as grass, bindweed, stocks, Japanese knotweed, giant hogweed and horsetail/marestail (Equisetum arvense).  
 iii. Foreign matter: On visual inspection, free from non-soil material, brick and other building materials and wastes, sharps, and any other foreign matter or material or substance that would render the soil or soil amendment unsuitable for use.  
 iv. Contamination: Do not use topsoil, subsoil, sand or compost contaminated with rubbish or other materials that are:  
 •Corrosive, explosive or flammable;  
 •Hazardous to human or animal life;  
 •Detrimental to healthy plant growth.

- in. Give notice: If any evidence or symptoms of soil contamination are discovered on the site or in topsoil, subsoil, sand or compost or other planting media to be used.

- 5. Soil testing**  
 Each soil source (imported and site-won subsoil and topsoil - see item 7 below) shall be analysed by Tim O'Hare Associates, Howbery Park, Wallingford, Oxon OX10 8BA, Tel: 01491 822653, Email: info@oha.co.uk, www.oha.co.uk (or equivalent approved).

- 6. Ameliorant: fertilizer and compost (contractor is responsible for submitting a sample of imported or site-won topsoil (to inform requirements).**  
 Topsoil ameliorants to be determined by analysis. Once amelioration requirements ascertained as required, approved (peat free) composts to PAS100 and/or fertilizers to be incorporated during cultivation at required rate to full depth of growing medium.

- 7. Soil handling and depths.**  
 Management of soils to be in accordance with the Construction Code of Practice for the Sustainable Use of Soils on Construction Sites

- i. Topsoil and subsoil to be handled (i.e. excavated and/or imported, stored, spread, cultivated) in accordance with method agreed in writing by Landscape Architect prior to work commencing. All topsoil and subsoil areas shall be thoroughly cultivated by hand to the full depth of the topsoil layer, incorporating ameliorants as required. If compaction is suspected in sub-grade, subsoil or topsoil surfaces, these should be ripped as necessary to decompact and ensure adequate drainage.

- ii. Final topsoil depth (allowing for settlement) to be 450mm for all beds with additional depth at tree positions utilising approved subsoil. Finished soil levels to be 25mm below adjoining paving or walls and parapets, not less than 150mm below dpc of adjoining buildings. Topsoil to be spread in lightly compacted layers, max. 150mm depth, gently firm each layer before spreading the next.

- 12. Plant handling and establishment.**  
 Plant handling shall be in accordance with 'Handling and establishing landscape plants', published by the CPSE through the JCL (https://www.csdhub.com/wp-content/uploads/2014/12/The-National-Plant-Specification-Handling-and-Establishment.pdf). The contractor shall comply with Part 3: Recommendations for plant handling from delivery to site to ensure successful establishment.

- 13. General planting notes.**  
 Details for tree, hedge and general planting to be finalised once final site conditions are known (i.e. compaction and permeability of ground). General plant stock to conform to BS 3936, advanced nursery stock to BS 8545, and planting to BS 4429. Plants shall be first class examples of their species or variety, free from all pests and diseases, with good fibrous root systems and material undamaged. All planting operations to be in general compliance with BS4428: 'Code of Practice for general landscape operations'.  
 Only carry out all planting where soil and weather conditions are suitable:  
 •Do not plant during periods of frost or strong winds. Plant only during the following periods:  
 •Deciduous and conifer trees: Late October to late March (rootball and bare root)  
 •Container grown plants: At any time if ground and weather conditions are favourable. Ensure that adequate watering is provided  
 •Bulbs: September/October  
 Setting out of planting beds to be approved by Landscape Architect before work commences.

- 14. Tree planting**  
 Any proposed substitutions of species shown on plan to be approved by landscape architect prior to planting. Details for tree planting to comply with BS5545. As a guide all trees to be planted in planting pits with base undisturbed unless drainage/compaction problems known. Plant at a depth where the root flare is clearly visible at the soil surface. Where trees have been supplied with the root flare too deep excess soil or fibrous root growth should be removed before planting. All trees to have 'Kicker' tree irrigation system installed as supplied by Plettus 01757 762300 www.plettus-anchors.com or approved equivalent. Water-in heavily after planting and mulch surface, ensuring mulch is not in contact with trunk of tree. Tree support to comply with BS 8545. Any necessary remedial tree works are to be carried out by an approved tree surgeon to BS 3998. Trees planted within grass areas to be set in mulched earth circles, 1m diameter around tree trunk, with turf trimmed neatly to form circle.

- 15. Specimen Shrubs.**  
 Depth of planting pit to be same as rootball, overall width space 100mm wider than rootball (50mm min. from rootball edge to sides of pit). Pit to be backfilled with 300mm depth of specified topsoil over subsoil as per spec. Fertiliser to be incorporated as required to ensure establishment and continued thriving of plants - type and application rate to be determined by analysis.

- 16. Shrub and Ground Cover Planting.**  
 All plants to be planted into cultivated planting beds (with 300mm depth specified topsoil) at densities shown in plant schedule, backfilled with same topsoil. Fertiliser to be incorporated as required to ensure establishment and continued thriving of plants - type and application rate to be determined by analysis.

- 17. Climbers.**  
 All climbers to be planted as above and provided with steel line wires attached with climbers spread out and tied to wires using appropriate horticultural ties. Fertiliser to be incorporated as required to ensure establishment and continued thriving of plants - type and application rate to be determined by analysis.

- 18. Bulb planting.**  
 All bulbs to be planted at the rate given in the schedule, in random mixed drifts of single species in areas indicated on the plan, minimum 15 bulbs per drift of single species. Plant so that the top of the bulb is at a depth of approximately twice its height with base in contact with bottom of hole. Bulbs should be no closer together than approximately twice the width of a single bulb.

- 19. Plants in Containers.**  
 Containers to be prepared for planting with a 50mm layer of gravel/broken pot in the base to ensure free drainage, followed by peat-free compost. Once planted, the compost is to be topped with a 30mm layer of buff-coloured decorative stone chips, to give a finished level 30mm below the top of the pot. Container plants are to be fed in late March and late June with a general fertilizer.

- 20. Drip line irrigation.**  
 Irrigation system to be installed designed by contractor (if required) and shall be a drip line system with filter / pressure regulator set, automatic control system and 12mm diameter irrigation pipe to length of beds, as supplied by approved manufacturer and installed in accordance with their recommendations. Pipework connecting dripline to supply shall be 20mm diameter. The Landscape Contractor shall submit proposals for approval. Installation will require coordination by the landscape contractor with others regarding ducting pipework, supply and control locations.

- 21. Maintenance.**  
 Establishment maintenance for all planting for 5 years from Practical Completion to include weed control, watering and replacement of failures to original specification in the planting season following failure.  
 i. All plant material to receive annual pruning and hedges and groundcover to be trained and edged with minimum 2 trims per year.  
 ii. Check guys and ties annually and after strong winds.

**Hop Exchange, Southwark**

Abbreviation	Species	Specification	Qty.	Height
Acer_davi 'George'	Acer davidi 'George Forrest'	Multi-stem	1 No.	2.5m
Amel_lama	Amelanchier lamarckii	'Umbrella' form	3 No.	2.5m
Euon_ala	Euonymus alata	'Umbrella' form	1 No.	2.5m
Olea_euro	Olea europaea	'Umbrella' form	1 No.	2.5m
Pinu_mug Mug	Pinus mugo 'Mughus'	'Umbrella' form	1 No.	2.5m

Abbreviation	Species	Pot Size	Density	Qty.
Ilex_Aqui 'J.C. V T'	Ilex aquifolium 'J.C. van Tol'	20L	Counted	1 No.
Juni_com Rep'	Juniperus communis 'Repand'	10L	3/m <sup>2</sup>	13 No.
Lava_Mun'	Lavandula angustifolia 'Munstead'	2L	6/m <sup>2</sup>	11 No.

Abbreviation	Species	Pot Size	Density	Qty.
Heuc_sang 'Alba'	Heuchera sanguinea 'Alba'	2L	6/m <sup>2</sup>	14 No.
Hosta_Snow'	Hosta 'Snowflakes'	2L	6/m <sup>2</sup>	12 No.
Liri_musc	Liriope muscari	2L	6/m <sup>2</sup>	14 No.

Abbreviation	Species	Pot Size	Density	Qty.
Cean_Autumnal'	Ceanothus 'Autumnal Blue'	5L+	No.	1 No.
Clem_Etoile'	Clematis 'Etoile de Hollande'	5L+	No.	2 No.
Humu_lupu 'Aureus'	Humulus lupulus 'Aureus'	5L+	No.	15 No.
Part_quin	Parthenocissus quinquefolia	5L+	No.	1 No.
Pyra_roge	Pyracantha rogersiana	5L	No.	3 No.
Rosa_ice' Climg	Rosa 'Iceberg Climbing'	5L+	No.	1 No.

Abbreviation	Species	Density	Qty.
Tuli_Diana	Tulipa Diana	12/m <sup>2</sup>	21 No.

Number	Abbreviation	Species	Density
50 No.	Cala 'K.F.'	Calamagrostis acutiflora 'Kari Foerster'	5/m <sup>2</sup>
50 No.	Fest_ 'E.B.'	Festuca glauca 'Elijah Blue'	5/m <sup>2</sup>
50 No.	Oph_plan 'N'	Ophrysopogon plantaginifolius 'Nigrescent'	5/m <sup>2</sup>
50 No.	Penn_ 'Ham'	Pennisetum atopocucoides 'Hamelin'	5/m <sup>2</sup>
Total: 200 No.			

Number	Abbreviation	Species	Density
18 No.	Ach_fili 'Coro Gold'	Achillea filipendula 'Coronation Gold'	6/m <sup>2</sup>
18 No.	Alch_moll	Alchemilla mollis	6/m <sup>2</sup>
18 No.	Alli_scho 'album'	Allium schoenoprasum 'album'	6/m <sup>2</sup>
18 No.	Alli_scho 'Purp'	Allium schoenoprasum 'Purple Sensation'	6/m <sup>2</sup>
18 No.	Dry_fili_mas	Dryopteris filix-mas	6/m <sup>2</sup>
18 No.	Echi_rit	Echinops ritro	6/m <sup>2</sup>
18 No.	Eryn_bour	Eryngium bourgati	6/m <sup>2</sup>
18 No.	Gera_ 'John'	Geranium 'Johnson's Blue'	6/m <sup>2</sup>
36 No.	Lava_ang	Lavandula angustifolia	6/m <sup>2</sup>
18 No.	Liri_musc	Liriope muscari	6/m <sup>2</sup>
18 No.	Nep_faas	Nepeta x faassenii	6/m <sup>2</sup>
18 No.	Poly_bist	Polygonum bistorta	6/m <sup>2</sup>
18 No.	Poly_vulg	Polygonum vulgare	6/m <sup>2</sup>
18 No.	Ruta_grav	Ruta graveolens	6/m <sup>2</sup>
18 No.	Saxi_umb var	Saxifraga umbrosa variegata	6/m <sup>2</sup>
36 No.	Sedum_ 'Autum'	Sedum 'Autumn Joy'	6/m <sup>2</sup>
18 No.	Verb_bon	Verbena bonariensis	6/m <sup>2</sup>
Total: 360 No.			

Number	Abbreviation	Species	Density
8 No.	Alch_moll	Alchemilla mollis	6/m <sup>2</sup>
8 No.	Cycl_hed album	Cyclamen hederifolium album	6/m <sup>2</sup>
8 No.	Cycl_pers 'Verano'	Cyclamen persicum 'Verano Red'	6/m <sup>2</sup>
8 No.	Gera_ 'Red'	Geranium 'Bright Red'	6/m <sup>2</sup>
8 No.	Gera_ 'Album'	Geranium macrorrhizum 'Album'	6/m <sup>2</sup>
8 No.	Heuch_ 'Snow'	Heuchera 'Snowstorm'	6/m <sup>2</sup>
8 No.	Heuc_sang	Heuchera sanguinea	6/m <sup>2</sup>
8 No.	Hosta_ 'Gold'	Hosta 'Golden Tiers'	6/m <sup>2</sup>
8 No.	Hosta_ 'Shade'	Hosta 'Shade Fanfare'	6/m <sup>2</sup>
8 No.	Hosta_ 'Snow'	Hosta 'Snowflakes'	6/m <sup>2</sup>
Total: 80 No.			

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2183	Ach_fili 'Coro Gold'	Achillea filipendula 'Coronation Gold'	6/m <sup>2</sup>
2183	Alch_moll	Alchemilla mollis	6/m <sup>2</sup>
2183	Alli_scho 'album'	Allium schoenoprasum 'album'	6/m <sup>2</sup>
2183	Alli_scho 'Purp'	Allium schoenoprasum 'Purple Sensation'	6/m <sup>2</sup>
2183	Dry_fili_mas	Dryopteris filix-mas	6/m <sup>2</sup>
2183	Echi_rit	Echinops ritro	6/m <sup>2</sup>
2183	Eryn_bour	Eryngium bourgati	6/m <sup>2</sup>
2183	Gera_ 'John'	Geranium 'Johnson's Blue'	6/m <sup>2</sup>
2183	Lava_ang	Lavandula angustifolia	6/m <sup>2</sup>
2183	Liri_musc	Liriope muscari	6/m <sup>2</sup>
2183	Nep_faas	Nepeta x faassenii	6/m <sup>2</sup>
2183	Poly_bist	Polygonum bistorta	6/m <sup>2</sup>
2183	Poly_vulg	Polygonum vulgare	6/m <sup>2</sup>
2183	Ruta_grav	Ruta graveolens	6/m <sup>2</sup>
2183	Saxi_umb var	Saxifraga umbrosa variegata	6/m <sup>2</sup>
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8 No.	Cycl_hed album	Cyclamen hederifolium album	6/m <sup>2</sup>
8 No.	Cycl_pers 'Verano'	Cyclamen persicum 'Verano Red'	6/m <sup>2</sup>
8 No.	Gera_ 'Red'	Geranium 'Bright Red'	6/m <sup>2</sup>
8 No.	Gera_ 'Album'	Geranium macrorrhizum 'Album'	6/m <sup>2</sup>
8 No.	Heuch_ 'Snow'	Heuchera 'Snowstorm'	6/m <sup>2</sup>
8 No.	Heuc_sang	Heuchera sanguinea	6/m <sup>2</sup>
8 No.	Hosta_ 'Gold'	Hosta 'Golden Tiers'	6/m <sup>2</sup>
8 No.	Hosta_ 'Shade'	Hosta 'Shade Fanfare'	6/m <sup>2</sup>
8 No.	Hosta_ 'Snow'	Hosta 'Snowflakes'	6/m <sup>2</sup>
Total: 80 No.			

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8 No.	Cycl_pers 'Verano'	Cyclamen persicum 'Verano Red'	6/m <sup>2</sup>
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8 No.	Gera_ 'Album'	Geranium macrorrhizum 'Album'	6/m <sup>2</sup>
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