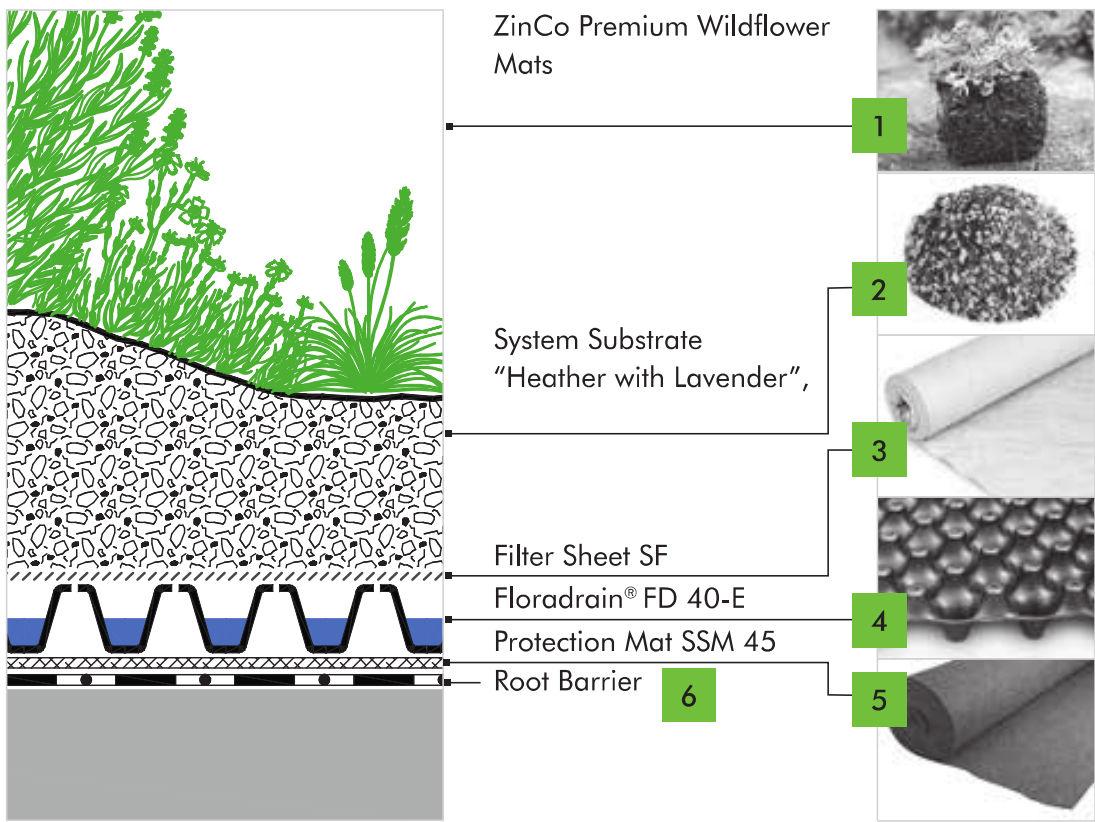


LIVING ROOF LAYOUT PLAN

SCALE 1:50 @ A1

ZINCO LIVING ROOF SYSTEM; - DETAILED BUILD UP



Technical Data

Average build-up height: ca. 170 mm
Average roof pitch: up to 8°
Average weight, saturated: ca. 200 kg/m²
Average water storage capacity: ca. 73 l/m²

1 Vegetation: Precultivated Wildflower Mats for immediate ground covering including a biodiverse and colourful mixture of wildflowers, herbs and flowering perennials with a prolonged flowering period from April to September.

2 System Substrate "Heather with Lavender": Special ZinCo blend of aggregates to provide a system substrate particularly suitable for the ZinCo Premium Wildflower Mats. Suitable substrate depths 100–150mm. Substrate available in Bulk Bags, 25 l bags and loose on lorry.

Water permeability mod. K: 0.3–30 mm/min

Water storage per 10 mm substrate height: ca. 5 l/m²

3 Filter Sheet SF

Item No.	Dimensions	Unit
2100	ca. 2.00 m × 100.00 m	200 m²-roll
2102	ca. 1.00 m × 100.00 m	100 m²-roll

Penetration force acc. to EN ISO 12236: ca. 1100 N
Flow rate (H50) acc. to EN ISO 11058: ca. 70 l/(m²·s) (± 0.07 m/s)
Notes on installation: Filter Sheet SF requires an overlap of at least 200 mm.

4 Floradrain® FD 40-E
Floradrain® FD 40-RV
(Roll with filter sheet attached)

Item No.	Dimensions	Unit
3041	ca. 0.96 m × 2.08 m	2 m²-board
3042	ca. 0.94 m × 10.70 m	10 m²-roll

Water storage capacity: ca. 5 l/m²
Filling volume: ca. 17 l/m²
Compressive strength at 10 % compression without filling: ca. 170 kN/m²
Compressive strength at 10 % compression with filling: ca. 250 kN/m²

5 Protection Mat SSM 45

Item No.	Dimensions	Unit
2045	ca. 2.00 m × 50.00 m	100 m²-roll

Water storage capacity: ca. 5 l/m²
Penetration force acc. to EN ISO 12236: > 2000 N
Notes on installation: Protection Mat SSM 45 has to be installed with an overlap of min. 100 mm.
At the roof edge it has to be taken up at least to the finished surface.

5 Root Barrier: If the waterproofing is not root resistant, the Root Barrier WSB 100-PO is required as a bottom layer of the system build-up.

PLANTING SPECIES & DENSITY

Technical Data

Pre-cultivated ZinCo Premium Wildflower Mats

ZinCo Wildflower mats are supplied as a pre-cultivated instant vegetation layer growing in a strong felt mat made from recycled British textiles. They include a biodiverse and colourful mixture of wildflowers, herbs and flowering perennials with a prolonged flowering period from April to September and attractive to a wide range of pollinators.

Planting mix: wildflowers, herbs and flowering perennials
Material: 450 g/m² felt with scrim
Thickness: 25 mm
Vegetation coverage: 75 % minimum at point of sale
Roll size: ca. 1.2 m² (0.6 m x 2.0 m) or ca. 2.4 m² (1.2 m x 2.0 m)
Saturated weight: ca. 25 kg per m²

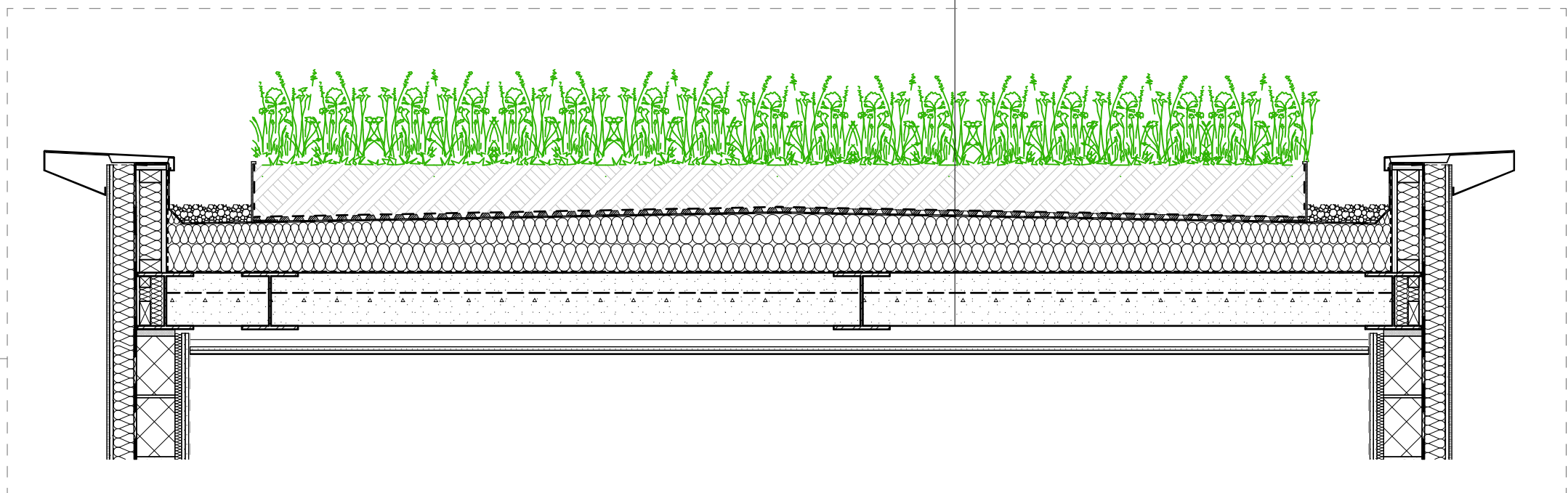
Delivery options: Pallet delivery service for small orders, variety of delivery options for large orders on request.

Wildflower Varieties

Botanical name	Common name	Height (cm)	Flower colour	Blooming period
Achillea Millefolium	Yarrow	20-100	white	5-7
Allium schoenoprasum	Chives	30-40	purple	7-8
Centaurea cabiosa	Greater Knapweed	30-60	violet	6-9
Dianthus carthusianorum	Carthusian Pink	30-60	red	7-9
Echium vulgare	Viper's-Bugloss	30-80	purple	5-9
Filipendula ulmaria	Meadowsweet	50-120	white	6-8
Gallium verum	Lady's bedstraw	30-50	yellow	6-8
Knautia avensis	Field Scabious	30-80	purple	7-8
Leontodon hispidus	Rough Hawkbit	10-60	yellow	6-10
Leucanthemum vulgare	Oxeye Daisy	30-90	white	5-9
Linaria vulgaris	Toadflax	20-70	yellow	7-9
Silene dioica	Red Carnation	20-60	red/pink	5-8
Thymus vulgaris	Common Thyme	10-30	light purple	7-9
Veronica spicata	Spiked Speedwell	15-40	blue	6-7

SECTION

SCALE 1:20 @ A1



TYPICAL ROOF BUILD UP

Living Roof precultivated Wildflower Mat
Substrate, depth varies 180 - 220mm, refer to ZinCo detailed system build up for further information
Drainage board & associated layers, refer to ZinCo detailed system build up for further information
Waterproofing DPM with root barrier
Tapered (170 - 210mm) insulation board to 1:60 falls to 300mm wide perimeter pebble channel gutter / vegetation barrier
Waterproofing DPM with Vapour Control Layer
200mm composite re-inforced concrete slab on metal decking

MAINTENANCE SCHEME

Stages

Completion Care

Successful installation — pre-cultivated vegetation mats or elements.

Vegetation mats must have established and secure root systems. There must be 90% cover by the advertised vegetation for acceptance. A maximum of 10% of the joints may be visible. Vegetation mats with wild flowers, herbs and grasses may contain a maximum 20% suitable species; Sedum vegetation mats should not contain any foreign vegetation.

Development Care

Directly after handing over the project, a 2 year maintenance period will begin. The goal is a permanently functioning green roof with a surface cover of at least 90% and a species composition in accordance with the plant lists. There are usually required 2 to 3 maintenance rounds per year. For this purpose, a maintenance contract should be struck with a specialist company.

Maintenance Care

Here it is important to preserve a functional state, the area coverage and possibly regulatory action.

Maintenance care belongs in the hands of skilled personnel.

2 to 3 maintenance rounds per year are recommended. The client may agree to a single annual maintenance in the case of sedum roofs and simple grass roofs.

Description of steps

Fertilization

For initial and subsequent fertilization, the FLL Guideline recommends a coated NPK slow-release fertilizer at a rate of 5 g N/m² FLL-Guidelines for the Planning, Construction and Maintenance of Green Roofing, 2008. For example a coated NPK long-term fertilizer 23 -5-10 with a residual effect of about 4 months can be used. The ideal time for fertilization is March to mid-June. If necessary, fertilizing later in the vegetation period can be conducted with a slow-release lawn fertilizer. Fertilizing should not occur in the rest period.

Recommendations for initial fertilization
When planting in mid-March to mid-June: coated NPK long-term fertilizer 23 -5-10, 25 g/m²
When planting in late June to mid-September: slow release lawn fertilizer NPK 20 -5-8, 10 g/m²
Greening mid-September to February: start fertilization in early spring.

Recommendations for subsequent fertilization
Every 2-3 years — coated NPK long-term fertilizer 23 -5-10, 25 g/m².

Irrigation

Initial irrigation
A thorough irrigation after planting is always necessary. Other early irrigations are required depending on the weather. We recommend the use of an automated irrigation for the initial period.

Duration

Planting — 3 to 4 weeks
Vegetation mats — 4 to 5 weeks
Seeding — 6 to 8 weeks (avoid any drying out after germination)

Irrigation in intervals

As long as the vegetation is not yet closed, evaporation losses from the substrate will occur. It is possible that rooting is not yet complete. Watering in intervals can be necessary until handover, especially in areas with low amounts of precipitation or during periods of draught.

Emergency irrigation

A green roof should also be watered long-term (except sedum plantings in climatically favourable regions)
Permanent irrigation installation can be useful, especially for pitched roofs > 20° and for roofs in hot, dry climates.

Removal of undesired vegetation

Weeds do not only disturb with the desired appearance of the roof. They also compete with the intended vegetation for nutrients and water and therefore interfere with the development of a healthy green roof. The first step towards preventing weeds is the use of a sterile growing medium. However, weeds can also be introduced by birds or wind. Due to the exposed state of the substrate during the establishment phase, weeding is especially important at that time. If undesired species are removed by their roots regularly and on time before they produce seeds or cover large areas, the total effort can be kept low. Usually 2-3 maintenance rounds per year until handover, and once annually thereafter is required for extensive green roofs. More frequent weeding may be necessary depending on the project, for example in extremely windy locations or near a forest.

Mowing

A clean cut every 2-3 years promotes biodiversity. More frequent mowing can be agreed for optical reasons. Cut grass must be removed.

Levelling after frost heave

Plantings in autumn or early winter sometimes have insufficient time to root.

Therefore, conduct a temper rolling in the spring or in accordance with frost free weather to level the vegetation and avoid desiccation.

Rework joints in vegetation mats

Joints in vegetation mats always occur to some degree. A reworking is necessary for a good appearance. On pitched roofs erosion must be avoided. As remedy, additional substrate and vegetation can be introduced to match the vegetation mats.

Maintenance of security and fire protection strips

These areas should be cleaned regularly and kept free of vegetation.

Erosion Control

Erosion control during installation and maintenance is particularly important, especially in pitched roofs. Wind uplift must also be controlled. For example, adhesive may be used again after hydro seeding. Stones can be used to secure mats until roots have formed. Long term, full vegetative coverage is key to avoiding erosion. This may require reseeding or replanting.

Control of irrigation and drainage

Drains and drainage systems must be kept clean, clear of obstructions and free flowing. Optionally installed irrigation systems must also be kept in good working order.

DO NOT SCALE FROM THIS DRAWING

Figured dimensions only are to be taken from this drawing. All dimensions are to be checked on site before any work is put in hand. If in doubt, ask.

All SHH drawings to be read in conjunction with relevant SHH Finishes, Sanitaryware, Lighting & Ironmongery schedules.

Any discrepancies to be highlighted to SHH prior to procurement and in good time.

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Legends & Notes:

Rev	Date	Descriptor	Athr.
P01	02.02.2021	Submitted for Condition Discharge	sr



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Drawing Title:
Planning / LB Condition Discharge

Living Roof (Planning Condition no. 14)

(Project number)DWG number_Revision: (828)SK010
Checked: P01