

Planting Species and Density for ~30 m² Extensive Green Roof – 37 Compayne Garden (Outbuilding)

The proposed extensive green roof design prioritizes ecological benefits, low maintenance, and sustainability. The plant species selected are hardy, drought-tolerant, and suited to thrive in shallow substrates, ensuring long-term success with minimal irrigation and fertilization needs.

1. Plant Species Selection

The plant palette consists of sedums, grasses, herbs, and succulents, chosen for their resilience and ecological value:

- **Sedum Species (Dominant Plants):**
 - ***Sedum album* (White Stonecrop):** Bright green foliage with small white flowers in summer.
 - ***Sedum spurium* (Creeping Sedum):** Fleshy leaves that turn red or purple in fall, forming a low-growing mat.
 - ***Sedum acre* (Goldmoss Sedum):** Yellow-green foliage forming dense mats, highly drought-tolerant.
 - ***Sedum telephium* (Autumn Joy):** Taller variety with pink flowers blooming in late summer/fall.
- **Grasses:**
 - ***Festuca glauca* (Blue Fescue):** Ornamental grass with blue-grey foliage.
 - ***Carex flacca* (Blue Sedge):** Clump-forming sedge tolerant of dry conditions.
- **Herbs:**
 - ***Thymus serpyllum* (Creeping Thyme):** Fragrant ground cover with tiny purple flowers.
 - ***Lavandula angustifolia* (Lavender):** Drought-resistant, low-maintenance, with strong fragrance.
- **Succulents:**
 - ***Sempervivum tectorum* (Hens and Chicks):** Hardy succulents that help with erosion control.

2. Planting Density and Arrangement

Careful planning ensures optimal coverage and long-term sustainability:

- **Sedum Species (70% of Area):**
 - Density: 8–12 plants per m².
 - Total: Approximately 450 plants across the roof.
 - Arrangement: Mixed clusters or a tapestry for a natural look.
- **Grasses and Herbs (20% of Area):**
 - Grasses (*Festuca glauca*): 5 plants per m², spaced 20–30 cm apart.
 - Herbs (*Thymus serpyllum*): 3 plants per m² for even distribution.
 - Total: 240 plants.
- **Succulents and Other Plants (10% of Area):**
 - *Sempervivum tectorum*: 4 plants per m².
 - *Lavandula angustifolia*: 1 plant per 2 m².
 - Total: Approximately 135 plants.

3. Coverage and Layering

The goal is to achieve 90% coverage within 1–2 years:

- **Top Layer:** Primarily sedums, grasses, and herbs for immediate coverage.
- **Lower Layer:** Additional succulents and herbs to fill gaps and enhance biodiversity.