GrowingRevolution

Core BNG-Focus: Living Walls

1. **UK biodiversity net gain legal framework**

- Since 2023, developers must deliver a minimum 10% biodiversity net gain on projects in England under the Environment Act 2021.
- Vertical greening including living walls, wires and cables and green screens are highlighted as an effective solution for boosting biodiversity in dense urban spaces, where horizontal land is limited.

Source: https://tugc.co.uk/urban-greening-services/biodiversity-net-gain/

Royal Horticultural Society Invertebrate Research (2023)

- Walls with vegetation show significantly higher abundance and diversity of invertebrates compared to bare walls.
- Increased vegetation depth and structural complexity lead to greater species richness- walls covered with common ivy (especially multiple cultivars) supported the highest abundance of predators, herbivores, and detritivores RHSLandscaping Matters.
- This research strengthens evidence that living walls can *form functional habitats* for urban biodiversity, supporting food webs and ecological balance in cities.

Carefully designed living walls do more than decorate, they function as vertical "mini-habitats," creating space for insect populations that support birds and other wildlife.

Source: https://landscapingmatters.co.uk/new-rhs-research-reveals-rich-invertebrate-abundance-within-green-facades/

Broader Benefits and Metrics

Research shows living walls are particularly effective when combined with other urban greening:

- Acting as vertical corridors, they improve habitat connectivity and help species movement between green spaces: Source MDPI.
- A typical sedum-&-wildflower wall can sequester significant carbon — e.g., a 1,700 m^2 wall captured 2,210 kg of CO_2/year (equivalent to 85 mature trees)Source: Planning, Building & Construction Today.

- Study results show living walls also contribute to air quality improvement, airshed biodiversity, and carbon sequestration - all positive outcomes that Local Planning Authorities can factor into BNG reports

Metric / Output	Typical Results	Source
Invertebrate abundance vs bare wall	Significantly higher (3–5× more)	RHS sky-green study
Habitat complexity benefits	More nesting, feeding, reproduction sites	RHS study
Carbon sequestration	~2,210 kg CO_2/year for 1,700 m^2 wall (~85 trees)	PBC Today Case Study
Practical BNG contribution	Adds biodiversity units, habitat connectivity, and resource availability for pollinators and birds	Urban Greening Company BNG guide

GrowingRevolution

How living walls generate biodiversity units

Under the statutory BNG framework in England, biodiversity value is measured using the statutory biodiversity metric, which scores habitat distinctiveness, size, condition, and location. Living walls are treated as "artificial habitat enhancements" rather than classic habitat types, but they do contribute to net gain in several ways:

1. Habitat and structural complexity
Living walls can be classed as "structured habitat" (e.g. A5.3 Urban green infrastructure – semi-natural habitats) in the metric if they are planted with diverse, wildlife-supporting species (native perennials, herbs, grasses, woody climbers etc). This kind of habitat often scores **"**moderate" or "high" distinctiveness, meaning each m^2 can potentially contribute biodiversity units comparable to low-quality grasslands.

2. Species richness & invertebrate support
Hands-on research shows green façades dramatically increase invertebrate numbers and diversity - especially if they include native ivy, wildflower plugs or layered planting. Invertebrates are a key component of the ecological structures BNG aims to restore, because they support birds, bats and other wildlife.

- Ivy and climbers can support over 20 species of invertebrates per m^2 — a figure several times higher than a bare wall.
- Adding features like nest boxes, bat roosts or insect hotels can further boost this score by adding structural features that count in the metric.

3. Connectivity and landscape function
Though they're "vertical", living walls contribute to movement pathways between ground-based habitats - which is critical for the Location value part of the metric. Including living walls in a wider habitat network (e.g. next to open space, trees or swales) can potentially increase their biodiversity unit score.

4. Enhancement and mitigation
Living walls are often proposed as *enhancements* - they help raise a site's biodiversity value rather than replace it. As such, they're usually considered **habitat creation** under the metric, meaning they can generate new biodiversity units - provided they're maintained for at least **30 years**, the minimum legal condition. GOV.UK