

A.D Architectural Design Consultants LTD.

info@addesign.uk

addesign.uk

GREEN INFRASTRUCTURE STATEMENT

**Proposed 5 No. External Air Source Heat Pumps
and timber fenced compound at Ty Bryn Seion,
Dowlais, Merthyr Tydfil, CF48 3SR.**



This Green Infrastructure Statement (GIS) describes how Green Infrastructure (GI) has been added to the development proposal. The Step-Wise approach outlined in Table 1 demonstrates the steps taken towards securing a Net Benefit for Biodiversity (NBB).

Table 1: Step-Wise approach

STEPS	1	Avoid	No alternative sites were more appropriate.
	2	Minimise	The minimum area necessary for creation of the compound has been used for the proposed air source heat pump compound, which will be sited on an existing clothes-drying area. This will maintain the largest possible area of existing habitat.
	3	Mitigate/Restore	N/A
	4a	Compensate onsite	
	4b	Compensate offsite	
	-	Enhance	See Table 2 for GI additions/enhancement prescriptions.
	5	Long-term management	See Box 1

Table 2: GI additions/enhancements to be added to the site

Existing	GI additions/enhancements	Description
Amenity grassland and concrete/hardstanding path	Native wildflower/grass habitat.	20m ² area of concrete/hardstanding path and amenity grassland to be removed and replaced with low fertility soil and seeded with the following seed mix: EM1 Basic General Purpose Meadow Mixture - Emorsgate Seeds (or equivalent)
	6x trees (must be native species & of local (or at least Welsh or UK) provenance)	Trees added in the wider grassland area. Tree species: - Hazel - Holly - Wild cherry - Guelder rose - Rowan - Silver birch

TIMING

Trees will be planted between mid-November and late March when roots are dormant.

FUNDING & MANAGEMENT

Tai Wales & West Housing Association will be responsible for the initial funding and ongoing costs of the enhancement measures above along with the management going forward.

The broad framework (*DECCA*) for implementing the Section 6 Duty, securing NBB and building resilience through the planning system includes addressing the following attributes:

Table 3: *DECCA framework attributes in relation to the proposed GI additions/enhancements*

Diversity	The proposed GI additions/enhancements will increase onsite biodiversity.
Extent	In terms of wildflower and tree habitat the onsite extent will be increased.
Condition	The long-term management of the proposed GI additions/enhancement habitats will ensure a healthy condition
Connectivity	The wildflower area and trees will provide excellent stepping-stone habitat for a range of invertebrate and bird species.
Adaptability to change	The increase in biodiversity will ensure the onsite habitats are adaptable to change (resilient)

Long-term (25 year) management of the GI additions/enhancements detailed in Table 2 are shown below:

Box 1: *25-year management of small trees and wildflower + grassland areas*

SMALL TREES

1. Choose the right tree

- Consider your space: Assess site size and layout. Suitable smaller native tree species include holly, hazel, hornbeam, field maple, hawthorn, silver birch.
- Match with soil type: Native trees thrive when planted in suitable soil conditions. Consider the type of soil on your site (sandy, clay, or loam) and choose a species that thrives in those conditions.
- Local climate conditions: The UK climate varies, and choosing a tree adapted to your region ensures better long-term health (NB tree species as listed above would be suitable for the Merthyr area).
- Wildlife benefits: Many native trees support local wildlife by providing food, shelter, and nesting sites.

2. Planting

- Timing: The tree will be planted between mid-November and late March when roots are dormant. Planting will be avoided in waterlogged or frozen soil.
- Tree preparation: The tree's roots will be soaked in water for a couple of hours before planting. For containerised trees, the rootball will be well-watered before removal from the pot.
- Hole preparation: A hole at least double the width of the rootball will be dug deep enough to allow the root flare (where the trunk meets the roots) to be at or just below the soil surface. The soil will be loosened around the sides of the hole to encourage root growth.
- Planting: Congested roots will be gently loosened, if necessary, and spread out in the hole. The tree will be placed in the centre of the hole, ensuring the root flare is at the correct level. The hole will be backfilled with soil, gently firming to remove air pockets. The hole will be watered generously to settle the soil.
- Staking (optional): For taller, more exposed, or vulnerable trees, a stake will be inserted at a 45-degree angle to provide support and prevent wind rock which can damage roots. A flexible tree tie and a spacer will be used to avoid the tree rubbing against the stake. The stake will be driven in to a depth of at least 40cm.
- Guarding (optional): If rabbits or other animals are a concern, a tree guard or spiral will be added to protect the young trunk.

3. Establishment, aftercare and management

Years 1-5: Establishment and formative care

- **Initial planting:** The planting techniques as described in the previous section will be used, including choosing the right species, preparing the planting hole correctly, and providing initial support with staking and guards if needed.
- **Watering:** During the first 2-3 years, regular, the tree will be watered, especially during dry spells, with approximately 20 litres every fortnight, ensuring the water soaks deep into the soil to encourage a strong root system. After this, the tree will be watered only during prolonged periods of drought or extreme heat.
- **Weeding and Mulching:** A 1-meter diameter area around the tree base will be kept clear of weeds and grass for the first 2-3 years to reduce competition for nutrients and moisture. A 10cm deep layer of mulch (bark chips, straw) can be applied to suppress weeds and conserve moisture. The mulch will not be piled against the trunk.
- **Pruning:** Formative pruning will be used to establish a strong structure. This will involve removing broken, diseased, or damaged branches and promoting a dominant central leader. Pruning will be undertaken in winter for most native deciduous trees (NB some species like cherry and walnut may benefit from summer pruning to reduce disease risk).
- **Tree Guards and Stakes:** If used, tree guards will be regularly checked to ensure they are pushed firmly into the soil. The guards will be removed after 5-10 years as they can restrict growth or disintegrate. Stakes and ties will be removed after 3-5 years when the tree is established and can stand on its own.
- **Pest and Disease Monitoring:** The tree will be regularly inspected for signs of pests or diseases. Early detection allows for more effective treatment.

Years 5-15: Growth and continued development

- **Pruning:** Growth will continue to be monitored and the tree will be pruned for health and aesthetics as needed. Pruning will be used to maintain the desired shape and size, remove dead or diseased wood, and address any structural issues. Heavy pruning can stress the tree, so the tree will be pruned little and often. Removing more than 25% of the canopy at a time will be avoided.
- **Soil and Nutrient Management:** Soil health will be maintained by continuing to mulch annually to improve soil structure, retain moisture, and suppress weeds. Native trees generally do not require heavy fertilization, especially once established, as they adapt to the natural soil conditions. Synthetic fertilisers, pesticides, and herbicides will not be used.
- **Promote Biodiversity:** A thriving ecosystem can be created around the tree by adding features like nest boxes, ponds, or wildflower areas.

Years 15-25: Maturity and long-term care

- **Continued Monitoring:** As the tree matures, will continue to be annually inspected for signs of pests, diseases, or structural weaknesses. Changes in twig growth, leaf size and number, dieback in the crown, and signs of decay will be noted.
- **Specialized Pruning:** If necessary, a professional arborist for specialized pruning techniques like crown raising or deadwooding will be commissioned to address specific issues or maintain the tree's health and appearance.
- **Respecting Natural Processes:** The natural aging process of the tree will be considered. Older trees may develop features like stag heads (dead outer branches) which can be a natural part of their health and can support wildlife.

NB the tree will be replaced if it fails or dies at any point during the management period.

GRASSLAND AND WILDFLOWER AREAS

Establishment Phase (Years 0–2)

1. Seed Selection

- Use only native species seeds of local (if not Welsh provenance) will be used to maintain regional genetic diversity and support native wildlife.
- See Appendix II for a list of producers:

2. Ground Preparation

- Ground with low fertility and without perennial weeds will be used.
- Any weeds that are present will be removed from the area using repeated cultivation.
- The surface vegetation will be buried and the soil raked and then rolled or treaded to produce a firm surface.

3. Sowing

- Seed will be sown by hand in autumn or spring.
- The seed quantity will be split into two or more parts to avoid running out and ensure an even distribution.
- The seed will be rolled or treaded in to give good soil to seed contact.

4. First Year Management

- After sowing there will be a flush of annual weeds arising from the soil seed bank. This may look unsightly but will provide shelter for the sown seedlings and a resource for invertebrates. The weeds will be cut, removed and composted in early August.
- The young wildflower area will then be kept short by mowing until March of the following year.
- Any remaining perennial weeds such as docks will be dug out.

5. Management once established (2-25 years)

- In the second and subsequent years the area will be managed using traditional meadow management methods.
- The wildflower area will not be cut from spring through to early August to give the sown species an opportunity to flower and go to seed.
- In early August the area will be cut to a height of approximately 50mm and the cuttings left to dry and shed seed for up to a week. The cuttings will then be removed from the site to prevent nutrient build-up.
- The re-growth *can* then be mowed before winter (optional) to a height of approximately 50mm and again in spring if needed (again, optional). Cuttings will be removed to prevent nutrient build up.
- Introduce Yellow Rattle in the Autumn to reduce grass dominance and promote wildflower diversity.
- Rotate some uncut areas to create structural diversity.

6. Monitoring

- Track species emergence and adjust management accordingly.
- Introduce additional species via plug planting or green hay if needed.

Tips for Success

- Patience is key: Meadows take years to mature and stabilize.
- Avoid over-management: Let natural processes shape the community.
- Engage with local experts: Wildlife Trusts and Natural Resources Wales offer guidance and support.
- Seasonal Management Calendar (once established)

Provided the measures as set out in this GIS are implemented, the development proposal will achieve a Net Benefit for Biodiversity.