

**LANDSCAPE AND BIODIVERSITY PROPOSALS**  
**EXISTING LANDSCAPE**  
 Nether Peover WwTW is situated to the north-west of Swan Green and is surrounded by agricultural fields. Directly south/south-east of the WwTW is Hulme Lane. Low lying hedgerows and hedgerow trees form the western boundary of the WwTW site.

**DESIGN AND PROPOSALS**  
 The proposals include minor vegetation removal to accommodate the new development to the east of the site and for the reinstatement of pasture to the south-east. Existing topsoils within the site will be stripped and stored on site for re-use in reinstatement. Subsoils excavated for site development will either be used on site for reinstatement or removed from site. On completion of construction, the soils will be reinstated to ensure there is 100mm of topsoil in areas to be seeded and 300mm of topsoil in areas for planting. Tree planting and grass and wildflower seeding would follow in the first available season after reinstatement of soils.

**GENERAL**  
 All planting to comply with BS3936 Relevant parts for Nursery Stock.

1. All pre-planting, site preparation, planting and post planting maintenance shall be carried out in accordance with BS4428:1989 Code of Practice for General Landscape Operations.

2. All trees shall be positioned in accordance with BS5837:2012 Trees in Relation to Design, Demolition and Construction and BS 8545:2014 Trees from nursery to independence in the landscape: Recommendations.

3. There are to be no trees planted within 5m of underground or overhead services.

**SCHEDULE OF IMPLEMENTATION**  
 The landscape reinstatement shall be carried out in the first available season after completion of construction, when weather conditions are suitable:  
 a) Soiling in April - October; Seeding of neutral grassland in April-September; Seeding of wildflower species in October-early November; Planting in October - March

**SITE CLEARANCE**  
 Trees and vegetation within the area of construction will be removed prior to soil stripping and timber arisings removed. Topsoil and sub-soil for re-use in reinstatement will be stripped before construction and stored separately on site. All soils will be stored on site and managed in accordance with DEFRA Construction Code of Practice for the Sustainable Use of Soils on Construction Sites and British Standards for Topsoil (BS3882:2015) and Subsoil (BS8601:2013) for the stripping, handling, storage and spreading of soils.

**At reinstatement:**

1. All stones over 75mm will be removed from the surface subsoil prior to placing topsoil.  
 2. Tree planting pits to be set out and dug, prior to placing of topsoils and monitored for drainage.  
 3. A minimum 300mm depth of topsoil to be retained per pit for planting, with the base backfill for the pit original subsoil, or imported clean sandy subsoil backfill to ensure free drainage.  
 4. If waterlogging is evident, clean inert granular material to be imported and laid to broken up base of pit prior to backfilling and planting.  
 5. Topsoil to be laid to minimum 100mm depth for seeding areas.  
 6. All litter, debris and stone above 50mm in any dimension and any other unwanted material will be removed from the finished surface topsoil in planting and seeding areas.

**PROPOSED STANDARD TREE PLANTING**

1. Excavate planting pits 1000mm dia and 600mm deep; thoroughly break up sides and base to 250mm depth.  
 2. Retain subsoils for backfilling to 300mm depth of pit.  
 3. Mix excavated topsoils with proprietary tree and shrub compost at rate of 50/50 mix by volume to achieve total 300mm depth topsoil for backfilling; insert 4kg slow release fertilizer tablets into backfill around roots per pit; backfill with ameliorated topsoil in 150mm layers; completely fill air spaces around roots; backfill to ground level.  
 4. All trees to be supported with No short 75mm diameter tree stake, on windward side of tree, pointed one end, driven minimum 450mm into base of pit and cut off 600mm above ground level. Tree to be secured with biodegradable hessian wrapping or similar and biodegradable guard to protect from vole damage.  
 5. Spread medium grade bark mulch to 75mm depth to 1m dia to base of tree.

**PROPOSED HEDGEROW - 146m long**

1. Trench to be formed along line of proposed hedgerow 750mm wide, 450mm deep to accommodate full spread of roots.  
 2. Hedge to be set out at 5 plants per linear metre, staggered in groups of 3-15 of the same species.  
 3. Hedge plants to be firm in around the collar whilst backfilling with as dug soils, backfilled with subsoils to base and topsoils to the upper profile back to ground level.  
 4. Hedge plants to be protected with biodegradable guards to protect from rabbits and voles.  
 5. Hedgerow to be mulched with gravel mulch to suppress weed growth.  
 6. Hedgerow along access track to be protected with post and rabbit proof fencing with sheep proof fencing attached and top rail to protect from rabbits and stock and crossing gates reinstated.

**PROPOSED NATIVE SHRUB PLANTING 238m²**. Transplants to be 1+1 transplants and container grown shrubs up to 80-100cm.

1. Planting to consist of mixed deciduous and evergreen tree and shrub/scrub species planted at 1 - 2m centres in single species groups of 3-7 No to form an understory to the tree planting.  
 2. Shrubs to be planted in pits 100mm wider and deeper than pot size and bare root plants notched in an L, T, L or H shaped notch.  
 3. All plants to receive slow release fertilizer at time of planting.  
 4. All evergreen species to be treated with anti-desiccant before and immediately after planting.  
 5. All plants to be protected with stockproof fencing with rabbit proof mesh attached.  
 6. Planting bed to receive medium grade bark mulch to 75mm depth after planting.  
 7. Planting edge to be seeded with wildflower mix.

**PROPOSED WOODLAND WILDFLOWER SEEDING WITHIN PLANTING AREA 31m²**  
 Harrow or rake to encourage creation of 50% bare ground across the area.

1. Sow in the autumn using a 10% wildflower mixture and broadcast by hand or by machine. Allow for bulking up the seed with an inert carrier such as sand for ease of distribution. Sow with EW1 - Woodland mixture @4g/m²/EW1 Woodland seeding mixture below tree planting:

**Wild Flowers**

%	Latin name	Common name
2.5	Alliaria petiolata	Garlic Mustard
1.2	Allium ursinum	Ramsons
0.9	Eupatorium cannabinum	Hemp Agrimony
1.7	Filipendula ulmaria	Meadowsweet
1	Geum urbanum	Wood Avens
3.4	Hyacinthoides non-scripta	Bluebell
2.7	Primula vulgaris	Primrose
2	Prunella vulgaris	Selfheal
3.4	Silene dioica	Red Campion
0.9	Teucrium scorodonia	Wood Sage
0.3	Tortilis japonica	Upright Hedge-parisley
20		

**Grasses**

%	Latin name	Common name
10	Agrostis capillaris	Common Bent
2	Anthoxanthum odoratum	Sweet Vernal-grass (w)
7	Brachypodium sylvaticum	False Brome (w)
20	Cynosurus cristatus	Crested Dogstail
1	Deschampsia cespitosa	Tufted Hair-grass (w)
28	Festuca rubra	Slender-creeping Red-fescue
12	Poa nemoralis	Wood Meadow-grass
80		

**MAINTENANCE**

1. All litter and arising stone larger than 50mm in any dimension to be removed from grassed areas.  
 2. Verify stakes and ties to upright position and loosen ties as necessary to allow continued healthy tree growth.  
 3. Remove weeds growing to base of tree stems by hand pulling. Replenish mulch to base of trees in year two of maintenance to suppress weed growth.  
 4. Refirm trees and plants to maintain upright growth in first two years of maintenance until established.  
 5. Prune trees to remove weak or damaged branches and promote healthy growth.  
 6. Any trees or shrubs which are removed, damaged dead or diseased within 5 years of planting will be replaced in the first available planting season with appropriate replacements of same or similar species and size of original plants.  
 7. Remove stakes and plant accessories after five years or when trees are self-supporting, whichever is the sooner.  
 8. Management of neutral grassland - to be managed as short grass between August - February with cutting down to 75mm height; cutting to be suspended during May through to July/August with the area managed as a meadow allowing the grasses to grow tall, flower and seed from May through to July/August. The grass meadow should be cut back and mowing resumed in late summer.  
 9. Woodland seeding should require little maintenance establishment. Vigorous weeds should be cut with a hand-operated strimmer or similar to suppress growth.  
 10. Fence to be maintained to prevent grazing by stock and rabbit damage.

**PLANTING SCHEDULE**

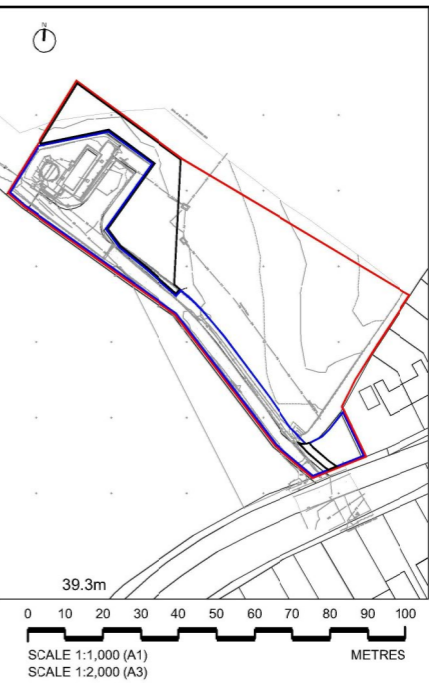
TREE SCHEDULE					
SPECIES	FORM AND CONDITION	GIRTH	HEIGHT (m)	ROOT CONDITION	TOTAL
Quercus robur	Oak	Select standard (2x)	10-12cm	300-350cm	5
Acer campestre	Field maple	Standard (2x)	8-10cm	250-300cm	6

**SHRUB AND TRANSPLANT SCHEDULE 238m² at 1.5m centres (105 plants)**

SPECIES	HEIGHT	AGE / CONDITION	ROOT CONDITION	TOTAL	
Corylus avellana	Hazel	1+1 Or 1/1	bare root	20	
Crataegus monogyna	Hawthorn	1+1 Or 1/1	bare root	25	
Ilex aquifolium	Holly	40-60cm	bushy 3 laterals	container grown 3litre pot	20
Sambucus nigra	Elder	80-100cm	1+1 Or 1/1	bare root	20
Rose canina	Dog rose	40-60cm	bushy 3 laterals	container grown 3litre pot	20

**HEDGEROW SCHEDULE 146 LINEAR METERS 5 PLANTS PER METER**

SPECIES	HEIGHT (cm)	Root condition	TOTAL	
Corylus avellana	Hazel	80-100cm	bare root	175
Crataegus monogyna	Hawthorn	80-100cm	bare root	450
Ilex aquifolium	Holly	40-60cm	container grown 3L pot	50
Sambucus nigra	Elder	80-100cm	bare root	35
Rose canina	Dog rose	40-60cm	bare root	20



**NOTES**  
 1. ALL DIMENSIONS IN MILLIMETRES AND ALL LEVELS IN METRES AOD UNLESS NOTED OTHERWISE.

**LEGEND**

- Existing ground levels
- Existing fence
- Existing trees and scrub
- Existing tree and shrub planting to be removed
- Existing hedgerow
- Existing hedgerow to be removed
- Proposed native species diverse hedgerow
- Proposed standard tree
- Proposed select standard tree
- Proposed shrub planting
- Proposed woodland species wildflower seeding
- Proposed reinstated pasture
- Land within United Utilities ownership
- Area requiring planning permission = 658m²
- Area required to undertake development
- Land to be reinstated and returned to garden tenancy
- Existing hard standing and access roads
- Proposed fence
- Proposed hard standing and internal footpaths
- Proposed gravel
- Proposed structure - concrete
- Proposed structure - GRP
- Proposed structure - steel

**REFERENCES:**  
 80061406-01-C2V-NETHP-97-JR-I-00001 SITE LOCATION PLAN  
 80061406-01-C2V-NETHP-97-JR-I-00002 SITE LAYOUT PLAN  
 80061406-01-C2V-NETHP-97-JR-I-00005 MISCELLANEOUS DETAILS

**CURRENT ISSUE INFORMATION**

VERSION	AUTH	CHKD	REVD	REASON FOR ISSUE	DATE
P02.1	---	---	---	---	---
S0	Work in Progress (WIP)				

SUITABILITY CODE: SUITABILITY DESCRIPTION



**NETHER PEOVER WwTW - FLOW PROGRAMME AMP7**  
 Landscape and Biodiversity Proposals  
 plan

SCALE: 1:250 SHEET SIZE: A1  
 DRAWING NUMBER: 80061406-01-C2V-NETHP-99-DR-L-00002 REVISION: P02.1