GENERAL NOTES FOR SOFT LANDSCAPE

Nursery Stock and Selection

All trees and planting are to be selected and tagged by the landscape architect prior to any stock being delivered to site. All planting should comply with the requirements specified in BS 3936:1992 'Nursery Stock' (Part One). All nursery stock and trees are to be free of pest and diseases prior to being delivered to site. All delivered stock is to be inspected by the landscape architect prior to any planting being carried out.

The Landscape architect reserves the right to reject trees and nursery stock that do not meet specifications as set out in the requirements and guidelines in BS 3936:1992 or in accordance with the landscape architects drawings. If a particular defect or substandard element can be corrected easily, appropriate remedies shall be applied and agreed with the landscape architect. If destructive inspection of a root ball is to be carried out, agreement should be in place prior as to the time and place of inspection. Inspection of shrub roots in containers or rootball can be carried out on site if required.

Tree Handling

It is recommended that companies that do not have experience with handling large trees or the required equipment to do so seek advice from the landscape architect or tree supplier. Furthermore, specialist hauliers are to be used who will have the correct lifting equipment to deal with unloading large trees. The landscape contractor must follow the industry guidance method for handling trees. Below are recommended industry standards.
Dormant trees sizes of 12-16cmg
These can be lifted and unloaded using a root hook and hoist. Even when the tree is dormant it is recommended to wrap the stem in hessian for additional protection when unloading maintaining the lifting weight on the root hooks.
Dormant trees sizes of 18-20cmg - 25-35cmg
These can be lifted and unloaded using a 3 tonne sling in combination with a chain and root hooks. Even when the tree is dormant it is recommended to wrap the stem in hessian for additional protection when unloading.
Dormant trees sizes of 35-50cmg
These can be lifted and unloaded using a 5 tonne sling in combination with a chain and root hooks ensuring the root hooks are hammered firmly into the rootball. Different lengths of chains can be used, however bare in mind that the longer the chain the more vertical the tree will be that will provide greater pressure on the bark. Even when the tree is dormant it is recommended to wrap the stem in hessian for additional protection when unloading.
Dormant trees sizes of 50-60cmg
These can be lifted and unloaded using an 8 tonne sling in combination with a hoisting strap that will pull less pressure on the trunk. The tree will also hang more vertically that makes unloading the tree directly into the planting hole easier. Note: If the trees are to be laid flat until planted it is better to use chains for unloading. Using the correct chain length will ensure the tree is moved horizontally. Even when the tree is dormant it is recommended to wrap the stem in hessian for additional protection when unloading.
Dormant trees sizes 70cmg and above
It is recommended that the landscape contractor seek specialist advice when dealing with extremely large trees. Extra large trees can be lifted with a Newman frame. During the harvesting process the frame is fitted to the trees and goes with the tree to it's final location. Only when the tree has been planted is the frame removed.

Tree Planting

The tree supplier is to be approved by landscape architect prior to any ordering of stock. All trees are to be planted in the first available planting season after construction as root balled stock unless otherwise specified and agreed with the client. All tree pits are to be excavated 24 hours prior to delivery to reduce the time the rootball is out of the ground. All tree pits are to be excavated under favourable weather conditions to avoid deterioration of the soil structure and glazing. All excavations are to be carried out using a toothed bucket ensuring tree pit walls are not glazed, the walls of the tree pit can also be loosened with hand held tools.
Tree pit dimensions are subject to soil conditions, soil report provided by agronomist and rootball size. Tree pits can never be excavated too wide in an unrestricted space (open ground), however they can be too deep.
All trees are to be planted at the correct height which is the same depth as the tree was growing on the nursery. The root collar must remain visible. Tree pit sizes are to be agreed with landscape architect prior to excavations. All tree pits are to be inspected by the landscape architect prior to planting. All tree pits are to have suitable irrigation pipe and end cap and aeration tubes if required (aeration tubes tend to be required for trees planted in a hard landscape environment). They are only required for the first two years after which they are superfluous. All irrigation pipes are to be placed as high as possible not at the base of the rootball. The tree would also benefit from an earth reservoir around the rootball on the surface to aid watering. The reservoir is best backfilled with bark mulch to avoid soil glazing on the surface.

Note: Trees may sink after planting due to soil settlement. With sandy soils generally there will be a settlement of 10% and clay soils 20%, this will need to be considered by the landscape contractor when planting and therefore the tree may need to be planted slightly higher to accommodate soil settlement.

Note: Never excavate deeper than the highest water table to ensure organic matter does not come in contact with groundwater resulting in anaerobic digestion within the soil. All hessian and wire supports around the rootball are to remain in place when planting (in some case it may be required to loosen the hessian and wire). The hessian will quickly decompose. The wire will oxidize and also disappear in the soil eventually. Trees planted within hard landscape areas are to have tree grilles and guards where specified. Subterranean cellular product is to be used to ensure the tree has a minimum of 9m3 growing area. Type and manufacture is to be agreed with the client and landscape architect prior to installation. The landscape architect is to inspect all tree pits prior to planting.

Trees are to be supported either by high anchoring, low anchoring or underground anchoring systems. The type of anchoring system is to be agreed with the landscape architect and detailed within the specification of works. For trees that are <10-12cmg use 1no untreated softwood stake at min 10cm diameter driven into the ground at least 1m depth (30cm of which must be in undisturbed ground), the stake is to be placed on the side of the prevailing wind. Trees >10-12cmg use 2no untreated softwood stakes at min 10cm diameter driven into the ground at least 1m depth with horizontal bracing bar. Trees >25-30cmg use 3no stakes in a triangle around the tree (1.4m above ground level) with horizontal bracing bars, tree bands are to be secured to the posts with galvanised nails.

Underground anchoring systems are to be used for large compact rootballs or trees within hard landscape with tree grilles to BS 4043: 1989' Recommendations for Transplanting Root-Balled Trees'. The type of anchoring system is to be agreed with the landscape architect. Biodegradable anchoring straps are to be used to ensure the straps do not grow into the trunk.

Note: There are benefits to using low level anchoring as field trials have demonstrated that the tree becomes independent in the ground quicker as a result of the wind rocking the tree that encourages root ground. However, this method is not recommended in exposed conditions or coastal locations due to a greater risk of the trunk breaking.

Ties and stakes are to be checked and adjusted every six months or after periods of strong wind and rain.
All topsoil is to conform to BS 3882:2015 'Multipurpose' or similar approved by an agronomist. The tree pit shall be backfilled with previously prepared topsoil excavated from the pit and additional topsoil as required. All backfilled material is to include an organic slow release fertilizer to ensure there is no adverse affect on soil organisms (Vitax Q4HN) or similar approved at a ratio of 10 -7.5 -10.2 + TE. The second application to be made 10-16 weeks after planting depending on soil type and weather conditions.
Tree pit root barrier are to be installed to all trees within 3m of any underground service routes or within 2.0m of kerb lines & hard surfaces & building foundations. Type of root barrier material is to be agreed with the landscape architect. The landscape contractor is to confirm locations of all services prior to implementation of trees. Prior to installation NJUG specification and requirements are to be referred too.

Guidance for Tree Pit Sizes within Soft Landscape Areas

Final tree pit size will vary dependent on size of rootball, tree stock and soil type.
Below are general guidance sizes only. The landscape contractor is to speak to the grower to obtain exact sizes prior to delivery. Landscape Architect to inspect tree pits prior to planting.

Tree pit size guidelines:

Tree size	Rootball Size	Tree pit size (length, width, depth)
08-10 cmg	40x30cm	70x60x45cm
10-12 cmg	50x40cm	80x80x55cm
14-16 cmg	50x50cm	80x80x65cm
18-20 cmg	60x60cm	80x80x75cm
20-25 cmg	70x60cm	90x90x75cm
30-35 cmg	90x60cm	110x110x75cm

Tree aftercare and pruning

When a tree is lifted/harvested it will lose a percentage of it's root system. As a result the roots are unable to supply the crown with the water demand being placed on the root system which can cause stress to the tree. As a result the tree will respond by reducing the amount of foliage, in some cases when the water storage is great the tree will shed wood from the crown. Watering the tree is important in the first two years after transplanting. In very hot conditions the canopy can dry out even when the rootball is moist simply because there is not enough root development yet. Therefore, the only solution is to reduce the canopy volume to reduce the stress.
All pruning is to be done by removing first and second wood only, all pruning works are to be carried out by appropriately trained landscape contractors.
It is recommended that hessian is placed around the tree stems after planting to prevent the overheating of the trunks.

The flow of water within the bark will normally prevent this, however, after planting less water is transplanted and as a result the trunk is at risk of sunburn. The setting sun will cause the most potential damage. Most of the damage will be visible on the western side of the tree. Trees with smooth bark are more vulnerable to sunburn than trees with rough bark.
Note: Painting is to only be done as a temporary measure as the tree is establishing, after which the hessian is to be removed.
Monitoring of the trees is to be carried out during the rectification period and as part of the long term management. The following points are to be considered and monitored;

- Watering, trees will require watering for the first two years after planting, after which they will generally look after themselves. The number of times will depend on location, weather conditions and growing season. Therefore, as the tree is a growing organism the required experience and knowledge will determine the number of times the tree is watered to ensure establishment. It is better to give the tree a lot of water once a week rather than water every day as this will encourage root development and prevent the tree becoming "lazy". Over watering will push oxygen away from the root system preventing root development.
- Soil condition, these can be carried out by a specialist to monitor the oxygen levels (that should ideally be 18-21%, 16-18% will be sufficient levels, 12-16% will be poor levels <5% shows acute root mortality). Soil moisture levels both within the rootball and surrounding ground to also be monitored.
- Soil compaction, traffic over planted areas or areas to be planted are to be limited or ideally avoided completely. When soil compaction is higher than 2.5MPa root development will not be possible.
- Canopy, monitor leaf development, size, colour and the amount of foliage that is within the crown. Length of new growth and bud development and size of buds.

Proposed Specimen Ornamental Shrub / Perennial / Herbaceous, Matrix & Block Planting

- To be planted in a minimum of 300mm depth approved topsoil to BS 3882: 2015 'Multipurpose' in the first available planting season after construction.
- All shrubs are to be planted as container stock unless otherwise specified (5 or 10 litre), all stock is to be well rooted into the container but not pot bound.
- All shrubs are to be planted with a slow release organic fertilizer (vitax or similar approved) and backfilled with a mixture of excavated top soil and compost (not peat based). A minimum of 50 mm approved ornamental grade bark mulch is to be applied to planting areas unless stated otherwise.

Proposed Hedge Planting

- To be planted in a minimum of 300mm depth approved topsoil to BS 3882: 2015 'Multipurpose' in the first available planting season after construction.
- All shrubs are to be planted as container stock unless otherwise specified (5litre), all stock is to be well rooted into the container. All hedge are to be planted in double staggered rows.
- All shrubs are to be planted with a slow release organic fertilizer (vitax or similar approved) and backfilled with a mixture of excavated top soil and compost (not peat based). A minimum of 50 mm approved ornamental grade bark mulch is to be applied to planting areas unless stated otherwise.

Proposed Climbing Plants

- To be planted in a minimum of 300mm depth approved topsoil to BS 3882:2015 'Multipurpose' in the first available planting season after construction.
- All climbing plants are to be planted as container stock unless otherwise specified, all stock is to be well rooted into the container.
- All climbing plants are to be planted with a slow release organic fertilizer to a N.P.K ratio of 4.5-2.0-7.5+0.8%mg (Vitax or similar approved) and backfilled with a mixture of excavated top soil and compost (not peat based). A minimum of 50mm approved ornamental grade bark mulch is to be applied to planting areas unless stated otherwise.
- All climbers that are not self-supporting are to be supported using vine eyes and plastic coated steel wire, climbers are to be secured using plastic coated clips.

Planting Guidelines

- All planting and landscape operations should comply with the requirements specified in BS 3936-4:2007 'Nursery Stock' (Part One) and BS4428:1989 'Code of Practice for General Landscape Operations' (excluding hard surfaces).
- All topsoil and testing to conform to BS 3882: 2015 'Specification for Topsoil and Requirements for Use'.
- All topsoil used for planting to be tested by an approved Topsoil Analyst and any required amelioration or soil improvements to be carried out in line with Analyst's report.
- All fertilizers are to be applied or supervised by qualified staff to avoid the action of plasmolysis.
- Nurseries to provide protocols for ensuring that plant stock is free of invasive species.
- No planting is to be carried out when the site is covered by frost.
- Irrigation of plant material to be carried out during periods of drought will be required to ensure successful establishment of all plant stock.
- All new planting to be protected from mammal grazing by individual guards or stock proof fencing.
- If planting is to be carried out outside the growing season, all bareroot / rootballed plant stock is to be substituted with containerised stock. Specification to be agreed with Landscape Architect prior to ordering and implementation.

Maintenance Notes - Overview

- Refer to landscape and open space strategy for programme of operations. Detailed landscape maintenance and management plans for each development phase to be submitted to the LA for approval.
- Planting to be protected from mammal and human damage by stock proof fencing.
- All planted areas to be kept clear of weeds at all times throughout maintenance period.
- Planted areas to be forked through regularly to keep soil loose and aerated.
- All litter and debris to be removed from landscaped areas and carted off site.
- Plants pruned as instructed by the Landscape Contractor to promote healthy growth and to remove dead and diseased wood.
- Watering as required to maintain healthy growth.
- Any dead or diseased trees or areas of planting are to be replaced in the next growing season within 5yrs from practical completion of the scheme.

Additional Notes

- Final location and tree species selection will be subject to service report and foundation depths to be provided by engineers.
- Levels information for the areas of open space in relation to the built form FFL's and retaining walls is to Architects drawings and details and coordinated with the team.
- Slope profiles to the open space areas are to be no steeper that 1:3 and to considering access for all.
- Locations of lighting columns to be confirmed by others.
- Demarcation of traffic routes to be determined following detail and technical design.
- Contractors to ensure they are working to the latest British Standards as required.

GT1 Wildflower Turf Specification

All specified Wildflower Turf is to acquired from Wildflower Turf Ltd or a similar and approved supplier.

Wildflower Turf Preparation & Installation

Existing vegetation should be killed or removed. Dig over or rotovate the soil to at least 100mm deep and rake over to create a reasonably fine tilth. Remove large stones, roots or clods of earth as it is important that the roots of the plants in the turf are all in close contact with the soil. Ensure soil is not waterlogged or compacted prior to laying the turf. The soil does not need to be fertilized before or after laying the turf. We would advise not stripping back the top soil to reduce soil fertility before using Wildflower Turf as it needs some level of fertility to get well-established initially and is an unnecessary ground preparation step. However, where soil is fertile, particular attention must be paid to the maintenance regime. The turf needs to be laid on a minimum of 100mm (4 inches) of growing medium or soil, the deeper the soil depth the greater capability of moisture retention and less irrigation required. There is usually no need to import top soil unless the levels on site are not sufficient or there is just sub-soil. In this case, a thin layer of 25-50mm (minimum) of top soil with greater than 0.15% organic nitrogen, less than 26mg/l of phosphorus and a low weed seed bank is recommended. Avoid compaction of subsoil layer. Please refer to Wildflower Turf Ltd if unsure. Care should be taken to ensure that all joints are butted up correctly to prevent the growth of weeds. Do not overlap the turf at the joints or create tension so joints pull apart or shrink. It is recommended to dress joints, edges and small gaps during the Wildflower Turf installation with WFT-Finisher. Please refer to Wildflower Turf Ltd for more information. Once laid, water the turf thoroughly, for the first couple of weeks (weather dependent), until the turf is rooted in. Ensure the soil underneath the turf is damp to be sure you have given it adequate water. Do this by lifting a corner of the turf. Do not allow the turf to dry out while it establishes, which should take approximately 2-3 weeks (weather dependent). Do not over water the turf, as this can promote grass domination in the sward. Once established the wildflowers can be fairly drought tolerant and shouldn't need watering again.

Wildflower Turf Maintenance

No fertilizer is needed, although in some circumstances, for example on a green roof or where the turf is on very low fertility soil such as sand or gravel, the addition of a light dose of fertilizer in the spring may improve plant development. Please refer to Wildflower Turf Ltd. Once established Wildflower Turf requires little maintenance. For the annual maintenance cut in the Autumn, it is important to cut the meadow down to 1 to 2 inches (25mm to 50mm) off the ground and remove all cuttings. This can be done by strimming and raking, or using a mower and collecting the cuttings. Make sure these tools are sharp. The cut is an important part of the meadows life cycle and ensures re-growth and species diversity year on year. Cuttings should not be left on the meadow, as they add undesirable fertility to the ground. It is also important to remove all leaf litter that falls onto the area. The annual maintenance cut should be done in late September, early October. There is no need for a set date, but this timing will allow the plants in the meadow to regenerate before the first frost typically in November. You can choose to cut only half of the meadow area at one time to allow time for fauna to migrate to the uncut meadow. Allow some regrowth of the cut area before cutting the second half, but aim to have finished all cutting by the end of the first week of October. Over time alternate the areas that are cut early and the areas that are left as this will benefit species diversity. On fertile sites or where you might have species dominance or too vigorous early growth, a second cut at the end of May, beginning of June can be introduced. This high cut, approximately 8 to 10 inches off the ground (200mm to 250mm) to remove the flower heads but leaving enough plant stems and leaf area to regenerate, and removal of all cuttings, will help to knock back some species dominance, reduce soil fertility and open up the sward to more light and air circulation to promote diversity of lower growing species. Once the cutting has been completed and all cuttings removed, give the area a good soaking with water to encourage the next flush of growth. Introducing this early summer cut and removal will mean your second Autumn cut and removal will be later that year, up to the end of October.

GT1 - Wildflower Turf * WFT-Species-Rich-26

Wildflower Turf (WFT-Species-Rich-26) is a soil-free turf system that is species rich when compared with the monoculture of a conventional lawn. It has a high grass inclusion rate and is treated as a traditional lawn as opposed to a wildflower meadow. It has been developed for projects requiring greater BREEAM points than standard amenity lawn turf. It is nursery grown to produce a mat of wildflowers and grasses that retains 100% of its root system. The turf is made up of UK native wildflowers and grasses, with a minimum of 10-20% wildflowers. The soil-less growing technique uses an inert, pH modified, low nutrient, compost based growing medium that is compatible with all Wildflower Turf Limited products. A fine degradable net is incorporated in the root zone of the turf to provide stability and strength, whilst maintaining a relatively lightweight turf slab ranging from 15-20kgs/m² (depending on maturity and moisture content when lifted). Turf size will vary with application but is generally 1m x 0.64m = 0.64m² slabbed ORT 1.62m x 0.77m = 1.25m² rolled per turf on pallets. Larger 2 x 20m (40m²) roll sizes are also available. They can each weigh between 750-900kgs each and need special machinery to offload and roll out on site.

Seed Specification - 90% Grass / 10% Flowers
Key: P = Perennial; B = Biennial; A = Annual; SLP = Short Lived Perennial
**Subject to seed availability*

Flora

Species	Common Name	Key
Stachys officinalis	Betony	P
Lotus corniculatus	Bird's Foot Trefoil	P
Medicago lupulina	Black Medic	A/P
Hypochoeris radicata	Cats Ear	P
Centaurea nigra	Common Knapweed	P
Rumex acetosa	Common Sorrel	P
Primula veris	Cowslip	P
Bellis perennis	Daisy	P
Galium verum	Lady's Bedstraw	P
Ranunculus acris	Meadow Buttercup	P
Lathyrus pratensis	Meadow Vetchling	P
Conopodium majus	Pignut	P
Sanguisorba minor	Salad Burnet	P
Prunella vulgaris	Self-Heal	P
Galium mollugo	Smooth bedstraw	P
Trifolium dubium	Suckling Clover	P
Trifolium repens	White Clover	P
Origanum vulgare	Wild Marjoram	P
Trifolium pratense	Wild Red Clover	P
Achillea millefolium	Yarrow	P

Grasses

Species	Common Name	Key
Festuca ovina	Sheep's Fescue	P
Festuca rubra trichophylla	Slender Creeping Red Fescue	P
Festuca rubra subsp. Commutate	Chewing's Fescue	P
Anthoxanthum odoratum	Sweet Vernal Grass	P
Phleum bertolonii	Smaller Cat's Tail	P
Lolium perenne	Dwarf Cultivar	P

SOFT LANDSCAPE LEGEND

Proposed Standard Tree Planting
Size/Spec: Refer to the plant schedule for details
Note: Final location of trees to be determined with services alignment
All trees are to be tagged by landscape architect prior to delivery

Proposed Multi-Stem Tree Planting
Size/Spec: Refer to the plant schedule for details
Note: Final location of trees to be determined with services alignment
All trees are to be tagged by landscape architect prior to delivery

Existing Trees

Proposed Specimen Shrub Planting
Size/Spec: Refer to plant schedule for details
Product: Container grown unless stated otherwise in the plant schedule

Hedge Planting
Size/Spec: Refer to plant schedule for details
Product: Container grown plant stock unless stated otherwise
in the plant schedule

Proposed Ground Cover Shrub, Grass & Herbaceous Matrix Planting
Size/Spec: Refer to plant schedule for details
Product: Container grown plant stock unless stated otherwise in the plant schedule
Note: All batches of species are to be labeled prior to delivery

Grass Type 1 - Species Rich Lawn Turf
GT1 - WFT-Species-Rich-26
Supplier: Wildflower Turf Limited or similar approved
Size/Spec: Refer to the Detailed GT1 Specification notes for more information

Revision	Date	Reason	Drawn	Checked
P2	22.01.23	TEXT AMENDED TO INCLUDE 5YRS DEFECTS ON TREES AND SHRUBS	JC	MB
P1	31.01.23	STAGE 4A ISSUE	JN	DY

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2. Do not scale from this drawing. Only figured dimensions are to be taken from this drawing.
3. All contractors must visit site and be responsible for taking and checking all dimensions related to the works shown on the drawing prior to fabrication or setting out.
4. This drawing uses coloured lines. Please do not rely on a monochrome copy.

External References
- D2857-FAB-X-LANDSCAPE-PLANTING GA

Drawing Information
- ARP3-FAB-ZZ-00-SH-L-903000 Soft Landscape Specification Notes
- ARP3-FAB-ZZ-00-SH-L-903001 Detailed Planting Schedule
- ARP3-FAB-ZZ-00-DR-L-903002 Detailed Planting Plan - Sheet 1 of 6 - Trees, Hedges & Specimens
- ARP3-FAB-ZZ-00-DR-L-903003 Detailed Planting Plan - Sheet 2 of 6 - Trees, Hedges & Specimens
- ARP3-FAB-ZZ-00-DR-L-903004 Detailed Planting Plan - Sheet 3 of 6 - Trees, Hedges & Specimens
- ARP3-FAB-ZZ-00-DR-L-903005 Detailed Planting Plan - Sheet 4 of 6 - Groundcover & Matrix Mixes
- ARP3-FAB-ZZ-00-DR-L-903006 Detailed Planting Plan - Sheet 5 of 6 - Groundcover & Matrix Mixes
- ARP3-FAB-ZZ-00-DR-L-903007 Detailed Planting Plan - Sheet 6 of 6 - Groundcover & Matrix Mixes

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Project: Abbey Area Phase 3
Client: Wates
Drawing Title: Soft Landscape Specification Notes

Purpose of Issue	Drawn By	Checked By	Drawn Scale	Date of First Issue
ISSUED FOR TENDER	JN	DY	N/A @ A1	Jan | 2023

Project Number	Drawing Number	Revision
D2857	ARP3-FAB-XX-XX-SH-L-903000	P02