

Model Specification for Garden Design Works

Clause Text (with side notes)

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Trade names mentioned in the text and Appendix D are examples only and should not be taken as endorsement of a particular product. Specifiers must remain responsible for ensuring that their documentation is up to date and suitable for the specific project.

The information on this computer disc consists of the Model Specification clauses complete with explanatory side notes. To assist word processing, the Specification without side notes is also included as a separate file.

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Specification for Garden Design Works

Modify this note if the JCLI LWC is not applicable.

This Specification should be read in conjunction with all Contract Documents and the Conditions of the Joint Committee For Landscape Industries (JCLI) Landscape Works Contract.

The information in Section A1 must be adequate to enable a busy tenderer with no prior knowledge to understand the nature of the project.

A - Preliminaries and general conditions

A1 Description of Project

A100 THE PROJECT:
Name of the project:
Address of the site:
.....

A105 DESCRIPTION OF THE WORKS:
.....

A105: The main elements of the work should be listed so that the tenderer can check that he has the necessary skills and resources. For example ‘The Works involve the creation of a new garden from approximately 0.5 hectares of meadow. The design involves major recontouring of the site, land drainage work and the creation of a pond. Hard landscape features include steps, walls and natural stone paving.’

A110: Amend this list as necessary. Other priced and unpriced schedules may be included.

A110 TENDER DOCUMENTS shall consist of:
This specification.
Planting schedule.
Tender Drawings: Nos.

A115: *The designer's client will normally become the employer of the successful tenderer.*

A115 EMPLOYER means:
(Name).....
(Address).....
(Post Code)..... Tel:.....

A120 DESIGNER / GARDEN DESIGNER /LANDSCAPE ARCHITECT
means:
(Name).....
(Address).....
(Post Code)..... Tel:.....

A125 CONTRACTOR / LANDSCAPE CONTRACTOR means the
accepted tenderer.

A130 SITE PARTICULARS: Tenderers are advised to visit the site by
prior arrangement with the employer, in order to familiarise
themselves with the access, ground conditions and available
facilities.

*A136 would be important if, for instance, the client wished to
retain part of his existing garden for children to play in
safely, while the contractor was working.
BS 5837 describes 'Root Protection Areas' and the necessary
protective barriers which will need to be shown on your
plans. On restricted sites the location of lorry access,
temporary storage areas and concrete mixing locations may
all need to be defined.*

A136 RESTRICTIONS TO CONTRACTOR'S WORKING AREA:
The area of the site available for use by the contractor is shown on
drawing No.

A201 is appropriate on larger projects if the JCLI Landscape Works Contract (JCLI LWC) is to be signed by the employer and contractor.

The JCLI LWC is the usual standard form of contract. The designer should also be familiar with the JCLI Practice Notes Nos. 8 and 9 and the JCT Practice Note “Deciding on the appropriate JCT Contract”.

On small projects, a less formal way for your client (the employer) to enter into a contract with the successful tenderer is for them to write a simple letter of acceptance. (see sample letter in Appendix B of the hard copy book .) By using A206 with A210 the JCLI LWC Conditions of Contract are incorporated by reference in the same way that the requirements of a British Standards may be referred to.

A215: This is more fully covered in the JCLI LWC. The employer should only issue instructions to the Contractor through the designer who must confirm in writing. To allow more than one person to issue instructions is likely to lead to chaos.

A221: If the completion date is not stated in A226, change this clause and ensure that the length of construction period is defined.

A2 The Contract

A201 FORM OF CONTRACT

The Contract will be The Landscape Works Contract last published by the Joint Committee for Landscape Industries (JCLI LWC).

A206 FORM OF CONTRACT

The Contract will be in the form of a letter signed by the employer accepting the completed Form of Tender. The Conditions will be those contained in the Landscape Works Contract last published by the Joint Committee for Landscape Industries (JCLI LWC).

A210 CONTRACT DOCUMENTS shall be:

- the Tender Documents listed in clause A110
- the Form of Tender as completed by the accepted tenderer
- the employer's letter of acceptance, if appropriate.

A215 AUTHORITY OF THE DESIGNER

The contractor shall carry out instructions given to him in writing only by the designer.

A221 SCOPE OF THE CONTRACT

The tender shall include the cost of all plant, labour, materials and plants necessary to complete the Works by the stated date for completion in Clause A226.

*General Note on A226: The text of items marked with * should be marked 'Deleted' if they are either not applicable or are unwanted alternatives.*

4th Recital: Normally a fixed price contract will be required and Clause 4.11 will be deleted. If so, the 4th Recital and Schedule 2 are not applicable.

5th Recital: The JCLI Practice Note No.8 para.3 gives guidance on the application of the CDM Regs.

Clause 1.1: No Construction Phase Plan is required if the project is non-notifiable under the CDM Regs.

Clause 2.8: Designers should agree with their client whether the complexity of enforcing Liquidated Damages is appropriate to the risks and benefits. If so Refer to JCLI Practice Note 8 for method of calculation.

Clause 2.10: The JCLI LWC is not applicable to Landscape Maintenance contracts. If Clients wish to hold the original Contractor liable for plant failures, a separate "establishment maintenance" contract is needed to last for 12 months minimum.

A226 CONTRACT PARTICULARS

The following list of the Clauses from the JCLI LWC Contract Particulars will apply to this project and are to be either amended, deleted or completed as shown:

4 th Recital and Schedule 2	Base Date.....
4 th Recital and Clause 4.2	The employer *is/is not a contractor for the purposes of CIS.
5 th Recital	*The CDM Regulations do not apply. *The CDM Regulations apply but the project is not notifiable. *The CDM Regulations apply and the project is notifiable.
Article 7	Article 7 and Schedule 1 (Arbitration) *apply/do not apply.
Clause 1.1	*The CDM Planning Period shall mean*days/weeks.
Clause 2.2	Date for commencement of the Works: Date for completion
Clause 2.8	Liquidated damages at the rate of £..... per *day / week.
Clause 2.10A* or 2.10B*	Responsibility for plant establishment and plant defects to be by Contractor* or by Employer*

Clause 2.10: If no establishment maintenance contract is entered into and Clause 2.10A is deleted, the rectification period applies only to defects in hard landscape. Ideally the rectification period should extend to cover a winter season but 6 months is usual.

Clause 4.3 and 4.5: The default is 95% and 97% respectively, but on small contracts the 5% and 3% retention may be insignificant and may not have the desired effect of encouraging the Contractor to complete outstanding matters quickly. In the interests of goodwill and simplicity the Client may wish to pay the full amount certified.

Clause 4.11: For contracts lasting less than 6 months a Fixed Price is usually required and this clause is not applicable

Clause 5.3.2: The Contractor's public liability insurance should be not less than £1m.

Clause 5.4: If none stated the default is 15%.

Clause 2.10A* or 2.10B*	Rectification period months.
Clause 2.13	Provisional Sum to cover theft or malicious damage £
Clause 4.3	Percentage of the total value of Works in a progress certificate%
Clause 4.5	Percentage of the total value of Works in the penultimate certificate%
Clause 4.8.1	Final Certificate: period allowed for the supply of documents months.
Clause 4.11	Contributions, levy and tax changes Clause 4.11 applies / deleted*.
Clause 4.11 / Schedule 2 (para.13)	Percentage addition for fluctuations option %.
Clause 5.3.2	Contractor's insurance to cover injury to persons or property £
Clause 5.4	*5.4A Insurance of the Works shall be by Contractor in joint names *5.4B Insurance of the Works and existing Structures shall be by the Employer in joint names. *5.4C Insurance for the existing structures shall be by the Employer.
Clause 5.4	Percentage to cover professional fees %
Clause 7.2	The Adjudicator is

A236: Provisional Sums are to cover work which may be required but not yet detailed and therefore cannot be priced by the tenderers until after the contract has been signed. It is also usual to advise your client to set aside a sum of money to cover unforeseen events (contingencies) such as the discovery of a previously unknown cess pit. The amount should be based on assessed risk or insert 2.5% of the contract value. This Contingency Sum is a form of Provisional Sum.

A245: For example, waste skip licenses, charges for water taken from a hydrant.

A250: The designer should state which buildings, garden walls and other features are listed.

*Quote the reference No. and date of Order.
See also Note to C620 - C635*

A255: Under the Wildlife and Countryside Act and other legislation it may be necessary to protect the identified flora, fauna and their habitats. The advice of the statutory nature conservation organisation e.g. English Nature, DEFRA or the local Council, should be passed to the Tenderers.

A236 PROVISIONAL SUMS: Allow the following sums to be included in the Tender:
Provisional sum for Contingencies £
Provisional Sum for: £
Provisional Sum for: £

A245 STATUTORY REGULATIONS
Comply with all statutory requirements which apply to the Works and pay all fees and charges.

A250 TOWN AND COUNTRY PLANNING:
The following structures on site are Grade listed :-
(state which).....as shown on Drawing No.....
The site... (is/is not)... in a Conservation Area.
Trees on the site ...(are/are not)... subject to Tree Preservation Orders.
Comply with the conditions of Planning Permission Ref:
The Party Fence Wall shown on drawing is subject to an Award, the conditions of which must be complied with.

A255 WILDLIFE
....., a protected species is known to exist on site
.....(location) and the contractor is to ensure its protection in accordance with the statutory Nature Conservancy organisation and / or DEFRA license

A300: See sample standard letter in Appendix B.

A310: If the JCLI LWC form is to be used the JCLI clause 4.10 will apply and 4.11 will be deleted.

A315: Some designers prefer that the written descriptions in the specification and schedules take precedence over the drawn information. If so, modify this clause.

A3 Tendering

A300 TENDERING PROCEDURE

The Tenderer must submit his Tender in writing in accordance with the procedure in the letter of Invitation to Tender.

A305 AVAILABILITY OF PLANTS AND MATERIALS

Tenders must be based on plants and materials which will be available when needed. If plants or materials as specified are not available or it can be anticipated that they will not be available when required, tenderers must submit a priced schedule of the alternatives which they have incorporated in their tender.

A310 FIXED PRICE

The tender must be for a fixed price. No additional payment will be made for cost fluctuations of any kind.

A315 DISCREPANCIES

All queries regarding the true interpretation of the tender documents should be resolved with the designer before tendering. If discrepancies come to light after the acceptance of tender, the information shown on any drawing will take precedence over the specification or schedule.

A400: Inadequate supervision is a major problem leading to poor work and mistakes. Under the JCLI form of contract the designer's role is to 'inspect'. The designer should not be involved in 'supervision' or management of the Works.

A415: The JCLI Conditions set out clearly the situations where the contractor can claim an extension of time. Delay due to the contractor's own failure to order in good time is not included.

A420: Contractors may be reluctant to provide a detailed programme, but it is a very valuable tool to help the designer to monitor progress of the Works.

A430: Consult your client as to acceptable working hours.

A4 Management of the Works

- A400 FOREMAN
Whenever work is in progress, keep a competent foreman on site to supervise the Works and to take the designer's instructions.
- A405 SITE MEETINGS: Hold site meetings when required by the Designer.
- A410 MATERIALS ON SITE which have been delivered for the Works become the property of the employer when paid for but must remain the responsibility of the contractor until Practical Completion.
- A415 ORDERING:
Order goods and materials in good time so that the Works are not delayed. No extension of contract period will be allowed where delay could reasonably have been avoided by the contractor.
- A420 PROGRAMME AND PROGRESS REPORTS .
Before commencement, provide the designer with a programme of work showing dates for all main operations and the number of staff to be employed daily on the site.
Keep the programme updated and reissued at monthly intervals.
- A425 USE OF THE SITE by the contractor shall be solely for carrying out Works described in the Contract.
- A430 WORKING HOURS: to be 08.00 to 18.00hrs. Monday to Friday.
No work is to be executed on site outside these hours without specific approval.

A435 NOISE: to be kept to a minimum at all times. Portable radios or CD players are not permitted but "Walkman" type personal radios or CD players will be allowed.

A440: For safety reasons, list all other contractors or workmen who may be on the same site at the same time.

A440 CONCURRENT CONTRACTS:

A445: If there is more than one contractor and/or self employed craftsmen working on the same site the employer may be required by the Construction (Design and Management) Regulations (CDM Regs) to appoint the successful tenderer as 'Principle Contractor' with statutory role of coordinating safety on site. See also A520.

A445 LIAISON WITH OTHER CONTRACTORS: Co-operate and liaise with any other contractors on site to ensure that the Works proceed safely and efficiently.

A450 INCOMPETENCE OR MISBEHAVIOUR OF WORKMEN: the contractor shall comply with any reasonable request of the designer to permanently exclude from the Works any person employed thereon.

A5 Quality and safety

A501 BRITISH STANDARDS AND CODES OF PRACTICE

Where the Tender Documents do not fully detail the quality of the Works, comply with current good practice as defined by:-

- BS 4428 '*Recommendations for general landscape work*' and other relevant British Standards;
- *National Plant Specification* published by the Horticultural Trades Association;
- any other Code issued by a relevant Trade organisation.
- all British Standards and other documents referred to in this specification are to be of the edition current at the date of Tender.

A505 and 510: Damage to a shared private road could be an embarrassing source of dispute with neighbours.

A505 PROTECTION

Adequately protect all existing landscape, buildings and public and private roads, from damage caused by the carrying out of the Works. Damage is to be made good at the contractor's expense.

A510 CONDITION OF THE SITE

Before work commences, agree with the designer the condition of the site/site access. Make a photographic record if requested.

A515: A risk assessment is a written review of the potential dangers of a particular material or a method of work and the necessary measures to be taken to remove the risk.

A515 SAFETY

Comply with the *Health and Safety at Work Act*. Before using any substance which may present a hazard, carry out a Risk Assessment and keep the record available on site for inspection. Ensure safe working methods are used.

A521: Designers should check whether the requirements of the CDM Regs apply to the Works and complete Clause A226. (5th Recital)

A525: Designers must not forget their own obligation under Health and Safety legislation to design in the safest way. Secondly designers must inform all tenderers of site hazards of which the designer or the employer is aware, for example, old wells or underground cables, etc. Make sensible enquiries and insert additional clauses as appropriate.

A540: Check whether the use of pesticides and herbicides is acceptable to your client. COSHH is the Control of Substances Hazardous to Health Regulations.

A521 CONSTRUCTION (DESIGN AND MANAGEMENT) REGS (CDM REGS):

Comply with the duties of contractors specified in the CDM Regs.

A525 UNDERGROUND SERVICES

Before starting work locate the exact position of underground services by making all necessary investigations and by using hand digging. No mechanical digging is to take place within 0.5m of gas or electrical services. Follow the guidance issued by the Utility Authority when working close to underground services.

A530 DAMAGED UNDERGROUND OR OVERHEAD SERVICES

If damage is caused to gas or electricity services, act immediately to:

- remove all persons from the vicinity;
- notify the service Authority by phone and comply with their safety instructions.

A536 STORAGE AND USE OF PLANT AND MATERIALS to be:

- in accordance with the manufacturer's written recommendations;
- in a position approved by the designer when stored on site.

A540 HERBICIDES AND PESTICIDES:

- Where appropriate ensure that only firms Certificated under the *Food and Environmental Protection Act 1985* carry out application of these chemicals;
- Make a COSHH assessment before use and ensure where appropriate that application of chemicals is made only by individuals with an NPTC certificate;
- Prevent all unauthorised access to treated areas for at least 24 hours;
- Store chemicals in a locked secure space in their original clearly marked containers.

A600 Compare the requirements of the JCLI Conditions. Ensure that the times or stages are defined either as part of the letter of invitation to tender or in the Specification. Discuss this with your client.

A606; Any contingency sum should be agreed with the client so that the client has budgeted for unforeseen problems which often arise. State the agreed figure in clause A230-A235.

A610; This is only appropriate where the employer is able to reclaim VAT. Normally the tender will be inclusive of any VAT due.

A615; Will the client permit workmen to use toilet facilities in the house?

A620; A client is likely to be seriously inconvenienced if the site is left untidy, especially at week-ends.

A6 General requirements

A600 PAYMENT

At the times or stages specified for payment, the contractor shall submit his claim to the designer and the designer shall certify in writing the amount due and send a copy to the contractor and the employer. The amount of the designer's certificate shall be payable by the employer to the contractor within 14 days of the date of the certificate.

A606 PROVISIONAL SUMS

Any Provisional sums including any Contingency sum shall only be expended on the written instruction of the designer.

A610 VALUE ADDED TAX

All contractor's claims for payment under this contract shall show any VAT due separately and the employer shall pay to the contractor all tax properly charged.

A615 TEMPORARY WORKS: provide all necessary secure storage, site toilets and other offices.

A620 SITE CLEANLINESS: Keep the site clean and tidy at all times. Remove rubbish from site at least once a week.

A625; The provision of samples is one of the most valuable methods of quality control available to the designer. This is particularly valuable for hard landscape such as brickwork where the prior approval of the client may also be important.

A630; Confusion may arise if the client also gives instruction or approval (see also clause A215).

A635 and A640 are designed to ensure competition and may be insisted on by local councils, charities and larger commercial firms.

A645; Check your Client's requirements for privacy and security.

A625 SAMPLES:

Provide samples and construct sample panels for approval when requested or specified. Keep approved samples on site for quality control purposes. Clear away on completion or when requested.

A630 APPROVAL and words derived therefrom shall mean the written approval of the designer.

A635 ALTERNATIVE PRODUCTS: the words 'or other equal and approved' shall be taken as following any brand name which is used to define the product required in the Specification or drawings.

A640 OR OTHER EQUAL AND APPROVED: shall mean that the contractor is at liberty to propose an alternative similar product which may be approved by the designer and the Contract Sum adjusted as appropriate, but the tender must be based on the product originally specified.

A645 ADVERTISING AND PUBLICITY: obtain approval before displaying any signboard or publishing any article or photograph of the Works.

B - Hard landscape - Workmanship and materials

B1 General preamble

B101 SETTING OUT:

- Provide and use suitable instruments for accurately setting out the Works;
- Make these instruments available to the designer for purposes of checking;
- Clearly define all boundaries between different elements of the design and inform Designer that setting out is ready for inspection before starting any subsequent construction or planting work.

B105 FIRES are not permitted on site without specific approval. When permitted, fires must not be within 10m of the drip line of any trees to be retained.

B111 PROTECTIVE FENCING: Before stripping or clearance of the site, provide, erect and maintain barriers to form Construction Exclusion Zones, using 1.2m high chestnut pale attached to scaffold poles top and bottom, or other approved strong fencing, in positions shown on the drawings and /or as scheduled below:(schedule)
..... Clear away on completion.

B116 PROTECT TREES TO BE RETAINED

Within the spread of the crown and any area protected by fencing:-

- do not reduce or increase soil levels;
- avoid compaction of the soil by plant or the storage of materials;
- avoid the spillage of toxic materials;
- where excavation is specifically approved, use only trenchless or hand excavation and backfill immediately;
- do not cut roots over 25mm diameter or damage their bark without approval.

B101: A traditional optical instrument commonly used would be a 'Dumpy' level which can set out angles as well as establish levels. Modern laser levels are easier to use.

B105: Fires can be fatal to existing trees or shrubs even though damage is not immediately apparent.

B111. Retained trees may need protective fencing in accordance with BS 5837 'Trees in relation to construction' which recommends that the Root Protection Area should be calculated as an area equivalent to a circle with a radius 12 times the stem diameter for single stem trees and 10 times the basal diameter of trees with more than one stem arising below 1.5m above ground. See also Clause A136

B116: If hard surfaced paths or drives are to be constructed within the area of the tree crown, further detailed instructions should be given based on BS 5837 'Trees in relation to construction'.

B2 Excavation and filling

B200 GROUND WORKS: comply with *BS 4428 Code of Practice for general landscape operations* and *BS 8000 pt.1 Clause 3.1 - 3.3* for excavation and filling.

B205 SITE CLEARANCE: remove to an authorised tip all scrub, undergrowth, roots, weeds, stones larger than 60mm, concrete, brick, tile and other unwanted material.

B210 COMPACTION/DAMAGE BY PLANT:
Do not allow plant to run over spoil heaps.
Minimise compaction by controlling access routes.
All compacted ground or pans to be broken up by subsoiling using a heavy tine ripper appropriate to the type of soil before practical completion.

B215 EXCAVATIONS: give 24 hours notice to the Designer that foundation bottoms will be ready for inspection . Do not proceed with further work until bottoms have been inspected.

B220 EXCAVATIONS: keep free of water.
A trial hole was dug on in the position shown on drawing No. and the level of ground water was noted asat that time.

B225 EXISTING TOPSOIL: to be removed from areas of hard landscape and areas to be re-graded. Keep free of contamination and store in heaps <1m high.

B230 SUB-SOIL Store clear of top soil in separate heaps. Soil in excess of requirements or deemed unsuitable for back-filling, to be removed from site.

B215: It is not necessary for the designer to ‘approve’ excavations. Contractors may press for approval to be given in order to avoid liability for future failures.

B220: If the level of ground water has been checked with a trial hole as part of your survey, give date and details.

B225: Topsoil stacked more than 1m deep will lose its fertility.

B240: BS 4428 'C.P. for general landscape operations' requires only 600mm of top soil at tree stations but the use of larger semi-mature specimens may require greater depths.

B245: Lack of proper consolidation can lead to long term settlement causing damage to hard landscape and ponding.

B235 IMPORTED TOPSOIL to be:

- medium loam with a pH value to match that on the site;
- stone size to pass a 40mm sieve and stone content to be <10%;
- free of sub-soil, perennial weed seed stolons, rhizomes or poisonous substances;
- if stored in temporary heaps, stacked less than 1m high.

B240 SPREAD TOP SOIL to provide the following minimum depths:

- grassed areas 100mm
- shrub areas 400mm
- tree stations 600mm
- Graded slopes to be of even gradient without puddles and kept 50mm above bordering hard surfaces to allow for settlement..

B245 CONSOLIDATION OF FILL: Spread and consolidate approved fill in layers not exceeding 200mm deep. General levels to be within ± 50 mm of design levels. Finished levels adjacent to hard landscape features and buildings to be ± 20 mm of design levels after settlement.

B301: 'Portland' cement is a name given to the type of cement traditionally manufactured from the limestone quarried at Portland in Dorset. Since June 2001 ordinary Portland Cement has been re-designated by the code 'CEM 1'. The class number refers to compressive strength and the letter N or R refers to normal or rapid hardening qualities. Aggregates are divided between 'fine' i.e. sand less than 5mm in size and 'coarse' which is gravel or stone from 5mm upwards. For concrete it is usual to specify the maximum size of the coarse aggregate. The concrete mix will then contain a range of sizes between 5mm and the maximum size specified. Size is graded through sieves. Therefore thin stones longer than the nominal size may slip through the mesh.

B305: Site-mixed concrete is likely to be much less reliable than ready-mixed concrete because of the lack of quality control. For this reason concrete used for the surface of drives and pavings is best specified as ready-mixed.

The local Council's Building Control Officer can advise on the presence of any damaging sulfates.

Where ready-mix is not economic, because of the small quantity involved or lorry access is impossible, the specification in Clause B305 compensates for the possible lack of strength and durability by increasing the proportion of cement in the mix.

'All-in aggregate' means that the sand and coarse aggregate are supplied mixed together and not as separate materials.

The 'slump' is a measure of how fluid a concrete mix is. This is normally controlled by the amount of water added. Too much water weakens the concrete.

B3 Concrete and mortar

B301 MATERIALS FOR CONCRETE

Cement: CEM 1 class 42.5N to BS EN 197-1

Rapid hardening cement: CEM 1 class 42.5R to BS EN 197-1

Sulfate resistant Portland cement (SRPC): class 42.5N or 42.5R to BS 4027

Aggregates: to BS EN 12620

Coarse aggregate: 20mm nominal max. unless otherwise specified.

Water: mains drinking water or tested to BS EN 1008

B305 SITE MIXED CONCRETE PROPORTIONS BY VOLUME:

General purposes: 1 : 2 : 3 Cement / sand / coarse aggregate
or 1 : 4 Cement / all-in aggregate

Foundations in sulfate bearing soils:

1: 2½ : 3½ SRPC /sand /coarse aggregate

or 1 : 5 SRPC / all-in aggregate.

SRPC = Sulfate resisting Portland Cement

Exposed concrete paving:

1 : 1½ : 3½ Cement / sand / coarse aggregate

or 1 : 3½ Cement / all-in aggregate

Fence post backfill: 1 : 10 Cement / all-in aggregate.

Slump is not to exceed 75mm unless otherwise stated.

General purposes mix used for bedding and backing curbs or edges of

B311 Ready-mix references called Designated Mixes are shown in this clause. These references follow the requirements of EN 206-1 or BS8500 for unreinforced concrete and are used by Ready-mix suppliers.

Unless otherwise specified the concrete supplied will have a 75mm slump. 125mm slump may be used for trench fill foundations.

B315: Stepped changes in level of foundations are normally designed as multiples of brick height i.e. 75mm, 150mm, 225mm, etc.

'Trench fill' foundations (where the trench is filled with concrete to within 150 of finished ground level) saves bricklayers working at the bottom of a narrow trench. Trench fill may be the safer and cheaper option.

B320: For thin slabs <75mm, the shrinkage and expansion joint intervals should be reduced.

18mm bitumen impregnated fibre board is the traditional expansion joint filler. Modern proprietary materials are available.

Minimum sub-base: normally 100mm min. but 200mm for clay soil.

Concrete thickness: e.g. 100mm for cars or 150mm for occasional delivery lorries.

Surface finish: e.g. tamped, wood float, brushed, retarded and washed.

B311	READY-MIX CONCRETE DESIGNATED MIXES	
	Mass concrete and trench fill in non-aggressive soils	GEN 1
	Foundations and general work in non-aggressive soils	GEN 3
	Foundations in Class 2 sulfate conditions	FND 2
	Foundations in Class 3 sulfate conditions	FND 3
	Foundations in Class 4 sulfate conditions	FND 4
	House drives, domestic parking and external paving	PAV 1
	Haunching to flexible block paving edgings and kerbs	GEN 1
	Obtain copy of delivery note and retain on site.	

B315 STRIP FOUNDATIONS:
 Overlap stepped foundations at changes of level by not less than 300mm or twice the change in level which ever is greatest.
 Use sulfate resistant cement in soils having a class 2 sulfate content or above.
 Back fill over-excavation or soft spots with foundation concrete, not rammed earth.
 Minimum excavation depth to be 500mm or to undisturbed ground or as shown on the drawings which ever is deeper.
 Minimum foundation concrete thickness to be 150mm
 Minimum foundation width 300mm greater than the wall or as shown on the drawings.

B320 CONCRETE DOMESTIC DRIVE
 Bay size: shrinkage joints at not exceeding 4m intervals.
 Expansion joints at not exceeding 24m intervals and at all abutting manhole covers, walls and similar obstructions.
 Expansion joint filler:
 Granular sub-base to B706; thickness:mm
 Concrete:mm thick to Clauses B301 and 311.
 Edging detail:
 Surface finish:

B330: In cold weather concrete may take several weeks to gain its required strength.

B335: Concrete must be kept damp for it to cure and gain strength. Concrete will harden even under water. Concrete, which dries out too soon, will be weak.

*B341: Air entraining plasticisers make mortar more spreadable and workable for the bricklayer by introducing microscopic bubbles into the mix.
Air entrainment also increases frost resistance.*

B325 MIXING AND PLACING CONCRETE

Use a batch mixer of approved type or use a ready-mix supplier who is a member of the British Ready-mix Concrete Bureau. Place as soon as practical after mixing and before the initial set takes place.

Compact thoroughly and achieve a level top surface after compaction unless falls are specified.

B330 CONCRETING IN COLD WEATHER

Do not use frozen materials;

Do not lay against frozen formwork or frozen excavations;

Pre-heat aggregate/water to ensure a minimum temp. 5°C at the time of placing and maintain this temperature for at least 3 days.

B335 CONCRETE CURING

Protect from frost, snow, wind or hot sun by covering all concrete with polythene sheet for a minimum of 7 days. Do not allow any wheeled traffic on concrete bases or drives for at least 14 days.

B341 MATERIAL FOR MORTAR

Cement: CEM 1 class 42.5N to BSEN 197-1

Sulfate resistant cement (SRPC) to BS 4027: 1991 class 42.5N

Lime: to BS EN 459-1

Sand: soft building sand to BS 882

Store lime and cement in a ventilated dry store clear of the ground.

Mortar plasticisers where specified to be of the air entraining type to BS EN 934-3. Use according to the manufacturer's instructions.

B345 MAKING MORTAR

Batch mortar proportions by volume using gauge boxes.

In cold weather pre-heat water and sand.

Do not mix for longer than 5 minutes after adding water.

B350: Masonry cements contain inert fillers and are designed to take the place of both the cement and lime content in a traditional mortar mix. The required proportion of cement is greater. E.g. the equivalent of 1 : 1 : 6 is 1 : 5. Follow manufacturer's instructions.

B356: Hydraulic lime mortar may be required for work on listed historic structures for mortar or for rendering. Hydraulic lime is not the same chemical composition as the lime used in conjunction with cement. Hydraulic lime sets when mixed with water but is not as strong or as quick setting as cement. For details of mix proportions read the manufacturer's recommendations (e.g. Hydraulic Lincolnshire Limes manufactured by Singleton Birch Ltd. see also www.hydrauliclimes.co.uk). Hydraulic lime mortar allows greater seasonal movement and may make expansion joints unnecessary. A lime mix for rendering is more vapour permeable allowing trapped moisture to escape. The use of experienced contractors when using hydraulic limes is essential.

B365: The colour of the mortar makes a striking difference to the appearance of brickwork. The only guaranteed method of obtaining a consistent colour is to specify premixed coloured mortar from a specialist supplier such as Tarmac Ltd. who can supply over 100 colours in 1 tonne bags. The mortar consists of pigment, lime and sand leaving the cement to be added on site.

B350 MORTAR MIXES OF CEMENT, LIME AND SAND to be:

- 1 : 1 : 6 or 1 : 2 : 8 for general purposes;
- 1 : ½ : 4 for copings, foundations and work up to 150 above ground level or 1 : ¼ : 3 in very cold weather;
- mix proportions are for dry sand. Allow for bulking if damp;
- use SRPC for foundation work in soils with a high sulfate content.

B356 HYDRAULIC LIME MORTAR

Where lime mortar is specified without the addition of cement, the lime shall be of the hydraulic type to BSEN 459-1 strength grade HL3.5 or HL5 and the sand shall be washed sharp flint or quartz sand containing a good proportion of 3 to 4mm grit.
Mix proportions shall be:

B360 MIXING HYDRAULIC LIME MORTAR

Add water to the lime in the drum or paddle mixer and mix to a wet slurry before adding sand. Add further water as necessary and mix for not less than 15 minutes.

B365 PREMIXED COLOURED LIME / SAND 'COARSE STUFF' to be:

Manufactured by
Colour reference:
Mix proportions:

B401: Wire ties are suitable for walls faced with knapped flint or rubble facings or for free standing cavity walls. Retaining walls may need stronger vertical twist type ties.

B406: For example Ruberoid 'Permabit' with good bond to mortar. Damp proof course (d.p.c). membranes should be laid with mortar on both sides. The danger of introducing a membrane dpc at coping level is creating a line of weakness allowing vandals or frost to dislodge the coping.

B410: To avoid introducing a line of weakness, membrane dpcs should never be used at the base of a straight garden wall.

B416: This is a minimum requirement for the most vulnerable positions. If bricks of only moderate frost resistance are used in the body of the wall, a water proof coping is highly desirable to keep them dry.

B4 Walling

- B401 WALL TIES to be BS EN 845-1 stainless steel or galvanised wire unless otherwise specified.
- B405 DAMP PROOF COURSE AT COPING LEVEL to be 2 courses of dpc or engineering bricks to BS 3921 in cement mortar with plasticiser.
- B406 DAMP PROOF COURSE UNDER COPINGS to be high bond type.
- B410 DAMP PROOF COURSE AT BASE OF WALLS to be 2 courses of dpc or engineering bricks to BS 3921 in cement mortar.
- B416 BRICKWORK FROST RESISTANCE
Bricks up to 2 courses above ground and for the top 2 courses of the wall, to be frost resistant designated FL to BS 3921 Table 3 (or grade F2+S2 to BS EN 771-1).
- B420 FACEWORK:
- facework to start not less than 150 below finished level of external paving or soil;
 - select bricks which are unchipped on their face;
 - mix bricks from separate deliveries to minimise any colour variations;
 - where cut edges are exposed to view, use a masonry saw.

B425: The requirement to lay bricks 'frog up' to fill the recess with mortar, is important for retaining walls which rely on the weight of the masonry to resist the sideways thrust of the material behind the wall.

The size of older bricks is frequently larger than the current British Standard size. Therefore, it is often not possible to interlock or 'tooth in' every new course to existing brickwork without producing unsightly thick bed joints. The best solution may be to divide the new from the existing brickwork using a vertical movement joint.

B435: 2 courses of engineering bricks in strong mortar are also an effective damp proof course.

B440: Standard Specials are those shapes for which the manufacturer has the moulds. There may still be a delay while the bricks are actually manufactured.

B425 LAY BRICKS:

- frog up on a full bed of mortar to Clauses B341 to B350;
- with vertical joints filled solidly;
- four brick courses per 300mm height;
- face to be plumb unless a batter is specified;
- Courses to be level and perpend to line through vertically;
- Ask for instructions to be issued on site if brickwork is to be built adjacent to or bonded to existing walls.

B430 PROTECTION OF BRICKS AND BRICKWORK:

- Handle with care to avoid chipping;
- Stack clear of the ground on level hard-standing;
- Keep stacks covered to protect from rain and to keep clean;
- Cover new brickwork with a board and polythene sheeting to protect from rain and frost;
- Rake out all frost damaged mortar and repoint.
- Do not lay bricks when the temperature is at 6°C and falling;
- Keep new work clean.

B435 ENGINEERING BRICKWORK for (location)

Bricks: to BS 3921, Engineering Class B
Mortar mix: cement : lime : sand 1 : ¼ : 3
Bond: English
Joints: Flush

B440 SPECIAL SHAPE BRICKS:

Use standard specials to BS 4729 where appropriate.
Where specials are not available and cut bricks are required, use machine cutting for all visible faces.
Work not visible is to be struck off with the trowel as work proceeds.

B446: For example, bucket handle; recessed; weather struck.

B450: To be effective this needs careful workmanship. A number of proprietary products are available ranging from small clay pipes to plastic slots to fit into perpend.

B455: Brick should be classified FL to BS 3921 or F2 + S2 to BS EN 771-1

Blocks to be dense (not light weight) blocks to BS 6073

Examples:-

Bond: Stretcher bond, English garden wall bond, etc.

Joint: bucket handle, flush, recessed, weather struck.

Batter: up to 50mm for retaining walls.

Dpc: Type 2 bricks manufactured by

Coping dpc: to clause B406

Coping: Engineering brick manufactured by... or pre-cast concrete ...

Vertical dpc: 2 coats R.I.W. Ltd. 'Heviseal'

Drainage: weepholes to clause B450 or fin drain to clause B1020. Free-draining granular backfill.

B460: The brick should have a low soluble salt content to avoid sulfate attack on the rendering.

Concrete blocks should have a surface which the manufacturer claims will give a good bond with the rendering and should conform to BS EN 771-3. If both sides of the wall are to be rendered, any water penetrating may be trapped in the wall. Therefore a waterproof coping is essential.

B446 MORTAR JOINTING:

Facework to be jointed to an approved profile. Brush with a stiff brush after the initial set, to lightly texture the joint. Work not visible is to be struck off with the trowel as the work proceeds.

B450 WEEPHOLES where specified to be provided at 1200mm centres by leaving perpend free of mortar. Ensure that each perpend is unobstructed through to free-draining backfill.

B455 FREE STANDING / RETAINING WALLS

Brick/block manufacturer and type:

Foundation:x.....mm, and to clause B315 unless otherwise specified.

Bond:

Joint profile:

Batter: mm per metre height.

Damp proof course: 2 courses to BS3921 type:

Coping damp proof course:

Coping:

Vertical damp proofing to back of retaining wall:

Drainage system:

Backfilling:

B460 WALL FOR RENDERING:

Brick or block type:

Base dpc:

Coping detail and movement joints as drawing No.

Rake brickwork mortar joints to a depth of 10mm.

Blockwork joints to be struck off flush with the trowel.

*B466: The strength of the render coats must suite the strength of the masonry material. The top coat mix should never be stronger than the base coat.
 Normal mix is 1 : 1 : 5-6 plus a top coat of 1 : 2 : 8
 For very strong masonry or exposed location use
 1 : ½ : 4 plus a top coat of 1 : 1 : 5-6.
 Pebble dash is thrown by hand into a wet 'butter coat'.
 Spatterdash or other texture finish may be applied to the top coat. Top coats for painting should be finished with a wood float. Sample panels for approval may be needed.
 Movement joints in the wall must be carried to the face of the render. The use of external quality stainless steel or galvanised render stops and bellcast mouldings neatens and reinforces the edges of render. For example: Expamet Building Products range.*

*B470; suggested range 50 x 75 up to 100 x150mm depending on the scale and texture required.
 Normally flint but other materials may be available locally especially in coastal locations.
 eg. 1 : 2 : 8 with white cement; see also Clause B356.*

B470 and B480: Wall ties would be unnecessary if lacing courses are used, i.e.1 or 2 courses of brick headers at 750 max. vertical centres with brick quoins and intermediate brick piers at 2 to 3m centres.

B466 CEMENT:LIME:SAND RENDERING

Sand: 'sharp' sand to BS1199
 Undercoat mix: Thickness: 10mm
 Top coat mix: Thickness: 8mm
 Surface finish:
 Allow base coat to cure thoroughly before applying top coat.
 Protect both coats from drying out for 3 days minimum with polythene hung in close contact.
 Render stop: Manufacturer Ref.
 Bellcast drips: Manufacturer Ref.
 Movement bead: Manufacturer Ref.

B470 COBBLE FACED BRICK OR BLOCK WALLING:

Cobble size: x
 Stone type:
 Mortar for bedding cobbles:
 Backing brick/block type:
 Wall ties: to clause B401
 at least 150mm long, set at 450 centres vertically and 900 centres horizontally.
 Lacing courses:
 Quoins and piers:

B475 LAYING COBBLE FACINGS:

Select and position cobble stones to achieve horizontal courses bedded and surrounded in a full layer of mortar. The orientation of the cobbles is to achieve a consistent size of exposed cobble after jointing.
 Rake back mortar 25mm from the front face with wooden spatula. Carefully remove mortar stains from the stones and finish mortar joints with a stiff stipple brush when partially set.

*B480: Suggested flint size: minimum of 75 x 75 x 75 but discuss with supplier.
This form of traditional walling is common in south-east England where the chalk strata provides plentiful supplies of flint.*

See also Note to B470

B490: The bonding of a wall without mortar is a skilled craft. Experienced workmen are needed. The wall detail will depend on the type, size and shape of the available stone.

B491: The mortar must be weaker than the stone; e.g. use 1 : 2 : 8 for soft limestone and 1 : 1/4 : 3 for granite.

B495; If the walling is part of a listed structure, the repointing may need to be done using hydraulic lime mortar 1 : 3 to clause B356.

B480 KNAPPED (SPLIT) FLINT FACED WALLING

Drawing No.

Flint size:

Mortar for bedding flints: 1 : 2 : 8 using white cement.

Facing brick type:

Backing brick/block type:

Wall ties: to clause B401 at least 150mm long set at 450 centres vertically and 900 centres horizontally.

B485 LAYING KNAPPED FLINT FACINGS: Lay split faces outermost to form a flush wall surface with a mortar joint round each flint. The joint is to be a minimum of 5mm wide, slightly recessed and brushed lightly after laying. Remove all mortar stains from face of flints.

B490 RUBBLE DRY STONE WALLING

Drawing No:

Carefully interlock and bond the two faces of the wall using through stones or bonders at the minimum rate of 3 per m². The faces of the wall shall be battered back at the rate of 35mm per metre height.

Select the largest available stones for ends and corners.

B491 STONE RUBBLE WALLING:

Drawing Ref:

Use crushed stone fine aggregate for mortar, colour matched to approval. Mortar mix proportions to be:

Carefully interlock and bond the two faces of the wall using through stones or bonders at the minimum rate of 1 per m². Select the largest available stones for ends and corners.

B495 REPOINTING BRICKWORK

Where specified cut out old mortar to 15-20mm depth. Remove dust, dampen joint and neatly repoint in 1 : 2 : 8 mortar with bucket handle joint unless otherwise specified.

B5 Carpentry

B500 STRUCTURAL TIMBER QUALITY unless otherwise stated to be a minimum of Strength Class C16 to BS EN 338 or SC3 to *The Building Regulations Part A*

B505 TIMBER FOR JOINERY: the limit for knots, splits, shakes and other timber defects is to be Class J40 to BS EN 942.

B510 TIMBER TREATMENT unless otherwise stated, all external timber is to be preservative treated to BS EN 460 for Hazard Class 4 with a desired service life of 15 – 20 years with Provide designer with the plant operator's treatment certificate.

B515 TIMBER DECK BOARDS: to be treated to BS EN 460 for Hazard class 3 with a desired service life of 15 – 20 years with water repellent preservative treatment. Provide designer with the plant operator's treatment certificate.

B520 TREATMENT OF CUT ENDS: As far as possible avoid cutting after treatment and do not place cut ends in ground contact. Brush treat all cuts with 2 full coats of preservative concentrate to restore protection from rot.

B525 BRACING OF STRUCTURES: Joints required to be nailed to have a minimum of two nails. Inform the designer if additional bracing is needed for stability.

B510: Chrome- and arsenic-free treatment for external timber is available. For example Arch 'Tanalith E' or Osmose 'Naturewood'. Hazard class 4 is timber in contact with the ground or fresh water.

B515: For example 'Tanalith Extra'.

B520: For example either 'Ensele' from Arch Timber Protection, the manufacturers of Tanalith or Osmose 'Endcoat'.

B530 Examples:

Concrete to specification Section B3

Mild steel hot dip galvanised to detail.....

Sawn softwood or planed European Oak

Posts: 75 x 75mm, 100 x 100mm, 125 x 125mm

Fixings: 2No. 10mm galvanised coach bolts with washers per junction.

Treatment: None, if the timber is durable, otherwise clause B510.

Decorative finish to clause B601.

B535 Examples:

General Structural Grade or C16, C24 etc.

Decking which is not at right angles to joists may need noggings (short lengths of wood nailed between joists). Consider the need for non-slip finish and specifying grooved deck boards. 'Bark side up' is to minimise tripping over raised edges due to moisture movement.

B530 to 540: The design of external joinery should encourage the drainage of rainwater from horizontal surfaces and avoid pockets which could retain water. This will prolong the life of the timber and its decoration and minimise moisture movement.

Boarding may be t and g (tongued and grooved) 100 x 22mm nominal size.

B530 PERGOLA as drawing No.

Foundations:

Support shoes:

Timber species and finish:

Posts size:

Longitudinal members:mm

Cross members:mm

Fixings:

Treatment:

Decorative finish: Type: Colour:

B535 TIMBER DECK/BOARD WALK as drawing No.

Foundations:

Support shoes: Hot dip galvanised to drawing No.

Timber species and/or strength grade:

Posts: xmm

Longitudinal members (beams):mm

Cross members (joists):mm

Decking:mm, fixed to

Fix boards bark side up using

Treatment: to clause B515

Surface finish: Type Manufacturer's Colour Ref:

B540 PURPOSE MADE DOORS/GATES:

Drawing No.

Timber species:

Post material:

Frame jointing:

Boarding:

Treatment:

Decorative finish: Type: Colour:

*B545: For example, Fosroc Expandite 'Galvafroid' zinc rich paint.
Aluminium components should not be in contact with timber treated with copper based preservatives.*

*B601 Examples: Sikkens Cetol Novatech (01480) 496868
ICI Paints. Dulux Weathershield Wood Stain
(0870) 242 1100*

*B605 Examples: Jotun Demidekk (01908) 321818
Akzo Permoglaze MVP Acrylic Gloss (01480) 496868*

B545 FIXINGS AND FASTENINGS

All mild steel nails, screws, bolts (including washers), hinges and other ironmongery which is not fully corrosion resistant are to be hot dip galvanised to BS EN 1461.

Damaged galvanising to be touched up with two full coats of zinc-rich paint to BS 4652 or use low melting point zinc alloy repair rods. Aluminium components are to be anodised.

B6 Painting

B601 HIGH BUILD WOOD STAIN FINISH:

To be obtained from one only of the following manufacturers:
.....

B605 WOOD PAINT FINISH

To be obtained from one only of the following manufacturers:
.....

B615 PREPARATION OF TIMBER SURFACES: to BS 8000-12.

Retreat all cut ends of preservative treated wood before priming;
Rub down to a smooth surface.
Remove sharp arises and clean off all dust.
Fill blemishes and seal resinous knots on timber to be painted.

B620 PAINT AND EXTERIOR WOOD STAIN APPLICATION:

Apply in accordance with the manufacturer's written instructions.
Do not apply in damp, frost, wind or when full sun may cause faults to develop.
Prime surface with the appropriate primer if required.
Apply evenly in full coats to produce a uniform depth of colour without brush marks.
Allow adequate drying time between coats.

B700: Consider the need to include clause B225 for the removal of all topsoil and vegetable matter.

B700 to B710: any paving within the root spread of trees to be retained should be designed to BS 5837. This may require cellular confinement systems and no-dig methods of construction in addition to no-fines granular material or sharp sand to ensure continuing water and oxygen supply.

B706: sub-base thickness (mm)

	Drives*	Terraces
Heavy clay or silt	350 [§]	250
Silty Clay	200 [§]	150
Sandy clay	130	100
Sand	100	N/A
Sandy gravel or chalk	N/A	N/A

* Domestic use by cars and light vans

§ Use a geotextile under the sub-base. eg Terram 900

B7 Pavings and steps

B700 LEVELS: make up levels as necessary with compacted gravel, hoggin, clean broken stone or brick to pass a 75mm ring.

B706 GRANULAR SUB-BASE for
to be Type 1 material to clause 804 of The Highway Agency Specification for Highway Worksmm thick.
Geotextile under-layer type:

B710 COMPACT SUB-BASE in layers not exceeding 150 mm thick with a plate vibrator minimum mass 100kg. or equivalent mechanical rammer. Apply a blinding if necessary to achieve a smooth, closed surface.

B711 BLINDING to be sand, pea shingle or PFA or similar approved fine material.

B720 RIGID BRICK PAVING for (*location*)
Brick Manufacturer and Reference:
Brick size:
Bond pattern:
Granular sub-base: as clause B706. Thickness: 100mm
Base: Concrete to Section B3 Base Thicknessmm
Cement mortar bedding thickness: 25mm mix: 1 : 4 with approved plasticiser.
Mortar joint mix:
Joint profile:
Bay size:

B731: See Note to clause B706. No sub-base required for car drives or footpaths on good ground such as gravel or chalk. For example, block pattern to be herringbone / stretcher bond / as drawn detail. Minimum 1:60 fall.

B725 LAYING RIGID BRICK PAVING

Set out bond to give uniform joint width.

Butter bed and joint faces of bricks and bed firmly on a bed of fresh mortar of plastic consistency. Tool joints to specified profile and clean off brick surface.

Protect with polythene from weather and traffic for 4 days minimum.

B731 CLAY BRICK/BLOCK FLEXIBLE PAVING for

Granular sub-base material: to clause B706.

Sub-base thickness:mm.

Edge restraint: bedded and haunched in cement mortar 1 : 6

Sand for bedding: sharp sand to BSEN 12620 laid to 65mm thickness before compaction.

Blocks: Manufacturer: and type: colour:

Block pattern: Surface falls:

Joint filling: dry fine graded sand to BS 882 to pass a 1.18mm sieve.

B735 LAYING BRICK / BLOCK FLEXIBLE PAVING

Ensure the bedding sand is moist enough to form a ball under hand pressure and then screed it to even falls as specified or shown on drawings. Cut blocks as required to maintain the specified bond using a block splitter.

Lay the blocks tight butted on the sand bedding and compact with a minimum of two passes using a plate vibrator. Spread a layer of fine sand over the whole area and vibrate again to cause the sand to fill the joints between the blocks.

B740: for rough textured stone use 1 : 40 cross fall to prevent ponding. Smooth flat stone can be laid to flatter gradients.

B745: BS 7263 covers a range of heavy duty slabs (flags) from 300 x 300 up to 600 x 900. These are suitable for occasional use by service vehicles and by cars. The bedding for vehicle use should be a continuous layer of mortar. If using the lighter domestic precast concrete or artificial stone for pedestrian use, remove the reference to British Standard and follow the Manufacturer's recommendations. See note to clause B731 for sub-base thickness.

B755: Not suitable for paths or drives carrying cars. Use clause B750 with an appropriate sub-base where light wheeled traffic is planned.

- B740 NATURAL STONE PAVING for
Stone type and finish
Slab sizemm xmm Thicknessmm
Jointing: 15mm wide
Granular sub-base: to clause B706, 100mm thick
Minimum cross fall:
Bedding
Weedkiller
- B745 PRECAST CONCRETE SLAB PAVING for
Slabs to BS 7263
Size:mm xmm xmm
Manufacturer and Ref:
Cutting: use a masonry saw or hydraulic slab splitter.
Sub-base:mm thickness to B706.
Cutting: use a masonry saw or a hydraulic slab splitter
Bedding:
Joints: 10mm wide
Minimum cross fall: 1 : 80 Weedkiller
- B750 SOLID BEDDING OF PAVING SLABS
Bed slabs on a continuous 50mm semi-dry mortar bed
using cement : sand 1 : 4 or lime : sand mix 1 : 3
Ensure slabs are at specified level ± 6 mm and free from rocking and
that the difference in level of adjacent slabs is less than 4mm.
- B755 MORTAR DAB BEDDING OF PAVING SLABS
Bed slabs on 5 mortar dabs of cement: sand 1:4 or
lime: sand mix 1 : 3.
Ensure slabs are at specified level ± 6 mm and free from rocking and
that the difference in level between adjacent slabs is less than 4mm.

B765: Sub-base will be necessary on poor soils or where wheeled traffic is planned.

B770: Cobbles are pebbles (typically flint or sandstone) worn to an egg-shape by the action of water. Cobbles are sometimes known as 'duckstones' in the Midlands and northern England.

B760 SEMI-DRY POINTING OF JOINTS

Brush in semi-dry cement mortar 1: 3. Lightly tap slabs and repeat until joints are solidly filled to the surface. Lightly tool the surface to consolidate, then cover with polythene for at least 3 days.

B762 SAND FILLING OF FLEXIBLE PAVING JOINTS using dry fine graded sand to BS EN 12620. Brush into joints and lightly tap slabs until joints are solidly filled to the surface.

B765 GRANITE/CONCRETE/STONE SETT PAVING for
Sub-base:mm thick to clause B706.
Pressed into a 100mm thick bed of cement mortar mix 1 : 4 with plasticiser of a consistency suitable for bricklaying.
Pointed: to Clause B760

B770 COBBLES/PEBBLE PAVING for
Granular Base: 75mm well consolidated limestone scalpings, clinker or equal approved.
Bedding: 75mm 1: 2: 4 fine concrete screed using 10mm pea shingle aggregate.
Cobbles: 75mm long, smooth, egg-shaped, of uniform size and colour.
Grout: dry Rapid Hardening cement and sand 1 : 3 to clause B301.

B775: Weedkiller is only likely to be essential under loose paving such as gravel or hoggin or thin specifications of macadam. Some geotextiles are also effective in preventing weed growth.

For example: Scotts UK Professional, 'Casoron G' (6.75% w/w dichlobenil)

B780: Geotextile separating layer Terram Ltd '900' or 'BuildA'

B782: Surfacing wood chip sized 5 – 60mm or wood chip sized 5 – 30mm and angular gravel 3 – 10mm in the proportion of 60% wood chip to 40% stone by volume.

B785: 'Hoggin' is a non-specific term used to describe a gravely material with a sufficient proportion of clay and fines to make it bind together when rolled. Too much clay will make it muddy.

B771 LAYING AND GROUTING COBBLES

Bed each stone on end into a screed in neat, close butted rows. Firm in each stone with a mallet to half its depth and to level the tops. Immediately brush in dry grout leaving 25mm of the stone exposed. Ensure that final levels allow free surface water drainage. Water with a fine spray. Remove grout stains from the exposed stones within 24 hours. Protect from rain and all traffic for 4 days

B776 WEEDKILLER

~~Apply sodium chlorate at the rate of 65 g/m² over the whole of the paved area after completing the reduced level digging. Where the roots of trees and shrubs may be affected, substitute~~ weedkiller applied in accordance with the manufacturer's written recommendations.

B780 GRAVEL PATHS/DRIVES

Geotextile separating layer: to be laid over excavation and turned up at the sides to meet edge board.
Surfacing: 50mm thick graded angular stones, 20mm down to 6mm.

B782 WOODCHIP AND GRAVEL PATHS

Edging board: 25 x 150 larch supported by 50 x 50 larch stakes at 1200 max. centres.
Granular base: 100mm open textured Type 2 or other approved free draining material laid and rolled. In dry weather water while rolling to improve consolidation.
Surfacing:
Thickness of surfacing:mm.

B785 HOGGIN FOR PATHS/DRIVES to be as-dug material consisting of self binding mixture of gravel, sands and clay, 95% to pass a 20mm sized sieve. Lay 150mm thick and roll to consolidate. Submit sample for approval prior to delivery

B790: Bitumen or tar macadams are coated stone of different sizes from 3mm up to 40mm.

Lay geotextile under sub-base for drives on clay soils.

Sub base: 200mm for drives used by delivery vans etc.

100mm for drives on poor ground used solely by private cars.

75mm sub-base required for car drives on good ground and for footpaths.

Base course: 60mm thick for drives /40mm thick for paths.

B791: This traditional surface dressing bonds a thin layer of gravel to a hoggin or scalpings type base and reduces the spread of gravel onto surrounding surfaces. It is suitable for footpaths and occasional use by cars.

A second layer can be applied in areas of wear such as gateways. Proprietary systems using a clear plastic binder are available and should be specified by brand name.

B795/796: The formula for the relationship between the size of riser and tread in mm for external formal steps is “the sum of twice the riser + the going should be between 550 and 700mm”.

The riser should preferably be between 130 and 170mm or exceptionally between 100 and 180mm.

See also page 19 of BS 8300 and Part M of The Building Regulations.

B796: A design problem with external steps is how to prevent the soil at the side encroaching on the tread. If the soil is kept low the side of the step is revealed. The use of a board to form a sloping string course either side solves the problem and strengthens the timber structure.

B790 MACADAM PAVING FOR PATHS /DRIVES: to BS 4987 with limestone aggregate.

Geotextile:

Sub base: granular materialmm thick to clause B706

Base course:mm thick of 20mm sized open textured aggregate.

Wearing course: 20mm thick, of 6mm sized medium textured aggregate.

B791 TAR SPRAY AND PEA SHINGLE SURFACE DRESSING to DETR Road Note 39.

Ensure that the surface to be dressed is sound and to the required level. Apply during a period of dry weather with a minimum temperature of 16°C

B795 EXTERNAL STEPS: as detailed on Drawing No.

Riser material: manufacturer and reference:

Tread material: manufacturer and reference:

Tread shall fall 1 : 60 towards the nosing for drainage.

Granular sub-base: 150mm thick to clause B706

Concrete materials to clause B301

Concrete foundation min.150mm thick, mix 1 : 4 all-in aggregate with 50mm slump.

Mortar for bedding slabs or brickwork: 1: 4 with air entraining plasticiser'

B796 TIMBER RETAINED STEPS: as detailed on Dwg. No.

Riser: 38mm x 150mm softwood.

String courses: 32mm x 150mm softwood.

Stakes: 50mm x 50mm x 450mm with splayed top.

Timber treatment: to clause B510.

Granular fill: to clause B706 to completely fill behind the risers to give a level top surface blinded if necessary with coarse sharp sand.

B8 Fencing

B800 SET OUT AND ERECT FENCING:

- In straight lines or as shown on the drawing;
- To follow the ground profile.

B805 POST HOLES to be vertical sided. Hole depth to be a minimum of 500mm deep for fences up to 1.2m high. For fence heights above 1.2m the depth of hole shall be half the height of the fence.

B810 POSTS SET IN CONCRETE to be vertical and rigid. Post hole's diameter to be a minimum of 200mm larger than the post section. Concrete to be to not leaner than 1 part cement to 10 of graded aggregate max. 20mm size. Concrete to be well rammed round post and kept 150 below finished soil level. Complete filling of hole up to finished ground level with rammed topsoil.

B815 POSTS SET IN SOIL to be vertical and rigid. Holes to be vertical sided and as small as practical in plan to allow for rammed back-fill. Backfill with soil in 3 stages thoroughly consolidated at each stage.

B820 CHESTNUT PALE FENCING: to BS1722-4
Height:m
Posts: spaced at 2.25m max. and driven into ground.
Spacing between pales: 75mm.

B825 CLOSE BOARDED FENCING: to BS1722-5
Heightm Number and type of rails: No.
Timber species: Timber finish:
Post material: Post preservation: to B510
Post spacing: not exceeding 3m
Method of setting posts:
Feather edge boarding:mm
Gravel boards: Gravel boards preservation: to B510

B805: In ground where the levels have been increased with fill or in poor soil, a greater depth may be necessary to ensure stability.

*B825: Rails are normally arrised (triangular in section).
Post material: Concrete or timber
Post setting: in concrete, rammed earth or driven.
Feather edge boards: BS size is 100 x 13 down to 6mm
Gravel boards may be timber sized 100 x 25 or concrete 150 x 38mm.*

B830: (BS1722-7 also covers cleft timber posts and rails.)

Height: 1.1m or 1.3m high.

Joints: nailed or mortised.

Number of rails: 3 or 4.

Post setting in concrete, rammed earth or driven.

Timber: European oak, sweet chestnut or softwood.

B835: Alternatives:

Height, 0.6, 0.9, 1.2, 1.5, 1.8m

Posts, concrete or timber

Setting of posts, concrete or rammed earth

Panel type, e.g. waney edge horizontal boards

B830 SAWN TIMBER POST AND RAIL FENCING: to BS1722-7

Height:m

Joint type:

Number of rails: ...

Method of setting posts:

Timber species:

Post preservation: to B510

B835 LAP BOARDED PANEL FENCING: to BS1722 Pt. 11

Height:m

Post material: Post preservation: to B510

Method of setting posts:

Panel type:

Gravel boards:

Preservation: Decorative finish:

B841 RABBIT FENCING

Posts: 75mm diameter treated round wood 1.8m long with one end pointed and driven 600mm into ground at 3.5m centres.

Braced straining posts: 100mm diameter at not exceeding 70m centres and at all changes of direction.

Galvanised wire netting to BS EN 10223-2; 31mm mesh; 1050mm high; buried 150mm

Straining wire: 3 No. 3.15mm galvanised wires, fixed with galvanised staples

Timber preservation: to B510

B845 PURPOSE MADE FENCING for (*location*)
Drawing No.
Timber species:
Timber finish:
Post material:
Post preservation: to B510.
Method of setting posts:
Gravel boards:

B850 FIELD GATE: to BS 3470. Manufactured by:
Width:m.
Gate material:
Timber: preservation to B510
Post material:

B855 FIXINGS AND FASTENINGS: to Clause B545

B850: For example 2.4, 2.7, 3m wide galvanised steel or timber – oak, larch, red wood or douglas fir.

Posts; concrete, steel or timber – oak, etc.

B9: To be completed as necessary for seats, sculpture, urns etc.

B9 Site furniture and equipment

B1001: Rule of thumb for the required volume of a rubble filled soakaway (assuming the soil is reasonably permeable such as gravel, sandy loam or chalk and above the water table) 'Area of hard surface to be drained in m² divided by 20 = required volume in m³.' The speed with which the water permeates the soil can be increased by forming a long trench rather than a soakaway pit of the same volume. When the total terrace area to be drained is over 100m² it may be economic to use a concrete ring or plastic preformed soakaway. The required volume of such soakaways is only 30% of the equivalent rubble filled soakaway.

B1010: For small soakaways prefabricated plastic perforated drums are available. For large installations the traditional material is precast concrete.

B1013: 200 - 400mm deep depending on soil conditions and 30 – 60mm wide.

B1015: Mole drains are only useful on clay soils. In clay the bullet shaped 75mm plough forms a drainage channel 600mm below ground which will last 5 to 10 years. Filter drains are laid at intervals across the line of the mole drains to collect the water.

B1020: Fin drains are usually proprietary sandwiches of geotextile and a porous core which are inserted into a narrow trench. They can be used behind a retaining wall or to catch underground horizontal seepage of water.

B10 Drainage

B1001 RUBBLE FILLED SOAKAWAY

Drawing No.

Volume: m³ measured below inlet pipe

Excavated depth:m.

Filling: granular material to B1005

Vertical Inspection pipe: 150mm with screwed plastic inspection cap

Horizontal distributor pipe: 100mm to clause B1045

Geotextile filter membrane to bottom, sides and top to B1035

Backfilling above inlet pipe to be as dug soil.

B1005 GRANULAR MATERIAL FOR SOAKAWAYS: to be clean crushed concrete, stone, brick, tile or gravel in the size range 130 to 50mm.

B1010 PREFABRICATED SOAKAWAYS:

Manufacturer: Size/Ref:

B1013 SAND SLITS to bemm deep cut with a mechanical slitting wheelmm wide and filled with 10mm shingle and capped with 50mm depth of coarse sand.

B1015 MOLE DRAIN

Mole Channel depth below finished ground:.....mm

Mole Channel spacing:.....mm

Filter drain spacingm

B1020 FIN DRAIN

Trench:mm minimum depth x mm wide

Porous pipe size: 100mm unless otherwise noted.

Minimum gradient: 1 in 100

Geotextile filter:

Granular backfill: 20mm single sized stones.

B1025: This type of drain is the traditional method used to lower the water table. In heavy clay the drains may need to be spaced at 2 or 3m intervals. The required depth depends on maximum required water table. For trees the water table should be at least 750mm below ground and for shrubs 500mm.

If the granular material is carried right to the surface the drain will also collect surface water. Otherwise specify that the top 300mm is backfilled with topsoil.

Placed either side of a drive, this type of drain could be suitable for ensuring that the water table is kept 600mm below ground and does not reach the sub-base material and to take the surface run-off.

B1035: Geotextile filter membrane Terram Ltd. '900' or 'BuildA'.

B1025 FILTER DRAIN FOR GROUND AND SURFACE WATER

Trench: Minimum depth x 450 mm wide
Trench spacing:m
Porous pipe size: 100mm unless otherwise noted
Minimum pipe gradient: 1 : 80
Geotextile filter:
Granular backfill: 20mm single sized stones.

B1030 LAYING FILTER DRAINS

Excavate to scheduled depth and width. Line the trench sides and bottom with geotextile filter membrane.
Lay the drainage pipe on a 50mm bed of pea shingle.
Backfill the trench with coarse single sized granular material to 300mm below finished level. Fold the geotextile over the top to enclose the fill.
Complete the backfilling with further coarse granular material up to 50mm below finished ground level and cap with 40 mm of hard ash.

B1035 GEOTEXTILE FILTER MEMBRANE for drainage work:

.....

B1041 CLAY POROUS PIPE LAND DRAINS: to BS EN 295

B1045 RIGID PLASTIC PERFORATED LAND DRAINS: to BS 4962

B1050 EXCAVATED MATERIAL: set aside all true topsoil for re-use.
Remove surplus or unsuitable subsoil from site immediately.

B1055 PVC_u DRAIN PIPES FOR SURFACE WATER: to BS EN 1401-1

B1061: Consider the need for rodding access using inspection chambers or rodding eyes.

B1066: It may not be possible to angle the covers of plastic prefabricated inspection chambers to match the slope of any embankment. Traditional brick inspection chambers may be preferred for that reason.

B1066 to B1075: Drainage manholes less than 900mm deep are usually termed 'inspection chambers'.

*B1075: Type and size of cover may be limited by the use of a proprietary inspection chamber. Otherwise choose galvanised pressed steel, cast iron or recessed. The recessed covers are designed to take an infill to match the surrounding paving.
Grade A for roads with commercial traffic.
Grade B for drives for light traffic.
Grade C light duty for footpaths with no chance of cars or tractors.*

B1061 LAY AND PROTECT UNDERGROUND DRAINS:

- to precise line and level on a 50mm bed of pea shingle;
- add pea shingle up to the level of the crown of the pipe after laying;
- protect shallow drains with additional 50mm of shingle and precast concrete slabs as detailed in the Building Regulations Approved Document H if the crown of the pipe is less than 200mm under terraces, 600mm under lawns and beds and 900 under drives carrying commercial vehicles.
- workmanship shall conform to BS 8000-14

B1066 PLASTIC INSPECTION CHAMBERS: to BS EN 13598-1
Manufacturer:

B1070 BRICK INSPECTION CHAMBERS to be constructed of Engineering bricks Class B built in cement mortar 1 : 3. Thickness 225mm in Flemish Bond built off 150mm thick concrete. Benching to be cement mortar 1 : 3 sloped smoothly down into the drainage channel.

B1075 INSPECTION CHAMBER COVERS

Type:
Grade:
Size: xmm

B1080 INSPECTION, CLEANING AND TEST: Check line and gradient of pipes and do not backfill any drain without approval. Keep drainage system free of obstruction till hand-over. Rod and flush out drains just before hand-over. Pressure test drains to 50mm w.g. if instructed by the designer.

B1100: Filter systems can be of the gravel or gauze types or based on UV light.

B1105: Alternative liner materials are black EPDM rubber or black butyl sheet. Liner thickness 0.75mm

B1110: The use of both sand and geotextile is a precaution against penetration of the pond liner by stones or other sharp objects. It may be difficult to retain the sand on steep or vertical sides.

B11 Water supply, irrigation and ponds

B1100 WATER PUMP AND FILTER SYSTEM

Pump manufacturer and reference:
Filtration system type:
Manufacturer and ref:
Electrical supply: as Specification section B12

B1105 POND LINER to be: Material: Thicknessmm

B1110 POND CONSTRUCTION WITH BUTYL / GRP LINER

Excavate to the dimensions shown on drawing No. and install any sub-pool drainage system shown.
Consolidate any backfilling thoroughly.
Remove all stones or sharp debris over 40mm in any dimension from surface of excavation.
Blind surface with 50mm of sharp damp sand.
Lay geotextile liner to sides and bottom as per construction drawing.

B1115 LAYING POND LINER:

Lay liner to the excavated contours and form a minimum number of neat tucks with the surplus material to leave the general areas of liner unwrinkled.
Overlap the pond rim with the liner by a minimum of 150mm all round.
Slowly fill pond with water adjusting the liner tucks as necessary prior to securing liner at the rim.
On completion of edge detailing, empty pond and remove all debris.
Ballast the bottom of liner with 100mm depth of rounded pea shingle before final filling with water.

B1125: The maximum size of pond using this form of lining should be 4m. The larger the pond the more difficult it is to keep it watertight.

B1135: Careful curing prevents quick early drying of the concrete / ferro-concrete. Premature drying would weaken the material. Changing the water 3 or 4 times before introducing plants is essential to reduce the alkalinity.

B1125 PREPARING FERRO-CONCRETE POND LINING

Excavate to required shape avoiding curves with a radius less than 400mm. Consolidate excavated surface.

Line with galvanised wire mesh with a 20mm mesh size.

Cut and fold mesh sufficient to ensure it lies flat on the excavation.

Tie joints together at 300mm centres with galvanised wire.

Spray the excavation thoroughly to dampen the ground and reduce the absorption of water from the concrete.

B1130 APPLYING FERRO-CONCRETE

Mix 1 part Cement with 1½ - 2 parts sharp sand with plasticiser.

Apply concrete with a firm pressure to force the mix through the mesh. The minimum finished thickness to be 25mm with 10mm cover over the mesh.

Apply concrete with a wood float in one operation to avoid weakness at day joints in the lining.

B1135 CONCRETE POND CURING:

Completely cover with polythene for 3 days then fill pond with water for a week. Empty and refill pond 3 times at further weekly intervals.

B12 Electrical

B1201 ELECTRICAL WORK shall only be carried out by firms who are:

- registered with the NICEIC or
- approved by the Electrical Contractor's Association;
- experienced in low voltage external lighting installations.

The design and installation shall be to the latest edition of the IEE Regulations and Part P of the Building Regulations.

B1202 COMPLETION CERTIFICATE

The electrical contractor shall issue an NICEIC test certificate (or shall obtain a Local Authority Building Control equivalent) for all work that is notifiable under Part P of the Building Regulations.

B1205 UNDERGROUND DUCTING to be

- 50mm diameter PE waste pipe and fittings to BS 5255 for extra low voltage cable;
- 100mm diameter pvc-u ducts for mains voltage cable;
- jointed with solvent welded fittings;
- radius of bends to be not less than 4 times the duct diameter
- minimum depth 450mm below finished ground level;
- left with draw wire and plugged ends for electrician.

Provide separate ducts for telephone and audio-visual cabling.

Ensure that ducts carrying mains voltage are kept a minimum of 100mm away.

B1210 MAINS VOLTAGE CABLE: to be pvc/swa/pvc steel wire armoured cables.

When buried, trench to be at least 350 below final ground levels and be marked with warning tape or tiles. Cables buried under paving are to be in ducts. Temporarily seal the ends of all SWA cables. A separate core of the cable shall be allocated for earth protection.

B1215 SEPARATED EXTRA LOW VOLTAGE (SELV) CABLE: unless otherwise approved shall be Heavy Duty Rubber Flexible (type H07) having a minimum cross sectional area of 2.5mm², and be suitable for exterior and buried underground use.

Alternative cable specifications must meet EU Regulations, must have stranded conductors and be rated to limit the cable voltage drop to 0.6v between the transformer and the furthest fitting.

B1220 SEPARATED EXTRA LOW VOLTAGE (SELV) LIGHTING:

- use twist or crimp connectors to join any supply cable to the leads of the fitting;
- protect junction of the leads with a heat shrunk sleeve;
- route SELV supply cables in positions where they are least likely to be disturbed;
- when routed in trees allow slack for growth and wind movement.

B1225 TREE ROOTS: Avoid routing underground cables near existing trees. Where this is unavoidable work to clause B116

B1230 POSITIONING OF WIRING AND EQUIPMENT: to be as unobtrusive as possible and neatly clipped back.

Bury or conceal equipment and junction boxes behind hard landscape features or planting where possible.

Above ground wiring, equipment, transformers and similar items to be coloured to blend with the background.

Above ground cables to be a minimum of 100mm above ground level and be clipped to a permanent and robust construction.

Woven or lap boarded panel fencing is not acceptable as a support structure.

B1235 ABOVE GROUND ENCLOSURES:

All external equipment shall be securely mounted not less than 150mm above adjacent ground level and have cable entry from below. PVC/SWA/PVC cables are to be terminated in an approved shrouded exterior gland incorporating an armour clamping earth ring.

B1240 BELOW GROUND ENCLOSURES: Buried transformers and any other below ground equipment shall be warranted by their manufacturer as suitable for below ground use. Use stainless steel glands for cast aluminium components. Bed components on a bed of pea shingle or coarse sand and ensure adequate drainage is available.

B1245 CIRCUIT PROTECTION: all circuits which may be used to power fixed external equipment must be protected with a permanent, fixed RCD not of the plug-in or in-line type and a circuit breaker of appropriate type and rating.

B1250 INGRESS PROTECTION: Ingress protection rating shall be not less than IP55. Seal all glands and blanking plugs with silicon sealant. Use PTFE tape on all threaded glands.

B1255 TRANSFORMERS:

- provide all transformers with a fuse protection on the primary side and a thermal cut-out unless these are provided as an integral part of the equipment;
- transformers supplying SELV lighting (under 50 volts) shall not power any other equipment;
- all transformers shall provide SELV supply on the secondary side to meet EU Directives.

B1261 EXTERIOR LIGHTING FITTINGS to BS 4533 and BS EN 60598-1

B1250: IP55 indicates a fitting which is dust proof and proof against a jet of water

B1265 RATING OF SWITCHES shall be appropriate to the load allowing for inductive loads.

B1270 EXISTING INSTALLATIONS: do not disturb any existing electrical installation without specific approval.

B1275 AS-INSTALLED DRAWINGS: on completion provide the employer with:

- plans to show all equipment positions and cabling routes;
- operating and maintenance instructions for all equipment.

C - Plants and planting - Workmanship and Materials

C1 General preamble

C102 WATER SUPPLY RESTRICTIONS

If the water supply is, or is likely to be restricted, do not carry out planting or seeding until instructed. If planting or seeding has been carried out, obtain instructions on watering.

C103 SUPPLY & PLANTING OF TREES & PLANTS shall comply with the 'Code of Practice for Plant Handling' drawn up by the Committee on Plant Supply and Establishment (CPSE).

C105 PLANT LABELING:

All plants delivered to site shall be clearly and durably labeled with exact genus, species, cultivar and supplier. Where plants are grouped one label is to be retained in place on completion of the work.

C110 MAINTENANCE INSTRUCTIONS:

Provide typed calendarised instructions for the maintenance of all planting for a full year and pass to Employer within 1 month of completing the work.

C111 PLANTING FAILURES: all plants including trees, which fail before Practical Completion or within any defects liability period stated in Section A2 of this Specification, shall be replaced with approved equivalent material to match the size of adjacent plants of the same species at the next suitable planting season.

C103: See advice given in JCLI Technical Report: Frost Damage to Trees and Shrubs (June 1985) available free on www.jcli.org.uk.

C110: On small projects lasting less than a year it is more likely that a separate contract will be let if the client requires periodic maintenance work. This clause is included to remind designers of the need to co-ordinate any replacement planting with ongoing grass cutting and maintenance work. See also Appendix A.

C111: Check whether you have confirmed the defects liability periods in Section A2 or by some other method. If so, a separate plant establishment Maintenance Contract will be required to last as long as the defects liability period.

*C115 appropriate products for professional use only include the following types:
Glyphosate for perennial weeds/brushwood.
Paraquat/diquat for annual weeds.
Dichlorprop as a selective pre- and post-emergent herbicide*

- C115 WEED KILLING:
Where chemical weed killing is specified apply at least 7 days before cultivation. Use products appropriate to the type of weeds to be killed.
- C120 GRASS MAINTENANCE
Apply a selective weedkiller the following spring in early April. Apply a N15.P5.K5. fertiliser the following spring in late April. Water using a fine spray whenever required to ensure continuing healthy growth until Practical Completion.
- C125 GRASS CUTTING: when the grass is between 50 and 75mm high, clear the lawn of surface debris. Make a first cut with a sharp cylinder mower with a fitted grass box to reduce the grass to 25mm. Dispose of all grass cuttings to an agreed location. Maintain the grass within these limits by mowing at intervals until Practical Completion.
- C130 ROLL lawn after the first cut with a mechanical drum roller weightkg

C2 Seeded lawns and meadows

C200 GRADIENTS AND LEVELS:

Conform to the spot heights on drawings and ensure that falls are even without humps or hollows. Unless otherwise specified final levels after settlement are to be 20mm above any adjacent paving.

C205 PRE-EMERGENT WEEDKILLER: Before cultivation apply an approved weedkiller unless the ground has been kept fallow and weed free for a period of 6 months.

C210 PRE-EMERGENT WEEDKILLER: Before cultivation treat weeds with according to manufacturer's recommendations

C215 GROUND PREPARATION FOR LAWNS:

Rotovate areas to be seeded to a minimum depth of 150mm

Remove all debris exceeding 50mm in any dimension brought to the surface including stones, vegetation and rubbish.

Ensure 100mm minimum depth of topsoil over all areas.

Rake and roll the area to produce a firm and level seed bed.

Reduce top 30mm of soil to a fine tilth not exceeding 10mm particles. Obtain approval before seeding the prepared ground.

C220 GROUND PREPARATION FOR WILD FLOWER MEADOWS:

Remove ... mm of top soil to reduce fertility and problematic weed seed.

Harrow to reduce remaining soil to a good tilth not exceeding 25mm.

C225 FERTILISER

Dress areas to be grass seeded with N7:P7:K7 fertiliser at a rate of 50g/m². and work into the top 30mm of tilth 7 days before sowing/turfing and water in well.

C220: Most wild flower meadows will require less maintenance and are more sustainable when grown on soils of low fertility.

C225: For example Pbi or Gem 'Growmore'

C230: For example, WW Johnson & Sons of Boston, Ref: JL23 applied at a rate of 30g/m².

The specification of alternative suppliers is desirable for clauses C230 to C240. Allowing the contractor choice may encourage more competitive tendering.

C255: Example, British Seed Houses Ltd. Ref: WFG6 - wild flora and ornamental grasses mix for heavy clay soil or Landlife Wild Flowers Ltd.,

C261: Check suppliers recommended sowing rate which will depend partly on whether the mix contains grass seed.

C265: The removal of cuttings is to prevent mulching and nutrient build-up. Cutting from year 2 onwards depends on the seed mix. It should normally cease between April and September to allow the seed to ripen and drop.

C230 GRASS SEED with ryegrass for utility areas to be:
.....

C235 GRASS SEED for sunny lawn areas to be one of the following:
.....

C240 GRASS SEED for fine lawns in shade to be one of the following:
.....

C245 TURF EDGING:
Lay a margin of turf to all edges before seeding, a minimum of 300mm wide. Turf grass mixture to match the seeding specification. Marry in the levels and trim turf to line.

C250 SOWING GRASS SEED:
During suitable weather use a broadcast machine to spread the seed in the quantity specified. Apply in two equal passes in transverse directions. Rake in the seed and roll with a lightweight roller.

C255 WILD FLOWER SEED MIX:
or similar approved and appropriate mix.

C261 SOWING WILD FLOWER SEED MIX:
Sow at a rate of ...gm/m² preferably in September or October
Ensure even mixing of all seed varieties at all times
Bulk up the seed with 10 times the volume of sawdust or silica sand.
Carefully rake the seed into the surface and role to consolidate.

C265 CUTTING WILD FLOWER MEADOWS (FIRST YEAR):
When the sward reaches 100mm cut to 50mm high using a hand rotary mower. Rake off and remove cut material by hand.
Thereafter, mow every 2 months till the end of the first growing season

C300: insert one of the following BS types:

- general purpose with ryegrass,
- or - general purpose without ryegrass,
- or - fine sport/ornamental.

Standard domestic turf is supplied in 1m² metre rolls 406mm x 2490mm (60m² per pallet) or for large schemes where tractor laying is possible 800mm x 25m rolls are supplied.

C315: For example Gem or Pbi 'Growmore'.

C3 Turfing

C300 TURF QUALITY forto be.....

- to BS 3969 with weedkiller applied 1 to 3 months before lifting;
- 900 x 300 minimum size x 25mm minimum even thickness.
Supply a representative sample to site for approval before delivery.

C305 DELIVERY to be phased to ensure laying within 48hrs. of lifting.
Stacks not to exceed 1.4m high.

C310 PREPARATION FOR TURFING:

Remove all weeds, rubbish and stones over 30mm in any dimension.
Cultivate topsoil to a minimum depth of 100mm.
Reduce top 30mm to a fine tilth and on clay or heavy loam soils
work in 50% of coarse sharp sand to produce a 60mm layer.

C315 FERTILISER:

Dress areas to be turfed with N7:P7:K7 fertiliser at a rate
of 50g/m². Work into the top 30mm of tilth 7 days before turfing
and water in well.

C320 LAYING TURF:

Transport turf over close butted timber planks.
Lay turf in consecutive rows.
Lay turf from timber planks protecting previously laid turf.
Lay turf close butted breaking the joint in alternate rows.
Use only whole turves at margins.
Consolidate lightly with wooden beaters.
Brush in finely sieved topsoil to fill all joints.
Peg turfs with wooden pegs on slopes exceeding 30°.
Ensure final surface is 20mm above any adjacent hard surface.

C335 The practicality of this requirement depends on when the turf is to be laid and the length of contract.

C325 TURFING ADJACENT TO OBSTRUCTIONS

Leave a neat 300mm radius of soil round all newly planted trees. Unless otherwise shown on the drawing, turf right up to existing established trees, walls, fences and similar obstructions, leaving no soil uncovered.

C330 CUT AND ROLL lawn after approximately 6 weeks using a sharp cylinder mower and a roller weightkg. Spread and brush in a top dressing of fine sieved topsoil and sand 50:50 to fill cracks and depressions.

C335 MAINTENANCE OF NEW TURF:

Apply a N15.P5.K5. fertiliser the following spring in late April. Water using a fine spray whenever required to ensure continuing healthy growth until Practical Completion

C400: Specify nursery if required.

C415: Inorganic fertilisers such as bonemeal should be applied in the autumn. Use organic or slow release fertilisers in the spring.

Do not feed aquatic plants

C4 Shrubs, herbaceous, ground-cover and aquatic plants

C400 NURSERY STOCK: as specified in the National Plant Specification (NPS) published by the Horticultural Trades Association. Obtain plants from

C405 PREPARATION FOR PLANTING:

Apply approved weedkiller.

Rotovate ground and remove stones over 50mm in any dimension.

Remove existing unwanted plants including their roots.

C410 SOIL CONDITIONING: apply and lightly dig into the surface one of the following:

- well rotted farmyard manure at a rate of 5kg/m².
- concentrated bagged animal manure at the rate ofk/m
- well rotted leaf-mould or spent mushroom compost at a rate of ...kg/m².

C415 FERTILISER: incorporate bonemeal at the rate of 70gm/m² into the topsoil.

C420 PLANT HANDLING, DELIVERY AND STORAGE: to be as recommended in the National Plant Specification. Phase the delivery of plants so that there is only sufficient for planting within 48hrs. of delivery or, if necessary, ensure suitable temporary storage before final planting by heeling in or lining out.

C426 PREPARATION OF PLANTS:

Remove inorganic containers.

Check for and reject any damaged, diseased, poorly rooted pest infested or wrongly identified plants

Carefully prune any minor root damage.

C435: Alien (ie imported) backfilling often inhibits plant establishment and growth. If needed, imported soil should be well mixed with the existing soil type. Refer to the National Plant Specification.

C440: Pruning should be minimal. Woody plants 'live' off the starch stored in their twigs at the beginning of their first growing season after transplanting.

C430 PLANT :

- in position shown on the drawings or in the absence of drawings space evenly;
- at the rate specified, avoiding regimented rows unless specifically shown;
- in holes large enough to allow adequate root spread and tease out congested root balls of container grown plants;
- excavate holes at least 75mm below the root system and a min. 400mm for climbers;
- set plants so that their original soil level matches the new surrounding ground and
- with their best side displayed.

C435 BACKFILLING to be selected existing topsoil. Add 600g/m³ of bonemeal to stimulate root growth. Any additional imported organic matter should be well mixed with at least an equal quantity of existing soil. The backfill is to be evenly worked round the roots and well heeled in.

C440 IMMEDIATELY AFTER PLANTING:

Lightly prune back any damaged or malformed growth. Rake soil to an even, fine tilth to the required levels.

C445 BULBS, CORMS AND TUBERS: to BS 3936 Part 9

C450 PLANT BULBS:

- under plugs of turf when in existing grassed areas;
- grouped at random for naturalised bulbs.
- with the base of bulb at the correct depth for the species and in contact with the soil;
- with fine, stone-free topsoil backfill.

- C455 **PLANTING SEASON:**
Plant out non-container grown plants only between October and March inclusive unless otherwise agreed.
Container grown or containerised plants may be planted out at any time of year except when the temperature is below 4°C on a falling thermometer, in frozen or waterlogged ground or in drought conditions.
- C460 **WATERING:**
Saturate the root ball of container grown plants before planting.
Thoroughly water plants immediately after planting and again before mulching.
- C465 **MULCHING:**
Fork soil to a medium tilth in the areas to be mulched. Apply 75mm of mulch with mature and coarse wood or bark chips before Practical Completion.
- C470 **POLYTHENE CRATES FOR AQUATIC PLANTS:**
Provide sufficient crates of appropriate size to accommodate all pond and marginal plants as scheduled or shown on the drawing.
Crates to be of the fine hole pattern without liners;
Use rotted turf or good topsoil free of fertiliser, manure or herbicide to fill the crates 75% full.
After planting apply a 25mm layer of washed pea shingle with a neutral pH to retain the soil in place.
- C475 **WATER LILY PLANTING:**
Remove all mature leaves and trim roots with a sharp pruning knife before planting.
Temporarily support newly planted crates on bricks to give 75mm to 150mm of water over the top of the crate until established.

C501: The size of standard or larger trees is normally measured by their girth in centimetres.

C510: This is suitable for domestic situations where vandalism is no problem. Double or triple staking to just below the first fork/crotch may be required for better support.

C515: Specify guying for stabilising some types of mature transplanted trees, particularly conifers.

C520: In heavy clay soils it may be necessary to prevent water-logging of tree pits by providing drainage.

C525: Use this clause to specify tree shelters, guard rails etc., as appropriate to protect from grazing animals/pests or vandalism. Also specify any special measures against excessive transpiration as appropriate to species and recommended by the nursery.

C5 Trees

C501 TREE QUALITY, SIZE AND TYPE: to the National Plant Specification with size as noted on drawing or schedule.

C505 TREE STAKES: 75mm minimum diameter, free of bark, with one end pointed.

C510 STAKING FOR TREES UP TO ‘STANDARD’ SIZE. Drive stake upright 450mm into bottom of excavated planting pit close to the tree stem on the windward side. Cut off at one-third the height of the tree and secure tree with approved ties and spacers at the top of the stake.

C515 UNDER/OVER GROUND GUYING to be provided for the following trees:

C520 PLANT TREES:

- upright and in exact positions shown on the drawings;
- in holes large enough to allow adequate root spread;
- so that their original soil level matches the new surrounding ground;
- so that the original orientation is maintained.

Excavate holes at least 75mm below the root system and loosen soil in base of hole.

For root balled or bare root stock, cut back any damaged roots to sound growth.

C525 TREE PROTECTION:

C535: No fertiliser is necessary for tree planting backfill. Provide a top dressing of slow release fertiliser in the autumn of year 1 or inorganic fertiliser in the spring of year 2.

C540: General pruning should normally be delayed to years 2 or 3 after planting.

C531 WATERING AND AERATION PIPES: provide perforated plastic watering pipes in a circle one third down around the root ball.

C535 BACKFILLING to be selected existing topsoil where available. Any imported soil/organic matter should be well mixed with at least equal quantities of existing soil. The backfill is to be evenly worked round the roots and well heeled in leaving the top slightly proud of the existing level to allow for settlement.

C540 PRUNING:
Immediately after planting carry out light formative pruning according to species. Remove damaged or weak growth.

C545 WATERING AND PROTECTION:
Water thoroughly immediately after planting and at intervals as necessary until Practical Completion or until the end of the defects liability period named in the Contract if later. After the first watering, mulch with 75mm of composted coarse wood or bark chippings over the excavated area.

C550 MAINTENANCE AND REPLACEMENT:
Replace any dead or dying trees at the end of the Defects Liability Period with trees similar to those specified. In the following year in March or April apply N15:P15:K15 fertiliser round all trees and keep the ground weed free for 1 metre diameter round each tree.

C6 Work to existing trees and plants

- C600 CONTRACTOR'S LIABILITY FOR DAMAGE:**
Plants damaged by the Works are to be repaired or replaced with equal approved species at the next suitable planting season at the discretion of the Designer and at the Contractor's cost. Any replaced trees or shrubs shall be maintained by the Contractor for 12 months.
- C605 SITE CLEARANCE:**
Do not burn vegetation on site without approval.
- C610 SUPERVISION OF TREE WORK:**
The removal of major branches or felling of trees over 6m high and similar operations shall only be carried out by specialist subcontractors with £ ... million public liability insurance.
- C615 TREE SURGERY:** to be to BS 3998 'Recommendations for Tree Work' unless otherwise agreed.
- C620 BRANCH REMOVAL:**
Cut branches sufficiently far from the main stem to leave the branch bark ridge intact. Avoid moisture traps and horizontal surfaces. Remove heavy branches in sections. Dead or damaged wood will always be removed whether or not specifically scheduled.
- C625 LIFTING THE CROWN:**
Remove branches from the main trunk or from main vertical branches so that the space below the canopy is clear up to the specified height.

C610: Check insurance amount with client. Private clients are likely to require £2 million cover. Public clients may ask for considerably more.

C615: Major work to large trees such as cabling, etc., should always be done by specialist contractors preferably on the advice of an independent arboriculturalist.

C620 – C635: may be used for minor works but the work should always be done by experienced, competent workmen. Remind Clients that Planning Permission is required before pruning or removing trees which are subject to a Tree Preservation Order. See also Clause A250. 6 week notice to the Local Authority is required if the tree is in a Conservation Area. Fruit trees cultivated for their fruit are not covered by these restrictions. Larger volumes of timber may require a felling licence for which you need to contact the Forestry Commission.

C640: Clients with space to compost bark and wood chippings for 3 – 6 months may wish to save the cost of removal and use the material for mulching.

- C630 **REDUCING AND SHAPING:**
Carefully select and remove branches and prune subsidiary branches so that the height and/or spread are reduced to the specified dimensions without destroying the shape and character of the species.
- C635 **TREE REMOVAL** means the complete removal from site of all arisings including stumps and root systems down to 500mm below finished ground level or as otherwise noted on the drawings.
Backfill any resulting excavation with topsoil.
- C640 **WOOD CHIPS** from stump and brushwood chipping is to be stored on site in an approved location for use by the employer.

The inclusion of a detailed schedules helps the Tenderer to price accurately and gives you the detailed information to price variations should changes be made later during the contract.

.Tree Schedule (Sample format only)

Large field grown specimen trees should also be specified by the number of times they have been transplanted in the nursery.

Name	Designation	Height (m)	Girth (cm)	Root system	Plant location	Quantity	Unit price		Total cost	
							£	p	£	p
<i>TREES</i>										
<i>Fraxinus excelsior</i>	Standard	2.7 – 3.0m	8 – 10cm	Bare root		1				
<i>Quercus robur</i>	Feathered	1.8 – 2.4m	---	Rootballed		3				

Plant Schedule(Sample format only)

Plant Name	Further description	Size (mm)	Container volume	Location/ Bed No.	Quantity	Unit price		Total cost	
						£	p	£	p
<i>SHRUBS</i>									
<i>Ceanothus</i> ‘Autumnal Blue’		450-600	3L		4				
<i>Phormium cookianum</i> ‘Cream Delight’	Bushy	450 – 600	3L		24				
<i>Lavandula spica augustifolia</i> ‘Hidcote’		200 – 300	2L		100				
<i>HERBS</i>									
<i>Allium sativum</i> (garlic)		---	2L		6				
<i>Salvia officinalis</i> (sage)		---	3L		10				
<i>CLIMBERS</i>									
<i>Clematis Montana</i> ‘Grandiflora’		600 – 900	2L		3				
<i>Hydrangea petiolaris</i>		300 – 450	3L		4				
<i>Lonicera periclymenum</i>		600 – 900	3L		1				

Annualised Cultivation and Maintenance Schedule (sample format only).

Plant name.	Months of the year.											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
<i>Achillea</i> 'Moonshine'	////////	////////	//////// D							////////	//////// C	////////
<i>Alchemilla mollis</i>	//////// D	////////	//////// D							//////// D	//////// C	//////// D
<i>Bergenia cordifolia</i> 'Purpurea'	//////// D	////////	//////// D						C	C	////////	////////
<i>Eryngium planum</i>	////////	////////	////////	////////					C	C D	////////	//////// D
<i>Fuchsia</i> 'Madam Cornelissen'			C	C	////////	////////					C LM	
<i>Hemerocallis</i> 'Stafford'	//////// D	////////	////////	D			DH	DH		////////	////////	////////
<i>Iris</i> 'Jane Phillips'			LM			//////// DH	////////		////////		C	

Key

- //////// - planting period
- D - divide and replant as necessary
- DH - dead-head
- LM - leaf mould mulch
- C - cut down to ground level

Schedule of model clause headings

Appendix C

A PRELIMINARIES

A1 Description of Project

- A100 THE PROJECT
- A105 DESCRIPTION OF THE WORKS
- A110 TENDER DOCUMENTS
- A115 EMPLOYER
- A120 DESIGNER/GARDEN DESIGNER/LANDSCAPE ARCHITECT
- A125 CONTRACTOR/LANDSCAPE CONTRACTOR
- A130 SITE PARTICULARS
- A136 RESTRICTION OF CONTRACTOR'S WORKING AREA

A2 The Contract

- A201 FORM OF CONTRACT
- A206 FORM OF CONTRACT
- A210 CONTRACT DOCUMENTS
- A215 AUTHORITY OF THE DESIGNER
- A221 SCOPE OF THE CONTRACT
- A226 CONDITIONS OF CONTRACT
- A236 PROVISIONAL SUMS
- A245 STATUTORY REGULATIONS
- A250 TOWN AND COUNTRY PLANNING
- A255 WILDLIFE

A3 Tendering

- A300 TENDERING PROCEDURE
- A305 AVAILABILITY OF PLANTS AND MATERIALS
- A310 FIXED PRICE
- A315 DISCREPANCIES

A4 Management of the Works

- A400 FOREMAN
- A405 SITE MEETINGS
- A410 MATERIALS ON SITE
- A415 ORDERING
- A420 PROGRAMME AND PROGRESS REPORTS
- A425 USE OF THE SITE
- A430 WORKING HOURS
- A435 NOISE
- A440 CONCURRENT CONTRACTS
- A445 LIAISON WITH OTHER CONTRACTORS
- A450 INCOMPETENCE OR MISBEHAVIOUR OF WORKMEN

A5 Quality and Safety

- A501 BRITISH STANDARDS AND CODES OF PRACTICE
- A505 PROTECTION
- A510 CONDITION OF THE SITE
- A515 SAFETY
- A525 CONSTRUCTION (DESIGN AND MANAGEMENT) REGS.
- A525 UNDERGROUND SERVICES
- A530 DAMAGED UNDERGROUND OR OVERHEAD SERVICES
- A536 STORAGE AND USE OF PLANT AND MATERIALS
- A540 HERBICIDES AND PESTICIDES

A6 General requirements

- A600 PAYMENT
- A606 PROVISIONAL SUMS
- A610 VALUE ADDED TAX
- A615 TEMPORARY WORKS
- A620 SITE CLEANLINESS
- A625 SAMPLES
- A630 APPROVAL
- A635 ALTERNATIVE PRODUCTS
OR OTHER EQUAL AND APPROVED
- A640
- A645 ADVERTISING AND PUBLICITY

B HARD LANDSCAPE WORKMANSHIP AND MATERIALS

Appendix C

B1 General preamble

- B101 SETTING OUT
- B105 FIRES
- B111 PROTECTIVE FENCING
- B116 PROTECT TREES TO BE RETAINED

B2 Excavation and filling

- B200 GROUND WORKS
- B205 SITE CLEARANCE
- B210 COMPACTION/DAMAGE BY PLANT
- B215 EXCAVATIONS
- B220 EXCAVATIONS
- B225 EXISTING TOPSOIL
- B230 SUB-SOIL
- B235 IMPORTED TOPSOIL
- B240 SPREAD TOP SOIL
- B245 CONSOLIDATION OF FILL

B3 Concrete and mortar

- B301 MATERIALS FOR CONCRETE
- B305 SITE MIXED CONCRETE PROPORTIONS BY VOLUME
- B311 READY-MIX CONCRETE DESIGNATED MIXES
- B315 STRIP FOUNDATIONS
- B320 CONCRETE DOMESTIC DRIVE
- B325 MIXING AND PLACING CONCRETE
- B330 CONCRETING IN COLD WEATHER
- B335 CONCRETE CURING
- B341 MATERIALS FOR MORTAR
- B345 MAKING MORTAR
- B350 MORTAR MIXES OF CEMENT, LIME AND SAND
- B356 HYDRAULIC LIME MORTAR
- B360 MIXING HYDRAULIC LIME MORTAR

B4 Walling

- B401 WALL TIES
- B405 DAMP PROOF COURSE AT COPING LEVEL
- B406 DAMP PROOF COURSE UNDER COPINGS
- B410 DAMP PROOF COURSE AT BASE OF WALL
- B416 BRICKWORK FROST RESISTANCE
- B420 FACEWORK
- B425 LAY BRICKS
- B430 PROTECTION OF BRICKS AND BRICKWORK
- B435 ENGINEERING BRICKWORK

- B440 SPECIAL SHAPE BRICKS
- B446 MORTAR JOINTING
- B450 WEEPHOLES
- B455 FREE STANDING / RETAINING WALLS
- B460 WALL FOR RENDERING
- B466 CEMENT : LIME : SAND RENDERING
- B470 COBBLE FACED BRICK OR BLOCKWORK WALLING
- B475 LAYING COBBLE FACINGS
- B480 KNAPPED (SPLIT) FLINT FACED WALLING
- B485 LAYING KNAPPED FLINT FACINGS
- B490 RUBBLE DRY STONE WALLING
- B491 STONE RUBBLE WALLING
- B495 REPOINTING BRICKWORK

B5 Carpentry

- B500 STRUCTURAL TIMBER QUALITY
- B505 TIMBER FOR JOINERY
- B510 TIMBER TREATMENT
- B515 TIMBER DECK BOARDS
- B520 TREATMENT OF CUT ENDS
- B525 BRACING OF STRUCTURES
- B530 PERGOLAS
- B535 TIMBER DECK/BOARD WALK
- B540 PURPOSE MADE DOORS/GATES
- B545 FIXINGS AND FASTENINGS

B6 Painting

- B601 HIGH BUILD STAIN FINISH
- B605 WOOD PAINT FINISH
- B615 PREPARATION OF TIMBER SURFACES
- B620 PAINT AND EXTERIOR WOOD STAIN APPLICATION

B7 Pavings and Steps

- B700 LEVELS
- B706 GRANULAR SUB-BASE
- B710 COMPACTION OF SUB-BASE
- B711 BLINDING
- B715 LIME MORTAR
- B716 MORTAR FOR MASONRY
- B720 RIGID BRICK PAVING
- B725 LAYING RIGID BRICK PAVING
- B731 CLAY BRICK / BLOCK FLEXIBLE PAVING
- B735 LAYING BRICK / BLOCK FLEXIBLE PAVING

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B740 NATURAL STONE PAVING
B745 PRECAST CONCRETE SLAB PAVING
B750 SOLID BEDDING OF PAVING SLABS
B755 BEDDING OF PAVING SLABS
B760 SEMI-DRY POINTING OF JOINTS
B762 SAND FILLING OF JOINTS
B765 GRANITE / CONCRETE / STONE SETT PAVING
B770 COBBLE / PEBBLE PAVING
B771 LAYING AND GROUTING COBBLES
B776 WEEDKILLER
B780 GRAVEL PATHS/DRIVES
B782 WOOD CHIP AND GRAVEL PATHS/DRIVES
B785 HOGGIN FOR PATHS / DRIVES
B790 MACADAM PAVING FOR PATHS / DRIVES
B791 TAR SPRAY AND PEA SHINGLE
B795 EXTERNAL STEPS
B796 TIMBER RETAINED STEPS

B8 Fencing

B800 SET OUT AND ERECT FENCING
B805 POST HOLES
B810 POSTS SET IN CONCRETE
B815 POSTS SET IN SOIL
B820 CHESTNUT PALE FENCING
B825 CLOSE BOARDED FENCING
B830 POST AND RAIL FENCING
B835 LAP BOARDED PANEL FENCING
B841 RABBIT FENCING
B845 PURPOSE MADE FENCING
B850 FIELD GATE
B855 FIXINGS AND FASTENINGS

B9 Site Furniture and Equipment

B10 Drainage

B1000 RUBBLE FILLED SOAKAWAY
B1005 GRANULAR MATERIAL FOR SOAKAWAYS
B1010 PREFABRICATED SOAKAWAYS
B1013 SAND SLITS
B1015 MOLE DRAIN
B1020 FIN DRAIN

B1025 FILTER DRAIN FOR GROUND WATER AND SURFACE WATER
B1030 LAYING FILTER DRAINS
B1035 GEOTEXTILE FILTER MEMBRANE
B1041 CLAY POROUS PIPES LAND DRAINS
B1045 RIGID PLASTIC PERFORATED LAND DRAINS
B1050 EXCAVATED MATERIAL
B1055 PVC_u DRAINS FOR SURFACE WATER
B1061 LAY AND PROTECT UNDERGROUND DRAINS
B1066 PLASTIC INSPECTION CHAMBERS
B1070 BRICK INSPECTION CHAMBERS
B1075 INSPECTION CHAMBER COVERS
B1080 INSPECTION, CLEANING AND TEST

B11 Water supply, Irrigation and Ponds

B1100 WATER PUMP AND FILTER SYSTEM
B1105 POND LINER
B1110 POND CONSTRUCTION WITH BUTYL / GRP LINER
B1015 LAYING A POND LINER
B1125 PREPARING A FERRO-CONCRETE LINED POND
B1130 APPLYING FERRO-CONCRETE
B1135 CONCRETE CURING

B12 Electrical

B1201 ELECTRICAL WORK
B1202 COMPLETION CERTIFICATE
B1205 UNDERGROUND DUCTING
B1210 MAINS VOLTAGE CABLE
B1215 SEPARATED EXTRA LOW VOLTAGE (SELV) CABLE
B1220 SEPARATED EXTRA LOW VOLTAGE (SELV) LIGHTING
B1225 TREE ROOTS
B1230 POSITIONING OF WIRING AND EQUIPMENT
B1235 ABOVE GROUND ENCLOSURES
B1240 BELOW GROUND ENCLOSURES
B1245 CIRCUIT PROTECTION
B1250 INGRESS PROTECTION
B1255 TRANSFORMERS
B1261 EXTERIOR LIGHTING FITTINGS
B1265 RATING OF SWITCHES
B1270 EXISTING INSTALLATIONS
B1275 AS-INSTALLED DRAWINGS

C PLANTS AND PLANTING – WORKMANSHIP AND MATERIALS

C1 General preamble

- C102 WATER SUPPLY RESTRICTIONS
- C105 PLANT LABELLING
- C110 MAINTENANCE INSTRUCTIONS
- C111 SUPPLY & PLANTING OF TREES & PLANTS
- C115 WEEDKILLING
- C120 GRASS MAINTENANCE
- C125 GRASS CUTTING
- C130 ROLL

C2 Seeded lawns and meadows

- C200 GRADIENTS AND LEVELS
- C205 PRE-EMERGENT WEEDKILLER repositioned
- C210 PRE-EMERGENT WEEDKILLER repositioned
- C215 GROUND PREPARATION FOR LAWNS
- C220 GROUND PREPARATION FOR WILD FLOWER MEADOWS
- C225 FERTILISER
- C230 GRASS SEED WITH RYEGRASS FOR UTILITY AREAS
- C235 GRASS SEED FOR SUNNY LAWNS
- C240 GRASS SEED FOR FINE LAWNS IN SHADE
- C245 TURF EDGING
- C250 SOWING GRASS SEED
- C255 WILD FLOWER SEED MIX
- C261 SOWING WILD FLOWER MIX
- C265 CUTTING WILD FLOWER MEADOWS

C3 Turfing

- C300 TURF QUALITY
- C305 DELIVERY
- C310 PREPARATION FOR TURFING
- C315 FERTILISER
- C320 LAYING TURF
- C325 TURFING ADJACENT TO OBSTRUCTIONS
- C330 CUT AND ROLL
- C335 MAINTENANCE OF NEW TURF

C4 Shrubs, herbaceous, ground-cover and aquatic plants

- C400 NURSERY STOCK
- C405 PREPARATION FOR PLANTING
- C410 SOIL CONDITIONING

- C415 FERTILISER
- C420 PLANT HANDLING, DELIVERY AND STORAGE
- C426 PREPARATION OF PLANTS
- C430 PLANT
- C435 BACKFILLING
- C440 IMMEDIATELY AFTER PLANTING
- C445 BULBS, CORMS AND TUBERS
- C450 PLANTING BULBS
- C455 PLANTING SEASON
- C460 WATERING
- C465 MULCHING
- C470 POLYTHENE CRATES FOR AQUATIC PLANTS
- C475 PLANTING WATER LILIES

C5 Trees

- C501 TREE QUALITY
- C505 TREE STAKES
- C510 STAKING FOR TREES UP TO “STANDARD” SIZE
- C515 UNDER/OVER GROUND GUYING
- C520 PLANT TREES
- C525 TREE PROTECTION
- C531 WATERING AND AERATION PIPES
- C535 BACKFILLING
- C540 PRUNING
- C545 WATERING AND PROTECTION
- C550 MAINTENANCE AND REPLACEMENT

C6 Work to existing trees and plants

- C600 CONTRACTOR’S LIABILITY FOR DAMAGE
- C605 SITE CLEARANCE
- C610 SUPERVISION OF TREE WORK
- C615 TREE SURGERY
- C620 BRANCH REMOVAL
- C625 LIFTING THE CROWN
- C630 REDUCING AND SHAPING
- C635 TREE REMOVAL
- C640 WOOD CHIPS

Trade Names mentioned in the Model Specification

Note: the use of a trade name in the text of this publication is as an example only and is not to be taken as an endorsement of that product.

B356	Hydraulic Lias Limes Ltd.,	01935 815290
B365	Tarmac - coloured mortars	01902 382632
B406	Ruberoid Building Products Ltd. 'Permabit';	01257 259793
B455	RIW Ltd., 'Heviseal'	01344 861988
B466	Expamet Building Products	01429 866688
B510 +	B530 Arch Timber Protection 'Tanalith Extra', 'Ensele'.	01977 714000
B510 +	B530 Osmose 'Naturewood'	01628486644
B545	Fosroc Expandite 'Galvafruid'	01827 262222
B601	Sikkens Cetol Novatech Akzo Nobel Woodcare ICI Weatherseal Wood Stain	01480 496868 0870 2421100
B605	Jotun 'Demidekk' Akzo Permaglaze MVP Acrylic Gloss	0207 4812741 01480 496868
B775	Scotts Co. Ltd., 'Casoron G'.	01473 830492
B780 +	B1035 Terram Ltd. '700' and '900'	01495 757722
C315	Pbi 'Growmore'	0845 3454100
C230	WW Johnson and Sons	01205 365051
C255	British Seed Houses Ltd. Landlife Wildflowers	01522 868714 0151 7371819

British and European Standards

BS 1196 Specification for clayware field drainpipes and junctions.
BS 1199/1200 Specification for building sands from natural sources.
BS 1722 -4, -5, -7, -11. Fences
BS 3470 Specification for field gates and posts (obsolescent)
BS 3921 Clay bricks (current but obsolescent in 2006)
BS 3936-9 Specification for bulbs, corms and tubers.
BS 3969 Recommendations for turf for general purposes.
BS 3998 Recommendations for tree work.
BS 4027 Specification for sulfate-resisting Portland cement.
BS 4428 C.P. for general landscape operations (excluding hard surfaces).
BS 4533 Luminaries see also BS EN 60598

Appendix D (updated to March 2006)

BS 4652 Specification for zinc-rich priming paint
BS 4660 Specification for PVC-U pipes ...for below ground drainage...
BS 4729 Specification for bricks of special shapes and sizes
BS 4962 Specification for plastic pipes for use as sub-soil field drains.
BS 4987 Coated macadam for ...paved areas.
BS 5255 Specification for thermoplastic waste pipes and fittings
BS 5589 Code of Practice for preservation of timber. (obsolescent)
BS 5837 Trees in relation to construction.
BS 7263 Precast concrete flags.
BS 8000 Pt 1 Code of Practice for excavation and filling.
BS 8000-12 Code of Practice for ...painting.
BS 8000-14 Code of Practice for below ground drainage
BS EN 197-1 Cement. Composition, specification and conformity ...
BS EN 206-1 Concrete ...
BS EN 295 Vitrified clay pipes and fittings ... for drains.
BS EN 338 Structural timber. Strength classes.
BS EN 459-1 Building lime.
BS EN 460 Durability of wood hazard classes.
BS EN 771-1 Specification for masonry units; clay (bricks).
BS EN 771-3 Specification for masonry units; aggregate concrete (blocks)
BS EN 845-1 Specification for ... masonry ties...
BS EN 934-3 Mortar admixtures.... air retaining (plasticizing) admixtures
BS EN 942 Timber in joinery – general classification of timber quality.
BS EN 1008 Mixing water for concrete
BS EN 1401-1 Plastic piping ... for underground drainage (PVC-U)..
BS EN 10223-2 ... Hexagonal steel wire netting
BS EN 12620 Aggregates for concrete
BS EN 13139 Aggregates for mortar
BS EN 13598-1 Plastic piping systems ... including shallow inspection chambers.
BS EN 60598-2, -7 Luminaries ... Portable luminaries for garden use.
BS EN ISO 11091 Construction drawings – landscape drawing practice.