

APPENDIX 1:

Planning Guidance

Introduction

Planning application forms can be obtained from the *Development Management: Application Forms* page of the Council's website, which includes information on the *Scale of Fees*.

Residential development of 50 or more dwellings or of a site area of 2 hectares or more is classified as major development and is subject to a pre-application process which requires prospective developers to consult local communities.

Comprehensive information on the pre-application process for major developments is available in the Council's *Pre-Application Consultation for Planning Applications: Notes of Guidance for Prospective Applicants*.

Further guidance on community engagement in planning is provided in the Scottish Government's Planning Advice Note *PAN 3/2010 Community Engagement*.

Applications for residential development for may also require the following:

Design and Access Statement

Design or design and access statements are required for:

- applications for planning permission for national and major developments;

- Applications for planning permission for local development within the categories listed below will require a **design statement** unless the development comprises the alteration or extension of an existing building :
 - a World Heritage Site;
 - a conservation area;
 - a historic garden or designed landscape;
 - a National Scenic Area;
 - the site of a scheduled monument; or
 - the curtilage of a category A listed building.

A design and access statement or design statement is **not** required for the following categories:

- an application for planning permission for development of land without complying with the conditions of a previous planning permission;
- a material change in the use of land or buildings; or
- an application for planning permission in principle.

Guidance on how to prepare and present design statements is provided in Planning Advice Note *PAN 61 Design Statements*.

Environmental Impact Assessment (EIA)

A site of more than 0.5 hectare requires an application to the Council for a formal screening opinion, which will set out whether an EIA is required to accompany a planning application. In the event that an EIA is necessary, a formal scoping opinion should then be obtained from the Council (see below).

Some types of development automatically require EIA. These tend to be larger developments, or those with the most serious potential environmental effects, known as Schedule 1 Development.

For more information see *Schedule 1 of the EIA (Scotland) Regulation 2011*.

Other types of development, known as Schedule 2 development, *may* require assessment. Generally, whether a proposal will require assessment or not depends on its scale, and the sensitivity of the site and surrounding area.

For more information see *Schedule 2 of the EIA (Scotland) Regulations 2011*.

Screening: Developers may ask the Council for a formal determination on whether or not a project requires EIA. This is called a Screening Opinion. The Screening Opinion will set out whether or not EIA is needed and

the reasons for that decision. It will normally be issued within three weeks of the request.

Where the Council's opinion is that EIA is required and the developer disagrees, or where should the Council fail to adopt any opinion within three weeks (or any agreed extension), the developer may ask the Scottish Ministers to make a screening direction.

Scoping: A developer intending to carry out EIA may formally ask the Council what should be covered. This is not essential, but is advisable as failure to include information in the EIA can lead to delays in processing the planning application. The Council will consult with the statutory bodies, and then provide a Scoping Opinion giving this information. Scoping Opinions will normally be issued within 5 weeks of the request being received.

Requests for Scoping Opinions should include a plan identifying the land and a description of the nature and purpose of the proposal and its possible effects on the environment. Any other relevant information such as proposed methodology of assessment may be included.

Transport Assessment

A Transport Assessment is required for a residential development of more than 100 dwellings, but may also be required for a smaller development (between 50 - 100 dwellings) located in a traffic sensitive area.

The scope of the Transport Assessment should always be agreed in advance with the appropriate Council officer and developers should always provide their consultant sufficient time to prepare the document, which can be constrained by the need to undertake traffic surveys outwith school holidays.

The requirements for a Transport Assessment are outlined in City Plan development guide *DG/TRANS 1 Transport Assessments*.

The following Glasgow City Plan 2 policies and guidance may also be relevant:

DG/TRANS 3 Public Transport Accessibility Zones

TRANS 8 Developer Contributions - Transport Infrastructure

DG/TRANS 4 Clyde Fastlink - Developer Contributions

TRANS 5 Providing for Pedestrians and Cycling in New Residential Development

Further guidance is available in *PAN 75: Planning for Transport and the Scottish Government's Transport Assessment and Implementation: A Guide*.

Site Investigation, Noise, Air Quality reports

These are required where previous use of the site gives rise to ground contamination issues, where the site is subject to significant external noise sources or air quality issues, normally from traffic. The Public Health Unit within the Council's Land and Environmental Services (LES) provides advice on whether these reports are required. E-mail: publichealth@glasgow.gov.uk

See also Policy *TRANS 9 Air Quality* of Glasgow City Plan 2.

Sustainable Urban Drainage System (SUDS), Drainage Impact Assessment (DIA) and Flood Risk Assessment.

Both SUDS and DIA are required for residential development of more than one unit and a Flood Risk Assessment is required where there is a material flood risk. See Appendix 3 SUDS and Flood Management for further guidance.

APPENDIX 2:

Construction Consent Guidance *for* New Residential Streets

CONTENTS

		Page
Section 1	Introduction	
	1.1 Purpose and Structure	4
Section 2	Stopping Up Orders, Construction Consent and Adoption	
	2.1 Stopping Up Orders	5
	2.2 Application for Section 56 Approval	5
	2.3 Application for Construction Consent	5
	2.4 Inspection procedures during construction	9
	2.5 Adoption procedure	10
	2.6 Application for adoption of development roads, footpaths and cycle tracks	12
Section 3	Design Standards	
	3.1 Visibility	14
	3.2 Design Parameters	16
	3.3 Shared Surface Roads	17
	3.4 Servicing and Turning Areas	19
	3.5 Bus Stop Provision	20
	3.6 Statutory and Private Services	20
	3.7 Additional Considerations	22

Section 4	Parking Design Standards	
4.1	Typical Dimensions and Manoeuvrability	24
4.2	On Road Parking	24
4.3	Off Road Parking	24
Section 5	Construction Design	
5.1	Geotechnical Considerations	26
5.2	Carriageway Construction	29
5.3	Islands and Build Outs	31
5.4	Footway, Footpath and Cycle Track Construction	31
5.5	Kerbs and Edging	32
5.6	Accesses	33
5.7	Road Drainage	36
5.8	Lighting Design	38

Forms:

Structural Design Proformas

- SD1** Form of Certificate required for the Design and Check of Category 0 structures.
- SD2** Form of Certificate required for the Design and Check of Category 1 structures.
- SD3** Form of Certificate required for the Design of Category 2 and 3 structures.
- SD4** Form of Certificate required for the Design Check of Category 2 and 3 structures.
- SD5** Application for Approval in Principle
- SD6** Construction Compliance Certificate

Construction Consent Proformas

- CC1** Construction Consent Application
- CC2** Docquets of Service
- CC3** Notice of Service
- CC4** Construction Consent
- CC5** Footpath Agreement
- CC6** Adoption Certificate
- CC7** Road Bond
- CC8** Carriageway Design Certificate
- CC9** Construction Consent Checklist

1 - Introduction

1.1 Purpose and Structure

Objective

The objective of this appendix (Construction Consent Guidance for New Residential Streets) is to assist developers designing new residential roads, submitting applications for Roads Construction Consent and subsequent Adoption. The Guide will also be used by Council officials assessing Road Construction Consent applications.

The guide aims to provide clear and consistent advice that builds on and interprets the principles, standards, and guidance contained in Glasgow's Design Guide for New Residential Areas, Design Manual for Roads and Bridges and the Manual of Contract Documents for Highway Works. The granting of roads construction consent does not exempt the applicant from compliance with these principles, standards and guidance or obtaining any other permission which may be required.

Although economy of maintenance will be a major consideration in the assessment of applications for roads construction consent, developers will not be discouraged from attempts to use innovative and new design techniques.

Structure

The guidance covers the following subjects and colour coding has been employed to allow for easy access to any part of the document:

Section 1, Introduction

introduces the document and its structure

Section 2, Construction Consent and Adoption

outlines the policy, procedures and legal requirements for road design, consent and adoption.

Section 3, Design Standards

contains details of the relevant roads design standards.

Section 4, Parking Design Standards

contains parking standards appropriate for both on and off street parking.

Section 5, Construction Design and Lighting Design

details construction design standards.

2 - Stopping Up Orders, Construction Consent and Adoption

2.1 Stopping Up Orders:

Applicants should be aware of the importance of the requirement to formally Stop Up certain areas, roads and public paths, which due to their development layout, will no longer have a public right of passage.

Where this process is required because of related development, it is normally carried out under the Town & Country Planning (Scotland) Act (1997) following the grant of planning permission. The associated advertising costs payable to the Council are £1,250. The timescale for an unopposed order is typically around six months.

The simplest way of demonstrating the Stopping Up procedure is in the context of public right of passage, which is established by Road Construction Consent. A Stopping Up Order removes the road area(s) from the register of public road and consequently removes the public right of passage. The Stopped Up areas must be physically grubbed up or closed off, e.g. with bollards, and street nameplates removed - i.e. the area no longer is and no longer appears to be a road.

After the Stopping Up Order has been signed it is the responsibility of the developer, via their contractor or consultant, to inform the Council's Land and Environmental Services (LES) at least a month in advance of the proposed date for physically Stopping Up each road area covered

by the Order. This is to allow programming of works to remove public apparatus such as lighting columns, control pillars, barrier rail and bollards.

In addition, prior to the physical Stopping Up of a road area, the developer must provide a plan of the existing drainage / SuDS system, including all gullies. This plan will clearly demonstrate the proposed methodology of this removal, and that the removal will have no adverse effect on the surrounding LES and Scottish Water infrastructure, which will remain part of the publicly adopted road and drainage network.

2.2 Application for Section 56 Approval

If a development is wholly within the existing publicly adopted roads area, then an application for Section 56 approval would be required, under Section 56 of the Roads (Scotland) Act 1984.

Requirements for a valid application for Section 56 approval:

- covering Letter;
- location Plan (to 1:1,250 or 1:2,500 scale);
- detailed site plan;
- cross-section through each area of proposed change within the adopted area (including footway) gradients and cross-falls);
- plan showing existing signing, lining, time-plates and street furniture (i.e. prior to any works taking place);
- plan showing existing street lighting (including illuminated road signs);

- where any change to an existing T.R.O (Traffic Regulation Order) is necessary due to the proposed works (e.g. by an access relocation), or a new T.R.O is required by the proposed works, the applicant will supply an electronic plan of the changes and a rechargeable works order code;

2.3 Application for Construction Consent

If a development will extend the existing road in any way, or add new road to it, then an application for Road Construction Consent would be required, under Section 21 of the Roads (Scotland) Act 1984.

Place and date of Application

An application for Construction Consent should be made on Form CC1. Completed application forms should be submitted at least three months prior to the commencement of construction to the Roads Asset Manager.

Submission of Plans

Formal applications for Construction Consent should be in an electronic Portable Document Format (PDF) and consist of the following **(initially two paper copies will be required for preliminary checking of the proposals)**:

- (a) A location plan, to a scale of 1:1250 or 1:2500, showing the proposed road network and its relationship to existing development.

- (b) A layout plan of the carriageways, footways, verges, footpaths, retaining walls, cycle tracks, buried structures, bridges and earthworks to a scale of 1:500 (1:200 where pedestrian / vehicle shared surfaces are proposed) showing;
- (i) the proposed centre, building and kerb lines (and also the heel of the footway where this differs from the building line),
 - (ii) curve radii of the road alignment and junctions,
 - (iii) speed control measures,
 - (iv) dimensioned visibility splays at road junctions and private accesses,
 - (v) forward visibility distances at bends,
 - (vi) vehicular access points to properties,
 - (vii) pedestrian crossing points at junctions and other locations,
 - (viii) the location of all road gullies,
 - (ix) details of Sustainable Drainage Systems that will potentially be offered for adoption,
 - (x) the location of the road drainage system and its discharge points (applicants can obtain information on discharge points from Scottish Water),
 - (xi) the location and type of lighting columns and lanterns, wall-mounted lighting units (if applicable), control pillars,

underground cables and road crossing ducts,

- (xii) the location of all underground services and ancillary apparatus,
 - (xiii) the full extent of all cut and fill slopes,
 - (xiv) the boundaries of any areas which it is intended will subsequently be offered for adoption (coloured red or hatched) or maintenance,
 - (xv) road signs and road markings etc.
- (c) **A longitudinal section** along the carriageway, footpaths and cycle tracks giving vertical alignment details, road drainage gradients with manhole positions marked thereon, together with the nature of the substrata to a depth of 1 metre below road formation level or to rock head where bedrock is at a depth less than 1 metre.
- (d) **Typical cross sections** through the carriageways, footways, footpaths, verges, cycle tracks and adoptable parking areas detailing widths, crossfalls, construction depths and materials used, kerb and edge details and typical details of gullies and gully connections.
- (e) A **Design Audit which includes a stage 2 Road Safety Audit** for the design shall also be included.
- (f) A **Ground Investigation Report** and corresponding **Geotechnical Design Report** making specific recommendations on the design of the proposed road.

Structures Submission

The structures technical approval procedures outlined in the following paragraphs must be completed prior to submitting an application for Roads Construction Consent. This applies to all proposals (relating to both existing and proposed roads) requiring new road structures or proposals which affect existing road structures.

Technical Approval consists of a review of Structural Proposals made by Designers on behalf of a Developer by a Technical Approval Authority (TAA). The role of Structures TAA for Glasgow City Council is held by the Structures Section in Land and Environmental Services.

The following Technical Approval Procedures should be read in conjunction with the Design Manual for Roads and Bridges, 'Technical Approval of Highway Structures'.

Please note bridges, buried structures, subway underpasses, culverts and any other structure supporting the road with clear span or internal diameter 0.9m or greater requires TAA approval as well as earth retaining structures where the effective retained height is 1.5m or greater.

Structures Technical Approval - Procedures

Category of Proposals

Consultation with the TAA on proposals regarding structures should start when Planning Consent is being considered. The Designer shall then propose an appropriate Category: 0, 1, 2 or 3 according to the criteria set out in the Design

Manual for Roads and Bridges for agreement with the TAA .

Technical Requirements

At initial consultations with the TAA, the Developer's Designer is to ascertain the required technical criteria for the design (or assessment) and construction of the structure. The design and construction requirements for all proposals shall generally comply with the relevant standards in the DMRB and the Manual of Contract Documents for Highway Works (MCHW). Other supplementary standards or requirements etc. proposed by either the TAA or Designer shall be agreed through the Technical Approval Process. All the relevant standards should be listed in a Technical Approval Schedule.

Departures from Standard

Designers seeking to introduce alternative design principles or non-standard techniques may do so by proposing Departures from Standard where required. Reasons and justifications for Departures shall be submitted to the TAA with the application for a Departure from Standard. Applications for Departures shall be submitted to the TAA for approval prior to submitting the formal Technical Approval submissions.

Application for Approval in Principle

An application for Approval in Principle shall be submitted for TAA review in accordance with the template provided in the Structure Design Certificate (SD5 - Refer to Structures Design Certificate Proformas). The Approval in Principle is a record of all the agreed technical criteria which the design (or assessment) and

construction is to be based. The submission shall comprise the completed SD5, a location plan, a general arrangement drawing, relevant parts of the Geotechnical Report, an agreed Technical Approval Schedule, documents relating to consultations and any other relevant information or reports. Calculations and detailed drawings are not required as part of the Application for Approval in Principle.

Endorsement of the Approval in Principle by the TAA is required before proceeding with any design. The completed design cannot be implemented until the Structures Section of Land and Environmental Services is in receipt of certificates confirming that the implementation documents are accurate and fully in compliance with the requirements of the Approval in Principle. The Approval in Principle is valid for three years after the date of agreement.

Design and Checking Certification

The Design and Design Check Certificates (SD1 to SD4 - Refer to Structures Design Certificate Proformas) are signed confirmation that the design and design check has been satisfactorily completed in accordance with the technical criteria agreed with the TAA. The completed Design and Check certificates should be submitted to the TAA as part of the Application for Construction Consent.

Construction Compliance Certificate

Completion and acceptance inspections shall be in accordance with Design Manual for Roads and Bridges 'Inspection of Highway Structures'.

Glasgow City Council requires a Construction Compliance Certificate (SD6 – Refer to Structures Design Certificate Proforma's) to be completed for all structures proposed for adoption by the Council.

Summary of Construction Consent Submissions

Please note where a Category 0 and 1 structure requires a Departure from Standard the category of structure shall change to 2. Applications for Departures from Standard require to be approved before the Approval In Principle is submitted.

Construction Consent Submissions for structural proposals for the various categories shall include the following: -

- | | |
|---------------|--|
| Category 0: - | Confirmation from TAA of Category selection.
Design and Check Certificate (SD1) -
Accompanied with a General Arrangement Drawing and any other documentation to support the Category 0 classification. |
| Category 1: - | Confirmation from TAA of Category selection.
An endorsed Application for Approval in Principle (SD5) with Design and Check Certificate (SD2). |

Category 2 and 3: - Confirmation from TAA of Category selection.
An endorsed Application for Approval in Principle (SD5) with Design Certificate (SD3) & Design Check Certificate (SD4).

For structures to be adopted by Glasgow City Council the Design and Check certificates shall be submitted with a copy of the design calculations and construction drawings.

If the need for an additional or amended structure arises after the granting of Construction Consent, the developer should seek the approval of Glasgow City Council before commencing the associated construction.

Responsibility for Design

The granting of Construction Consent does not imply that Glasgow City Council accepts any responsibility for the accuracy and suitability of any elements of the design.

Docqueting of Plans

It is essential that the applicant or agent declares each plan, detailed drawing and specification submitted with the application to be 'the plan/drawing/specification referred to in the application' by signing and dating each plan, drawing and specification.

Notification of Owners

Where any person other than the developer owns land which fronts, abuts or is comprehended in **the new road(s) or the**

extension of the existing road(s) for which Construction Consent is being sought, the developer will be required to declare on Form CC2 that all such persons have been notified of the application for Construction Consent by the issuing of Form CC3. Notice for Service on Owner.

Owners Objections

Any person to whom the application has been intimated under the provisions of the preceding paragraph may, within twenty-eight days of the date of intimation, make written representation to Glasgow City Council. Any such representations will be considered before Construction Consent is determined.

Hearing of Objection

Should it be considered that the application for Construction Consent should be refused or granted subject to special conditions, the applicant will be afforded an opportunity to be heard prior to such a decision being made.

Right of Appeal

If an application for Construction Consent is (i) refused or (ii) granted subject to special conditions, the applicant may within twenty-eight days of the date of intimation of such a decision appeal to the Scottish Government.

Construction Period

It will be a standard condition of any Construction Consent that the construction be completed within the period specified in the Consent. This period will be not greater than three years. If, as a result of a change in circumstances during

construction, it is demonstrated that the specified period is no longer realistic, Glasgow City Council may grant an extension with revised road bond (if appropriate). In the absence of such an extension a new application for Construction Consent must be made.

Amendments to Consent

Should the developer, for any reason, wish to depart from the construction or layout details for which Construction Consent has been granted, the approval of the Roads Asset Manager must be gained. Major changes may require the submission of a new application for Construction Consent, which must be approved by the Roads Asset Manager prior to construction.

Construction Consent approvals cannot be transferred from one applicant to another and any change of applicant must result in a resubmission.

Footpath Agreement

In addition to obtaining Construction Consent, the developer should enter into an agreement with Glasgow City Council (using form CC5) before constructing any footpaths which it is intended should subsequently be adopted.

Road Lighting and Signing

The developer will be responsible for the provision of all road, footpath and cycletrack lighting, temporary and permanent signing (whether illuminated or not) and alterations to existing lighting deemed necessary under Construction Consent.

Road Bonds

Where a developer is required to lodge a Road Bond or deposit, the completed CC7 Form should be submitted prior to any house building commencing.

Construction Consent Forms

All the relevant Construction Consent forms, as detailed below, are included in Appendix ? for the use of the applicant. Permission is hereby granted for these forms to be printed.

Form	Title
CC1	Application for Construction Consent to construct or extend a road
CC2	Notification of adjacent proprietors (Docquets of Service)
CC3	Notice of Service
CC4	Construction Consent
CC5	Footpath Agreement
CC6	Application for addition of roads (including footways/cycle tracks) to list of public roads
CC7	Road Bond
CC8	Carriageway Design Certificate
CC9	Construction Consent Checklist

Non Standard Materials

Carriageways should be designed as flexible pavements. Written approval of the Roads Asset Manager will be required for materials other than Hot Rolled Asphalt (HRA) or Dense Bitumen Macadam (DBM). A Materials Strategy which outlines the cost, durability and maintainability of the proposed materials compared to HRA and DBM over a 40 year design life, should be submitted to the Roads Asset Manager.

Where alternative materials are accepted in writing by the Roads Asset manager, the developer may be required to provide an additional supply of the alternative material/s, i.e. deposit a stock of 5% of these materials with Glasgow City Council prior to adoption.

Sustainable Drainage Systems, Pipes and Culverts under Roads

For Sustainable Drainage Systems, pipes and culverts under roads a hydrological study of the catchment area along with a hydraulic design of the proposed pipe or culvert and outfall should be provided along with confirmation that this has been checked independently. Grills should be designed to facilitate ease of maintenance and prevent flooding and, where possible, grills should allow for overflow during flood conditions or where the grill face is blocked with debris.

Drainage Outfall to Watercourse

The approval of Development and Regeneration Services Flood Risk Management team is required where it is intended that treated surface water run-off will be discharged to an existing watercourse. Where connection of the treated road drainage to an existing watercourse is not possible, it may be possible to connect the treated road drainage to a public sewer if approved by Scottish Water. The hydraulic capacity of this outfall should be established in a manner as described in Section 5.7, for pipes and culverts under roads.

Where it is intended that the Council and Scottish Water will share ownership of the surface water drainage network, approval of both the Roads Asset Manager and Scottish Water will be

required prior to granting Roads Construction Consent.

Failure to Comply

Failure to comply with the procedures given in this document will result in refusal of Construction Consent. Developers are therefore encouraged to liaise with the relevant Roads Asset Manager representative at all stages of a scheme.

2.4 Inspection Procedures during Construction

Notice of Commencement

The Contractor must **contact** the Councils Land and Environmental Services **Roadworks Control Unit** at least **six weeks in advance of commencement of the works** to discuss traffic management issues and arrange relevant permits.

Two weeks notice must be given to the Roads Asset Manager of the start of roadworks together with names and telephone numbers of responsible persons who may be contacted in connection with the construction of the works.

Prior to works commencing on site the Contractor should undertake a dilapidation survey on the adjacent public road network. In the absence of such a survey, the Contractor will be liable for any repairs required to the surrounding road network.

Inspection and Testing

During the construction period, irrespective of whether or not it is intended that the road(s) be subsequently adopted as public, the Roads Asset Manager representative must be afforded access to the site to ensure that the works are being undertaken in conformity with the Construction Consent. The developer and/or his contractor should initiate and maintain dialogue with the Roads Asset Manager representative to examine the works being executed and the materials being used, but will remain responsible for ensuring that construction is in accordance with the Construction Consent. Failure to do so could result in rejection of the application for adoption.

Charges for Inspection and Testing

Glasgow City Council reserves the right to charge for expenses incurred in inspecting and testing arising from the granting of Construction Consent. Samples of the various materials proposed to be used should be supplied, free of cost to Glasgow City Council, together with particulars as to the source of supply or manufacture of such materials; or, at the discretion of the Roads Asset Manager, test certificates may be submitted indicating the suitability of the materials proposed

Notice of Operations

The developer or his contractor must give the Roads Asset Manager representative a minimum 48 hours notice (excluding weekends and public holidays) of;

- (a) completion of formation,

- (b) commencement of each pavement layer to the carriageways, cycle tracks, footways and footpaths,
- (c) each concrete pour (including blinding) and commencement of steelfixing where reinforced concrete is used,
- (d) striking of formwork,
- (e) setting out of road lighting plant positions, backfilling of cable trenches and painting of lighting columns.

It should be noted that these are minimum requirements and that, in certain cases, the developer may be required to notify the Roads Asset Manager's representative of additional construction stages.

Completion Inspection

Towards completion of any development incorporating new roads, a request should be made to the Roads Asset Manager to have a completion inspection carried out. As a result of this inspection, a list of any remedial work required to bring the road(s) up to Glasgow City Council's standards will be prepared. Following the satisfactory completion of any such remedial work, an application may be made for the addition of the road(s) to Glasgow City Council's list of public roads.

2.5 Adoption Procedure

Policy Regarding Adoption and Maintenance

In terms of Section 16 of the Roads (Scotland) Act 1984, following satisfactory inspection (including the agreed Section 7 surface water drainage), Glasgow City Council will, upon request, adopt, any new road, (including any associated footway or verge) constructed in accordance with a Construction Consent.

Phased Adoption

To avoid delays between construction and adoption of roads, developers can programme construction to enable the adoption of roads to be phased as sections of work are completed, subject to the following conditions:

- (a) Each phase should have a separate and independent Construction Consent.
- (b) Carriageways, footways and verges will not be adopted separately.
- (c) Only lengths of road between junctions or completed culs-de-sac will be adopted.
- (d) All roads submitted for adoption should form a continuous system with existing adopted roads.

Adoption of Footpaths

In terms of Section 18 of the Roads (Scotland) Act 1984, Glasgow City Council will, upon request, adopt any footpath which is the subject of an Agreement (Form CC5). Furthermore, should a developer fail to complete a footpath to

the Authority's satisfaction within the period specified in such an Agreement, Glasgow City Council may itself carry out the work and recover reasonably incurred expenses from the developer. The suitability of footpaths for adoption under Agreement will be judged against the following criteria:

- (a) Footpaths should be constructed in accordance with a Construction Consent.
- (b) Footpaths should form part of a general pedestrian network interconnecting houses, shops, schools, public transport, etc. and be available to pedestrians on an unrestricted basis.
- (c) Footpaths should serve more than one dwelling.
- (d) In the case of multi-storey buildings, the footpath may be adopted up to the point where it is deemed to enter the curtilage (i.e. garden, landscaped or forecourt area surrounding the building).
- (e) Surfaced areas surrounding buildings and intended essentially for maintenance purposes will not be considered.
- (f) Where numerous footpaths serve the same purpose, only one will be considered for adoption, e.g. parallel footpaths, front and rear footpaths, etc.
- (g) At least one end of a footpath should be connected to a public road to facilitate access for maintenance purposes.

- (h) Arrangements of steps which prevent access to isolated lengths of footpath should be avoided.

Parking Areas Adoption and Maintenance

In new development, the developer will normally be required to provide parking spaces in accordance with development policy TRANS4 (Glasgow City Plan 2).

Parking areas contiguous with the carriageway will normally be adopted as public roads provided that their use by the general public is not restricted in any manner.

Off-road parking areas, will not be adopted as public roads unless they are identified as meeting a general public parking need and have been constructed to the satisfaction of the Roads Asset Manager.

Adoption of Road Lighting

Lighting installations on publicly maintainable roads, footpaths and parking areas may be taken over by the Roads Authority for operation and maintenance, in advance of the road adoption, provided that the following requirements are met;

- (a) acceptable Completion and Inspection Certificate (form CC10 or approved equivalent) is submitted
- (b) acceptance by the developer of responsibility for any necessary repairs or replacements, arising from faulty workmanship or from the failure of materials, during the twelve months following adoption,

- (c) written assurance from the developer that all roads concerned will be offered for future adoption,
- (d) where the development involves self build plots, all driveways and site lines are finalised.

Final acceptance will be withheld until all columns and control pillars etc. have been numbered.

Adoption of Cycle Tracks

A cycle track is a road for use by pedal cycles only, or by pedal cycles and foot only. The adoption of cycle tracks will therefore follow the procedures for the adoption of roads. Adoptable cycle tracks should:

- (a) form part of a general cycling network interconnecting houses, shops, schools, public transport, etc. and be available to cyclists or cyclists and pedestrians on an unrestricted basis.
- (b) be connected to a public road carriageway to facilitate access for maintenance purposes.

Where a cycle track is provided on land primarily intended for recreational or similar purposes to be managed by the Council, the cycle track will not be adopted and a Construction Consent is not required; Road (Scotland) Act 1984 Section 151 (3).

Delineation Public/Private

Clear physical delineation will be required between all private areas and the public road.

Structural Agreements

Where a Construction Consent provides for a road to be supported by a bridge, the Roads Authority will normally enter into an agreement with the developer, in terms of Section 79(1)(c) of the Roads (Scotland) Act 1984, whereby the bridge will heritably vest in Glasgow City Council. Other essential structures will also require an agreement to enable these structures and solums to vest in Glasgow City Council. However, where the bridge or other structure and solum has not been so acquired, Glasgow City Council will be responsible only for maintaining the road surface.

Drainage Agreements

The agreed Section 7 surface water drainage schedule should be prepared through joint discussion. This review will identify the combination of SUDS and drainage features that will be acceptable.

The developer will be required to provide a colour coded plan indicated what both Scottish Water and the Council will be willing to vest / adopt once the works have been completed to the appropriate standard.

Roads Bonds

In terms of Section 17 of the Roads (Scotland) Act 1984 and the Security for Private Roadworks (Scotland) Regulations 1998, private developers are required to make financial provision with Glasgow City Council in order to safeguard the completion of housing development roads and surface water drainage systems (including SuDS) which are the subject of a Construction Consent. Such provision as submitted under

form CC7, which may take the form of a Road Bond or deposit, protects prospective house purchasers from having to bring incomplete roads up to adoptable standards.

It should be noted that no building works can commence until such securities have been lodged. A security in favour of the Roads Authority will also require to be lodged in cases where substantial works affecting the existing road network are being undertaken by private bodies e.g. roundabout, underpass etc. (this by means of a Section 75 Agreement made under the Town and Country Planning Act 1997). The Regulations concerning Road Bonds do not, however, cover private accesses.

2.6 Application for Adoption of Development Roads, Footpaths & Cycle Tracks

Application for Adoption

Following completion of a development road constructed in accordance with a Construction Consent, an application (using Form CC6) for its inclusion in Glasgow City Council's list of public roads) may be submitted to the Roads Asset Manager by the person to whom such consent was granted.

Footpaths

Only those footpaths which are the subject of an Agreement will be eligible for adoption.

Documents to Accompany Application

The submission should be in an electronic Portable Document Format (PDF) and consist of all plans associated with the application for Construction Consent and all relevant as built details (including street names). The roads offered for adoption should be shown in colour (See figure 2.1), and the plans should clearly indicate the ownership of all areas so coloured. The application for adoption should include the Health and Safety File as required under the Construction Design and Management Regulations 2007.

Road Lighting

The submission should include two copies of a signed Lighting Completion and Inspection Certificate CC10 (or approved equivalent) together with as installed plans. These plans must show the positions and circuit, arrangements of all lighting apparatus and be in an electronic Portable Document Format (PDF).

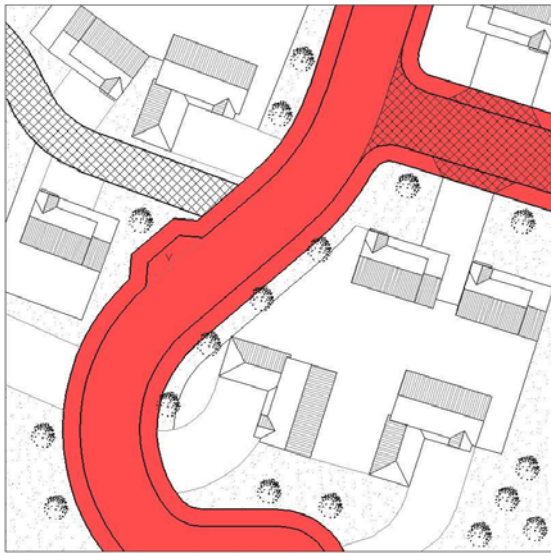
Drainage / SuDS

The submission should include two copies of the agreed drainage schedule and colour coded plans indicating what both Scottish Water and the Council have agreed to vest / adopt.

Adoption Inspection

Following on from completion in accordance with a Construction Consent, the Council will within a period of twelve months from the date of application for adoption, undertake an inspection to ensure that the road has not deteriorated to a standard below that required for adoption.

Figure 2.1 - Plan indicating adoptable areas



- (b) a turning facility up to basecourse level is provided at the 'end' of the section, and
- (c) the section is not isolated within the development by other sections not yet up to the standard specified in paragraph (a) above, but connects to the public road network through sections at least up to that standard.

Glasgow City Council will retain a minimum of 20% of the original security lodged until such time as the road has been added to the list of Public Roads.

Addition to List of Public Roads

Following a satisfactory adoption inspection by the Roads Asset Managers representative and Scottish Water vesting of drainage, the road(s) shall be added to the list of public roads, in terms of Sections 16 and 18 of the Roads (Scotland) Act 1984.

Release of Road Bond

Glasgow City Council may on request of the Developer release up to 80% of the Road Bond in respect of a section of road within a Construction Consent where;

- (a) the construction of carriageways, footways, etc is complete to basecourse including street lighting over the whole of the section, and

3 - Design Standards

Layout / Design Speed

The ability to achieve self enforcing vehicle speeds should not depend on traffic calming measures but should be brought about, by the road layout. As far as possible, geometry and natural features should be used to encourage speed reduction and provide the most environmentally friendly layout. Details of acceptable speed control measures are given in the Design Guide for New Residential Areas, which outlines design standards and method of application.

Pedestrian Consideration

Constraints introduced by the layout which might impede the free movement of pedestrians should be avoided but may be permitted under exceptional circumstances at the discretion of the Roads Asset Manager.

3.1 Visibility

Stopping Sight Distance

The Stopping Sight Distance (SSD) is the distance within which drivers need to be able to see ahead and stop from a given speed.

The SSD values used in *Designing Streets* are based on research into deceleration rates, driver perception-reaction times and speed. These SSD values are appropriate for residential and lightly trafficked streets. The table below shows the effect of speed on SSD. These values are independent of traffic flow or type of road. It is recommended that they are used on all streets

with 85th percentile wet weather speeds up to 60 kph.

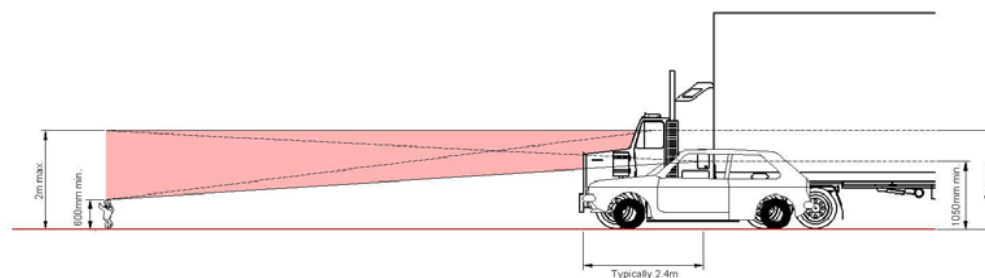
Below around 20 mph, shorter SSDs themselves may not achieve low vehicle speeds: the design of the whole street and how this will influence speed needs to be considered at the start of the process; e.g. the positioning of buildings, the presence of on-street parking, landscaping and speed control measures.

Further information on SSDs, including details of the calculation formula, and also the relationship between visibility and speed is available in *TRL Report No. 332*¹¹ and *TRL Report No. 661*¹².

Table 3.1 - Stopping Sight Distances

Figure 3.1 - Visibility in vertical plane

Speed	Kilometres per hour	16	20	24	25	30	32	40	45	48	50	60
	Miles per hour	10	12	15	16	19	20	25	28	30	31	37
	SSD (metres)	9	12	15	16	20	22	31	36	40	43	56
	SSD adjusted for bonnet length	11	14	17	18	23	25	33	39	43	45	59



Visibility Requirements

Visibility should be checked at junctions and along the street. Visibility is measured horizontally and vertically. Using plan views of proposed layouts, checks for visibility in the horizontal plane ensure that views are not obstructed by vertical obstructions.

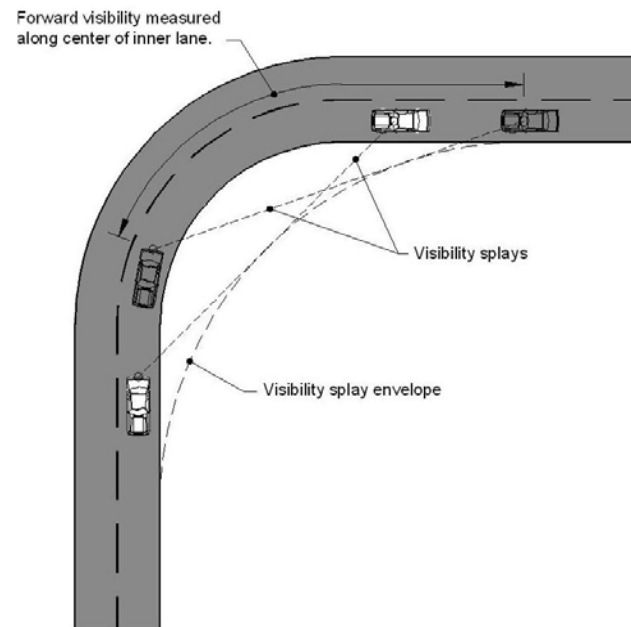
Checking visibility in the vertical plane is then carried out to ensure that views in the horizontal plane are not compromised by obstructions such as the crest of a hill, or a bridge at a dip in the road ahead. It also takes into account the variation in driver eye height and the height range of obstructions. Eye height is assumed to range from 1.05 metres (for car drivers) to 2 metres (for lorry drivers). Drivers need to be able to see obstructions 2 metres high down to a point 600 mm above the carriageway.

Forward Visibility

Forward visibility is the distance a driver needs to see ahead to stop safely for obstructions in the street. The minimum forward visibility required is equal to the minimum SSD. It is checked by measuring between points on a curve along the centreline of the inner traffic lane. Consideration should be given to vertical geometry and any other obstructions.

There will be situations where it is desirable to reduce forward visibility in conjunction with other methods to control traffic speeds.

Figure 3.2 - Measurement of forward visibility



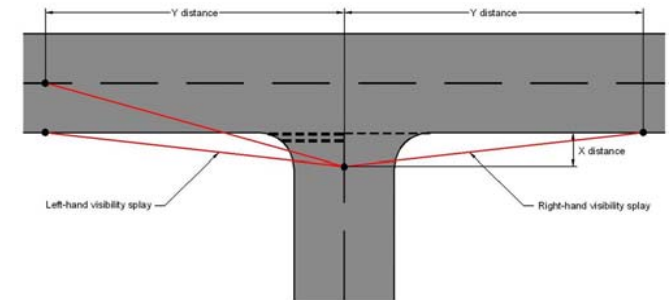
The distance back along the minor arm from which visibility is measured is known as the X distance. It is generally measured back from the 'give way' line (or an imaginary 'give way' line if no such markings are provided). This distance is normally measured along the centreline of the minor arm for simplicity, but in some circumstances (for example where there is a wide splitter island on the minor arm) it will be more appropriate to measure it from the actual position of the driver.

The Y distance represents the distance that a driver who is about to exit from the minor arm can see to his left and right along the main alignment. For simplicity, it is measured along the nearside kerb line of the main arm, although vehicles will normally be travelling a distance from the kerb line. The measurement is taken from the point where this line intersects the centreline of the minor arm (unless, as above there is a splitter island in the minor arm).

When the main alignment is curved and the minor arm joins on the outside of a bend, another check is necessary to make sure that an approaching vehicle on the main arm is visible over the whole of the Y distance. This is done by drawing an additional sight line which meets the nearest wheel track at a tangent.

Some circumstances make it unlikely that vehicles approaching from the left on the main arm will cross the centreline of the main arm - opposing flows may be physically segregated at that point, for example. If so, the visibility splay to the left can be measured to the centreline of the main arm.

Figure 3.3 - X and Y Distances



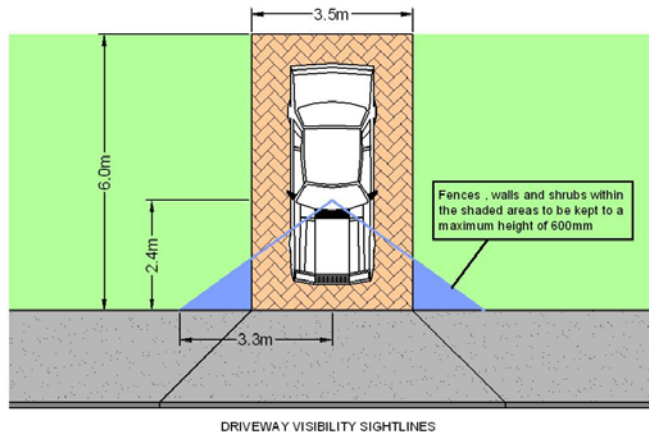
X and Y Distances

An X distance of 2.4 metres should normally be used in most built-up situations, as this represents a reasonable maximum distance between the front of the car and the driver's eye. A minimum figure of 2 metres may be considered in some very lightly trafficked and slow-speed situations, but using this value will mean that the front of some vehicles will protrude slightly into the running carriageway of the major arm. The ability of drivers and cyclists to see this overhang from a reasonable distance, and to manoeuvre around it without undue difficulty, should be considered. Using an X distance in excess of 2.4 metres is not generally required in built-up areas. The Y distance should be based on values for SSD.

Driveway Pedestrian Inter-visibility

To ensure adequate inter-visibility between vehicles in driveways and pedestrians on the adjacent footway, an X distance of 2.4m and Y distance of 3.3m should be provided as indicated in figure 3.4. There should be no physical obstructions or planting within these areas, that are above 0.6m high.

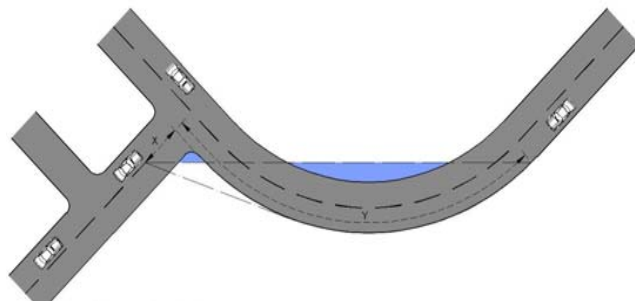
Figure 3.4 - Driveway pedestrian intervisibility



Obstacles to Visibility

The impact of obstacles, such as street trees and street lighting columns, should be assessed in terms of their impact on the overall splay. In general, occasional obstacles to visibility that are not large enough to fully obscure a whole vehicle or a pedestrian, including a child or wheelchair user, will not have a significant impact on road safety.

Figure 3.5 - Visibility Splay on Bends



3.2 Design Parameters

Table 3.2 - Typical Residential Street Design Parameters

Feature	Standard	Comment
Design Speed	20 mph (32 kph)	
Minimum Carriageway Width	4.8m	Min 6m on Bus Route
Maximum Gradient	8%	Max 6.7 % on Bus route
Minimum Gradient	0.8%	
Minimum Vertical Curve Length	K x change of gradient (see Note 1)	K=3 Absolute minimum curve length = 15 m
Camber / Crossfall	2.5%	
Minimum Horizontal Curve Radius	25 m	Except speed control bends Superelevation not essential
Corner Radii	4.5m	
Minimum Forward Sight Distance	25 m 43 m	85 th %ile Speed = 20mph 85 th %ile Speed = 30mph Based on stopping sight distances in Designing Streets.
Minimum Verge Width	2m	Grass or deterrent paving
Minimum Footway Width	2m	Desirable on both sides. Essential on at least one side of the road.

Note 1: The minimum vertical curve lengths can be determined by multiplying the K value by the algebraic change of gradient expressed as a percentage, i.e. +3%grade to a -2% grade indicates a change of 5% and a curve length of 15m

Vehicle Dimensions

Apart from the 4.2 metres height restriction for 38 tonne lorries loaded in excess of 32.5 tonnes, there is no regulation governing maximum height but most vehicles are less than 4.5 metres high.

Vertical Clearance

The minimum headroom for any structure, other than a footbridge (which must be constructed with a 5.7 metres clearance), must be 5.3 metres when spanning a road, including access through pends where servicing is required.

Generally, 2.25 metres clearance will be all that is required for an access, or covered parking area, which will only be used by private cars, but care should be taken to ensure that refuse vehicles can safely service the area without blocking the adjacent road.

Horizontal Clearance

A horizontal clearance of 0.45 metres should always be provided between the edge of the carriageway and any vertical objects such as signs.

3.3 Shared Surfaces

Table 3.3 - Shared Surfaces Design Parameters

Feature	Standard	Comment
Design Speed	10 mph (16 kph)	
Minimum Vehicle Running Width	5.5m vehicle width	Overall minimum width excluding service strip.
Maximum Gradient	7%	
Minimum Gradient	1.25%	
Crossfall	2.5%	
Minimum Vertical Curve Length	K x change of gradient (see Note 1)	K=2 Absolute minimum curve length = 10 m
Minimum Horizontal Curve Radius	10 m	
Corner Radii	4.5m	
Minimum Forward Sight Distance	11 m	85 th %ile Speed = 10mph Based on stopping sight distances in Designing Streets.
Verges		N/A

Note 1: The minimum vertical curve lengths can be determined by multiplying the K value by the algebraic change of gradient expressed as a percentage, i.e. +3%grade to a -2% grade indicates a change of 5% and a curve length of 10m

Application

Shared surfaces in residential areas comprise a road without footways where the carriageway is shared by pedestrians and vehicles. Shared Surface Roads should only be considered where the volume of vehicular traffic is expected to be low and consist mainly of residents of that particular street. It is desirable that vehicle speed should not exceed 10 mph in Shared Surface roads and the road layout should reflect this. A change in surfacing can assist with the desired speed reduction and concrete block paving or clay pavers may be appropriate for shared surfaces in locations where services are to be located in service strips outwith the shared surface footprint.

Transition

Transitions from conventional to shared surface roads can assist with the desired speed reduction and should be located to draw the attention of drivers to the change in the nature of the road and the need for different driving techniques. Transition should be emphasised by the incorporation of features as detailed in the examples in Figure 3.7

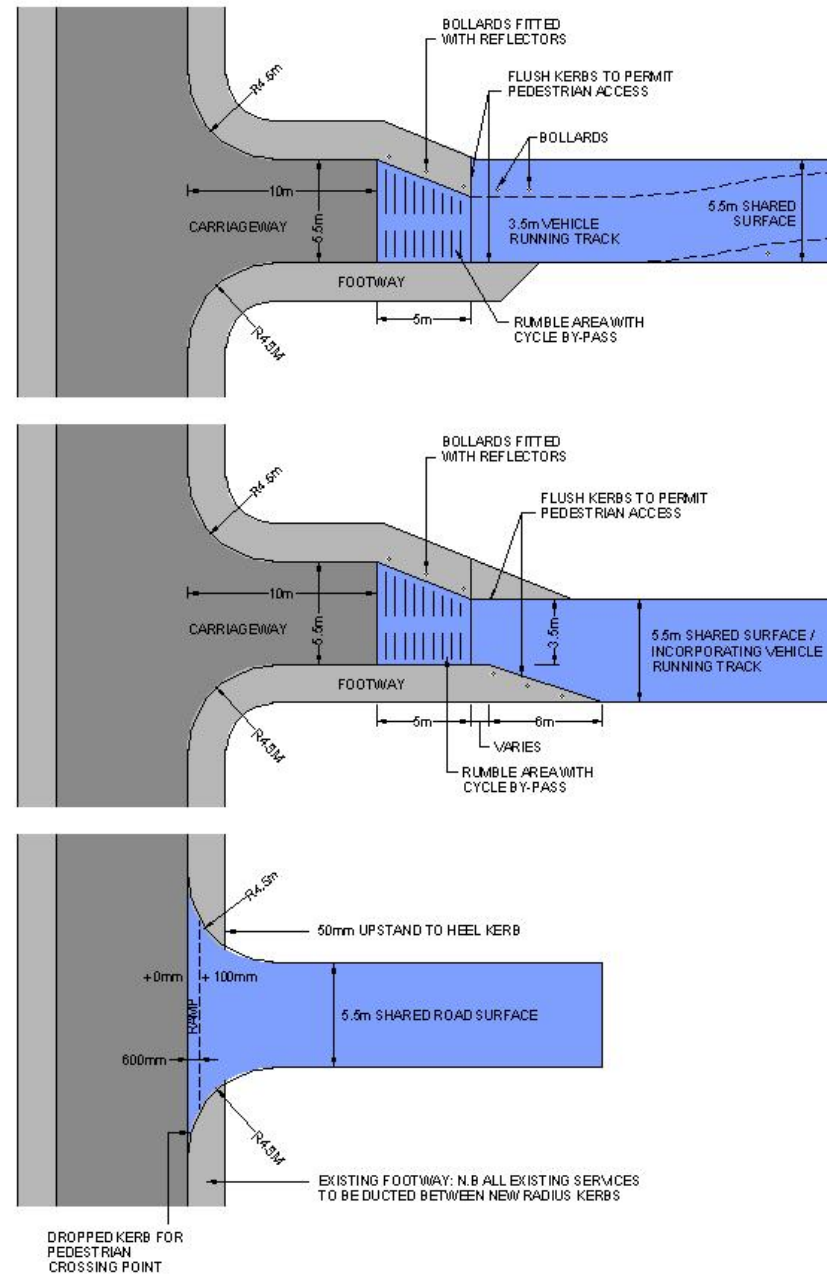


Figure 3.7 - Example Arrangements at Transition to Shared Surface Road

Parking

Parking provision is crucial in the design of a Shared Surface Road as any parking on the running track will severely disrupt traffic flow if not completely block the passage of vehicles. Parking places can be provided within the total road space and located in such a manner that they are incorporated in the speed control measures. Reference should be made to Section 4.2 (Aisle Parking / Driveway Width) to ensure that vehicles can enter and leave the spaces with ease.

Service Strips

2 metres wide service strips (Section 3.6) must be provided to accommodate Statutory Undertakers' services.

3.4 Servicing and Turning Areas

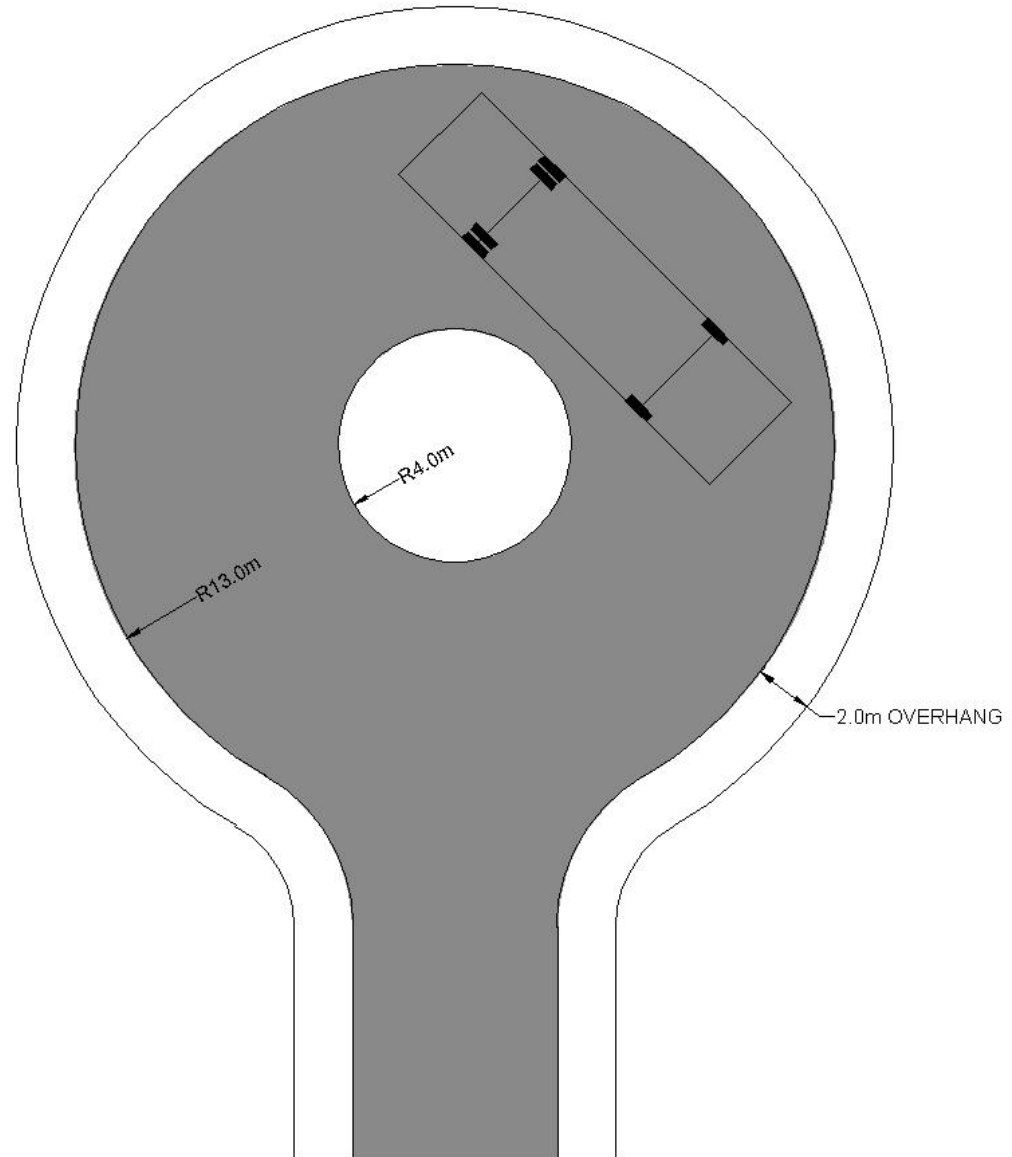
Provision

In circumstances where culs-de-sac are permitted, they should terminate in turning circles.

Dimensions

Unless agreed otherwise, the dimensions of turning circles shall be as detailed in Figure 3.8

Figure 3.8 - Turning Area (all dimensions in metres)



3.5 Bus Stop Provision

Good public transport provision should be available at the initial phase of any new development, either by linking to existing networks or by establishing new routes and should therefore be discussed with local transport operators at an early stage.

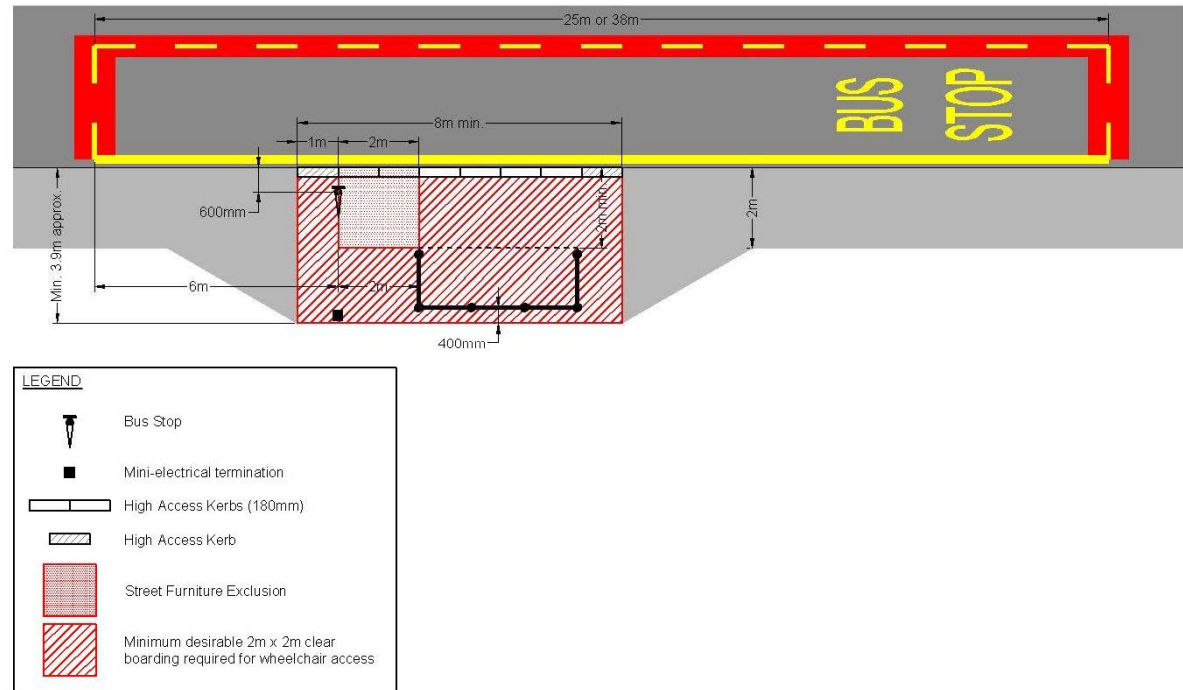
Designing for Bus Passengers

When a new bus stop is likely to be used by more than 50 passengers a day, shelter facilities should be provided. Where real-time information services can be made available, such facilities should also be considered.

All details in relation to the provision of bus stops should be obtained at an early stage by consultation with the Roads Asset Manager nominated representative.

A typical bus stop layout is shown Figure 3.9:

Figure 3.9 - Typical bus stop detail



3.6 Statutory and Private Services

Consultation

The provision of statutory or other services laid underground constitutes a basic element of development design. The Statutory Undertakers, who provide such services, must therefore be consulted during preparation of design briefs, so that their requirements can be coordinated in the design and a balance struck between their needs and other objectives.

Services Located in Roads

In the interests of both the Statutory Undertakers and their consumers, all mains and services serving more than one proprietor should be located in land which is both publicly maintained and readily accessible. It has been recognised that these criteria are best met by public roads and, as well as making provision for pedestrian and vehicular movement, it is therefore a function of most roads to provide routes for underground services.

Services in the carriageway

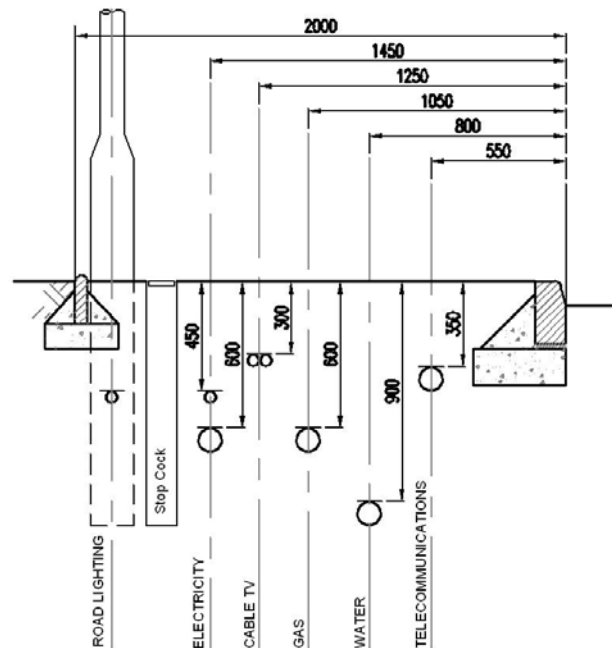
Foul and surface water sewers will normally be placed under the carriageway. The depth, clearance and relative position of sewers should be carefully considered and discussed with Scottish Water at an early stage in the design process and efforts made to minimise the need for future road closures during sewer inspections or maintenance.

Early consultation with Scottish Water regarding their provision, in accordance with the Sewerage (Scotland) Act 1968 should include surface water sewers for the drainage of roofs and paved areas within the curtilage of premises, and the foul water drainage system. All services other than sewers, and occasionally water mains, should be grouped in "service strips" located within the limits of the footways, verges and adoptable footpaths with a minimum of service connections across the carriageway.

Services in Service Strips

The width of a service strip will depend on the number and type of premises served. For up to two hundred dwellings, all domestic services (gas, electricity, lighting, water and telephones) will normally be accommodated in a 2 metres wide reservation and Figure 3.8 shows typical positions. The minimum clearance between each service should be to the satisfaction of the Statutory Undertakers. This diagram is, however, only a guide and does not absolve the designer from negotiating with each Statutory Undertaker at the earliest possible stage. In any development, the depth, clearance and relative position of each service will require to be decided by the Statutory Undertakers and the method of laying cables and pipes left to their discretion. Special arrangements will require to be made where a footway is less than 2 metres wide and local widening in excess of 2 metres may be necessary to accommodate access chambers or where roads have tight bends.

Figure 3.9 - Services under footway



Street furniture and Lighting Columns

All street furniture should normally be located at the rear of footpaths/footways or recessed behind them and no furniture or structures should obstruct any road junction sight line. Conversely, no services other than road lighting cables should be located within 0.5 metre of the rear of the footway to allow for lighting columns and joint pillars or other street furniture. For detailed guidance regarding the provision of road lighting see link below:

www.glasgow.gov.uk/NR/rdonlyres/E3E56765-5018-4EF9-AB51-09AEC53C32AC/0/LIGHTINGDESIGN.pdf

Service Strip Remote from Carriageway

Where service strips are not located adjacent to carriageways their width must allow for access by mechanical plant and/or vehicles for maintenance or repair. In all cases there must be a permanent and continuous demarcation of the boundary between the service strip and any adjacent private property [e.g. by a fence, wall or concrete edge kerbing].

Maintenance and Emergency Access

Ready access must be available at all times to all parts of service routes for maintenance and in cases of emergency. Lorry access will be needed to some places such as manholes, electricity sub-stations, telecom junction boxes and gas governor house installations; and the Statutory Undertakers requirements for such facilities should be ascertained at an early stage. They should be positioned so as to minimise disruptions to vehicle and pedestrian access when service maintenance is being carried out, whilst ensuring that access to services will not itself be obstructed by parked vehicles. Special consideration in this respect will be necessary where services run beneath or adjacent to single lane carriageways and parking bays.

Hydrants

The position of all hydrants should be agreed with the Commander of Strathclyde Fire and Rescue and Scottish Water. Hydrants should not be located where vehicles are likely to park.

Services Crossing under Carriageway

Where service strips or branch connections cross the carriageway, cabled services should be individually ducted at increased depths in accordance with the requirements of the Statutory Undertakers as directed by the Roads Asset Manager. Crossings of narrow residential roads should be located at passing places to minimise disruption to traffic flow during maintenance/repair works.

Services in Shared Surfaces and Housing Courts

In shared surface layouts, all services should continue to be located in land eligible for adoption by Glasgow City Council. Shared Surface roads should generally have a 2 metre contiguous service strip which is delineated by means of a flush kerb. Where a service strip must underlie a Shared Surface road, under no circumstances should any manhole be located within the 3.5 metres wide running width of the shared surface unless an alternative vehicular access is provided. Manholes should preferably be located in the service strip but may also be located within parking areas or widened areas within the total road width, by agreement with the Statutory Undertakers. In Housing Courts the discipline of a service strip should be maintained although this will be in private control and therefore a wayleave agreement will be required.

Surface Finish of Service Strip

The surface finish of all service strips must form an integral part of the environment and be acceptable for general maintenance by Glasgow City Council. Service strips should be protected

when there are risks from damage from occasional overriding by vehicles.

Planting and Service Strips

It is essential that any trees adjacent to service strips are located so that their roots will not damage services underground or be damaged themselves during the maintenance of such services. Advice should always be sought from the Statutory Undertakers when considering planting in the vicinity of services. Refer to Appendix 4 of the Design Guide for New Residential Areas for further details.

Road Opening Consultations and Consents

The developer is responsible for contacting the Statutory Undertakers regarding the position of, and connection to, any existing underground plant. In all cases, the necessary Road Opening Permit under the Roads (Scotland) Act, 1984 or permission in Writing under the New Roads and Street Works Act, 1991 must be obtained from the Roads Asset Manager before any excavation is undertaken in a public road.

3.7 Additional Considerations

Amendments to standards

The Council reserves the right to amend any of the standards contained within this document to suit local circumstances and changes to policy or good practice.

Traffic Management

The layout of a development may be influenced by existing or proposed traffic management measures and the Traffic Manager should be

consulted about these at an early stage. Where Glasgow City Council decides that traffic management measures should be introduced to facilitate a particular development, the developer may be required to reimburse the Authority for expenses incurred in the promotion and implementation of these measures.

Traffic Noise

The developer should consult with the Public Health Division of Land and Environmental Services to determine their requirements for dealing with external noise. Traffic noise from the following sources should be taken into account;

- (a) existing roads,
- (b) new roads being constructed as part of the proposed development,
- (c) alterations to the road network to accommodate the proposed development,
- (d) alterations to the road network listed in the Transport Policies and/or the Structure Plan.

Grit Bins

In all residential developments, and especially within culs-de sac or where pedestrian or vehicular routes have maximum permissible gradients, it will be necessary for the developer to provide either a widened portion of footway or an area of hardstanding to facilitate the placing of grit bins.

Fire Fighting

Notwithstanding the recommended road widths in these guidelines, all roads should

accommodate access and operation of fire tenders. The width of roads and reinforced emergency vehicle paths and their proximity to buildings is detailed in Part E of the Building Standards (Scotland) Regulations. This document specifies a minimum width of 3.7 metres adjacent to low rise dwellings to facilitate the use of pumping appliances this width is increased to 4.5 metres to permit the use of heavy rescue and fire fighting equipment where buildings are 9 metres or more in height). It should be noted that a basic vehicle path of 3.5 metres width (2.75 metres at pinch points) is appropriate for access but not operation of the fire tender.

4 - Parking Design Standards

4.1 Typical Dimensions and Manoeuvrability

Right-angled car parking bays should be 4.8 metres by 2.5 metres where a manoeuvring width of 6 metres is available. Narrower road or aisle widths will require the parking bay to be widened in accordance with table 4.1. Parallel parking bays should be 2.4 metres wide and 5.5 metres long where the bays are internal or constrained by physical means. Free access to an end space will permit the bay length to be reduced to 5.0 metres.

Aisle Parking / Driveway Width

Table 4.1 details the layout and aisle width associated with the standard right angle parking layout. The necessary width of entry to a parking bay is related to the available width of carriageway of a road or aisle of a car park. Where this width is limited, alternatives can be developed by adjusting the width of the parking bay to suit the available carriageway or aisle width. The dimensions to be used for the parking bay widths and the parking lane widths are given in Table 5.1 which also gives the corresponding widths of driveways.

Table 4.1 - Aisle widths and driveway dimensions

Road / Aisle Width (m)	Bay Width (m)	Driveway Width (m)
6	2.5	3.5
5.5	2.6	3.5
5.3	2.75	3.5
5.0	2.8	3.5
4.8	2.9	3.5
4.5	2.95	N/A
4.0	3.1	N/A
3.5	3.2	3.5*

* Shared surface and speed control measures only

4.2 On Road Parking

On Road Types

On road parking bays can be provided in any of the following forms;

- (i) end on parking,
- (ii) parallel parking
- (iii) angled parking - on one way road only or central reserve.

Angled Parking

Table 4.2 details the angle and road / aisle widths associated with angled parking.

Table 4.2 - Road / Aisle widths with Angled Parking

Angle of Parking (°)	Aisle Width (m)
30°	3.2
45°	3.4
60°	4.0
75°	4.7
90°	6.0

Note: One Way Circulation or on central reserve

Groups of Spaces

Long rows of parked cars should be avoided, where possible, as this creates difficulty and inconvenience for pedestrians to cross the adjacent carriageway. Conversely, small groups of parking spaces can encourage random pedestrian movements. Groups of 4 to 6 are appropriate to keep pedestrians to the footway. No individual line marking is required to indicate individual spaces, only a channel demarcation and end markings are required.

4.3 Off Road Parking

Location

Off road parking occurs as either spaces located for the use of individual premises, or as a larger area designated as a car park for multiple users. The location of car parking areas in any development should be considered at an early stage in the design process to achieve a balanced distributor of spaces throughout the site, conveniently related to user destinations. Access to large groups of off road parking should be via a footway crossing as indicated in Figure 5.8

Screening / Security

Since parked vehicles can be visually intrusive, particularly in the residential environment, it is desirable to have an element of screening of the actual parking bays, either by the judicious use of landscaping or by setting them behind building lines. However, communal parking areas can be subject to anti-social behaviour where these areas are not overlooked. Off-road parking should, therefore, be located in such a manner that parking spaces are within sight of associated premises and, where spaces are allocated to individual dwellings, ideally they should be visible from the appropriate house.

5 - Construction Design

5.1 Geotechnical Considerations

Introduction

The extent and type of ground investigation requirements with detailed reporting will be dictated by the nature of the proposed development, former land use, local ground conditions and mining history.

The Ground Investigation and Geotechnical Design Reports which must be submitted with the application for Construction Consent will be examined against the engineering drawings submitted and the supporting factual information. Reports that do not specifically relate to the proposed road/s will not be considered and will be returned to the applicant for re-submission.

Supporting Technical Documentation

The Ground Investigation Reports should include the following minimum information;

- (a) exploratory hole logs to BS 5930 : 1999,
- (b) laboratory test data to BS 5930 : 1999 and BS 1377 : 1990 relevant to the proposed form of road construction,
- (c) a location plan of the site at 1/2500 scale with the proposed road superimposed,
- (d) a plan at 1/500 scale showing the co-ordinated location of all exploratory holes and the proposed road.

The spacing between and the nature and depth of exploratory holes is dependent upon the ground conditions and nature of development. Typically, exploratory holes should be sunk at a maximum spacing of 25 metres offset from the centreline of the proposed road where necessary to ensure sufficient transverse coverage along the site. Where changing conditions demand clarification closer spacing may be necessary.

Where it is proposed to locate a road over land previously used for industrial purposes or waste disposal, it is essential that appropriate chemical analysis and gas monitoring information is submitted in addition to standard laboratory testing to BS 5930:1999 and BS 1377 :1990

Figure 5.1 - Exploratory Borehole Survey



Interpretive Report

The Geotechnical Design Report must include a Mineral Report specifically dealing with the implication for the proposed road construction.

Mine Workings

Where a mineshaft lies within the site it is not acceptable to locate the road over the shaft irrespective of how it has been, or will be treated.

In the situation where a proposed road is underlain by shallow mine workings, the designer of that road must identify the risk of loss of support to the road. Based on an evaluation of the method of mining, the current condition of the mine, the groundwater regime and condition of superincumbent strata, the applicant should identify whether precautions are necessary to ensure mineral stability. Specific guidance on the requirements for road structures is contained in the Department of Transport's Design Manual for Roads and Bridges. Although the Design Manual for Roads and Bridges can be applied to all roads, whether major or minor, specific site conditions may require treatment even where there is more than 10 times the extraction thickness in terms of rock cover.

The Coal Authority

It will be necessary to consult The Coal Authority before any ground investigation is carried out where coal seams are likely to be encountered by drilling operations. The Coal Authority must also be consulted before any proposed treatment of coal seams or shafts and other mine entrances vested with them are undertaken. The Coal Authority may impose certain conditions under which drilling or treatment may be carried out; any such conditions must be complied with and are conditional upon Construction Consent being granted.

Brownfield Sites

Where a site has formerly been developed it will likely be covered in fill material i.e. a brownfield site. The nature, depth and extent of this material should be defined. The possibility of the ground being contaminated must be considered. The Geotechnical Design Report should assess any contamination and its implications for both road construction and maintenance of the completed road and its drainage system.

Peat

Where peat is present in the vicinity of a proposed road, it should be excavated and replaced.

Geotextiles / Polymer Grids

Geotextiles or polymer geogrids may be used as a construction expedient to assist construction; however they cannot prevent consolidation settlement or secondary compression in soft compressible soils.

Geotextiles or polymer geogrids may not be used as a substitute for a capping layer or as a means of reducing subbase thickness in normal road construction. They may be used in addition to a capping layer or normal pavement construction to resolve a particular problem. The decision to use geotextiles or polymer geogrids must consider the need for long term integrity, damage from road openings and the practicality of effective repairs to the geotextile / geogrid.

Geogrids or geotextiles should not be used below roads and footways/cycle tracks as an alternative to grouting in an area where shallow

mine workings are present. If the workings are at a depth where the normal criteria as applied to development roads would require treatment by grouting or excavation and replacement then such treatment should be carried out.

CBR

The CBR value of the soil shall be determined by the laboratory CBR test in accordance with BS 1377: Part 4:1990 and test data shall be incorporated in the Ground Investigation Report.

Figure 5.2 - Ground Treatment A

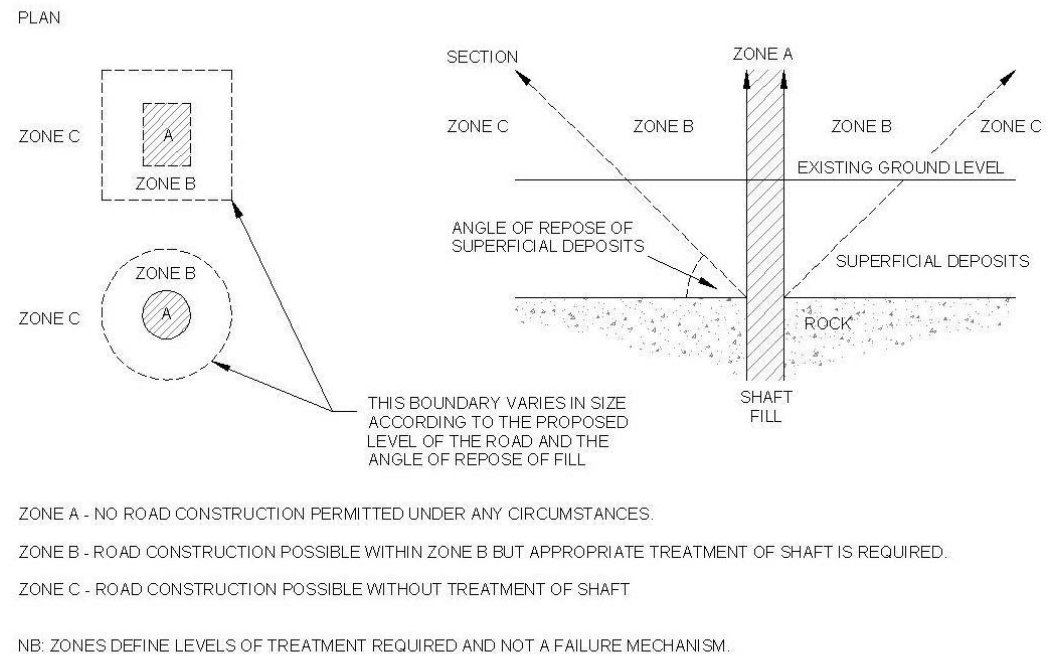
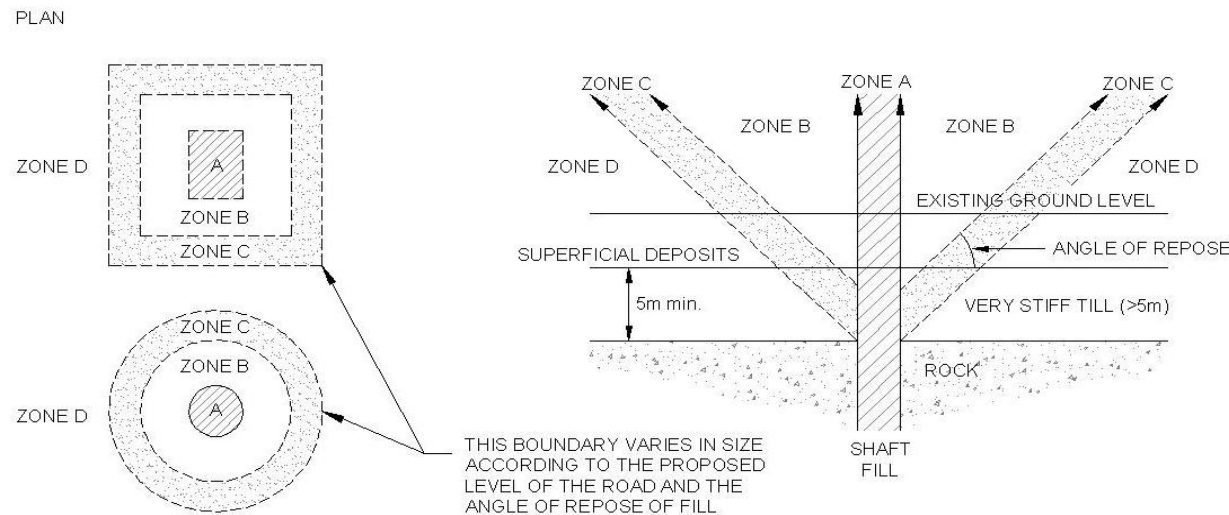


Figure 5.2 - Ground Treatment B



ZONE A - NO ROAD CONSTRUCTION PERMITTED UNDER ANY CIRCUMSTANCES.

ZONE B - ROAD CONSTRUCTION POSSIBLE BUT APPROPRIATE TREATMENT OF SHAFT IS REQUIRED.

ZONE C - ROAD CONSTRUCTION POSSIBLE BUT SOME TREATMENT SOME SHAFT IS REQUIRED

ZONE C - ROAD CONSTRUCTION POSSIBLE WITHOUT TREATMENT OF SHAFT

NB: ZONES DEFINE LEVELS OF TREATMENT REQUIRED AND NOT A FAILURE MECHANISM.

Subgrade Drainage

In addition to the requirement for surface water drainage, it is important to provide efficient permanent drainage of the subgrade and any other permeable layers of the Road.

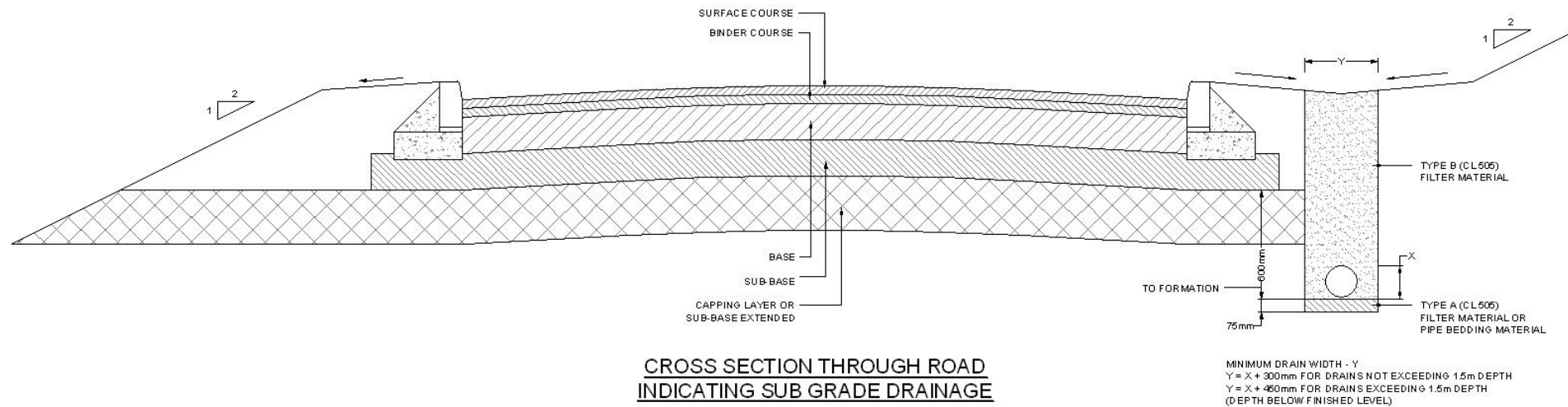
Where Roads have no frontage development, subgrade drainage will be effected as follows:

- (a) In cuttings, filter drains which will be required to cater for surface water run off from slopes will also provide a sub grade drainage function by being located deep enough to prevent the water table from rising to within 0.6 metre of the formation level.
- (b) In embankments, capping layers and/or sub-base layers must be extended periodically to the face of the embankment to effect drainage of these layers.

Where roads have frontage development and adjacent ground levels do not involve embankments or cuttings, it is unlikely that specific measures will be required to effect drainage of the permeable layers unless the site investigation indicated that either the water table is likely to rise to within 0.6 metres of formation level or that the material below formation level is highly impermeable.

In either of these cases, sub-grade drainage can be effected by ensuring that backfill material to gully connections is permeable and that water which will accumulate in this backfill is provided with an outlet which, while allowing water to permeate into manholes, ensures that bedding and backfill materials of the drain are retained.

Figure 5.3 - Cross-section through road indicating sub grade drainage



5.2 Carriageway Construction

Flexible Pavements

Rigid pavement construction will not normally be accepted. Carriageways should be designed as flexible pavements in accordance with volume 7 of the DMRB

Capping Layer

It will be permissible for developers constructing short lengths of roads to adopt the construction thicknesses detailed in Table 5.2 where the California Bearing Ratio (CBR) is greater than 5%. However where the CBR value is less than or equal to 5%, a capping layer is required as follows:

Table 5.1 - Capping Layer Requirements: Subject to frost susceptibility (See paragraph below)

Capping Layer Requirements		
CBR (%)	Depth of Capping (mm)	Depth of Sub-base (mm)
CBR ≤ 2	600	150
2 < CBR ≤ 5	350	150

NB. CBR testing is only relevant in natural soils and cannot be used for pavement design in fill materials. By their nature fills are random and highly variable in density and CBR testing in them only assesses the quality of the material at the locus of the test. Therefore for pavement construction on fill materials, unless the fill material is equivalent to or better than the specified capping material, a full capping layer is required.

Frost Susceptibility

It is possible for roads to be designed to have a total bituminous thickness of 170 mm and, with a CBR value less than or equal to 2%, a 150 mm sub-base and 600 capping layer. In such circumstances the upper 130 mm of the capping layer should be non frost-susceptible. In practical terms this effectively means that the sub-base becomes 280 mm with a capping layer of 470 mm. For a CBR value greater than 2% (but less than 5%) where the total bituminous thickness and sub-base thickness together are less than 450 mm the same principle applies (i.e. the sub-base is increased to achieve 450 mm of non frost susceptible material and the capping layer can be correspondingly reduced). This need not be done if the capping layer is non frost-susceptible.

Increased Capping layer Thickness

Although Table 5.1 prescribes thicknesses of capping layer dependent upon CBR, where CBR is significantly below 2%, these thicknesses may require to be increased dependent upon site and weather conditions prevailing at the time of construction. Additional material may require to be removed and replaced by more suitable material. Although the new material may be of good quality, the subgrade shall be assumed to be equivalent to one of a CBR just under 2% and requiring 600 mm of capping layer. The developer should consult the Roads Asset Manager for advice in these circumstances.

Formation on Rock

Where the formation is on rock, the granular sub-base will act as a 150 mm depth regulating layer.

Carriageway Construction

Where suitable technical facilities exist it is recommended that the specific circumstances of each site are catered for by designing the road in accordance with the criteria stipulated above, subject to a minimum construction as required to carry 0.5 Million Standard Axles (MSA), for all roads. In this circumstance it will be necessary to complete and return form CC8 "Carriageway Design Certificate"

Two Stage Construction

Where the road is continuously used by construction traffic, two stage construction will be necessary to avoid damage to the surface course. Table 5.2 indicates acceptable two stage construction pavement layer thicknesses for 0.5, 1.5 and 3.5MSA.

Stage One

The first stage for carriageway construction, shall be the top of the specified bituminous binder. Consideration should be given to the temporary drainage of the first stage, to minimise ponding caused by the projection of gully gratings above the temporary surface, either by adjustment of gully frames or other approved method. This applies particularly in large projects where the construction period may be long and the surface course not laid before a winter work period. Any settlement which may occur in the binder course of bituminous roads shall be made up with regulating course before the laying of the surface course, and early reinstatement of openings or failed areas is essential.

Stage Two

Before the regulating course and the surface course - where it is bituminous - is laid, the top surface of the binder must be well cleaned and a tack coat applied at the rate of 0.6 litres per square metre. In the case of block paved roads the bituminous basecourse material must be adequately maintained during the first stage and any openings or failed areas reinstated as soon as possible to ensure that the bedding layer thickness is regular and within tolerance.

Figure 5.4 - Carriageway and Footway Cross Section

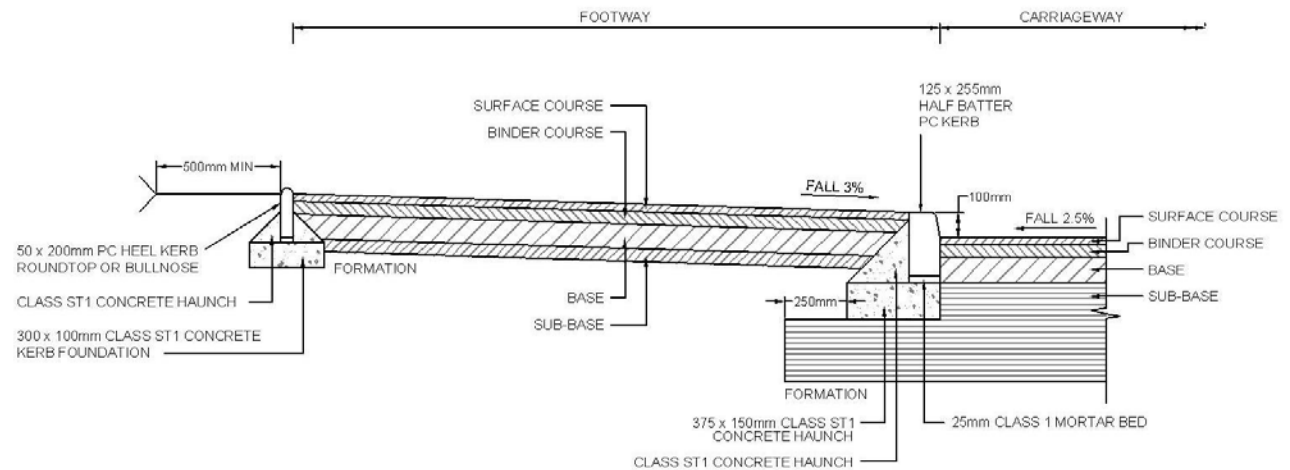


Table 5.2 - Pavement Design Examples (bituminous layers)

Road Traffic (MSA)	Sub-base	Base	Binder	Surface Course
3.5 MSA	225mm (cl 803)	215mm Dense Macadam Combined Base and Binder (cl 903)		40mm Rolled Asphalt (cl 910)
		for two stage construction		
		155mm Dense Macadam Base (cl 903)	60mm Dense Macadam Binder (cl 906)	
1.5 MSA	300mm (cl 803)	185mm Dense Macadam Combined Base and Binder (cl 903)		40mm Rolled Asphalt (cl 910)
		for two stage construction		
		125mm Dense Macadam Base (cl 906)	60mm Dense Macadam Binder (cl 903)	
0.5 MSA	300mm (cl 803)	170 mm Dense Macadam Combined Base and Binder (cl 903)		40mm Rolled Asphalt (cl 910) (see Note 1)
		for two stage construction		
		120mm Dense Macadam Base (cl 903)	50mm Dense Macadam Binder (cl 906)	

* MSA = Million Standard Axles.

Note 1: 40 mm rolled asphalt surface course may be replaced with 40 mm close graded macadam surface course (clause 912), at the discretion of the Roads Asset Manager. Also, in island locations with the agreement of the Roads Asset Manager, deferred set material may be permitted.

Note 2: This table is for guidance only, however it is based on a design life of 40 years, which must be used for all carriageway pavement designs.

Note 3: Clause and Appendix numbers in brackets refer to the Specification.

Note 4: A typical cross section of the carriageway and footway construction is shown in Figure 5.4.

5.3 Islands and Build Outs

Construction

Speed control measures can involve the build out of the footway to create such features as pinch points, nibs or chicanes. Where these are to be constructed, the normal kerb construction detailed in Figure 5.4 should be used. The infill to the footway build outs can be normal footway construction as detailed in Figure 5.4 or soft landscaping can be incorporated, subject to visibility conditions.

Pedestrian Provision

Where speed control measures involve the provision of islands in the carriageway, the normal kerb construction should again be used. Where pedestrians are likely to cross, drop kerbs should be used or breaks should be provided. In normal conditions short lengths of island in the carriageway should be constructed as footway construction. Such islands within the carriageway will require bollards or lights with appropriate signing to ensure visibility and heighten awareness.

5.4 Footway, Footpath and Cycle Track Construction

Flexible Pavement

Rigid pavement construction will not normally be accepted. Developers should adopt the footway, footpath or cycle track construction thicknesses detailed in Table 5.3 and 5.4 and Figures 5.4 and 5.5 unless an alternative design in accordance with volume 7 of the DMRB is agreed with the Roads Asset Manager.

Table 5.3 - Footway, Footpath and Cycletrack Construction in Urban Areas

Type	Sub-Base	Base	Binder	Surface Course
Flexible Surfacing	50 mm Granular Sub-base Type 1 (cl 803)	100 mm Type 1 Granular Material (cl 803)	50 mm Dense Macadam (cl 906)	30 mm Rolled Asphalt (cl 910) (see Note 1)

Note 1: Prior to compaction 6mm or 10mm limestone or other approved chippings shall be applied to the surface at a nominal rate of 1 kg/m².

Note 2: In rural areas or in lightly trafficked locations, the alternative shown in Table 6.4 may be permitted at the discretion of the Roads Asset Manager.

Note 3: Footway and footpath thicknesses will require to be increased where, in the opinion of the Roads Asset Manager, they are liable to be subject to overrun.

NB: Clause numbers in brackets refer to the Specification

Table 5.4 - Footways, Footpaths and Cycletracks in Rural Areas

Type	Sub-Base	Base	Binder	Surface Course
Flexible Surfacing	200mm Type 1 or recycled suitable material (e.g. planings)		40 mm Dense Macadam (cl 906)	25 mm Rolled Asphalt (cl 910) or 25 mm Close Graded Macadam (cl 912)
			Combined 50mm Close Graded Macadam (cl 912)	

5.5 Kerbs and Edging

Materials/Construction

All carriageways, footways and footpaths should be provided with precast concrete kerb or edging as detailed in Figures 5.4 and 5.5. On conventional roads, kerbs should be set 100mm above finished carriageway channel level, except at pedestrian and vehicular crossings where this dimension is reduced to 6mm and 20mm respectively. Edging at the heel of footways should have an upstand of 50mm, whereas on footpaths it should be set flush with the walking surface. On shared surfaces an upstand of 50mm should normally be provided, except at junctions with footpaths (both private and public) where kerbs should be set 6mm above the shared surface. Approval for any departure from these standard details should be sought from the Roads Asset Manager prior to construction commencing.

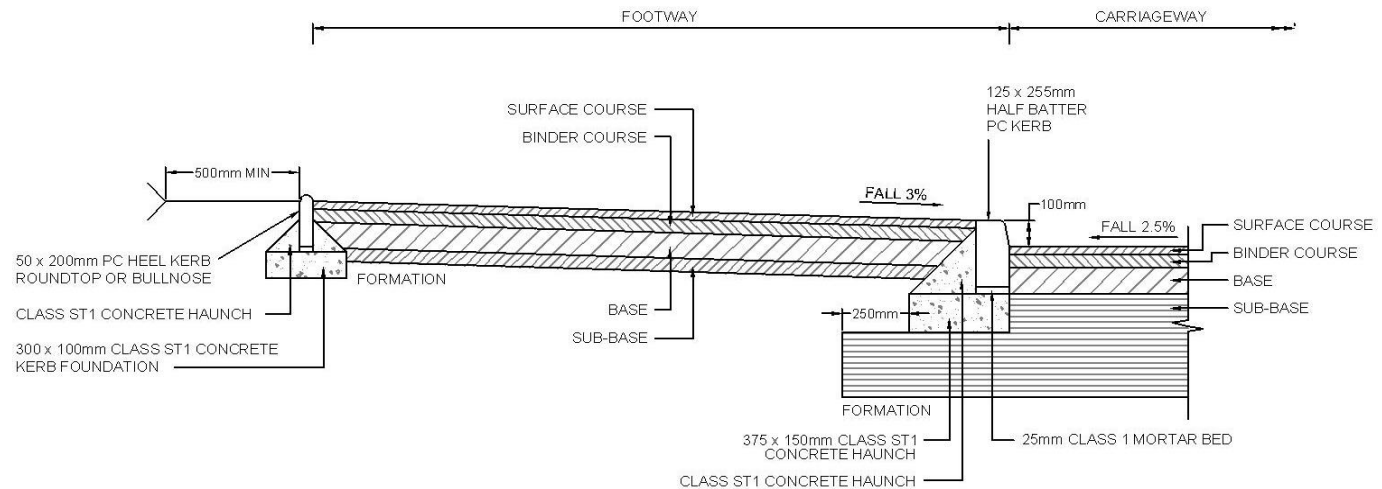


Figure 5.5 - Typical Footpath /Cycle Path Construction

5.6 Accesses

Driveways

Vehicular access crossings of the footway for individual dwellings should comply with Figure 5.6 and be constructed to the footway specification. Maintenance difficulties preclude the use of slab footway construction for vehicle access crossings.

Figure 5.6 - Driveway Access

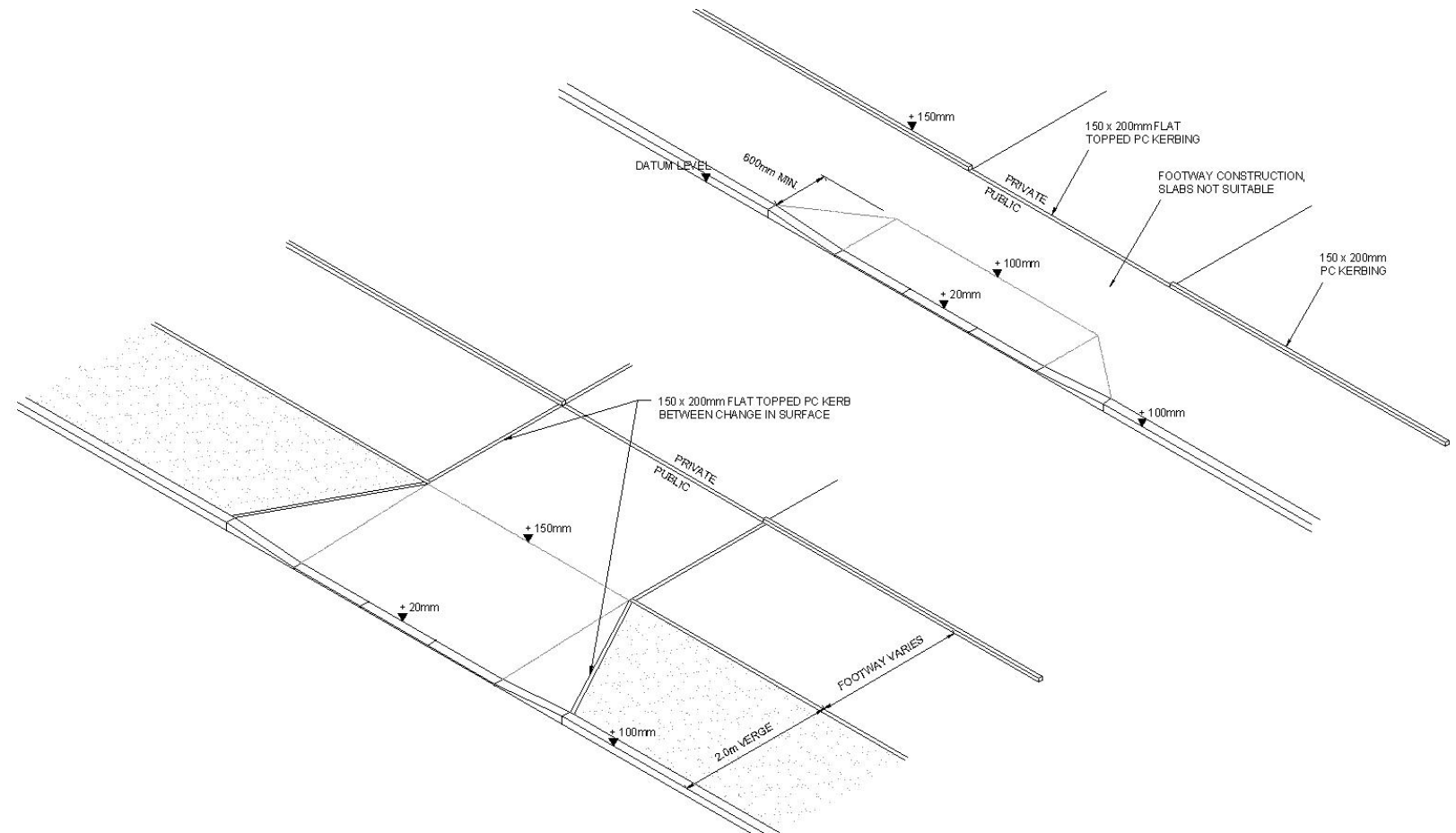
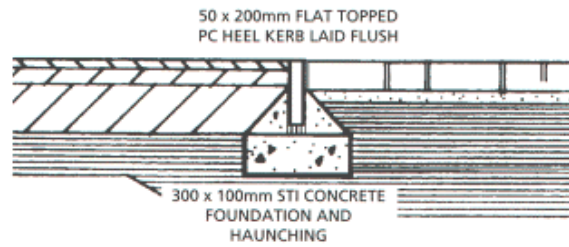


Figure 5.7 - Kerb Detail along the Footpath



Other Access Details

Where vehicular access, other than to individual dwellings, is taken over a footway, a crossing, as detailed in Figure 5.8 should be constructed.

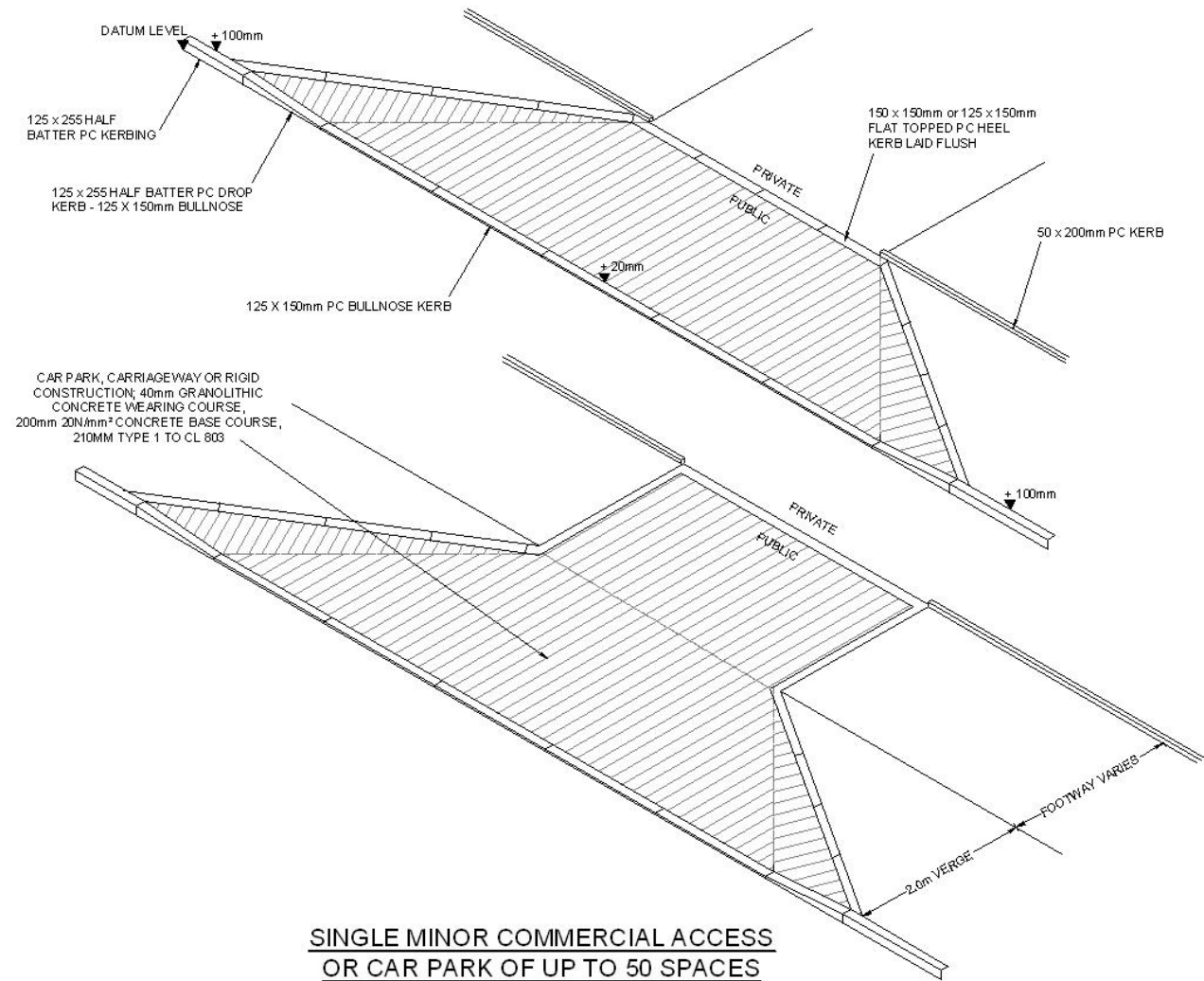


Figure 5.8 - Minor Access for Car Park of up to 50 Spaces

Pedestrian Access/ Crossings

Figure 5.9 details the requirement for dropped kerbs where pedestrian routes cross the carriageway from adjacent footways e.g. at T-junctions and pelican crossings. Note the large dished area which is to minimise footway gradients (7.5 per cent maximum) and avoid abrupt changes of slope. Pedestrian crossings of a carriageway with an adjacent grass verge should comply with Figure 5.8 except that the dropped kerb should be a 6mm up stand from the carriageway and extend for a minimum length of 1.8 metres.

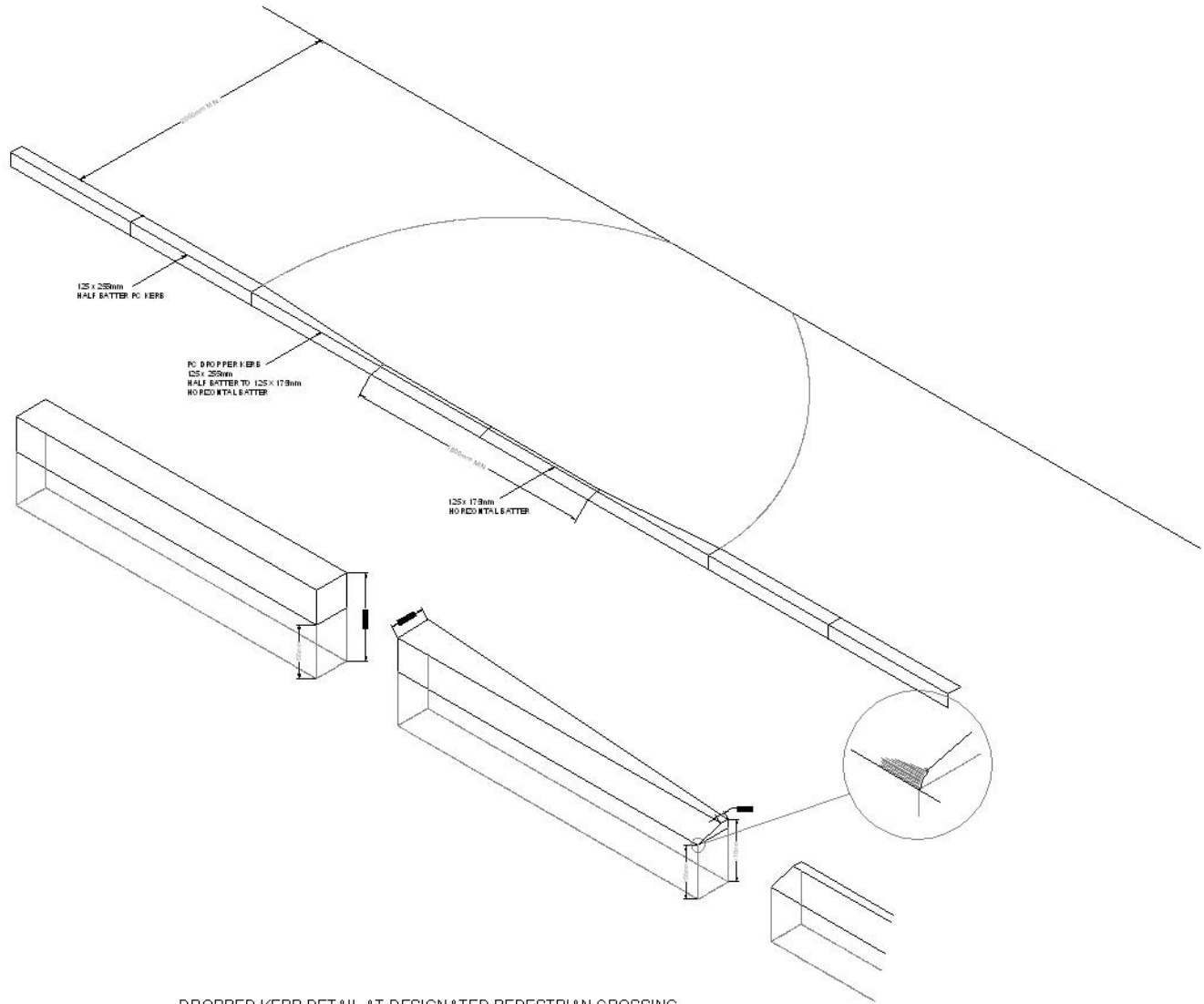


Figure 5.9 - Dropped kerb detail at designated pedestrian crossing

5.7 Road Drainage

Specification

The specification for the construction of road drainage shall be the Specification for Highway Works, Volume 1 of the Manual of Contract Documents for Highway Works. In addition, road drainage should meet with the requirements of Scottish Water and the Scottish Environmental Protection Agency (SEPA).

Design

Road drainage design should be in accordance with the current edition of Sewers for Scotland as regards hydraulic design subject to the qualification that the minimum pipe diameter permitted will be 150mm and the Design Manual for Roads and Bridges as regards pipe strength and bedding for main road loading for pipes in or adjacent to carriageways. Land drainage or other appropriate measures must be taken to prevent water flowing on to the road from adjacent properties.

Sustainable Drainage Systems

The use of Sustainable Drainage Systems is an integral part of road drainage design and must be discussed with the Roads Asset Manager, Scottish Water and Scottish Environmental Protection Agency (SEPA) at an early stage in the design process to agree the appropriate levels of treatment required and the form of Sustainable Drainage Systems that will be acceptable for adoption. All components should be designed in accordance with [Ciria C697](#) The SuDS Manual and to the satisfaction of the adopting authority.

Gully Spacing

Table 6.5 details the acceptable channel distance between gullies for a road comprising carriageway with two number 2 metres wide footways, based on criteria adapted from the Design Manual for Roads and Bridges. (Table 6.5 is based on rainfall intensity of 50 mm/hour and width of channel flow of 600 mm). The spacing may require to be altered according to the road layout (e.g. at junctions) and special measures will be required where the grade is necessarily flatter than 0.8 per cent (sags, crests, etc). Advice on these matters should already have been received from the Roads Asset Manager who should be consulted at an early stage by any developer wishing to carry out a full drainage design. Irrespective of design spacings, a gully should be positioned;

- (a) just upstream of the tangent point at road junctions,
- (b) short of the point where adverse camber is removed when applying super-elevation,
- (c) at any local low point,
- (d) at speed control measures, where necessary.

They should not be positioned;

- (e) at pedestrian crossing points,
- (f) at driveways.
- (g) at extended channel line of parallel layby parking.

Drop Kerb Inlets to Swales

Where drop kerbs are applied to promote runoff from the road surface to swales, the introduction of a paving slab 10mm below road channel level, will facilitate the flow to the swale whilst reducing erosion and accumulation of silt at this location.

Table 5.5 - Gully Spacing for Carriageways

Gradient:		1/150*	1/100	1/80	1/60	1/40	1/30	1/20
		0.66%	1.00%	1.25%	1.66%	2.50%	3.33%	5.00%
Cross Section	C/Way Width	Gully Spacing (metres)						
1 in 40 (2.5%)	5.5m	7.0	8.5	9.5	11.0	13.0	15.0	18.0
	6.0m	6.5	8.0	9.0	10.5	12.5	14.5	17.0
Camber 1 in 40 (2.5%)	7.3m	6.0	7.0	8.0	9.0	11.0	12.5	15.0
	5.5m	3.5	4.5	5.0	5.5	6.5	7.5	9.0
Crossfall	6.0m	3.0	4.0	4.5	5.0	6.0	7.0	8.5
	7.3m	3.0	3.5	4.0	4.5	5.5	6.5	7.5

* Gradients flatter than 0.8% are applicable to sags and crests only and should be discussed with the Roads Asset Manager

Irregular Areas

Lay-bys should normally drain to the road channel; it should not, therefore, be necessary to provide gullies at the rear of lay-by parking areas.

Lay-by Drainage

For large, irregularly shaped areas the empirically derived formula of one gully for each 100 square metres of catchment may be used. Additional gullies will be required where gradients are steeper than 1/20 or flatter than 1/150 and where surface water draining from adjacent areas may be anticipated.

Footpath Drainage

Remote footpaths should be constructed with flush edging as detailed in Figure 5.5. Only in exceptional circumstances, and where there is appropriate access for gully cleaning vehicles as agreed with the Roads Asset Manager, should direct drainage into gullies be considered.

Gullies

Road gullies should be constructed in accordance with clause 508 of the Specification. Gully gratings and frames must be positioned with grating bars not parallel to the kerb to facilitate cyclists and shall be of the captive variety. They shall comply with BS EN 124 and Class D400 in all adopted and adoptable areas, (minimum nominal width 450mm, minimum area of waterway 900cm² and minimum depth of

frame 100mm) The use of Class B125 (minimum nominal width 325mm, minimum area of waterway 650cm² and minimum depth of frame 100mm) may be permissible in non contiguous car parks at the discretion of the Roads Asset Manager.

Connections

Connections should be constructed in accordance with clause 508 of the Specification. They must be formed with junction pipes unless the Roads Asset Manager has specifically approved the use of saddles.

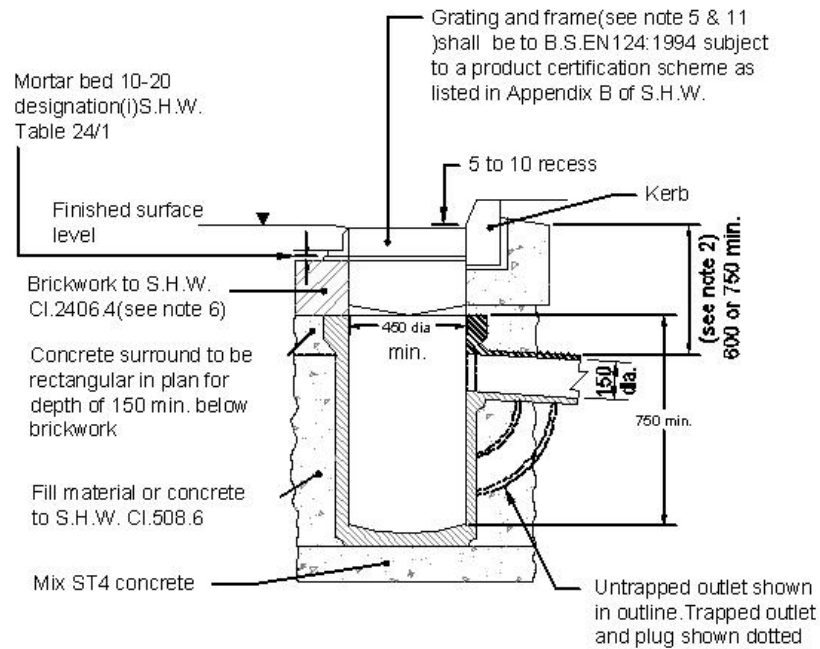
Chambers

Chambers should be constructed in accordance with Clause 507 of the Specification. Manhole covers and frames shall be non rock and comply with BS EN 124 and be Class D400 in all adopted and adoptable areas, (minimum clear opening 600mm dia or equivalent, minimum depth of frame 100mm) The use of Class B125 (minimum clear opening 600mm dia or equivalent, minimum depth of frame 100mm) may be permissible in non contiguous car parks at the discretion of the Roads Asset Manager.

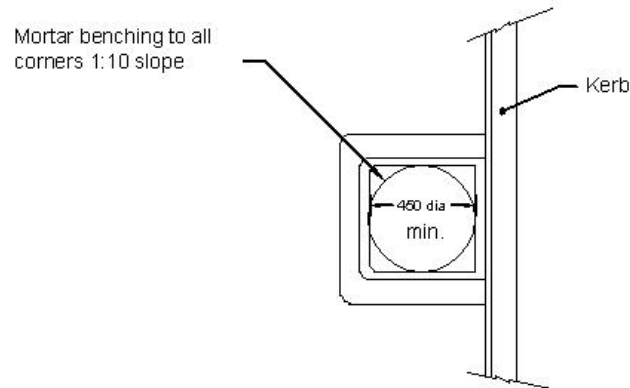
Outfall Connection

The connection of road drainage systems to the public sewer network should be undertaken only on the authority and to the requirements of Scottish Water. Similarly, when connecting to an existing watercourse, approval should also be sought from Development and Regeneration Services Flood Risk Management team.

Figure 5.10 - Road Gullies



PRECAST GULLY



5.8 Lighting Design

Glasgow City Council operates a white light strategy which recommends the use of white light sources for road lighting purposes. See link below for guidance on street lighting design.

www.glasgow.gov.uk/NR/rdonlyres/E3E56765-5018-4EF9-AB51-09AEC53C32AC/0/LIGHTINGDESIGN.pdf

APPENDIX 2:

Construction Consent Guidance *for* New Residential Streets
(Structural Design Proformas)



Structure Design Certificate

SD1

FORM OF CERTIFICATE FOR THE DESIGN AND CHECK OF CATEGORY 0 STRUCTURES.

(APPLICATION FOR APPROVAL IN PRINCIPLE NOT REQUIRED)

Name of Project/Scheme

Name of Structure

Designer

- 1** We certify that reasonable professional skill and care has been used in the preparation of the design and check of *(name of structure)*¹

with a view to securing that:

- a** it has been designed in accordance with the following standards:²

or³

- b** it has been checked for compliance with the relevant standards in **1a** *(above)*

- c** it has been accurately translated into Construction Drawings and Bar Bending Schedules (all of which have also been checked). The unique numbers of these Drawings and Schedules are:

Signed

Name

Position Held

Design & Check Team Leader

Engineering Qualifications⁴

Signed

Name

Position Held⁵

Name of Organisation

Date



Structure Design Certificate

SD1

FORM OF CERTIFICATE FOR THE DESIGN AND CHECK OF CATEGORY 0 STRUCTURES.

continued

(APPLICATION FOR APPROVAL IN PRINCIPLE NOT REQUIRED)

Name of Project/Scheme	<input type="text"/>
Name of Structure	<input type="text"/>
Designer	<input type="text"/>

2 The certificate is accepted by the Technical Approval Authority (TAA)⁴

Signed	<input type="text"/>
Name	<input type="text"/>
Position Held	<input type="text"/>
Engineering Qualifications ⁶	<input type="text"/>
For TAA	<input type="text"/>
Date	<input type="text"/>

Notes

- ¹ Where several Category 0 structures occur in a project they may be listed on one certificate.
- ² Insert relevant current standards including amendments to date. This certificate shall be accompanied by a General Arrangement drawing.
- ³ List of additional methods or criteria. Departures not accepted for Category 0 structures.
- ⁴ CEng, MICE, MIStructE or equivalent.
- ⁵ A Principal of the organisation responsible for the design.
- ⁶ Engineer with appropriate qualification and experience for Category 0 structures.



Structure Design Certificate

SD2

**FORM OF CERTIFICATE FOR THE DESIGN AND CHECK OF
CATEGORY 1 STRUCTURES.**
(APPLICATION FOR APPROVAL IN PRINCIPLE IS REQUIRED)

Name of Project/Scheme

Name of Structure

Designer

1 We certify that reasonable professional skill and care has been used in the preparation of the design and check of *(name of structure)*¹

with a view to securing that:

a it has been designed in accordance with the Approval in Principle dated.²

 (date) including the following³:

b it has been checked for compliance with the relevant standards in **1a**; or

c it has been accurately translated into Construction Drawings and Bar Bending Schedules (all of which have also been checked). The unique numbers of these Drawings and Schedules are:

Signed

Name

Position Held

Engineering Qualifications⁴

Signed

Name

Position Held⁵

Name of Organisation

Date



Structure Design Certificate

SD2

**FORM OF CERTIFICATE FOR THE DESIGN AND CHECK OF
CATEGORY 1 STRUCTURES.**
(APPLICATION FOR APPROVAL IN PRINCIPLE IS REQUIRED)

continued

Name of Project/Scheme	<input type="text"/>
Name of Structure	<input type="text"/>
Designer	<input type="text"/>

2 The certificate is accepted by the Technical Approval Authority (TAA)⁴

Signed	<input type="text"/>
Name	<input type="text"/>
Position Held	<input type="text"/>
Engineering Qualifications ⁶	<input type="text"/>
For TAA	<input type="text"/>
Date	<input type="text"/>

Notes

- ¹ Where several Category 1 structures occur in a project, they may be listed on one certificate.
- ² Insert date of agreement of the AIP by the TAA including the dates of any addenda. Note the AIP is valid for three years after the date of agreement by the TAA. If the construction has not yet commenced within this period, the AIP should be re-submitted to the TAA for review.
- ³ List of additional methods or criteria. Departures not accepted for Category 1 structures.
- ⁴ CEng, MICE, MIStructE or equivalent.
- ⁵ A Principal of the organisation responsible for the design.
- ⁶ Engineer with appropriate qualification and experience for Category 1 structures.



Structure Design Certificate

SD3

**FORM OF CERTIFICATE FOR THE DESIGN OF
CATEGORY 2 AND 3 STRUCTURES.**
(APPLICATION FOR APPROVAL IN PRINCIPLE IS REQUIRED)

Name of Project/Scheme	<input type="text"/>
Name of Structure	<input type="text"/>
Designer	<input type="text"/>

1 We certify that reasonable professional skill and care has been used in the preparation of the design of *(name of structure)*

with a view to securing that:

a it has been designed in accordance with the Approval in Principle dated:¹

 (date)

including the following²:

b it has been accurately translated into Construction Drawings and Bar Bending Schedules. The unique numbers of these Drawings and Schedules are:

Signed

Name

Position Held

Design Team Leader

Engineering Qualifications³

Signed

Name

Position Held⁴

Name of Organisation

Date



Structure Design Certificate

SD3

FORM OF CERTIFICATE FOR THE DESIGN OF CATEGORY 2 AND 3 STRUCTURES.

continued

(APPLICATION FOR APPROVAL IN PRINCIPLE IS REQUIRED)

Name of Project/Scheme	<input type="text"/>
Name of Structure	<input type="text"/>
Designer	<input type="text"/>

- 2 The Departure from Standards and additional criteria given in Paragraph 1 are agreed⁵.
- 3 The certificate is accepted by the Technical Approval Authority (TAA)⁴

Signed

Name

Position Held

Engineering Qualifications⁶

For TAA

Date

Notes

- ¹ Insert date of agreement of the AIP by the TAA including the dates of any addenda. Note the AIP is valid for three years after the date of agreement by the TAA. If the construction has not yet commenced within this period, the AIP should be re-submitted to the TAA for review.
- ² List any depatures from standard and any additional methods or criteria.
- ³ CEng, MICE, MIStructE or equivalent.
- ⁴ A Principal of the organisation responsible for the design.
- ⁵ Delete if not required.
- ⁶ Engineer with CEng, MICE, MIStructE or equivalent



Structure Design Certificate

SD4

FORM OF CERTIFICATE FOR THE DESIGN CHECK OF CATEGORY 2 AND 3 STRUCTURES.

(APPLICATION FOR APPROVAL IN PRINCIPLE IS REQUIRED)

Name of Project/Scheme

Name of Structure

Designer

1 We certify that reasonable professional skill and care has been used in the checking of the design of
(name of structure)

with a view to securing that:

a it complies with the Approval in Principle dated:¹

 (date)

including the following²:

c it has been accurately translated into Construction Drawings and Bar Bending Schedules, all of
which have also been checked. The unique numbers of these Drawings and Schedules are:

Signed

Name

Position Held

Engineering Qualifications³

Signed

Name

Position Held⁴

Name of Organisation

Date



Structure Design Certificate

SD4

FORM OF CERTIFICATE FOR THE DESIGN CHECK OF CATEGORY 2 AND 3 STRUCTURES.

continued

(APPLICATION FOR APPROVAL IN PRINCIPLE IS REQUIRED)

Name of Project/Scheme

Name of Structure

Designer

2 The Departure from Standards and additional criteria given in Paragraph 1 are agreed.⁵

3 The certificate is accepted by the Technical Approval Authority (TAA)⁴

Signed

Name

Position Held

Engineering Qualifications⁶

For TAA

Date

Notes

¹ Insert date of agreement of the AIP by the TAA including the dates of any addenda. Note the AIP is valid for three years after the date of agreement by the TAA. If the construction has not yet commenced within this period, the AIP should be re-submitted to the TAA for review.

² List any departures from standard and any additional methods or criteria.

³ CEng, MICE, MIStructE or equivalent.

⁴ A Principal of the organisation responsible for the design check.

⁵ Delete if not required.

⁶ Engineer with CEng, MICE, MIStructE or equivalent



Structure Design Certificate

SD5

APPLICATION FOR APPROVAL IN PRINCIPLE

Name of Project/Scheme

Name of Structure

Designer

1 Road Details

a. Type of road:

b. Permitted traffic speed²:

c. Existing restrictions³:

2 Site Details

a. Obstacles crossed:

3 Proposed Structure

a. Description of structure and working life:

b. Structural type:

c. Foundation type:

d. Span arrangements:

e. Articulation arrangements:

f. Proposed classes/levels

(i) Consequence class:

(ii) Reliability class:

(iii) Inspection level:

g. Road restraint system type:

h. Proposed arrangements for maintenance and inspection/ inspection for assessment¹:



Structure Design Certificate

SD5

continued

APPLICATION FOR APPROVAL IN PRINCIPLE

Name of Project/Scheme

Name of Structure

Designer

3 h. (i) Traffic management:

(ii) Access:

i. Sustainability issues considered. Materials and finishes/Materials strengths assumed and basis of assumptions^{1,4}:

j. Risks and hazards considered for design, construction, maintenance and demolition. Consultation with CDM Co-ordinator⁵:

k. Working life and estimated cost of proposed structure, together with other structural forms considered (including where appropriate proprietary manufactured structure), and the reasons for their rejection (including comparative whole life costs with dates of estimates):

l. Proposed arrangements for construction:

(i) Traffic management:

(ii) Service diversions:

(iii) Interface with existing structures:



Structure Design Certificate

SD5

continued

APPLICATION FOR APPROVAL IN PRINCIPLE

Name of Project/Scheme

Name of Structure

Designer

4 Design Criteria

a. Actions:

(i) Permanent actions:

(ii) Snow, wind and thermal actions:

(iii) Persistent actions relating to normal traffic under AW regulations and C&U regulations⁶:

(iv) Persistent actions relating to General Order Traffic under STGO regulations⁷:

(v) Footway or footbridge persistent actions:

(vi) Persistent actions relating to Special Order Traffic, provision for exceptional abnormal indivisible loads including location of vehicle track on deck cross-section⁸:

(vii) Accidental actions:

(viii) Actions during execution:

(ix) Special rules for combination of actions:

(x) Any special actions not covered above:



Structure Design Certificate

SD5

continued

APPLICATION FOR APPROVAL IN PRINCIPLE

Name of Project/Scheme

Name of Structure

Designer

4 b. Heavy or high route requirements and arrangements being made to preserve the route, including any provision for future heavier loads or future widening:

c. Minimum headroom provided:

m

(including allowance for vertical sag compensation and maximum deflection of structure)

d. Authorities consulted and any special conditions required:

e. Standards and documents

(i) List of relevant documents from the TAS:

(ii) Additional relevant Standards and publications:

f. Proposed departures from Standards given in **4e**:

g. Proposed methods of dealing with aspects not covered by Standards in **4e**:

h. List of record of options and choices (for Category 2 or 3 checks):



Structure Design Certificate

SD5

continued

APPLICATION FOR APPROVAL IN PRINCIPLE

Name of Project/Scheme

Name of Structure

Designer

5 Structural Analysis

a. Methods of analysis proposed for superstructure, substructure and foundations:

(i) Method of analysis for ultimate limit states (excluding fatigue):

(ii) Method of analysis for fatigue:

(iii) Method of analysis for serviceability limit states:

b. Description and diagram of idealised structure to be used for analysis:

c. Assumptions intended for calculation of structural element stiffness:

d. Proposed range of soil parameters to be used in the design of earth retaining elements:

6 Geotechnical Conditions

a. Acceptance of recommendations of the Geotechnical Design Report to be used in the design and reasons for any proposed changes:



Structure Design Certificate

SD5

continued

APPLICATION FOR APPROVAL IN PRINCIPLE

Name of Project/Scheme

Name of Structure

Designer

6 b. Geotechnical Design Report Summary Information * delete as appropriate

Structure Name	Chainage and OS Grid Reference		Reference / Comments		
Structure Type	AIP Ref No.		See HD22/08 cl 3.2 & 3.3 and BS EN 1997-1 cl 2.1 (10) - (21)		
Designer's Geotechnical Advisor	Design Life 120 years / other*				
Geotechnical Category 1 or 2 or 3*	Qualative or Quantitative Geotechnical Investigations*				
Soils / Geology	Relevant Trial Holes				
Strata	Typical Depths				
Previous Ground History					
Contaminated Ground Risk Assessment Required					
Ground Water					
Protection of Structure against Chemical Attack					
Earth Pressure Value - Range of angle of shearing resistance (Φ'):					
Spread Foundations					
Structure Element	Founding Stratum	Founding Level (m AOD)	Footing Size	Bearing Resistance (KN/m ²)	
			 ULS Comb 1 ULS Comb 2 SLS	
Pile Design					
Structure Element	Founding Stratum	Toe Level (m AOD)	Pile Dia (m)	Pile Length (m)	Pile Resistance (KN)
				 ULS Comb 1 ULS Comb 2 SLS
Pile type:					
Criteria for selecting pile toe level:					
Allowance for negative skin friction within design:					
Differential Settlement					
Geotechnical Supervision / Monitoring					

c. Differential settlement to be allowed for in the design of the structure:

d. If the Geotechnical Design Report is not yet available, state when the results are expected and list the source of information used to justify the preliminary choice of foundations⁷:



Structure Design Certificate

SD5

continued

APPLICATION FOR APPROVAL IN PRINCIPLE

Name of Project/Scheme

Name of Structure

Designer

7 Checking

a. Proposed Category of Checking and Design Supervision Level:

b. If Category 3, name of proposed Independent Checker:

c. Erection proposals or temporary works for which an independent check will be required, listing parts of the structure affected with reasons for recommending an independent check:

8 Drawings and Documents

a. List of drawings (including numbers) and documents accompanying the submission¹⁰:

b. List of record of options and choices (for Category 2 or 3 only):

9 The above is submitted for acceptance

Signed

Name

Position Held

Design Team Leader

Engineering Qualifications¹¹

Name of Organisation

Date



Structure Design Certificate

SD5

continued

APPLICATION FOR APPROVAL IN PRINCIPLE

Name of Project/Scheme

Name of Structure

Designer

10 The above is rejected / agreed subject to the amendments and conditions shown overleaf^{1,12}

Signed

Name

Position Held

Engineering Qualifications¹¹

For TAA

Date

Notes

¹ Delete as appropriate

² For a bridge, give over and/or under

³ Include weight, width and any environmental restrictions at or adjacent to the bridge

⁴ From record drawings or intrusive investigation

⁵ e.g. Risks and hazards required to be considered under the Construction (Design and Management) Regulations, including those associated with the construction methods, routine, cyclic and any required planned maintenance - i.e. inspection and jacking for bearing replacement, and future demolition. In the cases of design, these should be specific and concentrate on significant, foreseeable risks and hazards that are not likely to be obvious to a competent contractor or other designers, are unusual, or are likely to be difficult to manage effectively. Such risks and hazards should, where possible and reasonably practicable, be eliminated or minimised during the design stage. Designers should confirm that the CDM co-ordinator has been consulted of the risks and hazards identified in the AIP.

⁶ e.g. LM1 Loading

⁷ e.g. SV model vehicle

⁸ e.g. SOV model vehicle and/or individual vehicle which includes the following information as applicable:

- a) Gross weight of the vehicle in tonnes and vehicle nos.
- b) Axle load and spacing (longitudinally and transversely)
- c) Air cushion in tonnes over area applied in m x m
- d) Single or twin tyres and wheel contact areas

When the results of the ground investigation become available, an addendum to the AIP, covering Section 6, shall be submitted to the TAA. The addendum shall have its own Sections 8, 9 and 10 to provide a list of drawings, documents and signatures

⁹ Include, without limitation:

¹⁰ Include, without limitation:

a) Technical Approval Schedule (TAS)

b) General Arrangement Drawing

¹¹ CEng, MICE, MStructE or equivalent.

AIP is valid for three years after the date of agreement by the TAA. If the construction has not yet

¹² commenced within this period, the AIP shall be re-submitted to the TAA for review



Structure Design Certificate

SD5

continued

APPLICATION FOR APPROVAL IN PRINCIPLE

Name of Project/Scheme

Name of Structure

Designer

10 Conditions



Structure Design Certificate

SD6

FORM OF CERTIFICATE FOR CONSTRUCTION COMPLIANCE.
(REQUIRED WHEN STRUCTURE TO BE ADOPTED BY GLASGOW CITY COUNCIL)

Name of Project/Scheme

Name of Structure

Designer

1 We certify that

(name of structure)

a Has been constructed, commissioned and tested in accordance with :

(i) The following Standards; or The Approval in principle dated:

(date)¹

(ii) The Design/Check Certificates dated:

(date)

or

The construction drawings and bar bending schedules listed within the Design and Check Certificates dated:

(date)²

(iii) The Specification for Highway Works
(edition, date)

b The construction of these works has been accurately translated into As Constructed drawings. The unique numbers of these Drawings and Schedules are:

Signed

Name

Position Held Contractor's Representative

Engineering Qualifications³



Structure Design Certificate

SD6

FORM OF CERTIFICATE FOR CONSTRUCTION COMPLIANCE.
(REQUIRED WHEN STRUCTURE TO BE ADOPTED BY GLASGOW CITY COUNCIL)

continued

Name of Project/Scheme

Name of Structure

Designer

1 b

Signed

Name

Position Held⁴

Name of Organisation

Date

2 We certify reasonable professional skill and care has been used in examining the construction of:

(name of structure)

and that

a. It has been constructed, commissioned and tested¹ in accordance with:

(i) The Approval in principle dated: (date)

(ii) The Design/Check Certificates dated: (date)²

(iii) The Specification for Highway Works
(edition, date)

b. The construction of the works has been accurately translated into As Constructed drawings scheduled in 1b.

Signed

Name

Position Held

Name of Organisation⁵

Date



Structure Design Certificate

SD6

FORM OF CERTIFICATE FOR CONSTRUCTION COMPLIANCE.
(REQUIRED WHEN STRUCTURE TO BE ADOPTED BY GLASGOW CITY COUNCIL)

continued

Name of Project/Scheme	<input type="text"/>
Name of Structure	<input type="text"/>
Designer	<input type="text"/>

3 The certificate is accepted by the Technical Approval Authority (TAA)

Signed	<input type="text"/>
Name	<input type="text"/>
Position Held	<input type="text"/>
Engineering Qualifications ³	<input type="text"/>
For TAA	<input type="text"/>
Date	<input type="text"/>

Notes

- ¹ Used for Category 0 only.
- ² Applies where the contractor is not part of the design organisation.
- ³ CEng, MICE, MIStructE or equivalent.
- ⁴ A Principal of the Contractor or organisation responsible for the construction.
- ⁵ A Principal of the Works Examiner.

APPENDIX 2:

Construction Consent Guidance *for* New Residential Streets
(Construction Consent Proformas)



Construction Consent Application

CC1

APPLICATION TO ROADS AUTHORITY FOR CONSTRUCTION CONSENT TO CONSTRUCT OR EXTEND A ROAD

To be completed in accordance with the provisions of the Council's (as Local Roads Authority) standards by any person wishing to construct or extend a road irrespective of whether or not it is to be subsequently maintained by the Roads Authority

1 I/We (insert full name and address of applicant)

apply under Section 21 of the Roads (Scotland) Act 1984 for Construction Consent for the (state nature of operation, e.g. new construction or extension of existing road)

at (insert address of site)

of which I am/we* are (state interest in land, e.g. owner, tenant)

all in conformity with the plans, detailed drawings and specification submitted herewith and doquetted and signed as relative herto.

2 I/we* hereby declare that no other party has an interest in the land. The attached form CC2 details all other parties having an interest in the land*

Signed (Applicant)

Name

Date

* delete as appropriate

For Office Use Only

Reference Number	<div style="border: 1px solid black; width: 250px; height: 20px;"></div>
Received	<div style="border: 1px solid black; width: 250px; height: 20px;"></div>
Objections	<div style="border: 1px solid black; width: 250px; height: 20px;"></div>
Objections Cleared	<div style="border: 1px solid black; width: 250px; height: 20px;"></div>
CC Granted	<div style="border: 1px solid black; width: 250px; height: 20px;"></div>

Work Commenced	<div style="border: 1px solid black; width: 250px; height: 20px;"></div>
Work Completed	<div style="border: 1px solid black; width: 250px; height: 20px;"></div>
Start of Maintenance	<div style="border: 1px solid black; width: 250px; height: 20px;"></div>
Adopted as Public	<div style="border: 1px solid black; width: 250px; height: 20px;"></div>



Docquets of Service

CC2

Reference Number:

For office use only

1 I/We certify that on *(insert date)*

day of

20

a notice of the lodging of this application has been served by the applicant upon the undernoted proprietors being the owners of all lands or heritages fronting, abutting or comprehended in the proposed new road or extension of the existing road and further certify that such notice contained an intimation that plans and other relevant particulars could be examined at the office of the Roads Authority located at

and that objections to the application should be lodged with the Roads Authority within Twenty-eight days from the date of the notice.

Signed
(Applicant or Agent)

Name

Address

Date

List of proprietors referred to

Name

Address



Notice of Service

CC3

Reference Number:

For office use only

1 Notice for service on owner of land fronting, abutting or comprehending in new road or extension of existing road

Roads (Scotland) Act 1984 Notice under Section 21 (2) of application for Construction Consent

Proposed Road Construction at

a

Take notice that application is being made to

b

by

c

for construction consent by

d

If you wish to make representations about the application you should make them in writing not later than

e

to the Roads Authority office

f

Signed

On behalf of

Date

Notes

- a *Insert address or location of proposed road construction*
- b *Insert name of authority*
- c *Insert name of applicant*
- d *Insert description of proposed road construction*
- e *Insert date 28 days later than the date on which the notice is served*
- f *Insert address of Roads Authority office at which the application is being lodged*



Construction Consent Application

CC4

Reference Number:

For office use only

CONSTRUCTION CONSENT TO CONSTRUCT OR EXTEND A ROAD

Construction Consent by

(insert name of authority) (hereinafter referred to as the "the Council")

as to the construction/extension of roads in connection with the

The Council, acting under and by virtue of Section 21 of the Roads (Scotland) Act 1984 hereby grant construction consent as follows

The Council Grant authority to

(insert name and address of the applicant)

for roadworks in connection with

(insert name and address of the site)

In accordance with

- a the plans submitted to and approved by the Council which plans are docqueted and signed by the Roads Authority as relative hereto
- b the particulars set forth in the schedule annexed and signed as relative hereto and
- c the relative provisions of the said Roads (Scotland) Act 1984, on the following condition(s):

i) All works are to be completed within a period of years months from the date of this consent.

ii)

iii)

iv)

Signed
(Roads Authority)

Date

Schedule referred to:

Road Description *(this may be done by reference to plan)*

Length



Footpath Agreement

CC5

Reference Number:

For office use only

AGREEMENT TO TAKE OVER FOOTPATH(S) ASSOCIATED WITH DEVELOPMENT

(to be completed only in respect to footpath(s) which will subsequently be maintained by the Roads Authority)

Agreement in terms of Section 18 of the Roads (Scotland) Act 1984 between ¹

(hereinafter referred to as "the Council") and ²

of ³

(hereinafter referred to as "the developer")

Whereby the footpath(s) constructed by the Developer in accordance with

Construction Number:

granted by the Council on ⁴

as set forth in the Schedule annexed and signed as relative hereto will, following their satisfactory completion, be added to the Council's list of public roads.

Provided that, should the developer fail to complete the said footpath(s) to the satisfaction of the Council within a period of ⁵

from the date of this Agreement, the Council may itself complete the footpath(s) and recover from the Developer such expenses as are reasonably incurred in so doing.

Signed
(Roads Authority)

Date

Signed
(Developer)

Date

Schedule referred to:

Footpath Description *(this may be done by reference to plan)*

Length

- Notes**
- ¹ *Insert name of authority*
 - ² *Insert name of applicant*
 - ³ *Insert address of applicant*
 - ⁴ *Insert date construction consent granted*
 - ⁵ *Insert period for completion*



Adoption Certificate

CC6

APPLICATION BY A DEVELOPER FOR THE ADDITION OF ROAD(S) AND/OR FOOTPATH(S) TO THE ROADS AUTHORITY'S LIST OF PUBLIC ROADS

I/We (insert name of applicant)

of (insert address of applicant)

apply

1* under section 16(2) of the Roads (Scotland) Act 1984, in respect of the road(s) listed in Schedule A annexed and constructed in accordance with

Construction Number:

granted to me/us* on

and/or

2* under section 18(1) of the Roads (Scotland) Act 1984, in respect of the footpath(s) listed in Schedule B and the Agreement annexed and constructed in accordance with

Agreement Number:

dated

for the addition to the Roads Authority's list of public roads of the said road(s)* and/or footpath(s)* all as shown in colour on the plan(s)* submitted herewith and docqueted and signed as relative hereto

Signed
(Applicant)

Date

* delete as appropriate

Schedule A referred to:

Road Description (this may be done in reference to a plan)

Length

Schedule B referred to:

Footpath Description (this may be done in reference to a plan)

Length

For Office Use Only

Reference Number
Received

Adoption Inspection
Added to list



Road Bond

CC7

Reference Number:

For office use only

We,

*Name of
Bank etc.
Guarantee
Finance*

CONSIDERING THAT

Developer

has been granted Construction Consent Ref

No. Dated

by the

(enter Council Name) (hereinafter referred to as the Council)

as local Roads Authority in terms of Section 21 of the Roads (Scotland) Act, 1984 for the construction of a private road(s) or part thereof in connection with

Development

all as is more fully detailed in the said Construction Consent and the plans and Schedule relative thereto, considering further that the estimated cost of constructing the said private road(s) or part thereof in accordance with the said Construction Consent and others is

Sum of Money

and that the said *(Developer)*

has requested us to grant security for such sum to the said Council by means of a bond in terms of the Security for Private Works *(Scotland)* Regulations 1985, do hereby as cautioners and sureties bind and oblige ourselves and our successors to pay to the said Council and its successors or assignees, on receiving from the said Council a demand in writing, such sum not exceeding

Sum of Money

which the said Council states in the said demand to be the costs incurred by it in construction, or rectifying defects, in the said private road(s) or part thereof in accordance with Regulation 13 of the said 1985 Regulations: and we consent to the registration hereof for preservation and execution: **IN WITNESS WHEREOF**



Instructions;

Construction of private road(s) shall not commence until you have provided the Council with financial security for an amount of

£

Being sufficient to meet the cost of construction/completing the construction of the road(s) in accordance with the Construction Consent, in terms of the "Security for Private Roadworks (Scotland) Amendment Regulations 1998".

The Road Bond should be signed by an authorised signatory on behalf of the guarantor (*who is normally the bank, building society or insurance society*) and the signature should be witnessed by two witnesses. Please note that you should advise me of the date that the bond was signed.

To enable you to lodge your security I enclose the following documents.

- a. One copy of form CC7 to be completed and returned to this office with your security.
- b. One copy of the "Cautionary Obligation" in favour of

(enter Council name)

If you intend to lodge your security in the form of a bond you may use this document.

- c. One copy of "Directions for Signing Deeds" incorporation a signing schedule which you are required to complete and return with the bond.
- d. One copy of guidance note for developers.



Roads (Scotland) Act 1984

Security for Private Road Works (Scotland) Amendment Regulations 1998

Guidance notes for developers

In terms of Section 17 of the Roads (Scotland) Act, 1984 and the Security for Private Roadworks (Scotland) Amendment Regulations 1998 you, as a developer, are required to make financial provision with the Council, as Local Roads Authority in order to safeguard the completion of housing development roads which are the subject of a Construction Consent. Such provision, as required by the Regulations, may take the form of a Road Bond or deposit and this will serve to protect prospective house purchasers from having to bring incomplete roads up to adoptable standards.

You are unable to commence building works adjacent to any road permitted by a Construction Consent until you have met the requirements of the above regulations which came into effect on 1st April 1986.

In terms of Regulation 6, the security shall be an amount sufficient to meet the cost of constructing or completing the construction of the said roads. Also to calculate the amount of that security by objective estimating and negotiation.

In terms of Regulation 5, that security shall be either a bond in favour of this Council or a cash deposit of a sum equating to that security. Such bond or deposit shall be lodged with the Council at the office where your construction consent was issued.

In terms of Regulation 16, any person who carries out building works in contravention of these regulations shall be guilty of an offence. It would, therefore, be in your interests to make early contact with the Local Roads Authority, who will be able to advise you fully on these procedures. Copies of form CC7 should be completed and returned with the security. Copies of the regulations are also available for inspection at the office of the Local Roads Authority.



Road Bond

CC7

DIRECTIONS FOR SIGNING DEEDS

Before signing, please read carefully

Every Party to the deed must sign on the *(insert page)* including the inventory and plan, if any, with his or her usual signature where his or her initial are marked in pencil.

Each Witness to the execution of the deed requires to sign on the *(insert page)* at the pencil mark X, adding after his or her signature the word "Witness". Two witnesses are required to the signature of each party, but provided parties sign at the same time, the same persons may witness all the signatures and only require to sign once.

The witnesses must be above fourteen years of age. They should know the parties whose signatures they are witnessing personally or at least have credible information as to their identity. No person interested in the deed should act as a witness, and one spouse should not be a witness to signature the other.

The parties must not insert any blanks in the Deed.

When the Deed is signed the subjoined Schedule should be filled up in BLOCK LETTERS and returned along with the Deed. The schedule may be filled up by anyone. A female witness should state in the Schedule whether she should be styled Mrs, Ms or Miss.

SCHEDULE to be filled up and returned

Name of Party Signing	Place where Signed	Date of Signing	Full Name <i>(including middle Names, if any)</i> . Occupation, and Address of First Witness	Full Name <i>(including middle Names, if any)</i> . Occupation, and Address of Second Witness



Carriageway Design Certificate

CC8

Reference Number:

For office use only

Project

Description of roads

Location and other details

Soils - CBR

%

Chainage Limits

to

Source document(s)

date

Traffic Information - ADT

at opening
year

%
commercial

Source document(s)

date

Design 1 - way AADT
commercial

initial

final

Life

years

Damage Factor

n/2

MSA

(Cum total)

Technical reference(s)

Thickness of layers in possible construction - (Clause no) mm

Surface course				
Binder course				
Base				
Sub-base				
Capping layer				
Total				

Designed by

Date

Checked by

Date



Construction Consent Process Checklist

CC9

Reference Number:

For office use only

Developer

Scheme

Submitted Drawings



Construction Consent Process Checklist

CC9

Reference Number:

For office use only

	Yes	No
Design Audit (including Stage 2 Road Safety Audit) supplied?		
Ground Investigation and Geotechnical Design Reports supplied?		
Do reports specifically relate to the proposed roads?		
Have the Structures Technical Approvals Procedure being completed?		
Street lighting and signing proposals supplied?		
Drainage / SUDS schedule supplied?		
Construction Consent Application (CC1) Form submitted?		
Docquets of Service (CC2) Form supplied?		
List of individual drawings submitted?		
Location Plan supplied?		
Layout Plan supplied?		
Longitudinal Section supplied?		
Cross Section supplied?		
Road Bond (CC7) Form supplied?		
Carriageway Design Certificate (CC8) Form submitted?		

APPENDIX 3:

SUDS & Flood Management

Introduction

SUDS and a Drainage Impact Assessment (DIA) are required for residential development consisting of more than one unit; a Flood Risk Assessment is required where there is a material flood risk. Developers are advised to view the following Council policies and guidance:

ENV 4 Sustainable Drainage Systems (SUDS)

ENV 5 Flood Prevention and Land Drainage

Flood Risk Assessment and Drainage Impact Assessment: Planning Guidance for Developers

Glasgow City Council and Scottish Water (*not yet signed*) legal agreements for shared surface water drainage systems.

SUDS Details

Typical Section 7 layouts of possible shared surface water systems that would be acceptable to both Scottish Water and the Council. These layouts are not prescriptive but do give a starting point for discussion.

Details of SUDS features with an impervious lining which should be registered on the Symology system. Where impervious membranes are utilised care must be taken to ensure that the subsequent introduction of other infrastructure does not puncture the membrane, i.e. service connections, trees, lighting columns etc

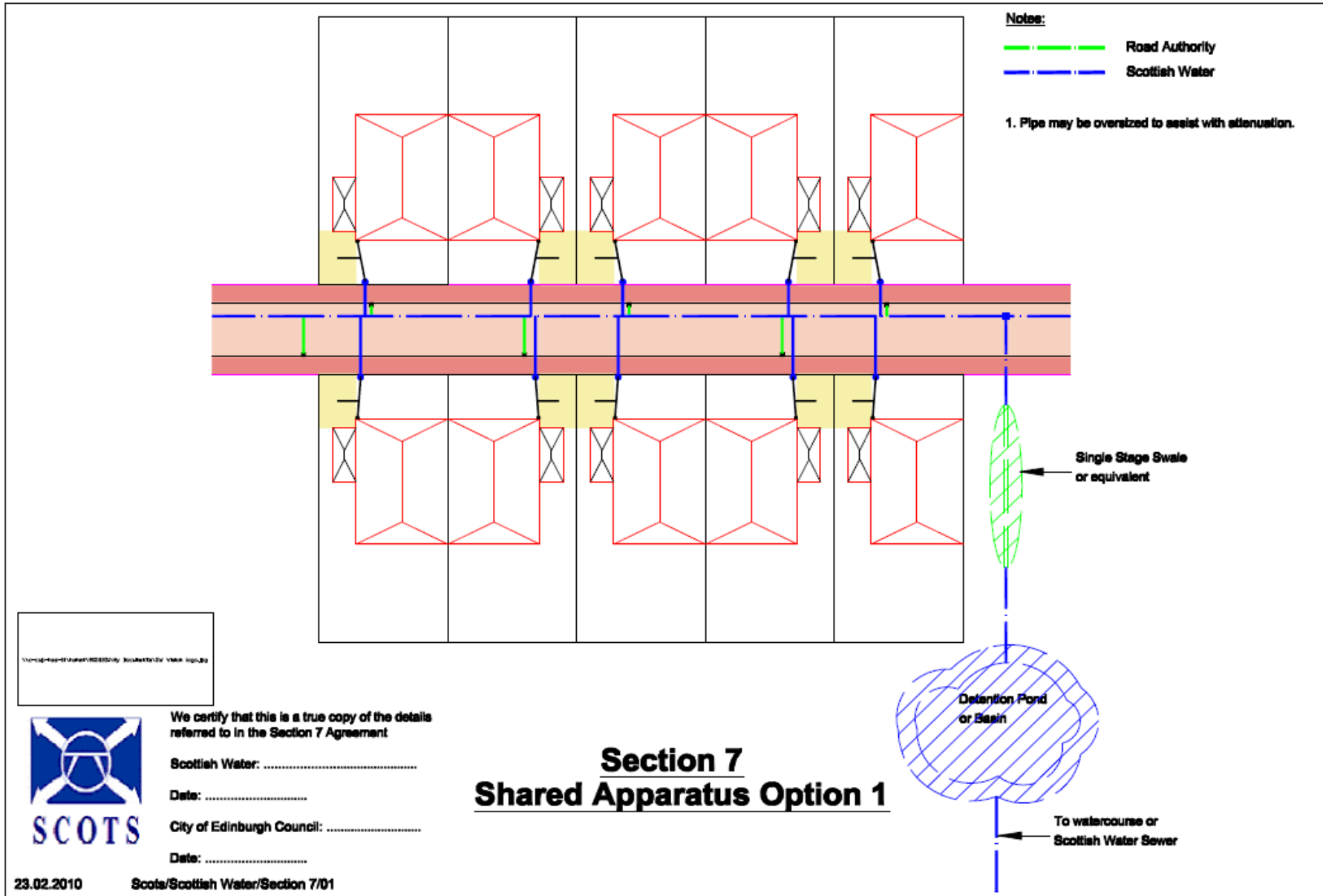
It is anticipated that with the predominate clay soils that are typically found in Glasgow, infiltration to the ground will be unlikely and an impervious membrane will be required.

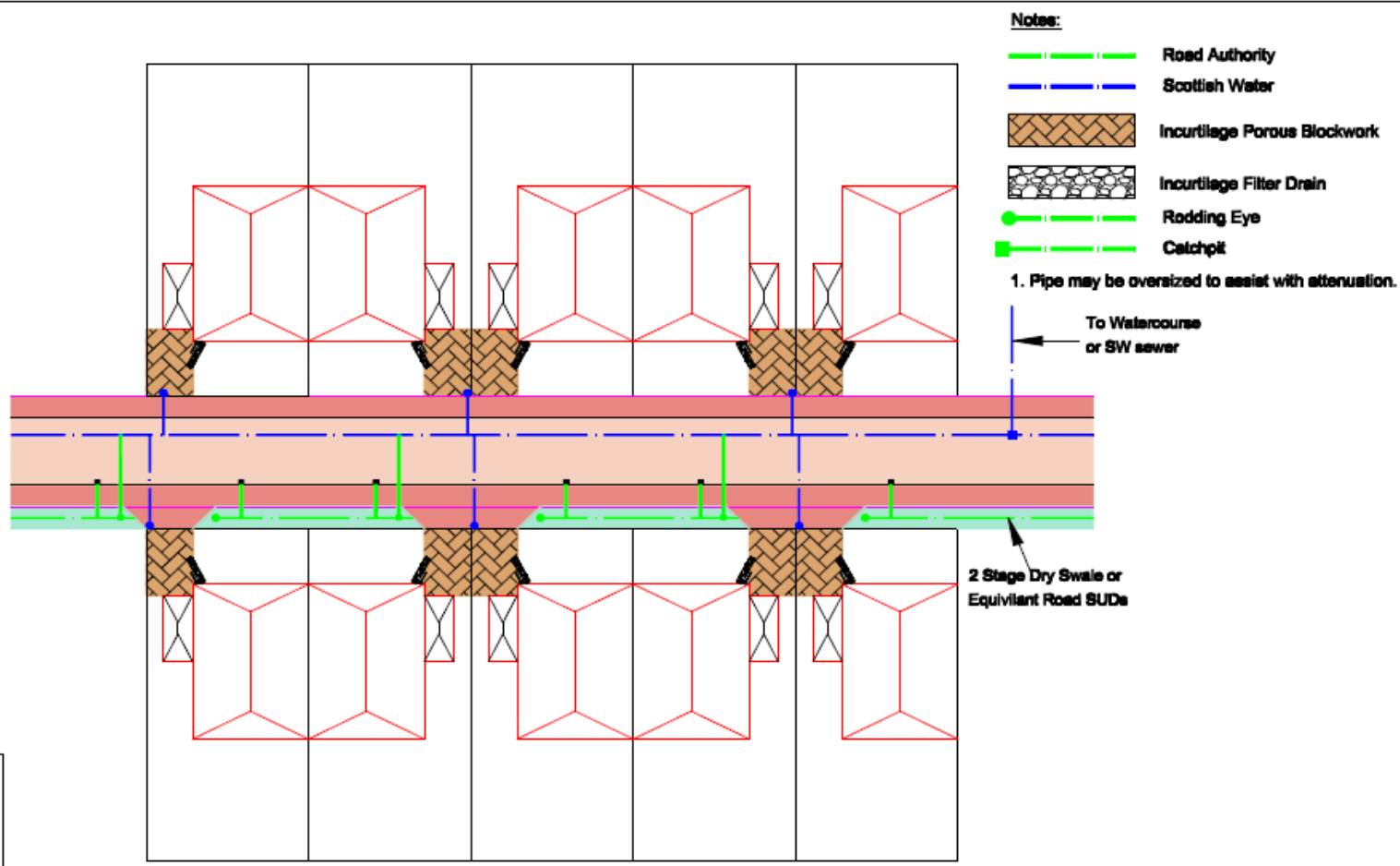
Bio-retention details as per CIRIA C697 will be considered, proprietary bio retention systems will be considered in it is confirmed by SEPA that they provide a level of treatment. Any such schemes will need to be considered alongside the landscape design.

Supporting capacity calculations will be required for all SUDS, to demonstrate that both the appropriate treatment and attenuation is being provided.

The following three layouts following indicate possible methods for the Council to share a surface water drainage system with Scottish Water under a section 7, of the 1968 Sewerage (Scotland) Act, agreement.

For private new build development option 1 is the preferred solution as it removes the Local Authority concern of lack of maintenance and subsequent consequences of privately maintained in curtilage SUDS features.





Version: 02/2010/00000000/00000000/00000000/00000000



We certify that this is a true copy of the details referred to in the Section 7 Agreement

Scottish Water:

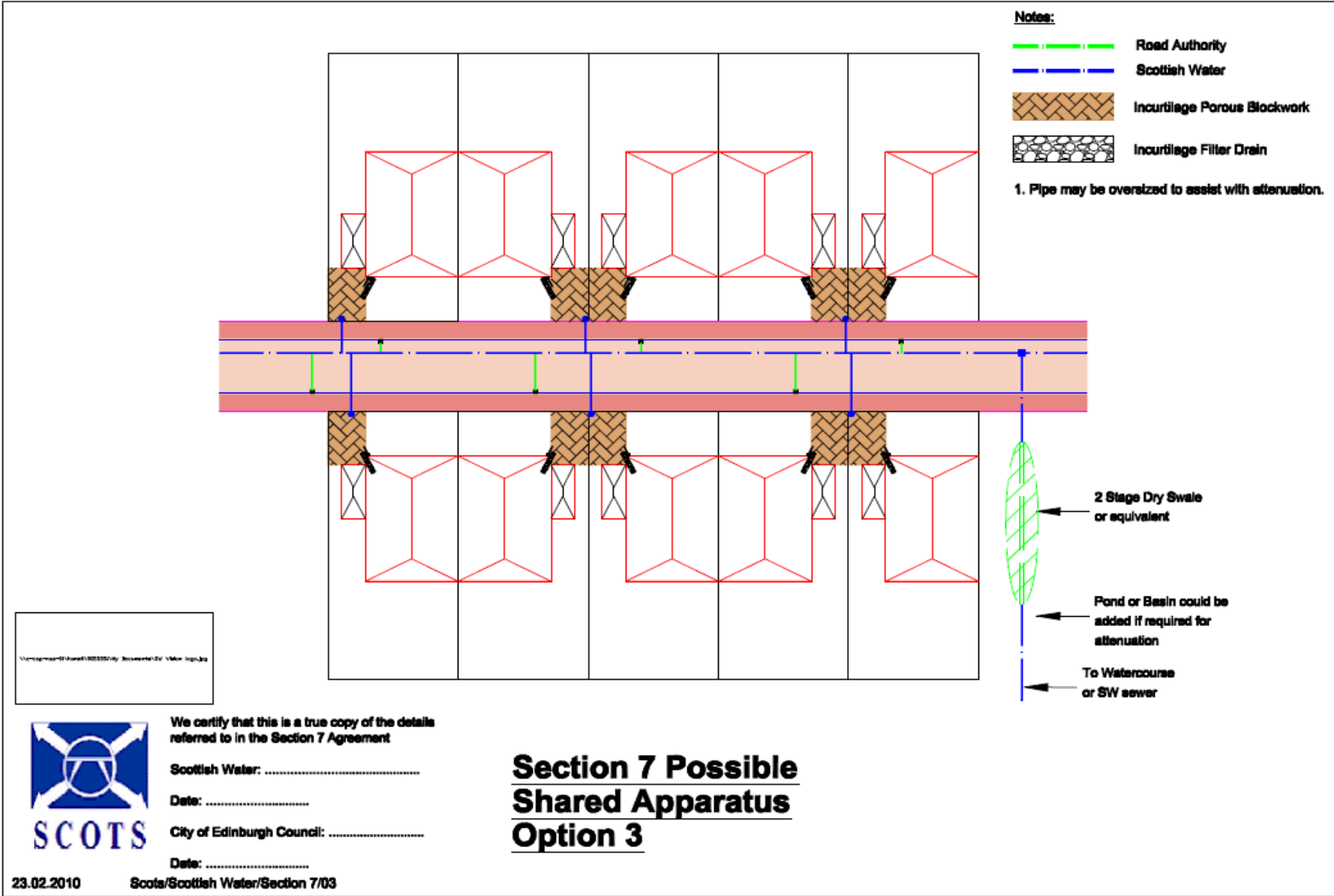
Date:

City of Edinburgh Council:

Date:

Section 7 Possible Shared Apparatus Option 2

23.02.2010 Scots/Scottish Water/Section 7/02



APPENDIX 4:

Guidance on Street Tree Details, Specifications & Standards

1. INTRODUCTION

It is the aim of this appendix to guide and advise on the planting of street trees in new residential developments. It covers aspects of tree selection, planting systems and onward maintenance deemed appropriate for a variety of settings.

Whenever possible, trees should be planted in free draining, uncontained tree pits as this creates the best environment for establishment and the ongoing health of the tree. In locations where this could compromise the integrity of the street infrastructure (including utilities), it will be necessary to restrict root growth through containing the root zone. In such locations, it is vital that the container provides an adequate volume for root growth. It is noted that root growth is rarely symmetrical and an irregular shape of container can still provide healthy growing conditions.

2. TREES IN PAVED AREAS AND ALONG ROADSIDES

2.1 Tree Pit and Planting Systems

This guide is aiming to take tree planting in the direction of a tree planting specification that moves away from or avoids the using root restricting measures that have traditionally been employed when planting

trees in urban areas; adjacent to roads and footways or within expansive areas of hard standing. It is many of these established practices of root growth restriction that lead directly shortening the life expectancy of a tree.

Therefore, to increase and extend the life expectancy of a street tree it is crucial that the volume of potential root growth is maximised. The aim should be to provide as much rooting area as possible: proprietary 'cell' systems are available that can assist in achieving this in urban areas.

This desire to provide ample volume for tree development can be seen in that larger growing tree species should ideally be provided with 20m³ growing media capable of supporting a tree however, compacted subsoil below the surrounding paved areas, road pavements or footways is not deemed as an exploitable growing media.

It is recognised that providing this volume of exploitable growing material may be difficult to achieve in the confines of the urban and road side environment unless the trees roots can naturally grow to or are encouraged to grow into open areas of adjacent soft landscape.

The exploitable rooting, grow-zone beyond the initial tree pit does not have to be geometrically formed, it is acceptable for

this zone to be designed to fit into the development and the conditions created. Increasing the depth of the pit can be advantageous but beyond 900mm of growing media the benefit is reduced and therefore of little use beyond pit drainage installation or natural filtration.

Where possible the construction of planting trenches, rather than a single tree pit is advantageous particularly when the length and width of road side verge is incorporated along with the use of root barriers to prevent undesirable root growth under the carriageway or footway. However, where this is not achievable then negotiation on specific site constraints would be required and may produce an acceptable solution to allow for the planting of trees and particularly if there are utilities or other elements present.

The use of proprietary root support systems to construct the exploitable rooting zone or utilised to form the pit structure (along with root management systems such as barriers) is to be encouraged for trees adjacent to roads or those located in areas of hardstanding e.g. expanses of paving or car parks.

Trees immediately adjacent to SUDS features such as swales, ponds or basins will require root containment.

It is recommended that any system and components selected along with any conceptual installation designs should be submitted and agreed at the earliest opportunity with the Council for agreement through Land and Environmental Services.

Therefore, in summary the planting of trees, numbers and locations is controlled by the ability to provide an ample rooting zone to assist in the establishment and continuing development of the trees.

Small: 10m³ minimum

Medium: 15m³

Large: 20m³ upwards

2.2 Utilities and How to Accommodate Them

Tree locations, service runs and proprietary systems should enable services to be accommodated and accessed.

2.3 Growing Media / Soil

Due to previous experience and a high mortality rate soil types should be 70% soil and 30% sand to alleviate the use of Amsterdam soil. Reference should be made to **BS 3882: 1994** for quality of top soil and pit soil if required.

2.4 Irrigation and Aeration

Irrigation is essential in paved areas particularly in a sealed system that does not allow for natural surface filtration or percolation of ground water or were a planting system utilising a 'cell' construction and root barriers are employed. Therefore, any proposed planting system must allow for a water inlet and subterranean either perforated pipe.

Although it may be desirable to allow surface water runoff to be directed into the planting pit / planting area as part of a none formal SUDS \ storm water management system the recognised damage that road salts have on tree growth can not go unchecked and therefore consideration for how these salts will be leached through the growing medium need to be considered.

Aeration is often overlooked as being essential for healthy tree establishment and growth but the need for gaseous exchange in the growing media and at surface level is crucial. It is at this point that consideration should be given to providing an air space between the soil and the surrounding hardstanding and therefore the use of traditional grates and proprietary surface treatments that do not inhibit gaseous exchange are the preferred option.

2.5 Drainage

Pit drainage is important to prevent water logging and assist the removal of salts and hydrocarbons that may wash into any root zone through surface runoff or percolation and also for the removal of VOC's (volatile organic compounds) that may naturally build up.

2.6 Tree Support

Underground support systems, proprietary and accepted industry standard methods: The selected method should be submitted and always obtain approval before commencing final specification.

2.7 Surface Treatments (Grates / Resin Bonded Gravels / Paving)

The surface treatment to the immediate surround of the tree: Over the rootball zone should always be accessible and a wide range of proprietary systems are available however, bespoke designed should be avoided unless agreed with the Council.

The proposed system must allow for an ample void between the surface of the growing media and the base of the cover or grate etc to allow for gaseous exchange to occur. It should also be noted that a similar void should be provided for the canopy area at time of planting.

3. TREES IN SOFT LANDSCAPE AREAS AND OPEN SPACE

3.1 Tree Pit and Planting Systems

Standard planting details in relation to BS 3882: 1994 and industry standard practices or 1.5 times larger than the tree roots, particularly with bare root specimens.

3.2 Soil, Growing Media

Essential soil tests done on existing and imported soils to ensure they are conducive to tree establishment and growth, the use of soil ameliorants, proprietary planting additives, composts and fertilisers are to be utilised if tests results indicate deficiencies. Refer to **BS 3882: 1994** for quality of top soil and pit soil if required.

3.3 Drainage

Surrounding soil conditions will have a bearing on drainage as a compacted soil may lead to the tree pit becoming a sump for surface and ground water increasing the mortality rate of the trees. Therefore, avoid planting trees in low lying areas that may prove prone to water logging.

3.4 Tree Support

Industry standard and best practise techniques for tree support (BS 3882: 1994)

i.e. short single or short double stakes with cross bar. Ties are subject to preference by contractors.

4. TREE SELECTIONS

4.1 Tree Genera and Species Unsuitable for Urban Areas

Tree species that are considered undesirable and the reason for their exclusion within a built, urban environment are listed below.

Populus spp (all) (surface rooting and suckering habit)

Salix spp (surface rooting)

Prunus spp and cultivars in certain locations such as hard standing (surface rooting and suckering habit)

Tillia spp and cultivars (ensure species/ hybrids/ cultivars are not subject to aphid infestation and therefore prone to honey dew production are selected in urban areas, car parks or pavements).

Acer pseudoplatanoides and cultivars (as per **Tillia** are prone to aphid infestation and therefore to honey dew can is an issue)

Aesculus hippocastanum (not adjacent to roads due to large dense crown, prone to shedding branches when under stress, conkers in built up areas and roads, although sterile varieties are available)

Malus spp/ cultivars (larger fruit forming varieties to be avoided in paved areas)

Where restrictions exist in relation to the amount of space available in terms of the breadth of the tree canopy, there would be a preference for the selection of columnar or fastigiate forms, and a presumption against the selection of trees requiring formative pruning in order to maintain a box or pleached character.

The selection of species exhibiting a comparatively open pattern of canopy growth may be of assistance where street trees might otherwise shade properties or gardens.

4.2 Selecting Species to Utilise

When selecting a palette of species to incorporate in any proposed schemes then a bias in the favour of native species or selected forms of native species are deemed more suitable, particularly in low rise residential developments. The use of non-native species is not to be discounted as many species have attributes that favour their use in the harsher urban environment

where planting in hardstanding areas may be required.

4.3 Tree Grow Potential and Stature

In most situations there should be a presumption for taller growing species as these provide the most benefit to the wider environment

4.4 Meeting biodiversity criteria

The use of native species will promote local natural biodiversity however; the principal of diversification can also be used to increase age and species diversification to steer away from monoclonal planting which will reduce pests and disease issues.

5. THE DESIGN, INSPECTION AND FUTURE MAINTENANCE OF PLANTINGS

5.1 Maintenance and Management Proposal

The following requirements would apply for any street trees submitted for adoption by Glasgow City Council.

The developer is to provide a management plan for the life cycle of any tree species and a maintenance regime supporting the first 5 years of establishment/ replacement, during which time the trees would remain the responsibility of the developer.

All information on technical detailing should be submitted based on an individual, site specific basis before any commitments from the Council can be made in relation to the formal adoption of trees.

5.2 Inspection

An agreement should be made between relevant parties to undertake site inspection visits at the following milestones, by providing 24 hours notice to the Council:

- On developments where 50 or more trees are proposed for adoption, the selection of the planting stock at the nursery would form the first inspection
- The excavation/construction of planting pits and rooting zones
- Installation of underground equipment
- The planting of trees
- The completion of any surrounding hardscape works to ensure works do not have a detrimental affect on pervious tree planting or the future establishment of the trees
- The conclusion of the developers 5 year maintenance and defects liability period for the trees, at which point records of each maintenance visit undertake by the contractor are to be provided