Approaching Inverness

A design guide to help improve the main approaches to Inverness

The Highland Council
Comhairle na Gàidhealtachd

Design Guide

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INTRODUCTION

This Design Guide aims to enhance the 'sense of place' experienced in the key entrances to Inverness, to reflect the status of the city as the capital of the Highlands - a dynamic, progressive and growing city that cares about how it is perceived by visitors, residents and business alike.

Aims

This Design Guide is intended to assist developers and professionals involved in the design of new developments & road improvements, and to guide householders planning frontage alterations, to ensure that their work maintains and enhances the character and quality of the main public approaches to the City of Inverness.

This is non-statutory planning guidance which means it can be taken into account in the determination of planning applications. It can also guide proposals by the Council that affect the various approaches to the City, including any changes to the road carriageway, walking and cycling space, surrounding landscaping and signage.

Note that whilst this guidance seeks to improve the quality of design, it does not seek to prevent development from taking place which meets the needs of local people and businesses.

Background

How the approaches to Inverness affects the perception of the city was recognised by The Highland Council in 2014 when they commissioned a strategy[1] to assist the Council to improve the quality, character and impact of the entrances to, and routes through, the City of Inverness.

The aim of The Highland Council through the Approaching Inverness Strategy is to enhance the 'sense of place' experienced on the main road corridors into the City, such as Longman Road, Millburn Road and Glenurquhart Road so that they reflect the status of the city and provide an attractive welcoming environment to visitors, residents and businesses alike.

This Design Guide flows out of the Approaching Inverness Strategy

1 Approaching Inverness, A Strategy & Design Guide, WSP and horner + maclennan landscape architects, 2016.

Planning Policy

This guidance has been developed to accompany and support the approach to Sustainability and Design contained within the Highland wide Local Development Plan (HwLDP). Specifically, this guidance relates to HwLDP Policy 28 Sustainable Design and Policy 29 Design Quality & Place-Making. It also relates to Policy 4 Longman Core Development, providing interim guidance to complement the existing Longman Core Development Brief (2006) and ahead of the publication of the update of this brief.

This Guide should be read in conjunction with all the other policies contained within the Plan, as well as the Council's complementary Supplementary Guidance: Housing in the Countryside - Siting and Design Guidance.

Document Structure

The document is set out in three main parts:

- Strategy Framework, summarising how the Council intends to achieve its ambitions, the strategy focus and the policy context for the Design Guidance;
- Design Guidance, to steer future development in the key corridors identified in order to maintain and enhance or, where necessary, create, an environment worthy of the city of Inverness; and
- Details and materials: a palette of materials, design details and plant species which are typical of Inverness, to supplement the Design Guidance

This document was adopted as non-statutory supplementary guidance by The Highland Council on 1 December 2016

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Strategy Framework

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Strategy Framework and Focus

The Highland Council has recognised that the quality of the approach to Inverness is an important factor in how the city is perceived. The Council has therefore committed to reviewing the quality and condition of the approaches to the City of Inverness with the aim of improving the experience of arriving at the city which is the capital of the Highlands.

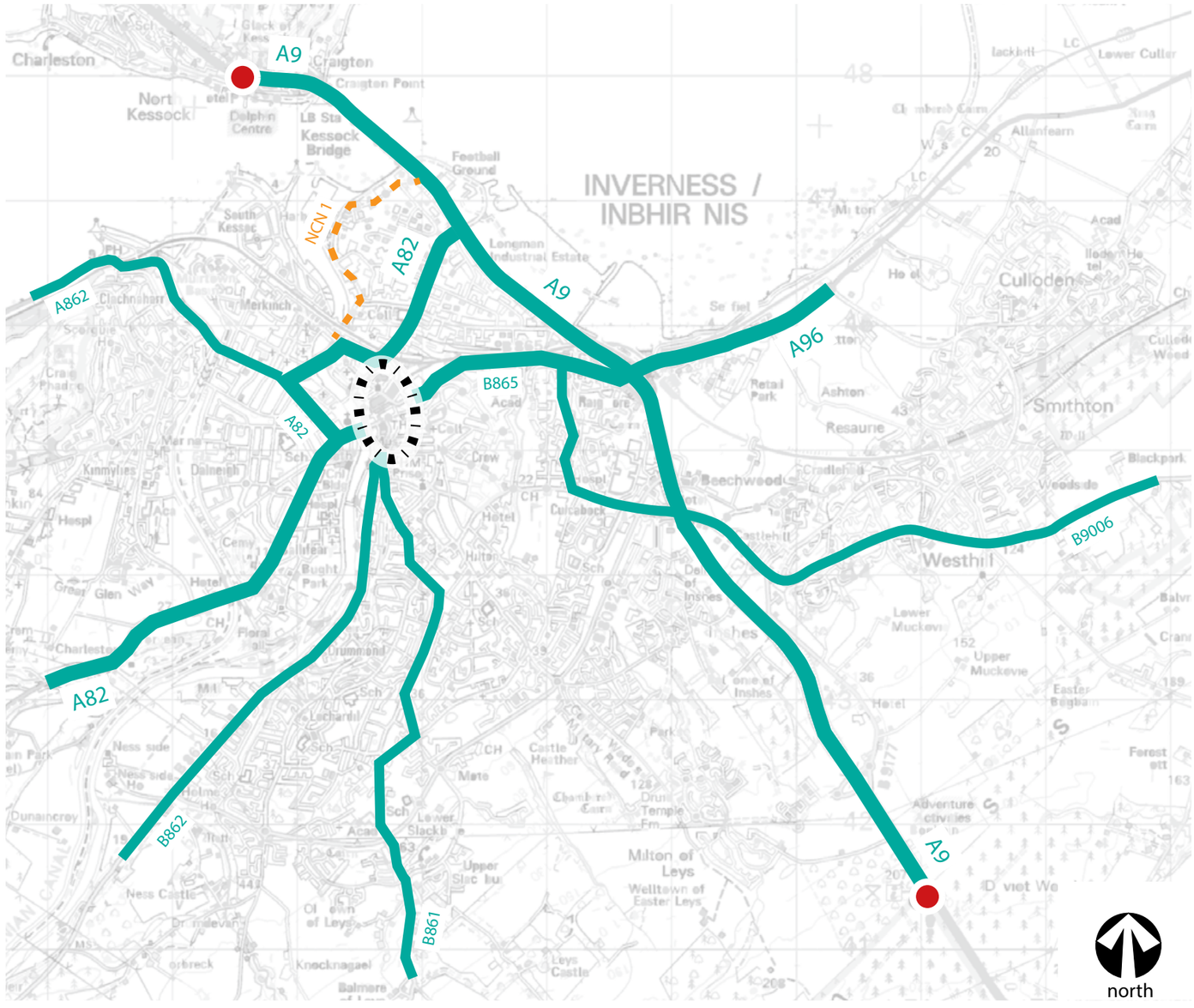
The Approaching Inverness Strategy, from which this Guide flows, found that it is really only the close approaches the city on the A9, then the Longman Road corridor that gives a significantly negative impression to large numbers of people along with, to a lesser degree, Millburn Road and parts of Telford Street. Most of the routes into the city through the suburbs are very pleasant.

The Approaching Inverness strategy noted that are two primary ways in which the quality of the approaches to Inverness can be improved:

- Design guidance and planning control - influencing or controlling the design quality of future development; and
- Direct intervention – undertaking environmental improvement projects.

This Guide is the Design Guidance part of the strategy. Separately, The Highland Council is undertaking pilot projects and working with the private sector to undertake environmental improvements.

The strategy and this Guide focusses on the main road approaches to the city, as shown.



City centre *(approach routes terminate)*
Main approaches
Secondary approaches
Cycle route
Existing tourist information points

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Policy Context

Highland-wide Local Development Plan (HwLDP)

This plan was adopted in April 2012, setting out the framework for development through until 2032. The HwLDP, which is in the process of being updated, will be supported by three area plans which are in various stages of development.

By 2030, Highland will be one of Europe's leading regions, with sustainable communities; where population growth, economic development and safeguarding the environment are balanced. The overall aspiration is to have built a fairer and healthier Highlands. Inverness is considered in the HwLDP as one part of the Inner Moray Firth; for which the key goals for 2030 are:

- Increased employment, people and facilities;
- Growing City;
- Safeguarded and enhanced special places;
- Green network;
- More efficient forms of travel;
- Resolved infrastructure constraints;
- Diversified economy;
- Regenerated and renewed.

The spatial strategy for Inverness included in the HwLDP prioritises transport improvements in the inner-city and at various locations in the wider area; as well as developing a number of expansion sites. The HwLDP will be supported by the Inner Moray Firth area Local Development Plan which is currently under examination by the Scottish Ministers. Supplementary Planning Guidance has been adopted which provides specific details on the type of development that will be supported by Highland Council in this area.

Inverness Local Plan

This plan was adopted in March 2006 (partly Continued in Force April 2012); and will shortly be replaced by the Inner Moray Firth area Local Development Plan.

Inner Moray Firth area Local Development Plan (IMFLDP)

The Inner Moray Firth Proposed Local Development Plan was recently subject to Examination which concluded in March 2015 and is due to be adopted this summer. It focuses on where development should and should not occur over the next 10-20 years, and the City of Inverness is identified as a hub for the Highlands with a major role in delivering growth. It refers to significant investment in infrastructure such as the West Link road project, Inverness East transport network and an improved active travel network and places importance on the green network in the area.

Inverness City Vision

Supplementary Planning Guidance (adopted March 2013) which sets out the vision of the type of place that Inverness could be and aims to help guide decisions about what the Inverness of the future will look.

Essentially, the vision for Inverness is to match the passion of the people with the potential of the place, recognising that although people leave Inverness there should be a reason to return. A number of Future City events were held to obtain information and stories from residents which were then used to develop the vision.

There are nine key themes to help Inverness grow, and the city was divided into six zones with associated actions to deliver the vision; which include the A9 Corridor.

The Inverness City Vision recognises that the A9 Corridor presents an opportunity for the city to market itself to a wider audience and to improve the quality of design in the wider area.

City Centre Development Brief

Supplementary Planning Guidance (adopted March 2013) which identifies and promotes opportunities for the redevelopment and enhancement of the city core, to support delivery of the Inverness City Vision. The City Centre Development Brief also identifies actions which seek to "build upon the qualities and unique characteristics that Inverness offers and set out a clear vision to promote major growth".

The City Centre extends from Friars Bridge to the north, the Infirmary bridge to the south, Midmills to the east and Tomnahurich Street to the west. The Approaching Inverness strategy area generally finishes on arrival at the area covered by the City Centre brief.

Longman Core Development Brief

Supplementary Planning Guidance (adopted June 2006), it seeks to co-ordinate redevelopment of land and property at the "core" of the Longman estate and set the context for development in a key urban transport corridor.

It includes guidance on how new development should be accessed, improving pedestrian and cycle access, safety and permeability, and design principles to to help upgrade and enhance the Longman estate to support business development. key points are that:

- a cohesive frontage to the A82, should be encouraged by an up-lift in the form,functioning and appearance of buildings and in "greening" the spaces which link them;
- discernable building lines should be acheived by controlled orientation and position of buildings; and
- the A82 should function as a major public transport/multi-user corridor, suitably "greened" and able to present - from an amenity and safety perspective - a substantially enhanced approach to the City.

The brief requires a minimum 10 m wide strip of land along the A82 "frontage" of each site (including the public footpath) to be reserved within each development site pending an agreement to vest the land with the Council at an agreed time and implementation of an engineering contract thereafter.

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Muirtown and South Kessock Development Brief

Highland Council is currently preparing the Muirtown and South Kessock Development Brief, utilising community views which were gathered at interactive workshops in February and April 2014. The Development Brief will provide a framework for development in these areas, based on the more strategic aspirations outlined in the HwLDP and IMFLDP.

The key challenges and opportunities identified in this area are:

- Delivery of leisure, tourism and housing led regeneration around Muirtown Basin;
- The need to address complex movement patterns in the area on both land and water;
- The need to improve walking and cycling connections both to, from, and within the area;
- The protection and enhancement of the natural, built and cultural heritage of the area.

This Strategy and Design Guide picks up on the proposals in the Muirtown brief where they abut or affect the Clachnaharry Road.

A9 / A96 Improvements Study

The A9 / A96 improvements Study by Transport Scotland with The Highland Council is looking at options linking the A96 from the Smithton Junction to the A9 in the Inshes area. The intention is to provide local linkages to the proposed expansion of Inverness east of the A9 and to better connect this area of the city.

In conjunction with the West Link proposals, it is likely to lead to traffic from the A9 and the A96 heading for the A82 south of the city using Sir Walter Scott Drive rather than the Longman Road.

Local Transport Strategy

The current Local Transport Strategy was published in 2012 and is due for review in parallel with the Highland-wide Local Development Plan. The LTS is intended to guide policy and investment on transport within Highland Council and partner bodies involved in the delivery of transport infrastructure and will therefore have bearing on what is work is undertaken on the key route corridors covered by this report.

Highland Council are developing a series of Active travel audits and masterplans in partnership with HITRANS, including for Inverness. These are intended to help establish a network for walking, cycling and access to public transport and to identify prioritised action plans to serve as a framework for future investment and new development.

Creating Places

The Scottish Government's policy statement on architecture and place sets out the comprehensive value good design can deliver. It notes that successful places can unlock opportunities, build vibrant communities and contribute to a flourishing economy.

It states that good places can have personal value to us as individuals, giving a sense of belonging, a sense of identity, a sense of community, and offer us the amenities to meet our daily needs; that good places can provide value to us as a society. They attract talent and investment and are the essential infrastructure which sustains business. Good places can be the critical factor in determining whether we choose to walk or drive, whether our lifestyles are active and healthy, and the size of our carbon footprint.

As part of this policy, the Government's advice on Designing Places promotes principles of context, identity and character. This points out that successful places are:

- distinctive;
- safe and pleasant;
- easy to move around;
- welcoming;
- adaptable; and
- resource efficient.

It further notes: *successful cities tend to be vibrant and cultural cities, which have a distinct quality of place, amenities, retail and cultural offerings to attract and retain talent, investment and visitors.*

Designing Streets

Was the first policy statement in Scotland for street design and now forms part of the Creating Places policy. It is based on the premise that good street design should derive from an intelligent response to location, rather than the rigid application of standards, regardless of context. It therefore requires a design-led approach rather than a standards based methodology for street design, taking into account site-specific requirements.

Designing Streets marked the Scottish Government's commitment to move away from processes which tend to result in streets with a poor sense of place and to change the emphasis of policy requirements to raise the quality of design in urban development. Specific policy in Designing Streets includes:

- Street design must consider place before movement;
- Street design guidance can be a material consideration in determining planning applications and appeals;
- Street design should meet the six qualities of successful places, as set out in Designing Places (see above); and
- Street design should be based on balanced decision-making and must adopt a multidisciplinary collaborative approach.

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Design Guide
(General Principles)

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Design Guide

The aim of this section is to guide the key aspects of new development on the main approaches to Inverness that affect the public realm.

This design guidance seeks to ensure future developments help to create and maintain attractive and locally distinctive streetscapes on the approaches to Inverness.

The guidance addresses key elements of the 'visual envelope' of the street corridor, the zone normally extending to the adjacent building façades that contains and defines the area perceived as the street.

The issues raised in this design guide section will be considered for incorporation into the Council's policies for design and layout, including the proposed Design and Layout Supplementary Guidance that will accompany the review of the Highland-wide Local Development Plan.

These proposals are intended to guide anyone undertaking development in or immediately abutting any of the streets that have been defined as the main approaches to Inverness (as shown on Figure 2):

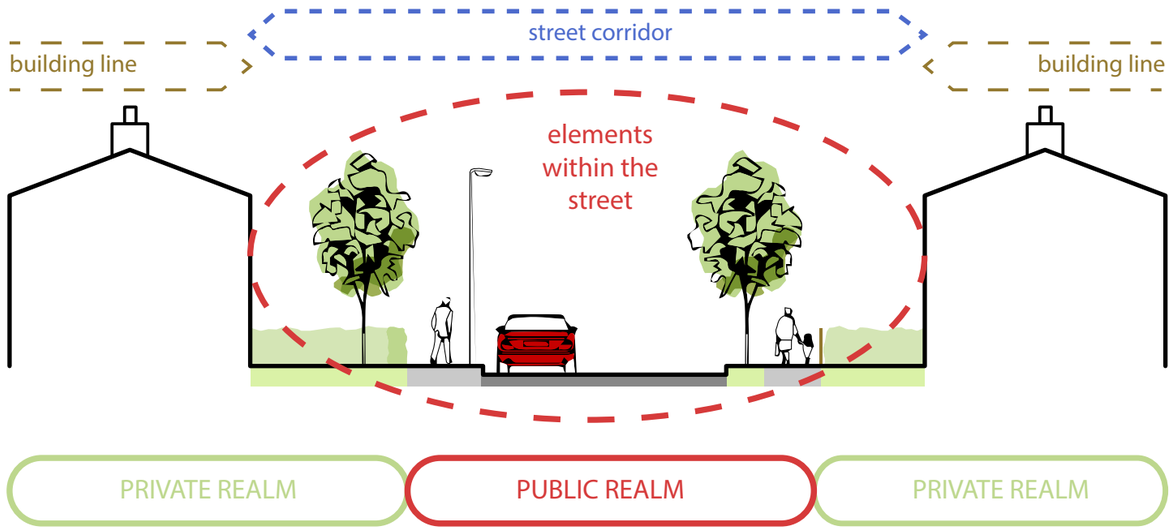
- Landowners;
- Developers;
- Householders;
- Highland Council departments; and
- Transport Scotland.

The 'visual envelope' of the street corridor is primarily made up of elements within the public realm, such as:

- Kerbs;
- Road & footway surfacing;
- Verges;
- Street trees;
- Central reservations;
- Signage and street furniture; and
- Lighting.

Certain elements in the private realm also have an important influence on the quality of the road corridor, in particular:

- Boundary walls, hedges and fences;
- Signage; and
- Building façade lines.



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Streets not Roads

Great street design considers place before movement.

The underlying principle behind this guidance is that set out by the Government guidance 'Designing Streets.

> *"Streets have two key functions: place and movement. In the more recent past, vehicle movement has often dominated the design of streets, resulting in many streets being out of context with their location and overly influenced by prescriptive standards. The prime concern of Designing Streets, in contrast, is to reverse this trend and shift the focus firmly back to the creation of successful places through good street design.*
>
> *Streets have to fulfil a complex variety of functions in order to meet people's needs as places in which to live, to work and to move around. Their design requires a thoughtful approach that balances potential conflicts between different users and objectives."*

The key point however is made in Designing Streets:

> *"A clear distinction can be drawn in functional terms between roads and streets as follows:*
>
> *Roads are thoroughfares whose main function is to facilitate the movement of motor traffic.*
>
> *Streets have important public realm functions beyond those related to motor traffic. They are typically lined with buildings and public spaces and, whilst facilitation of movement is still a key function, they normally support a range of social, leisure, retail and commercial functions.*
>
> ***All thoroughfares within urban settings should normally be treated as streets".***

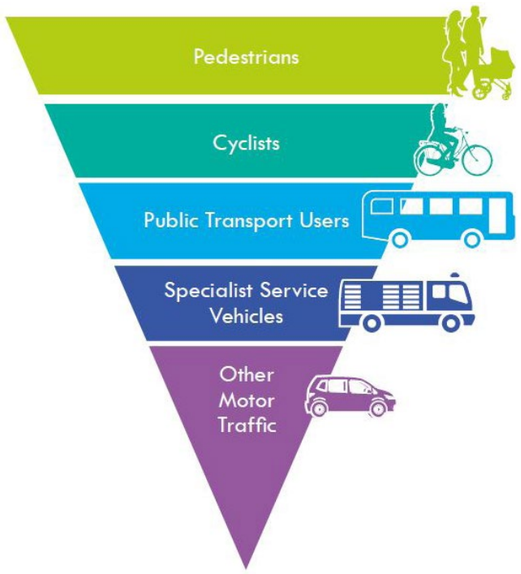
The corridors considered in this strategy are by their very nature the main vehicle approaches to and through the city: traffic movement is a major part of their function.

However, as made clear by Designing Streets and reiterated in the National Roads Development Guide[1], placemaking is critically important.

Furthermore, the needs of all street users need to be balanced. The hierarchy of user need as set out in both documents is illustrated by this graphic from the National Roads Development Guide.

The most heavily used approach to the city, Longman Road, is also the route that scored the lowest in the quality audit.

Much of this can be attributed to the weakness of the bounding townscape (disjointed building lines, varied and often weak site boundaries) but street design is also major factor: it is designed almost exclusively to facilitate vehicle movement.



The National Roads Development Guide reasonably tempers this pointing out: *"Any street whilst considering place before movement must balance all associated functions and considerations to deliver a sustainable and adaptable outcome."*

A typical 'road'

A typical 'street'

1: National Roads Development Guide produced by the Society for Chief Officers of Transport in Scotland, 2014

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Design Principles

The design principles underpinning this guidance arise from two directions:

- What makes a pleasant and interesting street; and
- What is distinctive about Inverness?

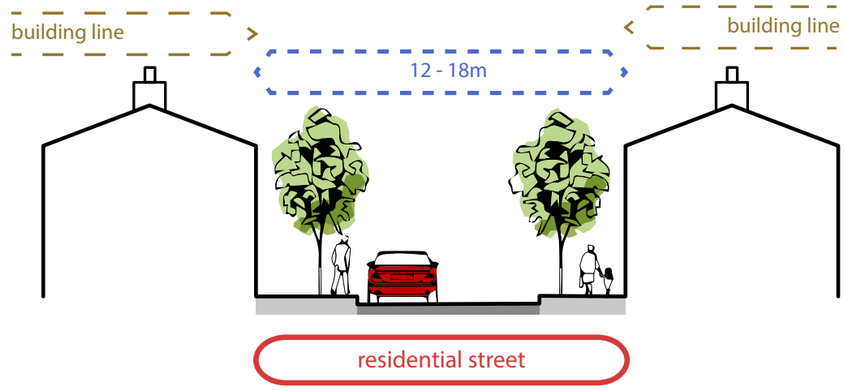
What makes a pleasant and interesting street?

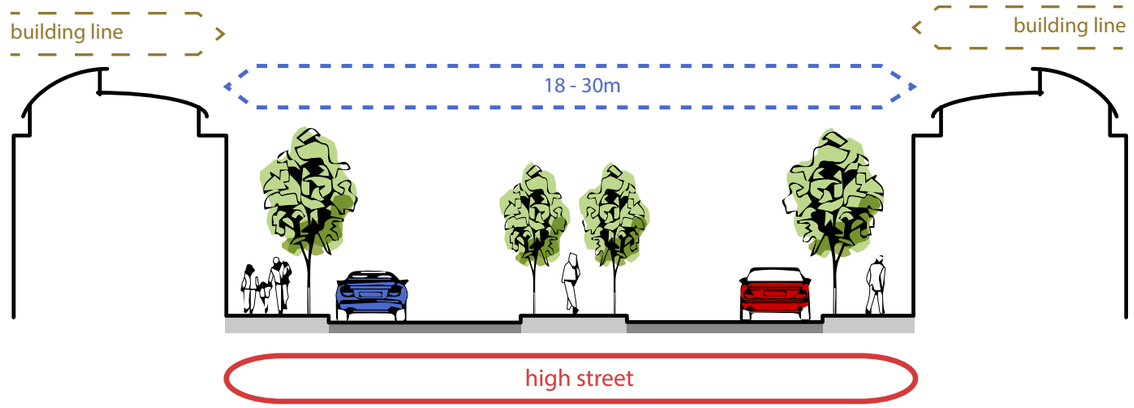
- Comfortably enclosed by the buildings either side;
- A quality edge to the adjoining development, clearly demarcating the separation between private and public space;
- Designed around people;
- A simple palette of materials;
- Free of clutter; and
- Well maintained.

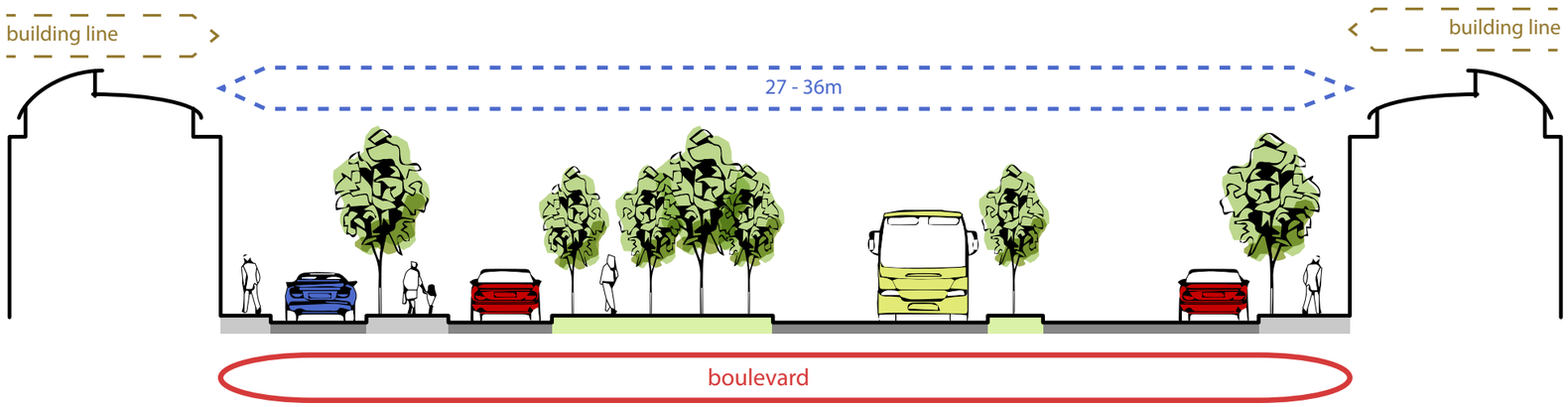
Enclosure

A key element in creating a comfortable space is the sense of enclosure that it provides – how it is contained (or not) by the buildings and trees that bound the space. This is a function of both the actual distance between the sides of the space and the proportions of the space, the ratio of width to boundary height.

Between enclosing façades, streets generally vary between about 12m wide (narrow residential streets) to about 36m (generous boulevards).







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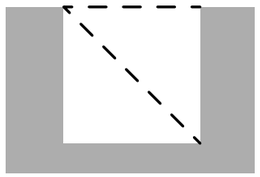
Proportions

The proportion of streets generally varies between about 1:1 and 1:6. How the space created by these different proportions is perceived varies according to a number of factors, of which climate is an important one.

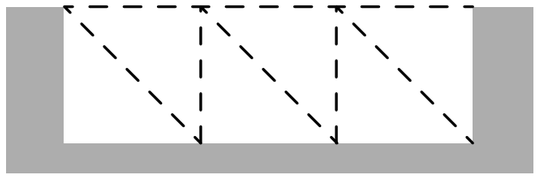
In hot sunny climates, shade is important and a 1:1 (or narrower) street will be seen as comfortably shaded.

In Scotland, with lower temperatures and shallow sun angles, 1:1 is perceived as narrow (suitable for a mews) and typically 1:3 is perceived as comfortable enclosure.

Wider proportions – up to about 1:6 can be suitable for important streets and main arteries, although they tend to be perceived as somewhat open.



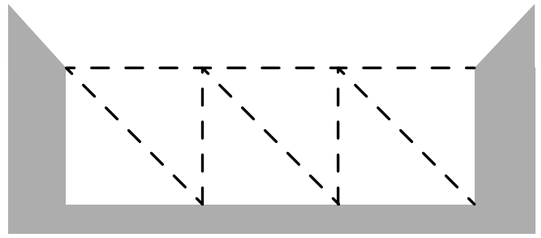
mews 1:1 ratio



1:3 ratio - comfortable enclosure

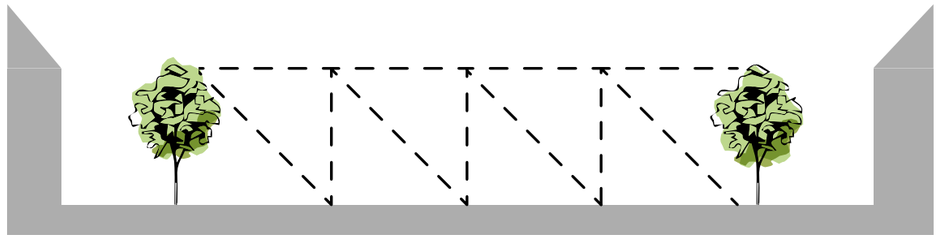
1:6 ratio - may suit a main street but appears wide

Ways of providing enclosure



enclosure by building line

Enclosure and proportion are best provided by defining a suitable building line.



spatial definition of street through use of tree planting

Where other factors mean that buildings have to be set back beyond the desirable building line, enclosure can be provided by appropriate tree planting.

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A quality edge

The street is public space. The curtilage of developments that bound the street is usually private space. The quality of the boundary between the two is important in creating a comfortable streetscape, giving a clear visual definition between the public and private realm and helping to enclose the street whilst enabling street users to understand where they are.

The boundary can sometimes deliberately be non-existent – such as outside the Highland Council Offices, where the broad grass strip, part of the building curtilage, can be used by the public. However, in Inverness good quality boundaries are usually provided by stone and harled walls, neatly trimmed hedges and by dwarf walls surmounted by railings.

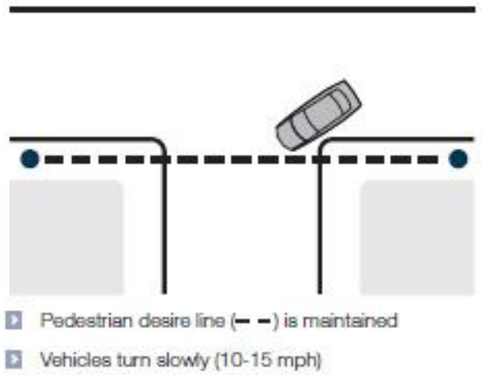
Designed around people

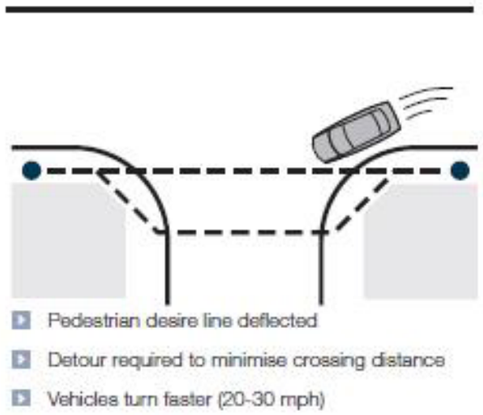
As noted in the previous section, streets are multifunctional places but the hierarchy of importance in which users are considered is critical for good street design and placemaking.

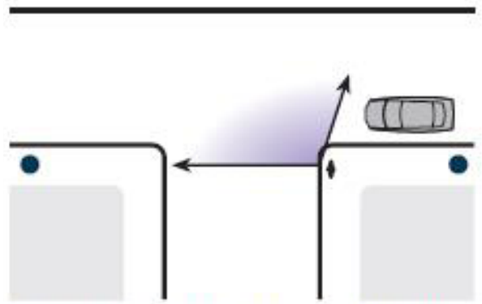
- pedestrians
- cyclists
- public transport
- private vehicles

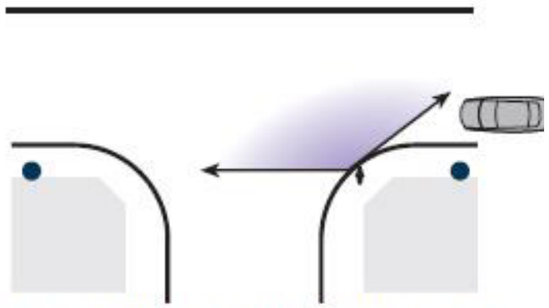
As noted in Designing Streets, historically, the layout of towns and cities evolved around pedestrian movement. In recent decades, motor vehicles have come to dominate our streets and guidance was developed that suited car movement.

To reinstate the priority of pedestrian movement has implications for the design of crossings and street interfaces. The key points taken from Designing Streets that are applicable to this guidance are to do with the details of junction geometry and, by extension, avoiding the use of roundabouts.









The effects of corner radii on pedestrians

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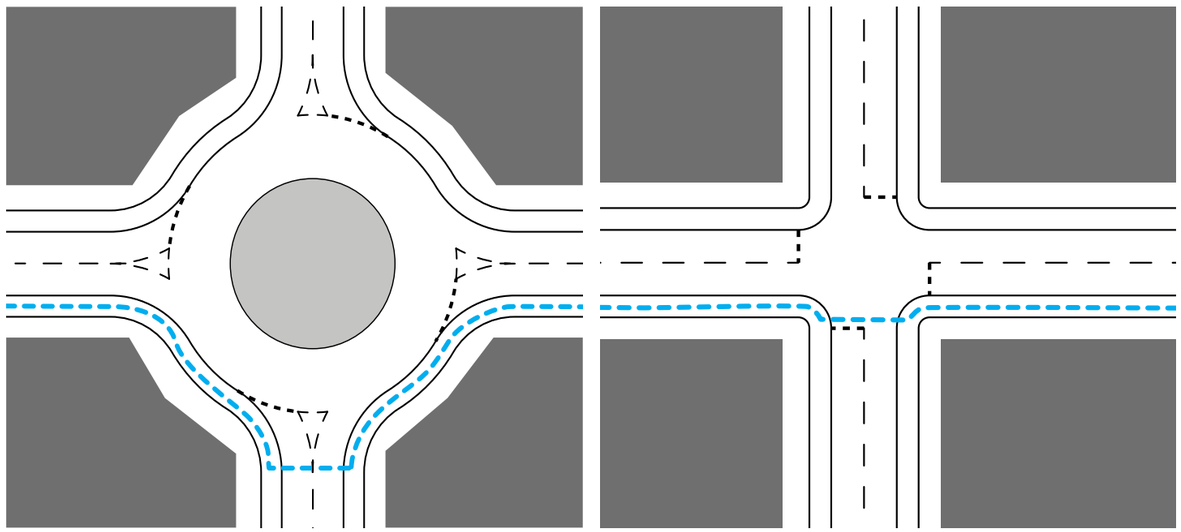

Roundabouts and crossroads

Roundabouts facilitate vehicle movement but at the cost of disadvantaging pedestrians and disrupting the townscape.

The dotted blue line shows how pedestrians are diverted off-route at roundabouts.

The dark grey shows potential building lines and the large set-back created by the roundabout.

A simple palette

As noted in Designing Streets, the materials used in the street should be distinctive, durable, easily maintained and of a quality appropriate to the specific context.

Part of the recognisable character of a city like Inverness comes from the traditional building and paving materials. New development should always be cognisant of this. Care should be taken when considering the introduction of new materials and, in particular, material colours should be selected to tone with and complement the existing streetscape.

Refer to Details and Materials section.

Free of clutter

This is a simple principle of good design, not unique to the streetscapes of the approaches to Inverness but even here very applicable.

In many cases, clutter in streets arises from the excessive use of signs, street markings and street furniture. New signage should never be introduced in isolation, but always considered in relation to what is there already. Existing signage can and should be rationalised, particularly before the introduction of new. Consideration should always be given to placing signs on existing features or street furniture. Good examples include wall mounting parking & waiting restriction details and fixing shared footway signage to existing lighting columns, in both cases avoiding the introduction of additional poles.

Street lighting should be as discreet as possible whilst providing the required levels of illumination. Simple modern lighting columns are generally preferred.

Street furniture should be located for maximum benefit and to reduce pedestrian obstruction.

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What is Distinctive about Inverness?

- Attractive, city skyline punctuated by numerous church steeples and Inverness Castle;
- Mature, leafy streets softening vernacular styled dwellings and buildings;
- Well kept historic features with distinctive time-depth pattern noticeable from the city centre to the outer extents;
- Well maintained open green spaces and gardens;
- External views and glimpses of the impressive, wider landscape setting;
- Interesting geological history along the Great Glen leaving iconic features such as Tomnahurich Cemetery and the escarpment and sea beach behind Millburn;
- The River Ness and the Caledonian Canal; and
- Varied palette of materials including natural stone and harled walls, mature trees, iron railings, and a variety of more modern and functional materials.

Ref: Scotrail.co.uk

Specifically in terms of the elements that make up the streetscape, distinctive items include:

- Natural stone walls (rubble, brought to courses, often with a ‘hit and miss’ cope);
- Harled walls with a heavy stone or concrete unit cope;
- Neatly trimmed hedges, often beech; and
- A restricted range of hardy trees.

The guidance therefore provides a palette of suitable materials and element design that reflects the character of Inverness.

Ref: Westcoastrailways.co.uk

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Design Guide (Detailed Guidance)

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Design Guidance

To acknowledge the significant differences in types and balance of use on the different corridors, and to tie in with future statutory Supplementary Guidance, this Design Guide distinguishes between four main types of route:

- Through roads;
- Main links;
- Main streets (residential and mixed use); and
- Main streets (industrial and mixed use).

Detailed design guidance for each route type is set out on the following pages.

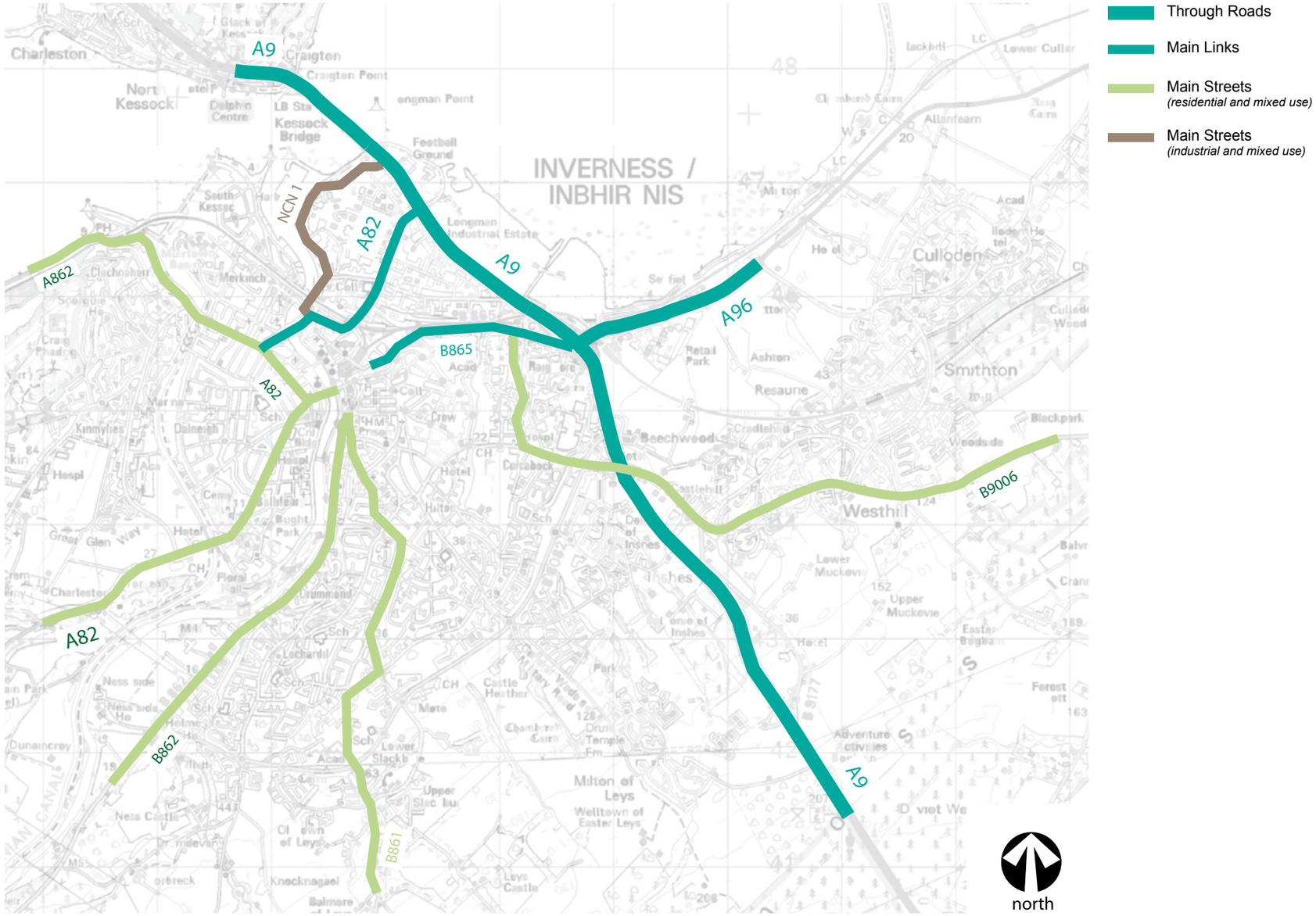

Figure 6: Route Types

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Through Roads

The A9 and the A96

Function

These routes are main inter-urban rural trunk roads, under the control of Transport Scotland. Unlike the other routes considered in this study they are clearly ‘roads’ not ‘streets’ and as such the design guidance is comparatively limited.

The basic principles that apply are set out in the Design Manual for Roads and Bridges and can be summarised as:

- Integrate structures into the landscape;
- Take advantage of good views;
- Frame any spectacular views; and
- Screen unsightly neighbouring development.

Elements

- Road verges;
- Embankments & cuttings within the highway boundary;
- Structure planting on embankments and cuttings; and
- Central reservations.

Maintenance

- On the approach to the city, the standard of maintenance is critical.
- A major factor in the poor and very quality audit ratings given to the A9 approaches to the city is the abysmal standard of both establishment and maintenance of the roadside landscape - the verges and the wider embankment areas.
- Maintenance to the road verges, at least two metres from the carriageway edge, should as a minimum be equal to ‘Medium Frequency’ in accordance with the Specification for Highway Works (SHW) 3006.13 to 3006.17.
- Maintenance to the wider embankments should be, as a minimum, equal to ‘Grass Cutting: Areas of Planting’ in accordance with the SHW 3006.23 to 3006.27.

A9 Longman Roundabout

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Main Links

Longman Road and Millburn Road

Function

These routes are major traffic arteries, Longman Road under the control of Transport Scotland and Millburn Road under the control of The Highland Council. Although they have a very important traffic function, they are part of the fabric of the city and the basic principle of Designing Streets applies:

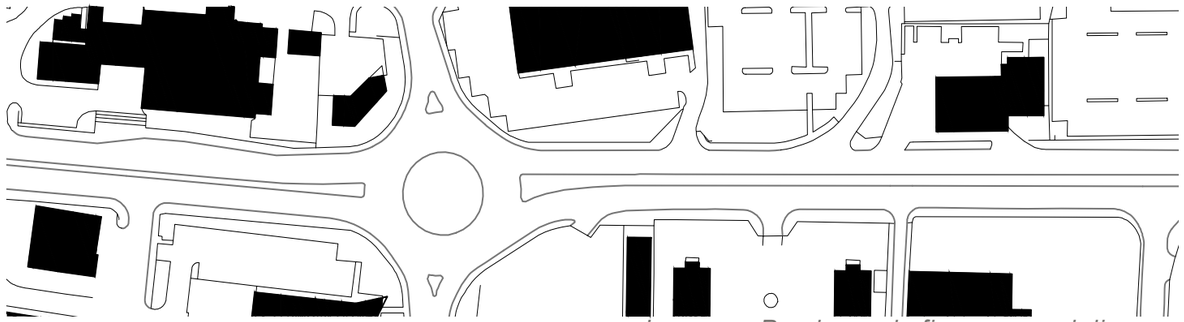
"All thoroughfares within urban settings should normally be treated as streets."

The National Roads Development Guide tempers this by noting that whilst considering place before movement, associated functions and considerations must be balanced to deliver a sustainable and adaptable outcome.

These routes are, and will remain, key traffic corridors but the fundamental point is that future development affecting the design of the street - particularly issues of highway geometry, should take full account of all users of the street. Active intervention is required to give pedestrians, cyclists and public transport the priority that has traditionally been given to the car, as is being implement on Millburn Road.

It is suggested that the long-term aim should be to replace the roundabouts with light-controlled junctions.

This would recapture space from the road corridor for development or structure planting to recreate the urban fabric; allow safer use of the road by cyclists; allow safer and more direct pedestrian crossing routes and; provide the potential for transponder equipped buses to gain priority.



Longman Road sample figure ground diagram

Millburn Road sample figure ground diagram

The figure ground diagram of Longman Road shows how the generally random positioning of buildings fails to create any form of urban enclosure. The diagram of Millburn Road shows how the street has been substantially widened by realignment. However, the reasonably consistent building alignment and strong boundary wall to the railway land has retained a degree of urban form.

Elements

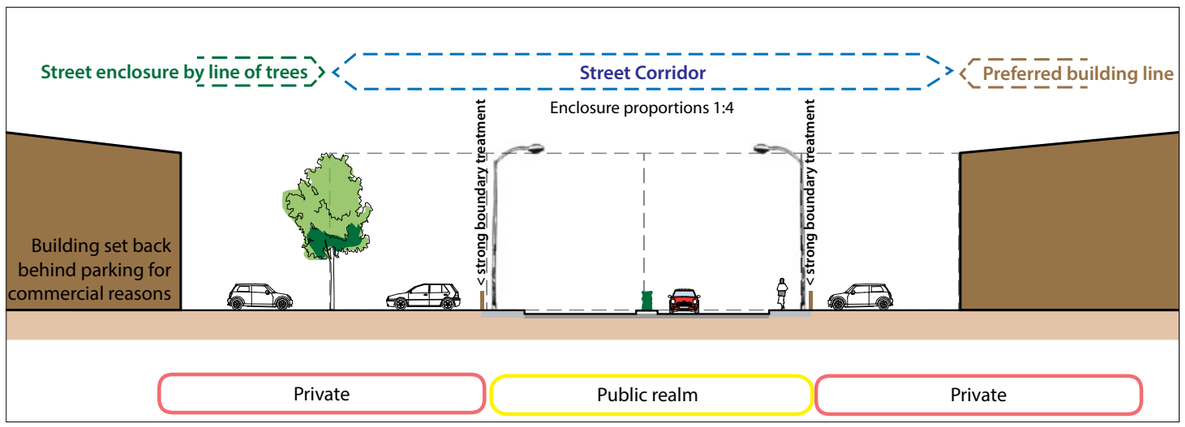
The most import elements in structuring and creating an attractive street are:

Building façade lines

Where possible new development should be positioned with the main frontage building line parallel to the street, respecting adjacent building lines where these comply with this rule, and positioned to create a breadth to height ratio across the street generally between 1:4 and 1:5.

Industrial buildings should be placed with the yards and working spaces behind the building.

Where commercial imperatives require extensive frontage parking (e.g. large retail units) or display (e.g. car showrooms), a line of trees should be placed to create a permeable 'false frontage' across the site at the building line as described above. The trees should be medium/large to large species and spaced such that in long oblique views down the street they create the required enclosure but that in close views the commercial premises are visible behind them.



Building facade lines

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Boundary walls, hedges and fences

The highway surface can form the dominant element in views of the street. A visually strong front boundary helps to contain and frame the highway, gives a clear distinction between the public and the private realm and discreetly hides any clutter there may be in a frontage yard or garden.

Preferred details:

- Stone walls, with plain copes.
- Harled walls with heavy plain cope.

Alternative details:

- “Stone effect” blockwork wall with heavy plain cope.
- Vertical board timber fence.
- Well maintained hedge, alone or reinforced with a fence.
- Height: 0.9m to 1.2m high preferred, higher (for security) usually acceptable, lower usually not acceptable (fails to provides sufficient visual definition to the street.
- Wall thickness: minimum 250mm.

Preferred detail: random rubble stone wall, bought to courses with a heavy plain cope.
Alternative detail: stone effect block-work with a heavy plain cope.
This photo demonstrates clearly how stone weathers and improves with age whilst blockwork simply fades.

Random rubble stone wall with a traditional cope, reinforced by planting.
Building set back for commercial reasons but street containment continued by line of trees.
Quality detailing but dwarf nature of wall means that it fails to provide sufficient containment to a wide street.

Street trees and in-curtilage trees

Trees, whether in the footway, verge or within the development curtilage are required to reduce the apparent size of these major arteries where adjacent buildings are substantially set back. Existing landowners on Longman Road in particular should be encouraged to “retro-fit” trees into their existing car parks or immediately behind the site boundary and Transport Scotland should be encouraged to introduce trees wherever the verges are wide enough.

Guidance on appropriate species is given under Details and Materials.

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Main Links (continued)

Verges

Verges should generally be avoided in new development, as these should be streets with a footway either side. Where verges are unavoidable, generally minimum 2 m, may need to widen to 3m to accommodate significant services. Minimum 2 m of verge to be level or minimally sloped (5% / 1:20 or less), maximum slope on verge 1:3 where services allow.

Existing broad verges provide the opportunity for the introduction of street trees, mass planting and hedges to contain the route corridor (see section, Active Interventions).

Central reservations

Existing central reservations provide the opportunity for the selective introduction of street trees and hedges to reduce the apparent width of the route corridor (see specific proposals).

Roundabouts

As described above, roundabouts, whist facilitating traffic flow, are inappropriate in an urban situation because they significantly disadvantage non-motorised users and have a deleterious effect on townscape, creating a 'hole' in the urban fabric. The main Approaching Inverness strategy proposes a short to medium-term solution, creating landscape/townscape features in the 'dead space' within the roundabout and notes that in the long term, the aim should be to replace them with junctions.

Signage and street furniture

Regulated street signage and road markings should be kept to a minimum and, wherever possible, signage should be mounted on street lights or combined with other signage or street furniture.

Junction marking should only be applied where the junction form requires clarity (e.g. angled junctions).

Non-standard marking of painting alternate kerbs black and white is a locally typical detail for sharp angled junctions and could be reproduced.

Street furniture should generally be located to the rear of the footway to ensure a clear pedestrian route. Where street furniture impinges substantially on the footway width, local widening should be provided.

Lighting

White light to THC or Transport Scotland specification as appropriate.

Columns: generally simple design and scale appropriate to street use – normally maximum 6 m high with no outreach arm, exceptionally 8 m high. Tall mast lighting should be avoided.

In areas close to the city centre, consider building-mounted lighting.

Harbour Road roundabout: pedestrian and cycle unfriendly, hard & unattractive, out of scale lighting columns, creating a void in the townscape. An object lesson in how not to treat a main link through a city.

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Kerbs

Generally kerbs should match as closely as possible the predominant adjacent kerbing.

In ‘special’ locations such as squares or at significant public buildings, wider and / or higher quality kerbs may be appropriate. The use of recycled whin or granite kerbs may be appropriate in some circumstances.

High kerbing to be used for bus stops in accordance with THC requirements.

In more contemporary development, standard BS precast concrete kerbs generally appropriate as a minimum standard.

In more historic areas textured kerbing (e.g. conservation or countryside type) should be considered in preference to standard BS kerbs.

Radius kerbs should be used wherever required. Corner radii at junctions should be as small as practical, commensurate with tracking of refuse vehicle.

Maximum kerb radius at junctions to be 6 m, unless particular circumstances dictate otherwise.

‘Skinny’ kerbs: traditionally used in ‘normal streets’.

‘Fat’ kerbs: traditionally used for ‘high streets’ and important civic places. A distinction misunderstood by many designers and used in any ‘improvement scheme’.

Simple, appropriate, easily repaired paving.

Simple footway (although broken bond slabs look better) but unfortunate use of ‘low maintenance’ hardscape where grass or soft landscape would be more appropriate.

Road & footway surfacing

Generally footway paving should match as closely as possible the predominant adjacent paving.

New styles of paving may be introduced as part of a specific design but care should be taken to ensure that the colour palette tones with existing paving and building in the vicinity.

Roadway: HRA surfacing to THC specification. No chippings to 300mm closest to kerb.

Footway: Asphalt surfacing to THC specification, block or slab paving as appropriate to the location

Combined footway/ cycleway: Asphalt surfacing to THC specification with:

- Preferred detail: 400mm wide block pavior strip behind road kerb or
- Alternative detail: 375mm wide strip behind road kerb with white chippings.

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Main Streets: residential and mixed use

Clachnaharry Rd/ Telford St - A82 Torvean to Telford Roundabout (Glenurquhart Rd, Tomnahurich St, Kenneth St) - Dores Rd/Island Bank Rd - Culduthel Rd - Culloden Rd - Old Perth Rd

Function

The function and character of these streets varies, primarily depending on distance from the city centre, from busy edge of centre shopping streets to relatively suburban streets.

All do carry significant levels of traffic, although in almost all cases this is well below 10 000 vehicles per day. The predominant use is residential and therefore the policy and guidance given in Designing Streets is fully applicable. The emphasis of design should therefore be toward placemaking rather than traffic flow.

Density of development, frontages and building set-back, parking arrangements and boundary treatments vary significantly between the more traditional and more contemporary developments.

Most of these streets benefit from direct house frontage and frontage access, while others (e.g. Dores Road) suffer from significant lengths with modern development with no direct house frontage.

The following other uses currently exist which should not necessarily be precluded:

- Smaller shops;
- Smaller business premises;
- Smaller offices; and
- B&B's and hotels.

Other features which have a more strategic function in the city are also located on some of these streets, such as:

- Supermarkets;
- Local authority offices;
- Electric transformer stations; and
- Cemetery.

Future location of these, or similar, uses on these streets requires careful consideration.

Elements

Buildings

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Offsets from back of footway should vary depending on location/ character of the space within the city-centre to rural transect.

Homes, shops and business premises in the busier, more central areas should reflect the position of adjacent and opposite buildings and where appropriate should be located as close as possible to the back of footway. At these locations - outside shops and public buildings - footway width should be wider (see below)

In the denser urban area set-back of building frontages from the rear of the footway should be no greater than 3 m, to discourage the conversion of front gardens to private parking. Some properties may appropriately be located closer to the footway dependent on use and context.

In the more suburban areas, homes may be located with larger front gardens but front garden parking should be minimised and the conversion of front gardens to parking actively discouraged.

The orientation of buildings at corners and junctions should be carefully considered. There are several good examples on these streets of buildings at junctions which vary from the standard aspect.

While buildings should generally face the street, some flexibility in the angle of façade in relation to the street should be permitted.

Shops (including supermarkets) should have an active frontage and preferably a street-facing entrance. Where this is not commercially possible, there should be at the least, windows showing activity within the shop facing the street.

Width to height ratio should generally not be greater than 1:4 in the more suburban sections and 1:2 in the city centre.

Open frontage and inappropriate building line detract from the character of the townscape.

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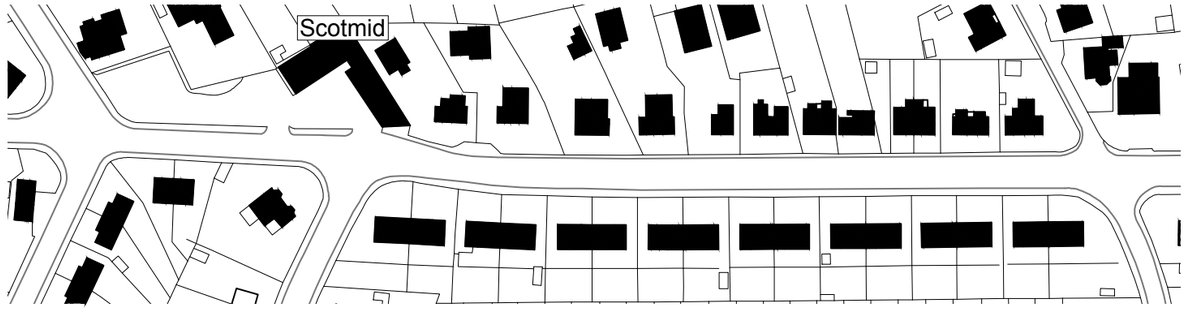
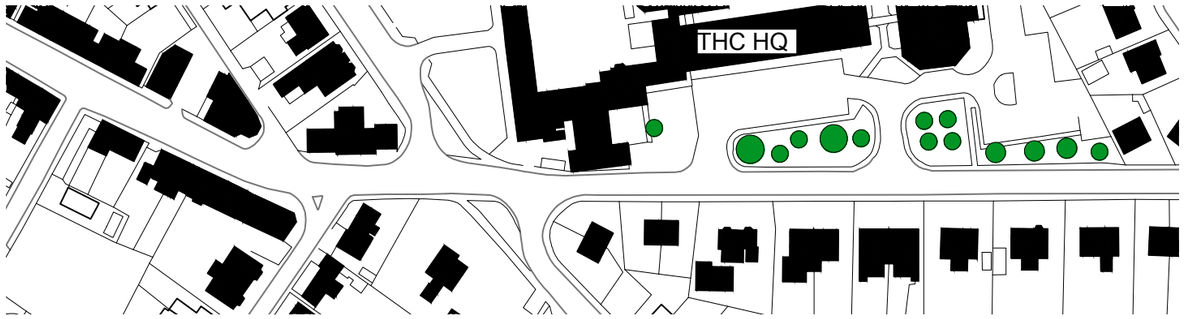


Glenurquhart Road figure ground diagram
consistent 'open suburban' enclosure at 1:4.5, disrupted by uncomfortably placed Scotmid supermarket with front car parking and weak edge detailing



Glenurquhart Road / Tomnahurich Street figure ground diagram
THC offices set back but enclosure maintained by street and in-curtilage trees. Tomnahurich Street, buildings tight to back of footway, urban enclosure, about 1:2.5

Driveways

Where provided these should comply with THC's requirements regarding width, visibility and dropped kerbs.

Where appropriate visibility is achievable to the more significant street, small numbers of driveways, gateways and minor streets may be grouped to a single access point.

Driveway entrances/ gates should be located not less than 1.0m behind the back of footway with an appropriate splay or radius. This provides warning to pedestrians and cyclists of emerging cars.

Boundary walls, hedge and fences

Definitive boundary features are a strong element in the existing character of Inverness.

Post & wire, chain link, weldmesh or other visually light mesh or wire based fencing is not considered appropriate except where they are used to reinforce a hedge.

Boundary details should be of a height that creates strong visual containment to the public realm without dominating or appearing overbearing: normally between 900 mm and 1.2 m high. High boundary treatment for security reasons should only be used in exceptional circumstances and then over not more than half of the property frontage to the street.

Wall and hedge height either side of vehicle entrances should be no more than 1 m to facilitate visibility splays.

Preferred details:

- Walls of stone or harled blockwork with stone or good quality imitation stone copes located not less than 300mm behind the back of footway;
- Walls of stone or harled blockwork with stone or good quality imitation stone copes, located not less than 300mm behind the back of footway, surmounted by appropriate visually strong railings;
- Formal hedges (i.e., species designed to be kept trimmed); and
- Walls to be minimum 225 mm thick, preferably 300 mm.

Alternative details:

- Walls, max 2 m high of stone with stone copes, located not less than 300mm behind the back of footway. Min wall width 225 mm. Walls , min 500 mm, max 1.2 m high of block, harled or rendered; with concrete copes, located not less than 300mm behind the back of footway; and
- Vertical timber boarded fence, max height 1.2m.

Details to be avoided:

- Ranch-style or other timber fencing with a horizontal emphasis; and
- Concrete panel fencing systems.

Careful consideration should be given to how open and green spaces meet the street. Where they are private realm, they should be separated from the street by a wall or hedge. Extensive areas of public open space may have no boundary where there is deliberate design intent to create a different street character.

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Main Streets: residential and mixed use (continued)

Street Trees

May be used to highlight and emphasise significant junctions and locations and to break up long sections of on-street parking.

Guidance on appropriate species is given in the section, Details and Materials.

Care should be taken to avoid overshadowing issues (low sun angles in Inverness, particularly in winter).

In-curtilage Trees should be encouraged to soften the boundaries between properties, the street and adjacent properties.

Verges

Verges should generally be avoided, as these should be streets with a footway either side. Where verges are unavoidable, generally minimum 2 m, may need to widen to 3m to accommodate significant services. Minimum 2 m of verge to be level or minimally sloped (5% / 1:20 or less), maximum slope on verge 1:3 where services allow.

Footways

Generally: 2 m minimum width.

At entrances to shops and significant public buildings: 4 m minimum width.

Combined footway / cycleway: 3 m minimum width (localised narrowing over no more than 5 m, to absolute minimum 1.5 m, permissible provided reasonable visibility is provided).

Signage and Street Furniture

Regulated street signage and road markings to be kept to a minimum and, wherever possible, signage should be mounted on street lights or combined with other signage or street furniture.

Junction marking should only be applied where the junction form requires clarity (e.g. angled junctions).

Non-standard marking of painting alternate kerbs black and white is a locally typical detail for sharp angled junctions and could be reproduced.

Street furniture should generally be located to the rear of the footway to ensure a clear pedestrian route. Where street furniture impinges substantially on the footway width, local widening should be provided, even at the cost of reducing carriageway width.

1:3 enclosure provided by trees rather than by building lines
Good quality traditional walls, although extensive use of high walls and fences becomes slightly 'unfriendly'.

Lighting

White light to THC specification.

Columns: generally simple design, maximum 6 m high with no outreach arm.

On smaller residential streets: maximum 5 m.

Towards the city centre, consider building-mounted lighting.

On some streets the existing lighting columns exceed these limits. Individual replacement columns should match the existing but any comprehensive replacement should adhere to this guidance.

Light spill from adjacent properties should be minimised.

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1:4.5 enclosure - a main suburban street, generous set-back of housing on the right leads to a slightly open character. Loss of garden walls to allow frontage parking starting to degrade the character of the street.

Kerbs

Generally kerbs should match as closely as possible the predominant adjacent kerbing.

In ‘special’ locations such as squares or at significant public buildings, broader and / or higher quality kerbs may be appropriate. Broad kerbs are traditionally used to demarcate the main city centre streets. On the approaches to the city, their use should be restricted to places of public or civic importance.

The use of recycled whin or granite kerbs may be appropriate in some circumstances.

High kerbing to be used for bus stops in accordance with THC requirements.

In more contemporary development, standard BS precast concrete kerbs generally appropriate as a minimum standard.

In more historic areas textured kerbing (e.g. conservation or countryside type) should be considered in preference to standard BS kerbs.

Radius kerbs should be used wherever required. Corner radii at junctions should be as small as practical, commensurate with tracking of refuse vehicle.

Maximum kerb radius at junctions to be 3 m, unless particular circumstances dictate otherwise.

Road and Footway Surfacing

Generally footway paving should match as closely as possible the predominant adjacent paving.

New styles of paving may be introduced as part of a specific design but care should be taken to ensure that the colour palette tones with existing paving and building in the vicinity.

Roadway: HRA surfacing to THC specification. No chippings to 300mm closest to kerb.

Footway: Asphalt surfacing to THC specification, block or slab paving as appropriate to the location.

Combined footway/ cycleway: Asphalt surfacing to THC specification with:

- Preferred detail: 400mm wide block pavior strip behind road kerb or
- Alternative detail: 375mm wide strip behind road kerb with white chippings.

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Main Streets: industrial

Shore Street - Longman Drive - Cromwell Road

Function

The primary function of Industrial Main Streets is, as the name implies, to provide access to industrial properties. They usually contain few residential properties and it is therefore hard to define them as 'streets' in terms of 'Designing Streets'. However, where they have a dual function, as in the case of Shore Street / Longman Drive / Cromwell Road, some of the principles can be applied to make them more pleasant and attractive spaces.

The aim of the street design is not necessarily to hide what is going on but to provide an attractive and, where possible active frontage with a variety of movement, noises and colours.

As well as providing access to the Harbour industrial estate, Shore Street / Longman Drive / Cromwell Road has an important role in the approach to the city: it forms the National Cycle Network (NCN route 1) link between the city centre and Kessock Bridge. There are few residential properties along the route, except at the south end of Shore Street. Good examples: Business Centre, Stadium Business Park, 24 Longman Drive and Jewson, Stadium Road.

Elements

Buildings/ Structures

Industrial buildings should be arranged with their main public entrances and facilities to the front, facing the street. Larger industrial buildings and workshop zones can be arranged behind the public frontage, reducing their impact on the street. Width to height ratio at the first building façade should not be greater than 1:6.

Industrial buildings should generally be oriented with a gable end toward the road.

Where possible existing features such as Cromwell's Tower should be made into the focal point of developments, to provide local character and distinctiveness. For example, public or office buildings could be clustered into a small square created around the tower.

Long uniform extents of building or structures should be avoided where possible. Where long façades are required for functional reasons, their extent should be broken up by planting, changes in colour, height and / or pattern.

Parking

Visitor, customer and some staff parking may be located to the front of premises. Limited cross footway parking may be permissible provided pedestrian entrances are clearly identified by landscape or other features.

Other parking facilities should be located to the side or rear of properties.

Boundary walls, hedge and fences

Industrial premises often require security fencing. Too often, this leads to the creation of an unwelcoming environment, dominated by grey galvanised palisade and chain-link fencing. This can be acceptable in a solely industrial environment but must be avoided where the route has a wider public function. Where high-security fencing is unavoidable, it can be set back a short distance into the site behind a screen hedge, or where space is severely limited, polyester powder-coated panels can avoid the uniform drab grey.

Preferred details:

- Hedges, either of deterrent plant types (e.g. berberis, hawthorn etc) or decorative hedge to screen a security fence. NB: a wide low hedge of deterrent planting can be as effective in security terms as a higher fence.
- Walls, min 600mm, max 1.5m high of stone, brick, block or rendered; with stone or concrete copes, located not less than 300mm behind the back of footway.
- NB: Wall and hedge height either side of vehicle entrances should be no more than 1.0m to facilitate visibility splays.
- Industrial security fencing and gates >1.5m high generally to be located not less than 6.0m from the back of footway. Where active building frontage is provided, a maximum of 50% of the overall length of frontage may have security type fencing located closer to the back of footway (min 1.0m).
- Barbed wire or spikes should not be used within 6.0m of the back of footway, unless incorporated within hedging or other planting.

Alternative details:

- Vertical timber boarded fence, max height 1.5m where less than 6.0m from back of footway.
- Coloured steel palisade fence.

Narrow strip of planting substantially softens frontage appearance.

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Street Trees

May be used to highlight and emphasize significant junctions and locations.

In-curtilage Trees and Planting

Should be encouraged to soften the boundaries between industrial premises, the road and adjacent premises.

Verges

Generally min 2.0m, may need to widen to 3.0m to accommodate significant services. 1.0m wide min level (i.e. 5% (1:20) or flatter) verge where services allow. Max slope on verge 1:3.

Footways

Generally min 2.0m.

Combined footway/ cycleway should be in 3.0m over as much of its length as possible. Localised, short (i.e. <5m) narrowing to min 1.5m are permissible provided reasonable visibility is provided.

High quality boundary treatment in a very narrow space, required by planning conditions: Dunkeld Road, Perth.

Signage and Street Furniture

Regulated street signage and road markings to be kept to a minimum. Junction marking should only be applied where the junction form requires clarity (e.g. angled junctions).

Where deemed necessary, regulatory signage should be mounted on street lights or combined with other signage or street furniture.

Waste bins at lay-bys to be incorporated in a housing or surround.

Lighting

White light to THC specification.

Columns generally 6.0m high with no outreach arm.

Light spill from adjacent industrial buildings, yards and process areas should be minimised.

Kerbs

Standard BS kerbs to be used with generally 100mm upstand. Radius kerbs to be used as appropriate. Radii to be as small as possible, commensurate with tracking of design HGV. Where practical, max radius at junctions to be 6.0m.

Road and Footway Surfacing

Roadway: HRA surfacing to THC specification. No chippings to 300mm closest to kerb.

Footway: Asphalt surfacing to THC specification.

Combined footway/ cycleway: Asphalt surfacing to THC specification with:

- Preferred detail: 400mm wide block pavior strip behind road kerb or
- Alternative detail: 375mm wide strip behind road kerb with white chippings

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Details & Materials

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HARDWORKS ELEMENTS

Preferred Boundary Treatments

Definitive boundary features are a strong characterising element of the Inverness streetscape. Two types of wall are particularly characteristic: random rubble brought to courses and harled blockwork. Both are typically capped with either heavy dressed stone copes or 'hit and miss' copes of squared rubble. Their use should be encouraged to maintain the local distinctiveness and townscape character of Inverness.

Stone walls

- Height - 0.9m to 1.2m (preferred)
- Higher (for security) usually acceptable, preferably over no more than 60% of the frontage length
- Lower usually not acceptable as fails to provides sufficient visual definition to the street unless doubled up with a trimmed hedge or capped by substantial railings
- Thickness: minimum 250mm
- Extent: minimum 60% of frontage length, preferably all except for pedestrian gate
- Preferably natural sandstone (locally sourced)

Cope

- Plain, heavy dressed natural stone
- 'Hit & miss' squared natural stone rubble

Harled blockwork walls

- Height - 0.9m to 1.2m (preferred)
- Higher (for security) usually acceptable, preferably over no more than 60% of the frontage length
- Lower usually not acceptable as fails to provides sufficient visual definition to the street unless doubled up with a trimmed hedge or capped by substantial railings
- Thickness: minimum 250mm
- Extent: minimum 60% of frontage length, preferably all except for pedestrian gate
- Colours: white, off-white, cream

Cope

- Plain, heavy dressed natural stone
- 'Hit & miss' squared natural stone rubble

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Alternative Boundary Treatments

Definitive boundary features are a strong characterising element of the Inverness streetscape. Two types of wall are particularly characteristic: random rubble brought to courses and harled blockwork. Both are typically capped with either heavy dressed stone copes or 'hit and miss' copes of squared rubble. Their use should be encouraged to maintain the local distinctiveness and townscape character of Inverness.

Stone 'effect' blockwork walls

- Height - 0.9m to 1.2m (preferred)
- Higher (for security) usually acceptable, preferably over no more than 60% of the frontage length
- Lower usually not acceptable as fails to provides sufficient visual definition to the street unless doubled up with a trimmed hedge or capped by substantial railings
- Thickness: minimum 250mm
- Extent: minimum 60% of frontage length, preferably all except for pedestrian gate
- Artificial or reconstituted stone blocks, in keeping with character of existing stone walls
- Colours: buff, sand, salmon, light grey - colour from exposed aggregate age better than pigmented concrete

Cope

- Plain, heavy dressed artificial / reconstituted stone blocks

Vertical fencing / railings

- Height - 0.9m to 1.2m (preferred)
- Higher (for security) usually acceptable, preferably over no more than 60% of the frontage length
- Within a streetscape where the plot frontage treatment of stone and harled walls predominates, alternative boundary treatments can be visually successful
- Extent: minimum 60% of frontage length, preferably all except for pedestrian gate
- When viewed obliquely (looking along the street) the boundary appears solid and robust
- Colours: timber / black or stainless steel railings

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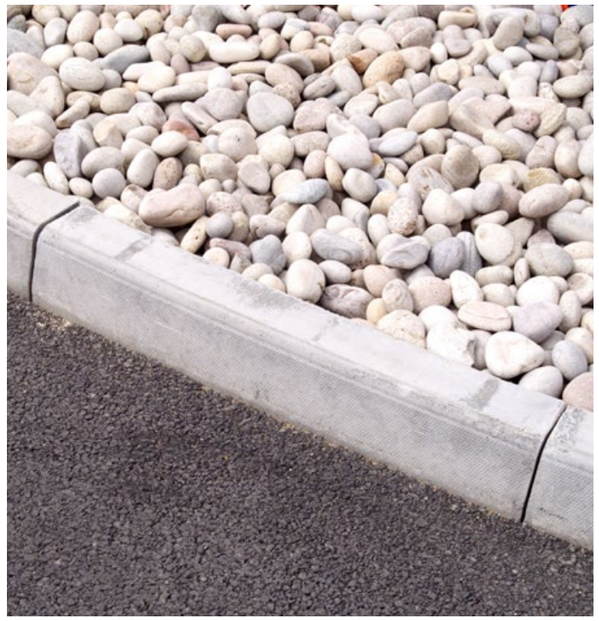
Preferred Kerbs and Surfacing Treatments

A sense of spatial hierarchy can be easily achieved with the appropriate use of kerb and surface treatments. Generally, the closer one gets to the city centre or places of public interest, the higher the quality and aesthetic appeal of materials and design should become. Inverness has an existing palette of hard surfacing materials, which should be used appropriately where approach routes do not already suggest a level of city importance.

Traditional kerbing

- Dressed granite, sandstone, or whinstone
- 125mm or 150mm for ordinary use
- 250mm or 300mm for important places: high streets and civic spaces
- Corner radii should be as small as practical: typically 3m for minor roads and 6m for major, unless particular circumstances dictate otherwise



Contemporary kerbing

- Standard concrete road kerbs for ordinary streets
- High quality exposed aggregate kerbs for more prestige or historic locations
- 125mm or 150mm for ordinary use
- 250mm or 300mm for important places: high streets and civic spaces
- Corner radii should be as small as practical: typically 3m for minor roads and 6m for major, unless particular circumstances dictate otherwise

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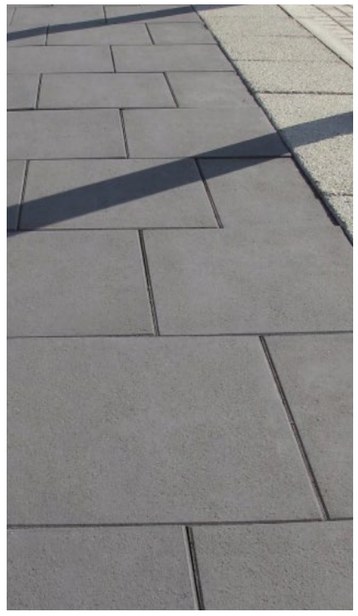
Natural stone paving surfacing

- Natural stone slabs (sandstone, Caithness flagstone) for high streets or more prestige or civic locations
- Natural stone blocks or setts (sandstone) for secondary streets, or as edging to slab paving, or as paving details and features



Contemporary paving surfacing

- Exposed aggregate concrete paving slabs for secondary streets
- Exposed aggregate concrete blocks or setts for tertiary streets, as edging to slab paving, as paving details and features, or for car parks

Standard road and paving surfacing

- Asphalt or DBM for footpaths / cycleways (usually with chippings) for tertiary streets and less public areas, and car parks
- HRA for roads (usually wiith chippings)
- Standard concrete paving slabs and blocks for tertiary streets and less public areas. and car parks

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Softworks elements

Boundary hedges

Definitive boundary hedges are a strong characterising element of the Inverness streetscape. A well maintained hedge, alone or reinforced with a fence can provide this. Suitable species are those that take regular clipping.

Suitable hedge species

- Beech (Fagus sylvatica)
- Copper Beech (Fagus sylvatica f. purpurea)
- Yew (Taxus baccata)
- Western Red Cedar (Thuja plicata)
- Holly (Ilex aquifolium)
- Privet (Ligustrum ovalifolium)
- Hornbeam (Carpinus betulus)

Also suitable are:

- Lonicera nitida
- Portuguese Laurel (Prunus laurocerasus)
- Berberis (Berberis x stenophylla, B. darwinii, B. thunbergii)
- Pyracantha (many varieties)
- Lawson's cypress (Chamaecyparis lawsoniana)

And, in more rural / urban edge locations

- Viburnum opulus
- Hawthorn (Crataegus monogyna)

The best know quick solution – Leyland Cypress is deliberately not on this list: not only does it grow too rapidly for many people to control properly, once it is too big, it can't be cut back to size – it doesn't re-sprout from old wood, so bare areas are left.

Frontage hedges are best kept between 1 and 1½ metres high. Higher than this is not only oppressive for passing pedestrians but more difficult to maintain.

Beech hedge, Culduthel Road

Thuja hedge, Glenurquhart Road

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Street trees and in-curtilage trees

Inverness has a good selection of mature street and in-curtilage trees, making many areas attractive, green and leafy.

The following species lists give general guidance on species of a suitable scale for the different locations, they not a comprehensive list of every option.

Suitable tree species

Large trees: suitable for boulevards, edges of large car parks, edges of open spaces

- Beech (Fagus sylvatica)

(sensitive roots, for open spaces and large gardens; street use only where serious care taken to provide engineered rooting zone)

- Norway maple, larger cultivars

  Acer platanoides ‘Summershade’
- Sycamore cultivars

  Acer pseudoplatanus ‘Erectum

  Acer pseudoplatanus ‘Rotterdam’
- Lime, selected species & cultivars

  Tilia cordata ‘Greenspire’

  Tilia tomentosa ‘Brabant’

  Tilia x euchlora

Fagus sylvatica

Acer platanoides

Acer pseudoplatanus

Tilia cordata

Tilia tomentosa

Tilia x euchlora

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Medium-sized trees: suitable for suburban streets and the interior of car parks

- Norway maple, mid-sized cultivars.
  Acer platanoides ‘Cleveland’
  Acer platanoides ‘Columnare’
  Acer platanoides ‘Drummondii’
  Acer platanoides ‘Emerald Queen’
  Acer platanoides ‘Olmstedt’
  Acer platanoides ‘Schwedleri’
- Field maple, selected cultivars.
  (marginally hardy for Inverness, only for more sheltered situations)
  Acer campestre ‘Elsrijk’
  Acer campestre ‘Streetwise
- Italian alder (Alnus cordata)
- Turkish hazel (Corylus colurna)
- Flowering crab apple, selected cultivars and species.
  Malus trilobata
  Malus tschonoskii
- Bird cherry, selected cultivars
  Prunus padus ‘Albertii’
- Hornbeam
  Carpinus betulus ‘Frans Fontaine’
- Rowan, selected varieties.
  Sorbus aucuparia ‘Fastigiata’
  Sorbus aucuparia ‘Sheerwater Seedling’
- Swedish whitebeam (Sorbus intermedia)

Acer platanoides ‘Cleveland’

Acer platanoides ‘Columnare’’

Acer campestre ‘Streetwise’

Alnus cordata

Corylus colurna

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Malus tschonoskii

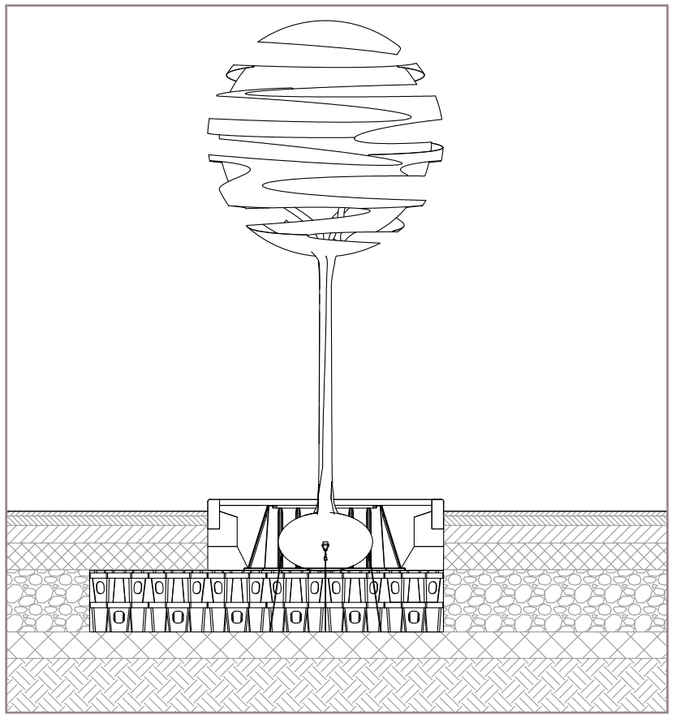
Prunus padus

Carpinus Frans Fontaine

Successful trees

Successful street trees are:

- species that will grow well in the Inverness climate;
- of scale and stature when mature to suit the scale of the street; and
- provided with the conditions they require to successfully establish and mature.



Detail of root zone cells and root deflectors (by Green Blue Urban) providing an adequate root zone in a central reservation, with the tree soil and root zone completely below the road construction.

Preferred detail on the left hand side - rooting zone extends under the carriageway. The detail on the right hand side - rooting zone only under the central reservation may be adequate if the rooting zone forms a long trench.

Trees need an adequate rooting zone, with soil that is reasonably open and fertile, aerated and adequately drained.

This is normal in parks and gardens but difficult to provide in the street.

In the street, problems arise because of tree roots lifting kerbs and paving, and trees often fail to flourish because the soil is too compacted (roots can't penetrate) or insufficiently aerated or drained (roots need both air and water available in the soil, but not to excess).

Proprietary systems exist which are designed to allow adequate root zones to coexist with fully engineered road construction and underground services, and to divert roots away from the surface where they can cause problems to the footway.

Sorbus 'Sheerwater Seedling'

Sorbus intermedia

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