Technical Advice Note (August 2012)

Further information on the design issues to consider in new development

Contents

Introduction

This document has been published to provide background information on the design questions listed in Appendix 1 in the Design Planning Advice titled "Implementation of policy SG LSD2 Layout siting and design of new development". It has been produced by Aberdeenshire Council, in association with the Scott Sutherland School of Architecture at the Robert Gordon University, to provide further information on:

 ➢ why the questions listed are important;
 ➢ why the issue may require to be addressed;
 ➢ when each question applies to a development proposal; and
 ➢ a list of points to consider (prompts).

The questions are designed as prompts to allow applicants to consider how they can resolve each specific design issue. Further definitions and guidance (underlined) is provided in the glossary.

Background

The questions are divided into 4 sections each covering a different design issue:

 ➢ Design issue A: Optimising the development's response to the site's context
 ➢ Design issue B: Optimising resource efficiency and appropriate use of materials
 ➢ Design issue C: The development performs the functions expected of it
 ➢ Design issue D: The creation of identity

Within each section there are a number of questions to address – 43 in total, which can be used as part of the analysis stage of the design statement. The questions should be used as a prompt to ensure the key principles of supplementary guidance SG LSD2 "Layout siting and design of new development" have been incorporated into development proposals, as necessary. These questions can also be used as a guide in the development of masterplans.

Applicants are not expected to address questions where no issue arises in the initial appraisal of the site. However, it is recommended that reference to all of the design issues are made in the design statement to make the planning officer aware that the issue has been considered and dismissed (e.g. due to the use, scale and location of the development). Planning officers will appraise each of the specific issue(s) that have been identified and whether these issues have been appropriately addressed in the design concept(s) and principles.

Assessment by planning officers

Planning officers will balance the appraisal of the design process against all other material considerations in the planning application. Planning officers can use the questions as a means to justify to the applicant why their design statement is not sufficient. When appraising the design statement, planning officers will consider whether the applicant has provided evidence of why the design solution does or does not meet the relevant questions.

A separate worksheet has been prepared by Aberdeenshire Council which will be used by officers to appraise the design statement for a planning application.

Design Issue A: Context

Part A)(i) Response to climate

New development should be designed to have regard to its local climate. The purpose of these questions is to identify the layout's response to the mitigation of cold winds, the maximisation of passive solar gain, and to the way the design of each building has been adapted to the climate.

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Q1. How has wind-chill been reduced within the development?

> This question applies to all types of new development, excluding structures and change of use proposals where no extension is proposed.

Explanation

Wind-chill has a significant impact on occupants' discomfort in and around the development, on the energy needed to keep that discomfort at bay, and even on the usability of outside areas (e.g. of the garden for sitting out in). To respond to wind chill factors a good knowledge of the site is essential. The orientation of building(s) can help with providing wind protected <u>sunny areas</u>, and wind protection can be further aided by strategic landscaping.

Things to consider

- Wind strength, direction and temperature
  - Simple observation (e.g. repeated over a period of months).
  - Local knowledge.
- Terraces, Courtyards and clusters
  - Linked houses forming U-shaped steading formations.
  - Houses in L-shaped plans can give secure wind protection.
  - Stepped or linked configuration of neighbouring houses.
  - Linking houses by garden walls to reduce wind chill and maximise sunny comfort
- Protection of long stretches of street from main direction of wind-chill, for example
  - Avoiding streets aligned with main direction of wind chill.
  - Short hedges at 90° to buildings.
  - Regular set backs of houses in groups, to protect neighbouring houses in the group from the direction of wind chill and to offer the possibility of suntraps.
  - Short projecting wings either side of south facing terraces to block wind.
- Windbreaks/porches for external doors
  - External doors on the sheltered side of predominant or chill wind.
- Strategic blocks of planting on the side of the development from which most wind chill arises (e.g. the use of shelter planting to block cold winds)
  - Location, depth, density, height and mixture of planting, and distance from the development that needs shelter.
  - Exploitation of existing <u>structure planting</u>.
  - Avoidance of planting that may interrupt sunlight on the buildings during the winter.
  - Shelter planting needs not only to be designed, but also planted and afforded appropriate protection during construction.
  - Shelter planting should be planted no later than the beginning of construction, but ideally it should precede construction.
- Additional tree-planting and windbreaks (e.g. use of "roughened" open ground to keep the wind high, close wind gaps and to break up stretches of space)
  - Windbreaks can be made of low-growing plants, so long as they are planted in depth (5-6 metre wide strips) to roughen and slow cold winds.
- Regular hedging or porous fences/walls along feu boundaries
  - Hedges along plot lines, especially hardy ones like beech and hawthorn.
  - Porous fencing, mimicking the effects of hedging, may be a substitute or assist until

- hedging is established.
- Is wind prevented from funnelling through gaps and along corridors
  - Gaps can encourage wind chill but they can be effectively blocked by clumps or short thick hedges
  - Funnelling can be similarly diverted
- Is wind turbulence minimised?
  - Turbulence can be mitigated by taller grasses or low habit shrubs, such as gorse.
- Other factors
  - Anything else relating to the particular site or arising from the explanation in response to the Question.

Note:

For major development proposals, it would be ideal to take measurements of wind speed, direction and temperature over a period of months, along with using local knowledge (e.g. neighbours, the Community Council). It is not adequate to make cursory assumptions on the basis of probability, or to give no consideration to this issue at all.

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Q2. How does the building(s) orientation maximise passive solar gain?

This question applies principally to residential uses, although it can be applied to non-residential uses and change of use proposals, where appropriate.

Explanation

This question investigates whether passive solar gain has been maximised by the layout through orientation of the house(s). Effectively this leads to a preference for most houses either to have a major southern aspect or a dual east/west aspect (with rooms distributed to take advantage of the specific orientation). The latter is especially true in northern areas such as Aberdeenshire, because it allows the rising and setting sun significantly north of the east-west axis to be exploited. The flip-side is a preference against houses at other angles (i.e. more than 15° away from east/west or north/south), where this can be avoided.

Overshadowing from surrounding buildings or landscape features should be avoided, and the main social spaces should have the potential to receive at least 4 hours of sunlight throughout the day.

Things to consider

- Orientation of buildings
  - Aligned on roughly east-west axis (plus or minus 15° towards north/south).
  - Living rooms should have a good penetration of sunlight for a significant part of the day, and since so much time is spent in kitchens, that room should be counted as public. Therefore, living rooms should be south or west facing (plus or minus 15° towards east/west).
  - Traditionally, bedrooms have been best oriented towards the east.
  - Some other way of designing individual buildings to maximise solar gain without causing excessive glare.
- Skilful design
  - Planning of living rooms for dual aspect, using both eastern and western frontages.
  - Reflected light exploited.
  - Where north-facing living rooms are involved, the designer should show how solar gain is maximised, e.g. suitably protected sunny garden spaces adjacent to them might alleviate the otherwise poor exposure.
- Minimise hours of shadow at midwinter (for Aberdeen – with the sun at 10° above the horizon at midwinter, 56° above at midsummer), for example:

- o For gently sloping sites to south 29m distance between nearest ridge and the front elevation.
  - o For flat sites 45m distance between nearest ridge and the front elevation.
  - o For gently sloping site to north 121m distance between nearest ridge and the front elevation (for steeper slopes, there should be a corresponding increase in distance).
  - o The arrangement of taller blocks of housing to the north of the site to limit overshadowing and reflect as much sunlight as possible back into the site
  - o Local climatic conditions should be exploited. In North-East Scotland north-facing rooms receive significant sunlight in summer from the NE and NW.
- Differential scale of importance from living spaces down to garages, car-parking and utility space
  - o Garages and car parking on shady sides of houses.
  - o Living rooms (sitting, dining, kitchen) ought to have sunny aspects.
  - o Bedrooms would benefit from sunny aspects.
  - o Other rooms (baths, utility, storage, corridors) do not require sunny aspects.
- Sunny private garden ground for each house
  - o Sunny areas can be protected from chilling winds by fencing, or hedges, or walls.
  - o Houses oriented on north-south axis - the sunny protected zone can be achieved by protecting the north boundary line with fencing walls or hedge.
  - o The windy side can be protected from chilling winds by the house itself, other building walls (e.g. store houses or garages) fences or hedges.
  - o When protected areas contiguous to the house cannot be provided, then detached ones, e.g. at the bottom of the garden or elsewhere within the plot, would serve using the same principles of protection from chilling winds and exposure to sun.
- All areas of public open space
  - o In larger or public spaces similar procedures apply. A play space, or small green, could be protected by fence, hedge or wall.
  - o Public scale would be better enhanced by using a mixture of hedge and denser shrubs, or even shelter belts including trees.
  - o The arrangement of thermally efficient blocks of flats and terraces to the windward side of open areas to prevent the wind getting to them.
- Other factors
  - o Other policy documents, such as the Aberdeenshire Parks and Open Spaces Strategy (2011).
  - o Anything else relating to the particular site or arising from the explanation in response to the Question.

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Q3. How do the key elements and features of the buildings' or structures' design respond to the climate?

This question applies to all types and scales of development.

Explanation

This question relates to the way the detailed designs and construction materials of the buildings and structures themselves have been adapted to deal with wind-chill, ice build up, passive solar gain, daylight, glare etc. It focuses on the way the design of the key elements (such as the footprint, massing and roof form) of the new building or structure, and its detailed features (such as porches, cladding, window and eaves detail) are shaped to handle the local climate. Will they reduce the amount of energy needed to heat and light the building or structure, while avoiding glare, and minimise the need for unnecessary maintenance over the building's or structure's life-time, or increase it? In light of this, it will be necessary to identify the critical characteristics of the local climate in the particular area that the building or structure will need to respond to and assess how all these individual components hang together to respond to the local climate as a whole.

Things to consider

- What are the key factors in the <u>local climate</u> for this particular site?
  - What evidence has been provided to indicate what the key characteristics of the <u>local climate</u> are for this site?
  - What is the frequency, strength and direction that cold winds blow from?
  - What is the pattern of precipitation - is there regular, heavy or intermittent rain; will snow lie deep on the roof; or stay for long periods?
  - How cold can the winter get? Will there be regular frosts, or a frequent pattern of freeze-thaw?
  - Is the site exposed to any salt in the wind or salt-spray?
  - How high will the sun rise and how many hours of sunshine will the building get in the summer and winter?
- How do the siting, footprint, massing and roof-shape/pitch/orientation of the building or structure, and any <u>structure planting</u> provided respond to these key factors?
  - Do the buildings avoid frost-pockets?
  - Will the doors to the outside face into the coldest winds or be protected from them?
  - Will the roof throw off heavy rain and snow, or manage it some other way?
  - Will awkward gullies create maintenance black-spots?
  - How much will the shape of the building cause wind-funnelling or turbulence?
- How do the windows, sills, doors etc; gutters, tabling etc; porches, decorative and other <u>features</u> of the building or structure respond to these key factors?
  - How are windows, doors, porches etc designed to manage the general or local pattern of cold winds?
  - How will gutters, down-pipes, french drains or other means manage rain and snowmelt?
  - Can the upstairs windows be opened and cleaned internally; is the guttering easily maintained?
  - What levels of insulation are proposed to prevent frost and cold penetration?
  - What pattern of glazing is provided to optimise day-lighting and passive solar gain, without overcooking the occupants on hot days? Ideally the 'four hour rule' remains a very good principle to aim for.
  - How well will external materials reflect or absorb day-light? Highly reflective colours or materials on garden walls, or walls of adjacent buildings (whether other offices, houses, garages or sheds) can be arranged to aid sunshine absorption, and light can be coaxed into other dark areas.
  - What steps have been taken to ensure ventilation of the building is adequate, especially when it is well insulated?
- How effectively do glazing and cladding/external materials impact on daylight and solar gain, heat loss and glare?
- Are these key <u>elements</u> and <u>features</u> of the design likely to maximise the comfort of the building's users while minimising the need for unnecessary energy-use within the building?
- Are they likely to minimise the need for unnecessary maintenance costs over the building's or structure's life-time?
- Any other relevant considerations.

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Design Issue A: Context

Part A)(ii) Respect for its setting: its response to the existing landscape, townscape and neighbouring features

Applicants should be seeking to optimise the development's respect for its setting (i.e. its surroundings) through a sympathetic response to the existing land form, which should be the foundation for the creation of vibrant new places. Any development will involve a dramatic change to the landscape and townscape, with no less effect to the wildlife, people, and natural quality of these buildings and spaces. These effects can be minimised, however, by designing the new development to reflect the pattern of the natural topography, retaining particularly important areas of green-space or buildings, re-planting of indigenous plant species, encouraging the diversity of nature to return, and taking account of the key characteristics and features of settlements. Further guidance on how to incorporate high quality green spaces in masterplans is provided in advice titled 'Green Infrastructure: Design and Placemaking' (2011), which is available from the Scottish Government's website at www.scotland.gov.uk.

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Q4. How does the design respond to the local landscape?

This question applies to all types and scales of development, with the exception of change of use proposals. The level of detail required to answer this question will vary depending on the use, location and scale of the development. The expertise of a qualified landscape designer at an early stage will help bring out the best in a site, especially if the development proposal includes new roads, public open space and/or landscaping.

Explanation

A site plan significantly larger than the proposed site to be developed needs to be assessed to discover how contiguous landscape features such as woods, shelter belts, rising or falling ground would impinge on the proposed layout. The proposal needs to take into account the cultural implications of the immediately surrounding landscape (i.e. how well does the design respond to the cultural significance of the local landscape?). Wherever possible existing features of landscape value, such as woodlands and watercourses should be enhanced and incorporated into the final design. Detailed site conditions need to be identified, and appropriate landscaping proposals tailored to the circumstances. For example, gentle curves are appropriate for hilly topography, whereas on flat or evenly sloping sites more formal (even "classical") relationships of roads, spaces and buildings will be better.

Things to consider

- Depending on the scale of the development, how thoroughly has the existing and potential landscape, including its biodiversity been assessed?
    - Site survey (See PAN 68: Design Statements for further advice)
        - Topography.
        - Soil conditions.
        - Drainage conditions.
        - Climatic conditions including exposure to prevailing wind, sun, frost etc.
        - Built and natural landscape features both in and adjacent to the site, such as buildings, ponds, roads, paths, fences, streams etc.
        - Existing trees and vegetation both in and adjacent to the site.
        - Presence of habitats and species.
        - Views in and out of the site.
        - Archaeological features and site designations.
    - Identification of natural features that make this area distinctive
        - Presence of water such as rivers, ponds, ditches, seashore and streams.
        - Individual specimen trees.
        - Windbreaks or nature corridors.

- Natural or cultivated areas of woodland used for leisure and recreation.
- The natural collection of stones formed from glaciation.
- A natural or industrial process exposing geological features e.g. cliffs, quarries etc.
  - o Identification of opportunities and constraints
    - What is practical and what is not in terms of site design?
    - What and where do things grow well?
    - What natural and built features are worth retaining, enhancing or introducing?
    - What natural and built features need to be removed, disguised or screened, and why?
    - What improvements need to be undertaken e.g. to soil, drainage, topography, planting etc?
    - Where is shelter needed?
    - How can links be made to the surrounding areas?
    - Opportunities for biodiversity.
    - Which views should be retained and enhanced?
- How well does the design respond to the predominant topography?
  - o What are the key elements of the dominant topography?
  - o How well does the road pattern reflect the landscape and topography (i.e. contours of the area)?
    - On flat sites: a formal symmetrical layout, possibly with a resemblance to old planned settlements.
    - On sloping and undulating or hilly sites: sinuously curving ways and forms that reflect the contours.
  - o How well will the planting (particularly of trees) in the individual plots or feus combine with the planting in other plots to generate an overall impact on the response to the dominant topography?
    - How much will the formal and informal planting patterns of the design reflect, contrast or respond in any other way to the forces of the wider landscape, such as local woods, shelter belts (continued or restored), the surrounding field pattern, or neighbouring rivers and water-cover?
  - o How well does the layout respond to other dominant landscape features?
- How well does the landscaping respond to the natural potential of the site – the genius loci?
  - o Positive relationship of landscaping to the landform and landscape features of the site
    - The layout should be designed around significant existing landscape features, rather than the other way about.
    - Development features, be they landscaping or built, should cluster more towards low/sheltered areas in the landform, and thin out towards higher areas.
    - Structure blocks of trees should relate to areas of woodland neighbouring the site.
  - o Existing wetland and other water and semi-wild areas
    - Should be retained and incorporated into the landscape design wherever possible.
  - o Existing trees (single specimens, groups or shelterbelts), hedging and drystane dykes
    - Should be retained and incorporated into the landscape design wherever possible.
  - o New habitats created
    - All planting should be based primarily on the list of locally native species.
    - Planting should suit localised soil conditions, drainage situation and microclimate.
    - The landscape design should specify the location of particular species within planting blocks.
    - Individual species of tree and shrub should be planted in groups, with naturally tall, or large specimens being located towards the core of the planting area, and small trees and shrubs being located towards the edges.
    - Group planting of individual species, usually in blocks of 6 - 9 or more, is essential to stop more competitive species eradicating less competitive neighbours for light and nutrients.
    - Planting should be designed to create year round interest.
- How well does the design respond to the cultural significance of the local landscape?

o What is the <u>cultural context</u> of the surrounding landscape?
  ▪ What are the key elements that characterise it?
  ▪ What shape/size of feus are there, what amount/kinds of trees and gardens, common materials, colours and pattern?
o Is the landscape <u>designated</u> in some way and of special importance?
o Is the current landscape dominated by less positive features, for example, a power-line or a motorway?
o Is the landscape likely to remain the same in the future or is it likely to be developed?
o Would the new building(s) dominate or hide in the landscape?
o Would the new building(s) improve eyesores or damage any critical features?
o How appropriate would that be for the sort of building that is proposed? For example,
  ▪ is it a modest building located in a prominent position?
  ▪ is it a significant building in the wrong place?
• Other factors
  o Anything else relating to the particular site or arising from the explanation in response to the Question.

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Q5. How does the design respond to valuable characteristics in the surrounding townscape?

This question applies to all types and scales of development. The level of detail required to answer this question will vary depending on the use, location, scale of the development and whether alteration(s) are proposed to the existing building(s).

Explanation

This question requires development proposals to take into account the "<u>urban grain</u>" of the surrounding townscape as a whole, as well as how it relates to the area's <u>sense of place</u> and how well the design responds to the <u>cultural significance</u> of local forms. A site plan significantly larger than the proposed site to be developed needs to be assessed to show contiguous townscape features such as waterfronts, woods and trees, distinctive features of architectural heritage, items of historic interest and connectivity, as these will indicate the existing <u>nature</u> and grain of development, and can give guidance to proposed new work. It may also be worthwhile undertaking 'social research' to consider the local context and to identify factors contributing to a quality environment in each case.

Things to consider

• How thoroughly has the existing pattern or urban character been assessed?
  o Social survey to identify locally valued features
    ▪ Key local facilities and services likely to be affected by development.
    ▪ Locally valued features of landscape and built environment.
  o Local distinctiveness - what are the key elements that characterise the <u>urban grain</u> of the area (i.e. the shape of the layout of the surrounding area)? Does it have:
    ▪ A burghal plot (often called a "fishbone layout"), as characteristic of some mediaeval burghs?
    ▪ A formal squared layout, as characteristic of 18th and 19th century new towns?
    ▪ A more organic layout, as characteristic of non-planned towns that seem to have grown naturally over the years?
    ▪ A series of cul-de-sacs, as characteristic of standard late 20th century town growth?
    ▪ Some other overall pattern?
  o Scale – does the surrounding settlement have the general characteristics of a small hamlet, a small or a large village, a small or large town or a city, or is it itself a subordinate part of a bigger town?
    ▪ Does it have formal <u>street furniture</u> with separated roads and footpaths or a less formal rural feel?
    ▪ Are buildings or houses set back from the street frontage behind gardens, or

- built on the back of the pavement in an urban form?
  - Are there large or small rear gardens?
  - Are most buildings one, two, three or more storeys high?
  - Is it a village layout organised around a green or a more urban layout organised around a series of larger scale squares, crescents, circuses and the like?
- o Retention of original historic, cultural, heritage and architectural features
  - Identify important features social significance.
  - Historic buildings and features of culture and heritage should be retained and where necessary incorporated and enhanced within the development and/or around the site plan.
- o Identification and retention of existing patterns of public movement and social interaction
  - Footpaths through and around the intended site for development.
  - Habitual routes through surrounding housing developments that give access to central areas and key shops and services.
  - Paths to and between green areas and peripheral sites of local interest and recreation.
  - Link ups between new routes and these habitual paths and movement patterns.
- How well does the design respond to the valuable characteristics in the surrounding settlement pattern (the "urban grain")?
  - o How well will the proposal relate to the key elements of the existing urban grain, by contrast, repetition, or variation? For example,
    - How well does it respond to the key characteristics that make the area distinctive (identified in the site assessment)?
    - How well does it fit with the urban scale of the local area (identified in the site assessment), e.g. terraces or larger blocks of houses with associated open spaces in areas of higher density, detached houses with gardens in areas of lower density?
    - How well does the road pattern reflect the genius loci – regular and straight for level and evenly sloping sites, or gently and curving to correspond to the natural contours of undulating sites.
  - o Is it appropriate to repeat existing features, or deliberately to do something different? For example:
    - Is it appropriate to repeat a village green or to develop in a way that is subservient to the original green?
    - At a neighbourhood scale of 50+ houses, is variation more appropriate, although at the same kind of scale?
    - If the immediately surrounding area is undistinguished, is there a case to create something completely new, or to respond to other more distinctive features of the town that are further away?
    - Is the settlement at a critical stage of growth at which it is now appropriate to introduce new forms that are more characteristic of a larger size town?
  - o Does it help towards any phase change that the settlement requires?
  - o Is there a need to disguise, screen or remove the unsightly?
    - Usually unsightly neighbours or aspects of a site can be overcome by design, and masked by appropriate planting.
  - o How effectively does the design complement or add to the connectivity with the surrounding neighbourhood?
  - o Are the building or house and its feu aligned to contribute to or detract from the free-flow of pedestrian routes and cycle ways?
    - Does the building help to provide natural surveillance of the established pattern of movement through the area?
  - o Does the design leave or fill gaps in the overall composition?
- How well does the design respond to the cultural significance of local forms?
  - o Is the surrounding area of civic significance, or is it suburban, rural, or of some other general cultural character?
    - What are the key elements that characterise the cultural context of the townscape and give it a sense of place?
    - What enclosures are there, what common materials, roof forms, colours and pattern?
    - Is the historic context still relevant or has it been overtaken by events (for

example, an old fishing village that has become a commuter dormitory)?

- What size of building or house is characteristic of the surrounding area? The answer involves discussion about plot sizes, the design of units, especially composition, and whether the new development is likely to have a significant effect up/down-market on the local area.

o What sort of role does the townscape require to be played by this particular site? For example, does it call for a focal point, or for the new building(s) to continue the local pattern, or to vary it (say, to avoid repetitive sprawl)?

o How well will the proposal relate to the key elements of the townscape and neighbouring buildings, for example, by contrast, repetition, or variation?

- Would that be appropriate for the sort of building that is proposed?
- Would it be appropriate for the required role of this site in the townscape?

o How much would the design complement or clash with those key characteristics, and would it add to or subtract from the sense of place?

- Will the proposal change the character of the immediate neighbourhood to its detriment, for example, is a 2 storey detached house be likely to "fit" in a neighbourhood of bungalows, or vice versa?
- If an existing building is to be re-used, will the design retain existing features and/or elements?
- Is it culturally appropriate for the particular new building to be bigger than those surrounding, to be at a focal point, or otherwise to have a big presence (for example, because it is a significant public building, executive housing, or a mansion); or is it big and in the wrong place?
- Is it a big building (right for a focal point, wrong for a row of cottages)?
- Is it a small building (wrong for a focal point, right for a row of cottages)?
- Is it out of character, for example, a suburban bungalow in the middle of the High Street, or an urban tenement in the middle of the countryside?
- How much will the design help to generate new sense of place that wasn't there before, or improve on it (for example, in accord with an accepted new masterplan)?

- Other factors
  o Anything else relating to the particular site or arising from the explanation in response to the Question.

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Q6. How does the built design relate to existing neighbouring features, such as public open spaces and landmarks?

This question applies to all types and scales of development, with the exception of change of use proposals, and could be considered in conjunction with Question 2 (townscape setting). The level of detail required to answer this question will vary depending on the location and scale of the development.

Explanation

A major landmark, open space, part of building or element of landscape can be important both in terms of orientation (people will use it to give directions to others) and in terms of residents' recognition of what makes their neighbourhood special. These are therefore at the heart of the "sense of place". It is essential that they be protected, but they can also be pointed up in a design so as to give them, and the design itself, an extra importance. Similarly an adjacent field or meadow can be worth "including" in a scheme to create a new landmark by using a walk or roadway along it, or grouping buildings or houses along its edge to take advantage of the view.

Things to consider

- Are there any significant public open spaces, landmarks, <u>focal points</u> or vistas in the vicinity (e.g. used to give someone directions or contribute significantly to the area's <u>sense of place)</u>?
    - o Which existing features in the local area would you use to give someone directions?
    - o Which features in the local vicinity already contribute significantly to the area's <u>sense of place</u>?
- What form of hierarchy do these areas or features stand in relation to one another (see Appendix 1 in the Aberdeenshire Parks and Open Spaces Strategy, 2011 available on Aberdeenshire Council's website http://www.aberdeenshire.gov.uk/planning/ldp/OtherInformation.asp)?
- How much will the scale, form or design of the buildings(s) or structure(s) complement, dominate or otherwise clash with one of these features or with their hierarchy?
- Will the new design create a new public open space, landmark or <u>focal point</u>?
    - o How much will this itself clash or compete with an existing important feature or with the hierarchy of landmark features?
    - o Will it repeat an existing feature - and would this contribute to a greater overall pattern, or merely be repetitive (and thus distract from the distinctiveness of the original)?
    - o Will it repeat the existing feature but in an interesting new way?
    - o Will it create a new scale of feature to signal a <u>phase change</u> of the settlement (see also Question 2 above)?
    - o Advice from 'Green Infrastructure: Design and Placemaking' (2011)
- Any other relevant considerations.

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Design Issue B: Resources

Part B)(i) Embodied energy and reuse of construction materials

Embodied energy is a significant component of the lifecycle impact of a building. It takes account of all the energy consumed by each of the processes associated with the production of a building, from the acquisition of natural resources to product delivery. This includes the mining and manufacturing of materials and equipment, the transport of the materials and the administrative functions. However, the issues of scarcity, renewability and durability are also part of this equation. Durability is particularly significant: for instance, if a material will last for 150 years without much maintenance, it can balance out what might otherwise be a high embodied energy cost in acquiring it.

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Q1. How does the design maximise the use of durable and renewable materials, and how will the general energy cost implications of getting the materials to the site be as low as it can be?

> This question applies to all types and scales of development, with the exception of change of use proposals where no alterations or extensions are proposed. The question should be considered in conjunction with the development's Site Waste Management Plan, when required.

Explanation

This question is about the life expectancy of materials, and the amount of energy that is required to extract, transport and use the materials on the proposed site. Clearly the harder they are to manufacture and the further they have to come, by and large the more energy is "embodied" and the less sustainable they are. Calculating the maintenance costs of different surface materials will also indicate how sustainable the chosen materials for the building are in the long term. Thus, extending the life expectancy of a building will aid in the following:

- lower demands on finite material resources;
- lower emissions of CO_2 caused by manufacture and transportation;
- lower demands on non-renewable fossil fuels;
- encouragement for a market-led improvement to the further development of more durable materials.

> ### *Things to consider*
>
> - How long do the materials have to last to cover the financial and energy costs of manufacture and installation?
>   - Low environmental impact.
>   - Use of labour and time for installation.
>   - Expected lifetime costs kept to a minimum.
> - Would the design provide good value in terms of the quality of resources used?
>   - How robust, long-lasting and easy-to-maintain are the materials and finishes? For example
>   - Heavy masonry, high quality hardwood components for doors and window frames, high quality structural and cladding materials.
>   - How will the materials react to any special characteristics of the particular site and micro-climate? For example, exposure to salt-wind, damp ground?
>   - How gracefully is the building likely to age? For example,
>   - Does the harling need expansion joints, ventilation ducts or sheet-metal strips at its foundation (any of which may indicate it is on an inappropriate substrate)?
>   - Does it have plastic rainwater goods?
>   - Does it have softwood or plastic windows?
> - How often will they need major repairs?
> - What is the forecast use-by date of the materials by when they will need complete replacement?

- o High durability over 150yrs for structure, roof cladding and the outer surface of walls; and similar for windows and doors. Or, for example, will the materials degrade in sunlight and need replacement after 5/10/15 years?
- How much regular maintenance is required?
  - o Low maintenance requirement, for example, will the materials need repainting every 1/3/5/10 years, or will they need repainting at all?
- Whether the need for material to be transported will be minimised?
  - o How much transportation of waste material to landfill sites will be avoided by recycling and reuse? For example,
    - Reusing excavated and other waste material within the development to avoid transportation to landfill.
    - Reusing on-site demolition material, if available, as hardcore.
    - Providing separate site skips to allow for the recycling of timber and packaging.
    - Conserving topsoil material on-site to avoid the haulage of additional soil.
    - Optimising use of bulk quantity deliveries from large haulage vehicles.
- Whether the materials are locally sourced or imported from afar (for example, where do they come from; how do they get to the site?)?
  - o How many of the new materials are locally sourced (i.e. grown, quarried or extracted within 40kms of the site)? For example,
    - timber components from manufacturers who use locally sourced timber (see Planning Advice *Using local timber – contributing to sustainable construction: guidance for North Scotland*);
    - low-density cladding and roofing material, for example, timber from home-grown native species (for example, birch, larch or oak); or other home grown species (for example, Douglas fir, western red cedar etc);
    - high density materials, for example, stone, blockwork, slate, or clay tile;
    - materials that have been recycled locally, but which otherwise might have required large quantities of virgin material to be imported.
  - o If the materials cannot be sourced locally, how many of them come from a nearby port (i.e. within 40km) importing them by sea in energy-efficient ships? For example,
    - sustainably managed timber from Finland, Sweden;
    - low-density material from low transportation energy cost countries, for example, steel, aluminium.
  - o If the materials cannot be sourced locally, how many of them will be transported by rail to local vicinity from within the UK? For example,
    - timber components sourced from elsewhere within the UK;
    - high density materials sourced from elsewhere within the UK.
- Whether alternative sources are available locally (either currently, emerging or potential)?
  - o What other renewable (or non-renewable) materials are available locally that could be used?
- Whether they are cheap or expensive to extract and transport (for example, financial costs; energy costs)?
  - o If the materials are to come by road and/or from elsewhere, how far away will the material be imported from? Are these bulky materials or the materials required in large quantity, or small quantities of light, possibly specialised, material?
  - o How much will deliveries be optimised:
    - by the use of bulk quantity deliveries using large haulage vehicles?
    - by delivering all components required for development in one delivery?
- Any other relevant considerations.

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Q2. How has end of life recycling been considered?

This question applies to all types and scales of development, with the exception of change of use proposals where no alterations or extensions are proposed. The question should be considered in conjunction with the development's Site Waste Management Plan, when required.

Explanation

The recycling of building or other materials makes environmental sense and the scope for increased recycling can be incorporated into a design in two ways. Firstly, by specifying recycled materials for the original development, or secondly, where new material is used, the specification can ensure that as much as possible can itself be recycled at the end of the building's or structure's life. Some of the obvious candidates for recycling are brick, roof coverings, hardcore, copper wiring and plumbing, steel, iron, lead and zinc, door and window furniture, and timber doors and windows.

"Renewable" resources, such as timber offer the advantage of an on-going supply if they are managed properly. Timber is not only renewable, but compared to non-renewable materials it needs very little embodied energy to be put to use; and only when it is transported long distances or it is incinerated does it embody more energy and emit CO^2. Therefore, the preference should be to use building materials that have low embodied energy.

Things to consider

- The reuse of materials and structures already on site.
    - Retention/reuse of existing buildings, retaining and boundary walls, wherever possible.
    - Minimisation of the need for new material in the first place, especially for engineering work:
        - Minimised re-engineering of the site – fit the layout to the contours rather than the other way about.
        - Minimised need for excavation - design light structures which require a minimal foundation depth. Low density cladding materials such as timber will aid in lowering the dead load of a building.
        - Minimised areas of hard landscaping.
        - Reuse of materials already available on site.
- The reuse of materials reclaimed or recycled from elsewhere.
    - Maximised use of reclaimed or recycled materials, for example,
        - Recycled concrete and asphalt surfacing for driveways, pavements and hard standing areas.
        - Natural stone, slates and tiles.
        - Blockwork with a high-recycled aggregate content.
        - Recycled aluminium sheet roofing (see WRAP website for "quick win" solutions).
    - How much of the materials are recyclable?
- The use of other renewable materials.
    - How much of the materials are from renewable sources? For example,
        - Are any of the materials derived from threatened species or environments?
        - How much evidence is there that the original resources from which the materials have been extracted really are sustainably managed?
        - Maximised use of FSC accredited timber cladding, timber shingle roofing, and timber component windows and doors.
- Where non-renewables are necessary, the use of those that are least scarce and most easy to recycle in the future.
    - How many of the materials are derived from abundant reserves, for example, clay tiles and natural slate?
    - Has the number of new products manufactured with low finite reserves been minimised, for example, aluminium, stainless steel?
- Whether any of the materials contain toxic components, will have toxic effects, or will provide a host environment to harmful organisms.
    - During the building's lifetime will any of the materials be dangerous to contact or give off fumes that would be deleterious to health?
    - Are any materials assembled in such a way that they might harbour toxicity (for example, radon gas, dust or allergens), or encourage infestation (for example, by rats)?
    - On disassembly will any of the materials give rise to hazards of some sort (for example, asbestos, post-tensioned concrete, by-products of timber preservation)?
- Any other relevant considerations.

Design Issue B: Resources

Part B(ii) Compactness of built form

This issue focuses on the density and layout of housing developments, which should be designed to be as efficient as possible. This would, for example, provide more green-space, make the provision of community services easier and more efficient, and make the construction process and the buildings themselves more efficient. This may be achieved both by refining the roads layout and by efficiently combining mutual walls.

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Q1. How does the building design and/or road layout optimise the density of the site?

This question applies principally to developments of two or more housing units, although it can be applied to non-residential uses, where appropriate.

Explanation

Usually the most significant impact on resource use is in the construction of the site itself, resulting from the length of road needed to service the site. The ratio of road coverage to number of housing units served by those roads, or R/H ratio, can vary from a very efficient 60m² to a very inefficient 180m² of road per house. This not only affects the materials that go into the roads (which themselves have a very high cost and embodied energy content); but a distinct mark-up ensues from the additional length needed for water supply, drainage and all the other pipes and ducts that follow the line of the roads. Resource inefficiency may also result from recontouring sites for individual buildings rather than shaping the development site to fit within the topography of the site.

The use of mutual walls can also reduce resource use as they take fewer materials to build and lose less heat (for the same amount of insulation) than buildings with only external walls.

Things to consider

- Ratio of road coverage : number of housing units
  - A low ratio might be achieved in a number of ways, but the assessment should also be tailored by the success of the design in responding to the topography of the site (thus minimising the need for recontouring).
    - A low R/H ratio: 60-100m² R/H ratio would be a good design response to this issue.
    - A medium R/H ratio: 100-140m² R/H ratio would not be a very effective response, but may be called for in some circumstances, e.g. depending on the topography.
    - A high R/H ratio: 140-180m² R/H ratio would be a poor response.
- The quantity of infill/recontouring of the site
  - The optimisation of infill and recontouring.
  - The road layout flowing with the site's natural contours.
- Proportion of mutual walls and ceiling/floors in the overall development
  - A high proportion of flats and terraces in relation to the total number of detached and semi-detached houses in the layout.
  - Generally flats are much better than terraces, terraces are twice as good as semi-detached, and semi-detached are better than detached houses.
- Anything else relating to the particular site or arising from the explanation in response to the Question.

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Design Issue B: Resources

Part B(iii) Appropriateness of materials

This design issue is about the way the materials proposed relate to each other and to their setting. It is related to but distinct from the way that the different elements and features of the design combine to make the overall composition (for which see Design issue 4, Part D(iv) below).

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Q1. How do the finishes, textures and colours of the materials relate to each other and to the surroundings?

This question applies to all types and scales of development, with the exception of change of use proposals where no alterations or extensions are proposed. The level of detail required to answer this question will vary depending on the use, scale and location of the development.

The question should be considered in conjunction with the questions listed in Part B)(i) on embodied energy above, as applicants will be expected to explain why the materials proposed have been used (e.g. to complement or replicate existing architecture, to be innovative, for cost reasons, or to use local or low embodied energy materials).

Explanation

The quality of a material's finish, texture and colour is related to the relative importance of the component it is used on. For instance, the front façade of a public building is more important than an outhouse, should be expected to last longer and justifies the expenditure of more quality and resources. Thus the relative gradation of quality in the materials used across the building will also contribute to the overall design. However, these factors equally relate to the way materials in the new building(s) relate to the quality of materials in neighbouring buildings. There are no good or bad individual materials in a design. What is important to the appropriateness of the mixture is the way all these individual components hang together to make an overall composition. This applies both to the way the materials are used within the new building(s), and to their role in their street and landscape setting. Potential mismatches between the constructional and visual qualities of materials, which usually stem from a desire for something new to look like what has gone before for aesthetic or cultural reasons should be addressed at the design concept stage.

Things to consider

- What varieties of material are to be used?
  - Are the walls of stone, brick or other blockwork; exposed or roughcast; timber or metal?
  - Is the roof of slate, concrete or clay tile, straw, metal or shingles?
  - Are either of some other type of cladding?
- What varieties of finish, texture and colour are to be applied?
  - Is the surface of the materials to be used rough or smooth, and what scale of roughness does it have (for example, hammered stonework, smooth ashlar, stucco; flat, grooved or crinkly tiles)?
  - Is the surface uniform or irregular (for example, rustication, uncoursed rubble masonry, coursed ashlar; patterned tiles)?
  - What range of colours is to be used (the hue); are they light or dark (the tone); and are they bright or dull (the value)? This includes the way that the intrinsic colours of the materials themselves are used in their raw state, as well as when they are painted.
- How do the types of material finish, texture and colour vary across the building?
  - Is the relative quality of finishes, textures and colours within the design itself (on the front, side and rear façades of the building, and on extensions, outbuildings and boundary walls) the same or different?
  - If they are different, are the differences sharp or complementary, are there contrasts or similarities?

- Is there any relationship between the <u>finishes</u>, textures and colours on the building and the way they are used?
  - o Is there a gradation from significant façades to less significant façades?
  - o Is there a gradation from the larger scale <u>elements</u> within each façade to the smaller scale <u>elements</u> or <u>features</u>?
  - o Is the gradation related to some other factor?
- Is there any relationship between <u>finishes</u>, textures and colours on the building or structure and the surroundings?
  - o Is the relative quality of <u>finishes</u>, textures and colours on the building as a whole the same or different, in relation to its neighbours and its own <u>cultural significance</u>?
  - o Do they reflect materials and patterns in use on neighbouring buildings, or is there some reason for them not to do this?
  - o If they are different, does the difference reflect an appropriate distinction between the <u>cultural significance</u> of the different buildings?
  - o Is a contrast appropriate or will the difference make the new building stand out like a sore thumb?
  - o Is the difference related to some other factor?
  - o Are they local materials that reflect local resources in some way?
  - o Are they colours that reflect the character of the local landscape in some way?
- Is the relative quality of materials appropriate to the way they are used?
  - o Is there a limited palette of <u>finishes</u>, textures and colours?
  - o Are the different qualities of the materials used related to each other by gradation, contrast or in other ways?
  - o Is there any pattern or coherence to the relationship between these aspects?
  - o How appropriate is the pattern to the setting of the design?
- Are the materials and the construction form of the building(s) or structure(s) true to themselves?
  - o Are solid construction forms (for example, stone, blockwork or bricks) mismatched with frame construction forms that are disguised as solid forms?
  - o Are there any materials masquerading as something they are not?
    - ▪ Are there any fake slates, stonework, window astragals or other details?
    - ▪ Is there any plastic made to look like wood or like metal?
    - ▪ Are there any steel beams disguised as a stone lintels and not expressed in their own right?
- Are there any materials or <u>features</u> used in a constructional form to which they are inappropriate?
  - o Are light materials mismatched with heavy materials?
  - o Are the substrates appropriate to the <u>finishes</u> applied?
  - o Is any harl on a timber or light masonry substrate (this will also affect durability)?
  - o Is any tabling on a timber frame?
- Is there a deliberate '<u>unusual architectural style</u>' (and is this appropriate to the circumstances?)?
- Any other relevant considerations.

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Design Issue C: Function

Part C(i) Basic functions

New developments are expected to perform basic functions, including issues of perception related to the sense of security, privacy and warmth, and to the perceived usability of the proposed development. However, it also extends to the more practical side of support systems – the heating, lighting, water and waste utilities needed to make the building usable – and their lifetime sustainability. Footpaths and cycle routes have a huge bearing on how well the inhabitants relate to a site and create a <u>sense of place</u> which affects the occupants' sense of community and interaction. Equally, the design issue addresses whether for example, a housing development will provide places where children can play in a stimulating and secure environment that is usable, whether it has the adaptability to cope with the normal cycle of change during its lifetime.

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Q1. How does the design provide a reasonable level of privacy and amenity?

> This question only applies to developments, including change of use proposals, which include new housing unit(s).

Explanation

Everyone has a right to expect a reasonable level of privacy within their own home. This should also be extended to some adjoining private garden space. In some cases, such as flats, it will often not be possible to provide such additional outside private space, but as an alternative a balcony could be provided.

Things to consider

- Window distances
  - Good practice suggests a separation distance from house windows to a common property boundary (at right angles to the windows) of at least 9m for ground floor windows and 12m for upper floor windows.
  - These figures will vary depending on the slope of the ground, angle of the window, use of the room and use of obscure glazing or other screening etc. They will not apply where the "public" side of the house faces directly across a road.
- Screening
  - The private areas of gardens should be screened from direct views from public roads and from directly intrusive upper floor windows in the side elevation of an adjoining plot.
- Other factors
  - Anything else relating to the particular site or arising from the explanation in response to the question.

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Q2. How does the design provide for a reasonable level of security?

> This question applies to all developments, with the exception of structures.

Explanation

The shape of the environment can have a significant effect on the vulnerability of developments and occupants to intrusion. The use of public paths and rights of way in and around a housing area can mitigate the sense of insecurity by making housing layouts more open, permeable and legible to public use. Importantly this will also increase the potential for social contact between neighbours and other

potential community members. A good layout will use natural surveillance from houses, shops, offices and community facilities which overlook a space, and will clearly define public and private land. Further information is provided in PAN77 Designing Safer Places.

Things to consider

- Clear distinction between public, semi-public, semi-private and private space
    - All accesses to houses should traverse at least some semi-private space.
    - Courtyards and streets leading to a development (e.g. groups of houses) should be designed wherever possible as semi-public space.
    - Each type of space (public, semi-public, semi-private and private) should be clearly defined by visual boundaries and have clearly recognisable points of entry and exit.
- Natural surveillance
    - All main entrances, communal meeting, play and parking areas and/or public footpaths should be overlooked from other buildings or public thoroughfares.
    - On normal public routes footpaths should be aligned and public lighting deployed to avoid the creation of unnecessarily dark corners or places where criminals could lurk unnoticed (this does NOT mean flood-lighting all public spaces, or stripping the landscape out of amenity space).
- Promotion of continuous activity
    - Routes past houses, communal meeting, play and parking areas designed as through routes, albeit via semi-public space; avoidance of unnecessary dead-ends.
    - The introduction of a limited mixture of other uses into the development, such as a houses, offices, café, crèche, library, corner shop etc, which involves daytime activity.
- Any other relevant considerations.

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Q3. How does the design provide a reasonable level of comfort? How well does the design of the garden(s) integrate with the proposed house(s)?

This question applies to all types and scales of development, excluding structures, but includes change of use proposals. The level of detail required to answer this question will vary depending on the use, scale and location of the development. The second question only applies to developments, including change of use proposals, which include one or more housing unit(s).

These questions should be considered in conjunction with the questions listed in Design issue A, Part A(i), which questions the general response of the building's location, orientation and design to the local climate.

Explanation

The first question relates to the effectiveness of methods used to keep the building itself warm, dry, well-ventilated and well-lit in light of the building's location, orientation and design to the climate.

The second question is about how all the associated necessities of the new house(s), including the role of roads (as spaces), car-parking areas, garden, planting, fences, walls etc contribute to the quality of the design, and to the usability of the property as a home. The garden and the surroundings of the house need to be seen as intrinsic parts of the design. In practice, if designed well, they will act almost as additional accommodation - just in the open air. For this reason, they can be seen most easily in plan form.

Things to consider

- What are the key climatic factors on the particular site that the design will need to deal with (these are likely to have been identified in response to Design Part A(i))?
- How well will the design minimise energy expenditure in providing thermal comfort and air quality?

- o What methods of permanent protection are provided against cold winds and frost, to minimise the expenditure of further energy? For example,
  - What standard of insulation and wind protection will be provided?
  - Double or triple glazed weather-stripped windows, or thermal shutters?
- How well has the thermal comfort and air quality of the building been considered?
  - o What methods of permanent protection are provided against dampness, condensation, poor air quality and even over-heating? For example,
    - What standard of insulation, ventilation will be provided?
    - How responsive and efficient will the ventilation be?
    - How much personal control will the occupants have over the internal environment, for example, by being able to open windows or draw down solar shades in hot weather?
- How is the lightness and airiness of the building to be optimised? For example,
  - o Avoidance of overshadowing?
  - o How much has natural sunlight been used to avoid dependence on artificial light?
  - o What quality of views is provided by the windows?
  - o How well has the design overcome problems of reflectance, glare and harsh sunlight?
- How well have the lighting and acoustics of the building been considered?
  - o How well will the different parts of the building be insulated acoustically from each other and from neighbours?
- Are any innovative measures/combinations of materials and forms proposed to achieve the above?
- As a result, how much of the heating, ventilation etc will be provided by passive means? By how much (over standard) will the heating requirement and emissions be reduced?

- How well are the garden and parking arrangements integrated into the design? For example:
  - o Is direct access provided:
    - from house to garage without getting wet when it is raining?
    - from the house to parking areas?
    - from the living room to the private garden?
- Is the garden designed to provide usable space for play, private recreation, drying clothes and growing things? For example:
  - o Is the garden/parking space/other surrounding area set out in such a way that the house occupier is likely to take "ownership" or personal interest in it and actually be inclined to use it? For example,
    - is the garden and parking space overlooked by living room or kitchen windows?
    - do the areas between house and roadway contribute as clearly defined private ground or as a communal or "semi-private" buffer between public and private space?
  - o How private is the private side of the house?
  - o Is there a sunny patch adjacent to the living room/kitchen for the occupants to enjoy; where children can play within sight of the parents inside; where the occupants might sunbathe or eat outside on sunny days; and/or where the washing will dry?
- How well does the design of the garden go along with the house and the surrounding buildings? For example:
  - o Is there an area where trees can grow without undermining foundations or inappropriately overshadowing houses; vegetables can reasonably grow protected from rabbits or other vermin; and/or a compost heap/recycling bins can reasonably be sited.
  - o Are existing trees to be retained?
    - Are the new species to be planted relevant to the local habitat - will they encourage wildlife (has any contact been made with the North East Biological Records Centre?)?
    - Is there architectural or specimen planting for contrast?

- Any other relevant considerations.

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Q4. How does the design provide for places for children to play and what is their nature?

This question applies to developments, including change of use proposals, which include new housing units. The level of detail required to answer this question will vary depending on the scale and location of the development.

Explanation

The provision of areas where children not only can, but actually are likely to play, is another key element in the development of a <u>sense of place</u> and community. These will mostly need to be within 400m (a 5 minute walk) of each house for practical purposes. The overall objective should be to provide a stimulating and secure environment, with places where children can play that are usable and that appeal to all members of the community, including young people and the elderly. This is another of the key functions that any house or housing layout should provide, if it is to be seen as a potential home.

The design should aim to maximise social use by all groups in public areas. Important factors to encourage the level of child activity in public areas are visibility, the penetration of the layout with green areas and nature corridors, and the inter-linkage of play areas with the system of public footpaths and existing patterns of public movement to and from key services.

Things to consider

- Access and social mix (further advice on open space provision is provide in Aberdeenshire Parks and Open Spaces Strategy (2011)).
    - Play areas should be within 400m of most houses.
    - Play areas should be inter-linked with a system of public footpaths along green / nature / wildlife corridors.
    - Play areas should relate to existing patterns of public movement from key services such as shops or community centre.
- Visibility of child play areas
    - All formal child play areas should be visible from surrounding houses.
- Informal play areas in natural areas
    - Retention of natural features and areas to provide more informal play opportunities, for older children and potentially further away from each house.
- Other factors
    - Anything else relating to the particular site or arising from the explanation in response to the Question.

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Q5. How does the design provide easy and safe routes to walk and cycle to and between available services?

This question applies to all types and scales of development where path(s) are either proposed or required in a development. The level of detail required to answer this question will vary depending on the use, scale and location of the development.

Explanation

The increased use of footpath and cycle routes has a far wider impact than just on health and energy use. It also has a strong bearing on the occupants' or residents' sense of community - how well they know and relate to the place, and how well they interact with neighbours in it. In relation to footpath and cycle routes, the key elements in the development of such a <u>sense of place</u> are the provision of an open layout structure, the adaptation into it of existing habitual routes, the linkage of routes to centres of social activity, services and destinations with valued features of community interest, and the linkage of this all in a single system of pedestrian and cycle routes in loops. Loops allow people to go and come back from a destination by different routes, or simply to enjoy just going for a walk. Either way, they will

be more encouraged to use the network, and by doing so interact with and bind to the place and its community.

An open layout structure without dead-ends is essential, which adapts to existing habitual routes along with valued features of community interest. The linkage of this all in a single system of looping pedestrian and cycle routes is key. Further information is available in 'Making the case for Investment in the Walking Environment, published by Living Streets, which can be viewed at www.livingstreets.org.uk.

Things to consider

- Open layout structure
    - Layout permeated by public access paths, green areas and nature / wildlife corridors with direct access to residential frontage.
- Integration of layout by footpath and cycle routes
    - Retention of existing access paths and habitual movement patterns on key routes to a community centre, key local facilities and transport links, and any connections to routes in the local Core Paths Plan.
    - Use of the layout's entrance, exit and access routes and house orientation to emphasise existing valued features of community interest and significant destinations (e.g. key local services and recreation areas).
    - Linkage of the centre, periphery and external areas of the layout, including all sites of recreation, heritage and significant valued features of community interest, in a single system of looping pedestrian and cycle routes.
- Other factors
    - Anything else relating to the particular site or arising from the explanation in response to the Question.

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Design Issue C: Function

Part C(ii) Support systems

This issue is about the key support systems – the heating, lighting, water and waste utilities – required to make the building or structure work on a practical basis, along with how sustainable they are likely to be over the building's lifetime. It particularly focuses on the future use of resources e.g. in the need for maintenance, and is thus distinct from the amount of energy used to build it in the first place or embodied within the materials in getting them to the site. A related issue is the avoidance of unnecessary over-design in outside lighting, which not only wastes energy, but also pollutes the night sky and creates unpleasant, and even dangerous, glare for others.

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Q1. How will the energy needed to run the building over its <u>life-cycle</u> be minimised?

> This question applies to all types and scales of development, including change of use proposals. The level of detail required to answer this question will vary depending on the use, scale and location of the development.

Explanation

The less energy needed to run the building or structure during its lifetime, the better; and the fewer fossil fuels needed the better. This issue considers how the energy needed to keep the building or structure wind/watertight and warm can be minimised.

> *Things to consider*
>
> - How much residual energy will be required to run the building or structure over its life-time for space-heating, water-heating, lighting and other power needs?
>   - Have the rooms been arranged to minimise the need for energy use, for example, with kitchens, living rooms and any conservatory where they will absorb sunlight, and storage areas, stairways, garaging etc to the north?
>   - To what standard will the house be insulated?
>   - Is any additional comfort value provided for cultural reasons? For example,
>   - a log fire in the living room even when additional heat is not actually required, except as back-up?
>   - How much of the artificial lighting provided for the house is low-energy? Are occupancy sensors included to switch off lights when they are not needed?
> - How much energy will be saved or wasted as a result of using good or poor quality materials - would the design give good value for the resources used in the first place?
>   - What are the maintenance implications? For example,
>   - of having to replace plastic framed windows or a poorly-designed flat roof every 15 years.
> - Any other relevant considerations.

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Q2. How renewable are the energy sources proposed?

> This question applies to all types and scales of development, unless exempt under supplementary guidance SG LSD11: *Carbon neutrality in new development.* The level of detail required to answer this question will vary depending on the scale and location of the development.

Explanation

However well designed the building or structure is to minimise energy use over its life-time, there is always likely to be some continuing residual need for the energy used in space-heating, water-heating, lighting, monitoring and to provide for other power needs. This issue is about how sustainably that residual power requirement will be provided.

An ideal response would be to provide a careful analysis of the site's potential, with a well argued consideration of the most appropriate renewable power source (including siting, emissions, combined heat and power, <u>life-cycle</u> costs, integrated design and landscaping). The more of the site's energy needs that will be met by a viable renewable energy source, the better. However, a reasonable explanation should be provided of alternatives dismissed. A simple dismissal of alternative heat and power sources, or a declaration of the intent to use renewable energy, without any detailed explanation of how this will be done, would be inadequate.

Things to consider

- The site's potential and limitations for renewable heat and power use
  - Assessment of the climatic and topographic potential of the site.
  - Assessment of the total energy requirements of the buildings, and their geographical spread across the layout.
- Optimisation of the renewable/non-renewable mix of energy uses proposed
  - Comparison between the main renewable power sources potentially available on the site or from an existing source nearby (e.g. an existing district heating system, waste heat from a nearby industrial plant), and what is actually proposed, e.g.
    - Standard central heating, using fossil fuels, such as coal, gas or oil.
    - Micro-renewables, such as wind-power, ground-source heating, solar heating or photo-voltaic power.
    - Access to energy-efficient methods, such as combined heat and power systems, a heat recovery system, or biomass generated district-heating.
  - A comparative assessment of the proportion of the power and heat that can be provided by renewable methods in relation to the total likely load in different seasons of the year.
  - A comparative assessment of the aesthetic impact of proposals and how well they have been integrated into the overall layout design (e.g. the integration of solar panels into houses, the siting of a wind turbine, or the pipework from a hydro system).
- Maximisation of efficiency in the energy used
  - A comparative assessment of the energy-efficiency of the methods proposed, including consideration of embodied costs of production and maintenance requirements that will arise.
  - A comparative assessment of life-cycle and health impacts (e.g. the siting and any potentially harmful emissions from a waste plant).
  - Use of combined heat and power.
  - Use of heat recovery systems.
  - Recirculation of un-used electricity into the grid.
  - Will energy be wasted in having to provide unnecessary back-up systems?
- Other factors
  - Anything else relating to the particular site or arising from the explanation in response to the Question.

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Q3. How has light-pollution been minimised?

This question applies to all types and scales of development that propose external lighting (e.g. for decorative or security purposes). The level of detail required to answer this question will vary depending on the use, scale and location of the development.

Explanation

Unnecessary over-design in outside lighting not only wastes energy, it also pollutes the night sky and creates unpleasant and even dangerous glare for others.

Things to consider

- Will the street-lighting provide a level of security appropriate for the area without blinding the windows of adjacent houses, causing unnecessary light-pollution, or creating awkward shadows?
    o Effectiveness of lighting
        ▪ Will any significant dark corners remain or awkward shadows be created?
    o Minimisation of impact
        ▪ Use of reflectors to concentrate light downwards.
        ▪ Use of dimmers to reduce energy waste after 11pm.
    o Number and power of outside lights
        ▪ Optimise efficiency and effectiveness of street-lighting.
        ▪ Minimise use and over-design of security lighting.
- Other factors
    o Anything else relating to the particular site or arising from the explanation in response to the Question.

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Q4. How has the recycling of water been maximised?

This question applies to all types and scales of development requiring a fresh water supply. The level of detail required to answer this question will vary depending on the use, scale and location of the development.

Explanation

All residential and non-residential sites must be provided with an adequate supply of fresh water, the detailed capacity for which will be assessed separately by the Water Authority. However, for a development to be as sustainable as possible, there are additional considerations to the use of fresh mains water and the disposal of waste or 'grey' water.

An ideal response would be to provide a fully designed ecosystem, which recycles grey water and collects rainwater/surface water for re-use, and/or treats either for re-use as potable water. The more the site's water supply is recycled for re-use, the better. A layout where the water supply proposed in the first place is inadequate, or where there is no system for recycling rain/surface or grey water or reducing water use, would be an inadequate response.

Things to consider

- Adequate fresh water supply
    o Acceptance by the Water Authority of connection to the new development.
    o Has the quality and quantity of any private fresh water supply been tested?
- Reduction in water volume

- for example, through specification of low flush WCs, spray taps, minimisation of leakage, use of water meters etc)?
- Recycling of grey water
  - Dedicated and/or sophisticated grey water recycling system.
  - Outside taps to re-use grey water in gardening.
- Recycling of surface/rainwater
  - Rainwater collection system (which can feed into grey water systems, and a water butt, and/or augment the potable supply).
  - Designed ecosystems, which are human-made environments consisting of constructed wetlands, reed beds and soil filters, and various combinations of these to maximise grey and surface water recycling.
- Other factors
  - Anything else relating to the particular site or arising from the explanation in response to the Question.

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Q5. Is the drainage system proposed the most sustainable for the site?

This question applies to all types and scales of development, which require infrastructure to dispose of waste water. The level of detail required to answer this question will vary depending on the use, scale and location of the development.

Explanation

All sites must be drained in a safe and hygienic manner, the details of which will be assessed separately by the Drainage Authority (see *Policy and Supporting Guidance on Provision of Waste Water Drainage in Settlements WAT-PS-06-08*). For a development to be as sustainable as possible, there are some aspects of drainage from both foul water disposal and surface water disposal, which have a more general impact and should be considered along with the site layout.

An ideal response would be to provide a fully designed ecosystem, which disposes of foul water and surface water run-off through sustainable SuDS and wetland systems, including the recycling of black water. The more the site's drainage system will operate on sustainable principles, the better. Lack of a system to treat black water or lack of any SuDS would be a reason to question the response. A layout where the drainage system proposed in the first place is inadequate, or where there is no system for recycling or treating drainage prior to discharge to the public system, would be an inadequate response.

Things to consider

- Capacity of public drainage system
  - Acceptance by the Water Authority of connection from the new development (the detailed specification would be part of a separate Water Connection Consent).
- Treatment of foul water drainage
  - Use of a recycling system for black water.
  - Use of reed beds or other wetland system to treat effluent.
- Treatment of storm and surface water drainage
  - Use of Sustainable Drainage Systems (SuDS), to reduce the speed of surface water runoff.
  - Use of porous road and other hard surfaces.
- Programme of implementation and maintenance
  - Implementation phased to ensure the system is usable prior to occupation of each group of houses.
  - Overall maintenance regime proposed for the drainage system (including all SuDS).
  - The accessibility of drainage systems (including all soakaways and SuDS drainage channels) for ongoing maintenance.
  - Indication of who will carry out the ongoing maintenance and how it will be funded and

guaranteed.
- o An undertaking to provide adequate developer contributions to allay relevant costs.
- Other factors
    - o Anything else relating to the particular site or arising from the explanation in response to the Question.

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Q6. How efficiently will waste be managed in terms of the principles of "reduce, re-use, recycle and recover"?

This question applies to all types and scales of development, and change of use proposals, but excludes structures, alterations, and extensions to residential buildings. The level of detail required to answer this question will vary depending on the scale and location of the development.

Explanation

Developing new and more suitable waste collection systems should provide improved waste reduction and recycling facilities and services, which will keep environmental impacts of waste movement to a minimum. The current response is led by the Zero Waste Plan and when designing the layout of a site, proposals should have regard to Appendix 1 in supplementary guidance *SG Developer Contributions 4: Waste management requirements for new development*. The ideal response would be to include a variety of ways of recycling, reducing and re-using waste. To provide no form of recycling or composting would be an inadequate response.

Things to consider

- What methods will be used to ensure the maximum recycling and recovery of solid waste? For example:
    - o Provision of home composting boxes to each household.
    - o Space provided for kerbside collection with segregation of dry recyclables, organic / green waste and residuals.
    - o Space provided for LGV collection vehicles.
    - o Provision of "bring" recycling systems, waste recycling centres and communal composting schemes.
- Any other relevant considerations.

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Design Issue C: Function

Part C(iii) Connectivity

This section highlights the practicality and environment-friendliness of a development's access and servicing arrangements. Access is required to any development not just for the private car, but also for the likes of delivery vans, waste collection and emergency vehicles. Above all it is required for pedestrians to be able to get out and about. In turn this requires the layout to provide "connectivity", to be reasonably permeable, to allow and encourage people to pass from one part of the layout to all the other parts that they are likely to want to access – and to be able to do this in comfort, without fear of being run over. Within the residential area, this demands a priority for pedestrians (and cyclists) over motorised traffic, in contrast to the traditional approach to priorities. The following set of questions considers the more practical aspects of road and path design in terms of connectivity.

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Q1. How will pedestrian movements be given priority over vehicles? Is there a clearly defined transport hierarchy? How will the variety of ways of getting to and between the key services and places of employment been optimised?

This question applies to residential (i.e. housing estate), employment (i.e. a business park) or mixed use developments. The level of detail required to answer this question will vary depending on the scale and location of the development.

Explanation

The basic principles and requirements for access in general are set out in the Scottish Government's "Designing Streets: a Policy Statement for Scotland". The importance of different forms of access will vary with the location. The difference will stem from how well integrated the location is with commercial, community and leisure uses. An appropriate mixture of access modes in one location will thus not necessarily be the same in another. For example, access to jobs and community facilities is a key consideration in any housing development proposal, and the more variety in the number of modes available, the better.

Preference should always be given to layout designs that provide for and are well integrated into effective public transport, walking and cycling networks, giving priority to the pedestrian over the private car, and proposals should have regard to supplementary guidance *SG Developer Contributions 2: Access to new development*. A well-designed and integrated pedestrian network is the key element, in which separate paths and shared surfaces are equally friendly to people on foot, while still allowing for an adequate combination of modes of transport. Links to transport interchanges, especially the rail network, should be considered where possible. Clearly, therefore, sites in central locations, where public transport is better represented will have an advantage.

Roads standards will serve as a guide and starting point, but should not deprive developers of the flexibility to be innovative in promoting a high standard of urban design, and increasing the attractiveness of walking and cycling. Where good access to public transport exists or can be provided, planning authorities may set lower standards for parking and access by the private car.

Home zones are different from mere traffic calming as home zones aim to change the underlying function of a street. For instance, 20 mph zones do reduce accidents, but traffic calming still allows motor traffic to dominate the street, and it does little to improve the quality of the street environment.

Things to consider

- Footpaths
  - All areas within a residential area should be safe for pedestrians, including shared vehicle/pedestrian areas within home zones.

- Creation of pedestrian links between new developments and surrounding urban areas, providing safe routes to schools and other facilities, and improved security and surveillance.
  - Availability of easy and safe routes by foot between each house and in the direction of all nearby key services and places of employment (preferably within 400m of them), whether these are within the immediate residential area or not.
  - Alternative routes to key destinations, including links to routes in the local Core Paths Plan, will allow residents to go and come back by different paths, increasing the likelihood of them walking in the first place.
  - Design of key routes should be user friendly for disabled and other less mobile people, including mothers with prams, e.g. level surfaces, any kerbs turned down, safe road crossings.
- Cycle routes
  - Availability of easy and safe routes by bicycle between each house and in the direction of all nearby key services and places of employment.
  - Design of routes outwith home zones and other immediate residential areas should include separate tracks for bicycles and safe road crossings.
- Public transport
  - Most houses being within 400m by a convenient route of a regular bus stop or other public transport halt, which connects to a local service centre.
  - Proximity to multiple public transport links would be a bonus.
- Cars
  - Provision of accessibility by car to each house for the purpose of loading/unloading.
  - Provision of parking within sight of each house to locally agreed parking standards.
  - Design of main roads to "highway standards".
- Other modes of transport
  - Anything else relating to the particular site or arising from the explanation in response to the Question.
- Home zones
  - A place where all forms of activity can happen together – walking, driving, playing, sitting outside etc.
  - Shared community spaces within the street, such as seating areas or play spaces.
  - Trees, planting, bollards, lighting and other <u>street furniture</u> used to punctuate and improve the street environment.
  - Sharp changes of direction in the road alignment to discourage drivers from accelerating.
  - Simple "gateways" at entry points to a home zone.
- Other methods
  - The coherent application of traffic calming features other than in home zones.
  - Plateaux at junctions, where cars must cross the pavement and pedestrians have right of way; and/or a shared surface for vehicles, pedestrians and cyclists within streets - with no separate raised pavements.
  - Variation in the colour and texture of surface treatments suited to a pedestrian environment.
- Anything else relating to the particular site or arising from the explanation in response to the Question.

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Q2. How will the environmental impact of providing adequate parking space be minimised?

This question applies to development that proposes one or more parking spaces. The level of detail required to answer this question will vary depending on the use, scale and location of the development.

Explanation

Parking spaces may be an energy inefficient use of land, and often take up the sunniest and wind protected areas. Far too often developments in recent years have been designed to give priority to the car, both as a form of transport between the housing and other facilities, and within the development

itself, where layouts have been dominated by access roads and parking provision. This form of development disadvantages those walking, especially the disabled, and also those cycling. However, where good access to public transport exists or can be provided, planning authorities may set lower minimum parking standards.

Things to consider

- Will the parking arrangements meet the established local standard requirements?
    - In residential developments, the application of maximum parking standards limiting the number of private parking spaces for any one property.
    - Location of parking in north-facing and other shaded spaces.
    - Provision of parking within sight of, but not necessarily adjacent to each house.
    - Communal or shared parking provision, wherever possible, with landscaping that enhances local biodiversity.
    - The provision of appropriate developer contributions to improve alternative methods of access to the site.
- Inverse relation of parking provision to the availability of public transport
    - Limitation of parking provision where public transport routes are easily accessible.
    - Higher levels of parking where access to public transport is limited.
- Other factors
    - Anything else relating to the particular site or arising from the explanation in response to the Question.

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Q3. Is road access for key services the most appropriate?

This question applies to all types and scales of developments where access is required for service vehicles. The level of detail required to answer this question will vary depending on the use, scale and location of the development.

Explanation

No matter how much other forms of access might be reduced or altered to save on resources etc, it will always remain essential to provide for certain types of service vehicle. These include the emergency services (fire engines, ambulances and police cars), waste collection vehicles, winter maintenance vehicles and hearses. Access for these services should be adequate, but not excessive (for instance, using interlocking blocks or reinforced grass paving), and it is important that the surface materials used do not reduce the quality of the street layout, or unnecessarily increase surface water run-off. Proposals should have regard to supplementary guidance *SG Developer Contributions 2: Access to new development*.

Things to consider

- Access standards for service vehicles
    - Provision of space for bins and waste collection points.
    - Space for waste collection vehicles to approach (e.g. within 25m of each house).
    - Provision of a load-bearing surface for turning movements where there is no through route for service vehicles.
- Other factors
    - Anything else relating to the particular site or arising from the explanation in response to the Question.

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Design Issue C: Function

Part C(iv) Flexibility

This design issue is to do with how adaptable the proposed building is to accommodate lifetime and life-style changes of the occupants without the need for expensive and resource-wasteful adaptations later on.

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Q1. How effectively will access be provided for those who are permanently or occasionally less mobile?

> This question should apply when development of any type and scale is required to provide access for the less mobile. This question also applies to extensions of existing buildings and change of use developments, where applicable.

Explanation

A special need for flexibility applies to the various forms of "disability". This includes not just those registered as disabled, but also those who are temporarily injured, the elderly, small children, parents pushing prams, and even shoppers carrying packages. This issue is therefore about how well the new design copes with these needs (i.e. provision for the less able over the entire layout, and the way provision is tailored to the routes most likely to be used, without resulting in over-design).

Things to consider

- What arrangements will be in place to provide access to the building and within the building:
    - for people in wheelchairs or specially adapted vehicles?
    - for people with walking aids, and people with injuries?
    - for people with sensory impairment?
    - for parents with prams, carrying children or loaded with shopping bags?
    - for people carrying heavy furniture into and out of the house?
- If the site is on a slope, how have the internal and external changes of level been accommodated?

The following arrangements may include:
- A surfaced footpath (wide enough and with a "tactile" wearing course appropriate to wheelchairs) from the roadside pavement and from any other parking space to the front door. Where high usage by the less mobile is expected, they should also be surfaced with a smooth wearing course that will not easily be broken up by the occasional vehicle going over it, and preferably with a light coloured finish to make it clearly visible.
- Kerbs should be turned down where a pedestrian route crosses them. It is suggested that gradients on footpaths should not exceed 8% (1 in 12). Steps should be provided in addition to but not instead of ramps, wherever possible. Where steps are used, an alternative route ought to be available nearby for the benefit of users of prams and wheelchairs.
- Specification of the colours and textures of surfaces, and street and door furniture to aid navigation of people with visual disabilities.
- It is suggested that at least 4 per cent of general purpose parking spaces is reserved for disabled persons and there is a minimum 0.9m strip between adjacent spaces to allow access for wheelchairs, and to load and unload a car.
- Easy means to get wheelchairs into and about the house.
- Sufficient space within the lobby and corridors to manoeuvre a wheelchair or a bulky item of furniture, for example, a table or an armchair.
- Is at least one toilet space big enough for a wheel-chair (NB it may need an outward-opening door to ensure the space is usable)?
- Are the stairs wide enough to accommodate a chair-rail, and is there an upper landing to accommodate a wheel-chair?
- Is the construction robust enough to accept the addition of a hoist for bed-ridden occupants, for example, using in-built strain points?
- Any other relevant considerations.

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Q2. How adaptable will the design of the building(s) be to changing circumstances?

This question only applies to developments of one or more housing units, and excludes proposals for alternations, extensions and changes of use.

Explanation

As the original occupants of a house grow older, have children, split up or widowed, their needs of the house and the way they use it will change. This issue is about how adaptable the house is to accommodate changing social needs of the occupants through their life cycles and as family membership varies without expensive and resource-wasteful adaptations later on. The general requirement to provide access for the less mobile from the start of the development is addressed in Question 1 in Part C(iv) above.

Things to consider

- Can the house easily be adapted with the advent of children, their growth and departure?
  - Does the loft provide usable space?
  - Is there enough space to accommodate separate bedrooms for children? Is any room on the ground floor usable as a bedroom?
  - Is there space for children to play both inside and outside the house within sight or hearing of an adult in the kitchen?
  - Can the layout accommodate one, two or three cars if necessary?
- Can the house easily be adapted for single-parent families, and/or families with all adults out at work all day?
  - Does the design provide areas which give the opportunity for a single parent or other single occupant, who is tied to the house all day every day, to bump into and converse with neighbours?
- Can the house easily be adapted as occupants grow older and they need support?
  - Is it possible to adapt entrances and stairways to accommodate changes in physical ability?
- Does the design easily permit internal alterations over the building's <u>life-cycle</u>, to meet changing lifestyles?
- Is there space to convert part of the house into a "granny-flat"?
- How easy would the house be to extend, without putting neighbouring houses at an unreasonable disadvantage?
- In larger housing layouts, is there a mixture of house types and designs that cater for different stages in the usual life-cycle (single → couple → family → couple → single)?
- Any other relevant considerations.

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Q3. How adaptable will the design be to different uses?

This question applies to developments of one or more houses and excludes change of use proposals. The level of detail required to answer this question will vary depending on the tenure, scale and location of the houses(s).

Explanation

As local circumstances and the economic fortunes of the occupants change, it is also sometimes useful for a house to be adapted to a different or ancillary use in addition to habitation. This issue is about how adaptable the house would be to accommodate those changes without expensive and resource-wasteful adaptations later on.

Things to consider

- How easily could the house be adapted to permit a small business or other ancillary use to be run from one room?
  - How possible would it be to adapt a space to accommodate the cars of potential customers?
  - Is there a room that could be set aside near the front entrance, which would avoid customers having to go through the living room or kitchen?
  - Increased homeowner quality; personal space increased to accommodate broader range of lifestyle needs:
    - Home-working.
    - Hobby 'making' space.
    - Multi-generational living.
    - Children's Nursery.
    - Storage.
- Where it is appropriate on general land-use grounds, how easily could, for example, a house be converted entirely to a small shop, office, crèche or other minor community use or public service?
  - If the house were to be converted entirely, how possible would it be to access the rear garden for storage, deliveries or additional car-parking in a way that would not disturb remaining neighbours unreasonably?
- Developments include land not allocated for particular uses which could be built on or become community land at a later stage (i.e. when the local development plan is reviewed).
  - Is there a masterplan for the site, of which land for future development is indicated?
  - Are there appropriate access points?
- Developments include plot sizes and housing typologies that can be adapted or extended.
  - Are plot sizes of sufficient size for future adaptation?
  - Does the design of the building allow for a well designed extension?
- Any other relevant considerations.

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Design Issue D: Identity

Part D(i) Balance of community

In general, social comfort will be increased and travel demand (and thus energy consumption) will be reduced by the effective integration of land uses and mix of house types. The spatial relationship between key local services, sources of leisure, education and recreation and significant natural or heritage features are an important basis for 'sense of place' and social wellbeing of individuals and community. In the context of creating and maintaining a sense of community or neighbourhood, it is important to maintain local interest alongside easy access to utilities and major sources of employment. In light of this, the following questions ask whether the proposal includes an appropriate mix of house types, other building types (e.g. where developer contributions are required) and/or land uses, where housing and mixed use developments are proposed.

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Q1. Is an appropriate mix of house type and tenure planned?

This question only applies to developments of two or more houses and excludes change of use proposals. The level of detail required to answer this question will vary depending on the scale and location of the development.

Explanation

The key element is the provision of the affordable housing requirement (i.e. in accord with the Local Housing Strategy) in a coherent overall design for the layout. The ideal response would be distribution of these elements in a way that reflects proximity to services, along with a reasonable range of house types and sizes. Lack of either the proximity to services or the range of types/sizes element would be a reason to question the response. Failure to meet the affordable housing requirement or to address this issue at all would be an inadequate response. Details of the housing information used will be found in the Aberdeenshire Local Development Plan and the settlement profiles each published separately.

Things to consider

- Social inclusion (tenure)
    - Affordable housing requirements to meet the supplementary guidance SG Affordable Housing 1: *Affordable housing.*
- Range of housing types (meeting the approved masterplan, where one exists)
    - Range of house sizes (1, 2, 3, 4 and 5+ bedrooms).
    - Range of garden sizes.
- Distribution and design of different house types
    - Range of housing reflects the proximity of their location in relation to services and public transport.
    - Reflection of difference in house types in a coherent overall design framework.
- Other factors
    - Anything else relating to the particular site or arising from the explanation in response to the Question.

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Q2. Is the mix of land-uses appropriate?

This question only applies to proposals on land allocated in the Aberdeenshire Local Development Plan for mixed used development (e.g. site M1) or where housing is proposed as part of a mixed use development. The level of detail required to answer this question will vary depending on the uses, scale and location of the development.

Explanation

The development of houses has a widespread knock-on effect on the need for key services, which will ultimately support the occupants. These range from open space to shops and schools. All developers have an obligation to make an appropriate contribution to these services, whether it involves providing space within their particular site, or contributing to its provision elsewhere. Aberdeenshire Council has identified the locations where particular mixtures of land-uses are needed, and when developer contributions are required. However, these contributions only cover public facilities and not, for instance, local shops, which would be privately run. Space for these must therefore be considered separately.

Designers should also consider how to incorporate this mixture of uses into the development. For example, a shop could be on the ground floor of a flatted development, or space could be made available for a shop and/or crèche.

Things to consider

- Adequate provision of space for public community facilities
    - Adequate provision of space for schools, public libraries, open space etc in accord with the requirements of the current Aberdeenshire Local Development Plan.
    - Appropriate developer contributions in accord with the requirements of the current Aberdeenshire Local Development Plan developer contribution policy and supplementary guidance.
- Adequate provision of business space standards in mixed use developments (e.g. integrated 'job spaces' per 100 dwellings)
- Adequate provision of space for private community facilities
    - Local shops, where the need has been identified in the current development plan.
    - Other private community service buildings e.g. a crèche.
- Other factors
    - Anything else relating to the particular site or arising from the explanation in response to the Question.

Design Issue D: Identity

Part D(ii) Sense of place

This design issue is not about the aesthetics of individual building or structure design, but the design of the spaces that buildings and structures (where relevant) are built around, which make a significant contribution to a development layout's individuality and its <u>sense of place</u>. <u>Sense of place</u> can potentially be both good and bad depending on the overall quality of the environment experienced by residents. This in turn depends on specific local factors affecting that environment. Negative factors such as dereliction and pollution can have a negative impact upon the residential experience and in turn produce a negative <u>sense of place</u>. Wherever possible, derelict areas should be included within development in order to bring them back into useful relationship with the rest of the built environment. The use of trees in shelter belts and nature corridors is an established and effective method for improving the quality of the environment while at the same time screening areas which would otherwise degrade the quality of life for residents and workers. Further guidance on incorporating <u>green infrastructure</u> into layouts is available in the Scottish Government's publication 'Green Infrastructure: Design and Placemaking' (2011).

When considering this section consideration should be given to appraising an area significantly larger than the site to be developed.   Existing features of landscape and town character contain many important 'intangible resources' of place that provide the necessary foundation for a stimulating urban environment. Such resources may not be directly measurable in terms of their benefits but possess social significance for residents who derive satisfaction and increased identification with their environment from their presence. Examples will be dependent upon <u>cultural context</u>, climate and geography but may include waterfront, woods and trees, distinctive features of architectural heritage and items of historic interest.

<p align="center">❋ ❋ ❋</p>

Q1. How does the proposed landscape design contribute to a sense of place?

> This question applies to structures, and residential (i.e. more than one house), employment (i.e. a business park) or mixed use developments. The level of detail required to answer this question will vary depending on the use, scale and location of the development.

Explanation

This question of a development's response to landscape and materials lies at the heart of <u>environment-friendly</u> and successful layouts. The answers will already be largely apparent from the contextual issues raised in Part A(ii), in which case much can be transferred directly here. However, this issue focuses more on the landscape qualities of the design itself – of the layout, small group of houses, or even an individual house or structure(s) (e.g. wind turbine(s)). In general terms, respect for natural contours in designing development layouts not only saves unnecessary and expensive site work but can yield very attractive curving streets which vary the scene and give different aspects and views. The layouts which result will also each foster a <u>sense of place</u> sympathetic to the site.

Things to consider

- Use of natural contours
    - Respect for natural contours in designing housing layouts not only saves unnecessary and expensive site work, but can yield very attractive curving streets which vary the scene and gives different aspects and views.
    - Generally for sloping and undulating ground plans curving elements will be best.
    - For flat sites, geometric forms made up of straight lines and regular curves will result in more architectural spaces and will foster a <u>sense of place</u> sympathetic to the level site.
- Exploitation of local views out of the site
    - Good views give local character and are much sought after.
    - Good views are plentiful in North-East Scotland.

- Use of topographical features to set the basis of an open space framework
  - Incorporation of distinctive hilltops, woodland, bio-diverse wild areas and waterways into open space provision.
  - Retention of sufficient space to permit reasonable access for maintenance, in particular access or buffer strips alongside each bank of a waterway or drainage ditch.
- Retention of trees, wetland, stone dykes and other boundary features
  - Infrastructure of a site (hedges, shelter belts, mature planting, dykes), even in fragmentary form, can give an instant boost to a new housing layout, and provide much help in establishing its "sense of place".
  - Structural landscape to assist in mitigating cold winds and defining protected sunny places will be likely to be much more successful, if it takes its character from the existing or contiguous landscape.
- Coherence of new landscaping with the existing
  - Existing field patterns with dykes and shelter belts, even if fragmentary, can give coherence to new housing schemes.
  - New work may build upon existing design or act in contrast to it.
  - Resulting design will need to be assessed as a whole, and should aim to add value.
- Other factors
  - Anything else relating to the particular site or arising from the explanation in response to the Question.

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Q2. How will each open space or landscaped area be fit for the purpose required?

This question applies to any type and scale of development that includes public open space or landscaped areas. The level of detail required to answer this question will vary depending on the use, scale and location of the development.

Explanation

Any landscaped area created should be designed to fulfil a specific function or functions. It is not enough for it merely to be the space left over after the buildings have been set out. If it does not have a function, there is no point in using space for it. However, the problem is not usually whether there is a function at all, but whether, once defined, the form of landscape provided delivers it.

Things to consider

- Whether the function of each part of the landscape scheme is clear.
  - Has the designer set this out in any formal statement?
  - What landscape function or mixture of functions is each space intended to serve? For example, does it provide shelter, screening, ecological habitat, formal or informal recreation opportunities, a green corridor, community food-growing space, an amenity focal point; or is it just a bit of space left over that nobody else wants?
- Whether the provision of open space as a whole meets the requirements of the current development plan and/or the Aberdeenshire Parks and Open Spaces Strategy (2011).
  - Is there enough of each type of open space to meet the requirements of the plan?
  - Is each space large enough and located appropriately to serve the relevant purpose?
- Whether the design of the scheme meets the functional needs of the use.
  - Structure and shelter planting should be substantial enough (in terms of species, quantity and planting distances) to provide a year round setting or screening for the scheme, or in the case of shelter planting to break up the flow of cold winds.
  - Any space that is part of a SuDS must meet the technical requirements of the scheme.
  - To provide habitat, space should reuse existing areas of biodiversity, wherever possible, take advantage of watercourses and wetland, and always use locally native species.
  - Play and recreation areas should be structured to minimise exposure to prevailing and cold winds, and to maximise solar gain, but still be visible from nearby houses.
  - Amenity planting should be designed to make the site look attractive, for instance, by

> providing a <u>focal point</u> or local setting, or to maintain and enhance views.
>   - o Landscaped or green corridors should be designed to link larger areas of open space to each other, and to minimise the distance between housing and services.
> - Other factors.
>   - o Anything else relating to the particular site or arising from the explanation in response to the Question.

<div align="center">❀ ❀ ❀</div>

Q3. How does the proposed urban design of the layout contribute to a sense of place (NB not the aesthetics of individual building design)?

> This question applies to residential (i.e. two or more houses), employment (i.e. a business park) or mixed use developments in or adjacent to a settlement. The level of detail required to answer this question will vary depending on the use, scale and location of the development.

Explanation

This question is not about the aesthetics of individual building design, but the design of the spaces that buildings are built around, which make a significant contribution to a development layout's individuality and its <u>sense of place</u>. This includes both the shape of formal and informal open spaces, the shape of streets (narrow, broad, high or low, straight or curved), the relationship of the buildings to these spaces, and how that relationship varies across the layout. Like a <u>sense of place</u> in countryside, built up areas can give guidance in designing new schemes. Part of the question of quality in urban design is the appreciation that urban areas may have their own distinctive character appropriate to the culture of that area. From a social perspective the quality of urban design depends on the provision of a quality urban environment. In practical terms this might mean the provision of street trees or landscaped areas as part of the public area layout of a development.

> ### *Things to consider*
>
> - Distinct shape or "signature" of layout
>   - o An open space which can be shared by the community can be very helpful in giving a layout distinction, or "signature".
>   - o For sloping or hilly sides a linear planted median strip perhaps adjacent to a curving roadway through the heart of a layout could give distinction.
>   - o Details of the entrances to the layout, and intersections within it can give individual character.
>   - o On level sites a village green or long oblong, whether used as playground or for general amenity, can give strong <u>sense of place</u> and signature to the layout.
> - Use of <u>focal points</u>, especially for important buildings and works of public art
>   - o Any existing buildings and adjacent public buildings such as churches or schools ought to be "borrowed" to provide points of focus.
>   - o Adjacent buildings and neighbouring natural objects can be used as terminations to an axis, or composed as part of a vista within the layout to give distinction.
>   - o New works of public art and major buildings can be used to create points of focus or to generate a locality's individual identity.
> - Buildings related by roof or frontage alignments and by coherence of materials
>   - o The commonly expressed concern for variety will be more effective (and cheaper), if it occurs in contrast to a family of roof types, building mass and a simple suite of materials.
> - Punctuated <u>rhythm</u> of building alignment
>   - o Layouts should be thought of not only as individual buildings linked by roads, but also as a series of related but varied spaces, defined by the alignment of the adjacent houses, which contribute to the clarity of the layout and help it to develop its <u>sense of place</u> and value.
> - Clear entrance to each area and visual cues to roads

> o Details of the entrances to the layout, and intersections within it can give individual character.
> - Other factors
>   - o Anything else relating to the particular site or arising from the explanation in response to the Question.

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Q4. How will the pattern of development relate well to its neighbours?

> This question applies to residential (i.e. two or more houses), employment (i.e. a business park) and mixed use developments. The level of detail required to answer this question will vary depending on the use, scale and location of the development.

Explanation

This issue focuses on the buildings themselves as much as the spaces between them (see under Question 5 below). It seeks to determine what makes buildings as individuals successful when standing in their own grounds and less so (or not at all) when "crowded" together. Houses which are close are better if connected, or actually joined in an overall composition. This relationship between house type and the separation distance between houses also affects the plot ratio, which is considered in Part D(iv), Question 2.

> ### *Things to consider*
>
> - Are the houses far enough apart to appear as independent designs, or close enough together to require design as a group? How much do the relationships of this spacing contribute to the overall sense of place in the streetscape?
>   - o The separation distance between houses in relation to length of frontage:
>   - ▪ houses separated by >1.5 x frontage width can be independently designed;
>   - ▪ houses separated by 1-1.5 x frontage width need linking features, such as walls;
>   - o houses separated by <1 x frontage width need to be grouped.
> - How much is this affected by differing heights, shapes and other qualities of the buildings?
>   - o Do the individual houses relate to each other gable to gable and/or roof to roof, or are they all at random angles to each other?
>   - o How well do rows of houses relate to each other?
>   - ▪ Are the houses and their roofs all aligned with each other?
>   - ▪ Are rows of alignment articulated at intervals to create an overall pattern?
>   - ▪ Are they all higgledy-piggledy?
>   - o Is there any overall pattern set up by the arrangement of houses?
>   - o How much do the same or varying heights of different houses contribute to the pattern?
> - Any other relevant considerations.

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Q5. How does the layout of the buildings contribute to useful semi-public spaces?

> This question applies to any type and scale of development that includes public open space or landscaped areas. The level of detail required to answer this question will vary depending on the use, scale and location of the development.

Explanation

A major element of how the new building(s) will interact with the existing area will depend on how their respective occupants interact. This will largely be dictated by the design of the spaces immediately around the new building(s) and adjoining them to neighbouring properties. This issue is to encourage consideration to be given to "make" spaces, where clear boundaries can be recognised between the areas of interest or "territories" of each land use or group of land uses, and happy interaction can happen between neighbours. It is partly from this that a <u>sense of place</u> is developed.

Things to consider

- Who is the development for (for example, young or old, families or singles, rich or poor, disabled or special needs, any mixture of these, or all of them together) and what are likely to be their particular requirements of these spaces?
- How sensitive is the design to all age-groups, both sexes, etc?
- Is there a good balance between the demands of "<u>Secure by design</u>" and the provision of an attractive environment? How effectively will the <u>semi-private</u> areas contribute to the sense of security of the building?
    - o Will they provide an adequate security buffer to the property?
    - o What boundary treatments (for example, the planting of thorny bushes) are used to discourage trespass?
    - o Would it be clear when a stranger or visitor crosses the feu boundary into the property of, for example, each house, and would the visitor remain in public view from the boundary up to the front door?
    - o Will they allow people to come and go from their own houses with decent privacy, or will their every move be seen by the whole neighbourhood?
- How attractive will the <u>semi-public</u> areas be, and how likely are they to encourage communal interaction?
    - o Does the grouping of small numbers of houses create areas that, though public, the neighbouring residents are likely to take a proprietorial interest in?
    - o Will they provide places for children to play, with adequate oversight, where noise and ball-games will not be an issue?
    - o Will there be somewhere pleasant to sit down, and where friendly interaction between neighbours would be possible?
    - o Will there be barren areas with irresistible opportunities for graffiti and defacement, or dark, scary corners that people will want to avoid, and muggers could hide?
- How effectively do the layout and design of the buildings create <u>semi-private</u> and <u>semi-public</u> areas in the spaces in between them?
    - o How clearly do the layout and alignment of the buildings and their feus along with their hard and soft landscaping provide differentiation of these areas?
        - ▪ Are there clear boundaries differentiating between private, <u>semi-private</u>, <u>semi-public</u> and public areas?
        - ▪ Is there a strong visual entrance or "gateway" to the site as a whole?
        - ▪ Will these signals be strong enough to encourage a reasonable balance of security along with accessibility to the houses and <u>connectivity</u> between this area and others?
    - o How much do the placement of overlooking windows and other <u>features</u> of the design contribute to privacy, security and social interaction?
        - ▪ Do they provide oversight of private garden and parking spaces?
        - ▪ Do they provide views onto public greenspaces and along public pathways?
- How effectively does the design permit access to safe public pathways and greenspaces?
- How well does the layout achieve a balance between these aspirations and problems, providing a reasonable level of security without sacrificing the look of the area, and while still providing interesting areas of biodiversity and amenity planting, where people can walk and children can play or hide?
- Any other relevant considerations.

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Q6. Is the quality and quantity of planting proposed adequate?

> This question applies to any type and scale of development that proposes planting on private or public spaces. The level of detail required to answer this question will vary depending on the use, scale and location of the development.

Explanation

Quality landscape design is an integral part of all new development. It is essential to help development fit into the landscape and enhances the surrounding environment. The landscape design package should contain enough information so that there is no doubt as to the quantity, quality or dimensions of each element of the scheme. However, some types of planting require slightly different approaches, depending on the purpose of the open space.

Things to consider

- Quantity
    - The total quantity of public open space required for major developments is 40% of each site.
    - The total quantity of public open space required for new development of less than 50 houses is 120sq metres per house.
    - For each detached or semi-detached house, an area of at least 100sq metres of usable private garden space and at least 66% of the plot should remain unbuilt.
    - For high-density housing proposals such as terraces and flats the private open space requirements will be assessed on their own merits dependent on the type or proposal and the site's proximity to adequate public open space, other serves and public transport.
- General design details
    - The design should be at a scale that provides enough information for a contractor to implement the scheme, and include cross-sections where level changes or earth works are proposed.
    - Details of drainage, fully in compliance with SuDS.
    - Clarity on surface finishes used.
    - A planting schedule of plant and tree species, size, type, number, density, protection etc, all suited to localised soil conditions, drainage situation and microclimate, and designed to create year round interest.
    - All landscaping should comply with British Standards guidelines.
- Design to minimise maintenance
    - Use of different, non-grass types of plant for ground cover and wild areas.
    - Minimise areas of manicured grass, except for play and recreation areas.
    - Trees and shrubs should be located with their ultimate size in mind, in order to minimise the need for pruning etc.
    - Evergreen species should normally be planted over 2.5m from the nearest road (to avoid winter salt damage).
    - Use hard landscaping, featuring chippings and natural materials, especially close to buildings.
    - Avoidance of extensive uninterrupted areas of hard landscaping - shrub and tree planting is possible and appropriate within areas of hard landscaping.
- Structure planting
    - Structure planting areas should be planted with whips or small sized planting stock, initially at high density, usually one plant per 1.2 metres.
    - Structure planting areas should comprise of groups of individual species, usually in blocks of 6-9 or more, with naturally tall, or large specimens being located towards the core of the planting area, and small trees and shrubs being located towards the edges.
    - Shelter planting should consist of at least 3 (but preferably more) rows of short, medium and tall trees, including one row of tall or medium evergreens.
- "Green corridors"
    - Should consist primarily of locally native species.
- Private feus

> - o Should include at least 3 locally native trees per garden.
>   - o Residents should be encouraged to plant primarily native species, by the supply of guides such as 'Creating Environmentally Friendly Gardens'.
> - Other factors
>   - o Anything else relating to the particular site or arising from the explanation in response to the Question.

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Q7. How adequate are the arrangements for implementation and subsequent maintenance of both existing and new landscaping?

> This question applies to any type and scale of development that includes public open space or landscaped areas. The level of detail required to answer this question will vary depending on the use, scale and location of the development.

Explanation

Arrangements for the successful implementation and long-term maintenance of the scheme are arguably as important, if not more important than the initial design proposal. Plants are living things, particularly vulnerable at first planting and do require continuing maintenance. In many ways, therefore, the most significant contribution to a successful landscape scheme derives from the very attitude of those involved to ensuring the scheme works: the developers, managers of maintenance and not least the subsequent residents. The quality of the arrangements for implementation and maintenance provide a clear statement of that attitude.

> *Things to consider*
>
> - Programme of implementation
>   - o Should at least be in parallel with, but preferably ahead of development stages, certainly ahead of occupation of associated houses, and with arrangements specified for protection of existing plants during construction operations.
>   - o Arrangements for consultation with prospective residents, on the landscape and planting aims of the scheme.
> - Maintenance specification
>   - o Full details of plant replacement, weed control, grass cutting, pruning, general maintenance activities and watering, and a "natural" regime for semi-wildspace.
>   - o A short-term maintenance plan for 3-5 years, including establishment of the new planting areas, replacement of failed stock as required, and thinning of structure planting blocks when canopy closure occurs.
>   - o A long-term, on-going maintenance plan for the scheme, including a programme relating to monthly maintenance tasks, and provision to establish diversity of woodlands/landscapes in terms of age as well as species.
> - Ongoing responsibility and funding
>   - o Clarification of who is intended to implement the maintenance scheme
>   - o Clarification of how the maintenance scheme will continue to be funded
> - Other factors
>   - o Anything else relating to the particular site or arising from the explanation in response to the Question.

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Design Issue D: Identity

Part D(iii) Aesthetics

Although all the issues raised in this advice contribute to design as a whole, this section addresses the key issues that underpin aesthetics – the way the buildings look as part of an artistic or architectural composition, in practice, their attractiveness. It includes the unity and rhythm of all the design elements and features. A denial of the importance of aesthetics is simply another aesthetic response (e.g. the denier merely likes "plain" buildings). It must also be emphasised that this section calls for an objective assessment of these components of the design: it is thus not the same as the "gut-reactions" called for in Part D(iv), Visual appeal.

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Q1. How do the key elements, features and associated infrastructure of the building(s) contribute to the unity of the design and the sense of place?

> This question applies where two or more buildings are proposed as part of an infill development or land allocation. The level of detail required to answer this question will vary depending on the use, scale and location of the development.

Explanation

Unity of design is about the way all the different elements, features and associated components of the design combine to make an overall composition. This applies both to the unity of the new building(s) in their own right, and to their part in their street and landscape setting. Applicants should consider the scale, shape and relative proportions of these elements and what it is the design is seeking to accomplish. When considering the key elements of the design, applicants should identify the character of the overall shape of the design(s), under the headings of plan-shape, massing, roof form and and/or the overall presentation of the façades. Applicants should consider the arrangement of the detailed features of the design, under the headings of openings, materials, patterns, textures, colours, and any other detail of significance to the particular case. In relation to associated infrastructure, outbuildings and boundary treatments are equally part of and can contribute to or detract from the overall design.

> *Things to consider*
> - How is each façade divided into structural and design bays? Are there other separate elements in the overall design?
>   - Is the massing of these design bays discrete; composite/ joined; repeated?
> - What is the dominant plan-shape of the design?
>   - Is it square, round, triangular, some other shape, or are the constituent elements a mixture of these?
>   - How is the plan-shape oriented to other buildings?
> - What is the character of proportions of each element?
>   - What are the proportions of the elements?
>   - Is the roof flat; pitched; mono-pitched; other; or a mixture of these?
>   - What are the angles of roof-pitch?
> - What are the shapes, scale and relative proportions of the features, in terms of door and window openings, porches, decorative features, pillars, banding courses, other vertical and horizontal lines, and any other features that provide incident within each façade?
>   - Are they similar or different?
>   - Are they big or small; simple or complex; rich or plain?
> - How much does the new building contribute to the unity of the street setting, through its orientation, positioning, comparison or contrast etc?
>   - How well does each of the key elements and features relate to neighbouring buildings?
>   - In relation to neighbouring buildings, are they bigger or smaller; do they provide a comparison or contrast; do they provide a needed focal point or visual link in the overall

- - - - composition; or ride roughshod over it?
  - Do the scale, shape and relative proportions of the key <u>elements</u> and <u>features</u> of this design enhance or detract from the overall composition?
    - o Is the scale of these <u>elements</u> big or small in relation to each other and to neighbouring buildings?
    - o Overall are these <u>elements</u> simple or complex; rich or plain?
    - o Do they use symmetry or asymmetry; comparison or contrast?
  - How well does the shape and form of associated infrastructure (e.g. garage, outbuildings and boundary treatments) relate to the building, the garden (where applicable) and its surroundings? Do they:
    - o complement the shape and form of the building(s)?
    - o relate the building(s) to its neighbours and/or surrounding landscape?
    - o contribute to the enjoyment of the property's garden, by minimising overshadowing, by creating suntraps or by providing shelter from the wind?
  - How coherent is the design of the street-lighting, bin stores, paving surfaces and other <u>street furniture</u>; and how well does it relate in to the design of the building(s), or is it an obtrusive mixture of <u>features</u> unrelated to each other or the buildings?
    - o Will they contribute to or get in the way of the overall design?
    - o Will they use the same or complementary materials?
  - Is there unity of design in the overall composition?
    - o Is there order in the design or disorder? Is there resonance between components at different scales or dissonance? For example,
      - ▪ Is there a limited number of variations of <u>feature</u>, or pattern to the repetition of <u>features</u>?
      - ▪ Is there any similarity or reflection of shapes and proportions?
      - ▪ Do they use symmetry or asymmetry; comparison or contrast?
      - ▪ If it is almost symmetrical, why is it not completely symmetrical?
      - ▪ Is there purity or complexity of line?
    - o Is it beautiful? Will the new building(s) give delight?
  - Any other relevant factors

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Q2. How do the key <u>elements</u>, <u>features</u> and associated infrastructure of the building(s) contribute to the rhythm of the design and its setting?

This question applies where two or more buildings are proposed as part of an infill development or land allocation. The level of detail required to answer this question will vary depending on the use, scale and location of the development.

Explanation

"<u>Rhythm</u>" is to do with the way individual <u>elements</u> or <u>features</u> of design combine to generate a coherent pattern, phrasing or shape within the street as a whole or within individual buildings. There are no good or bad individual <u>elements</u>, <u>features</u> or other components in a design. What is important is the way all these individual components hang together to make an overall composition. This applies both to the <u>rhythm</u> within the façade of the new building(s), and to the new design's contribution to its street and landscape setting.

In terms of the design's <u>elements</u>, the important factors in this issue are the contribution of the development's footprint, massing of the main blocks, and shape and alignment of the roof form to the whole composition. This contribution might be by way of the repetition of some component, contribution to a larger-scale component, or introduction of a new component to the <u>rhythm</u> of the streetscape as a whole.

In terms of individual façades, the important factors in <u>rhythm</u> are the relative size, emphasis and grouping of detailed <u>features</u>, such as windows, porches, <u>design bays</u> and gables, again with patterns

repeated or changed, giving shape to the whole composition. This greater "whole" may be just within the individual façade or may contribute to the rhythm of the entire streetscape (or both).

In terms of associated infrastructure, the important factor is the role that these components (garaging, other outbuildings, walls, fencing, hedging etc) play in linking and reflecting the key elements and features of the main design.

Things to consider

- Identification of what is important in the existing rhythm of the local landscape, streetscape or settlement pattern (or, if wholesale redevelopment is expected, in the masterplan for the area).
  - o Is there an identifiable character to the "urban grain" of the surrounding area - for example, is it on a square-plan, herring-bone, organic, sporadic, or other general type of layout?
  - o Is it part of a local street, square, crescent, block or other group of buildings or landscape with a recognisable identity of its own; or does it stand on its own unrelated to anything else?
  - o What rhythm of built or landscape structure contributes to that identity - for example, are there regular plot sizes, building heights or building frontage lines; are there breaks in the regularity at particular intervals or at certain focal points?
- Identification of what role is required of the particular site in contributing to that rhythm.
  - o What is required of this building or its landscaping to contribute to the grain and rhythm at the different scales of the local landscape, streetscape and/or settlement pattern, or does the existing rhythm need to be changed?
  - o Does the rhythm require repetition of some component, contribution to a larger-scale component, or introduction of a new component?
  - o Does it require continuity, smooth flow, build-up of, prominent or subdued features?
  - o Does it need to provide punctuation to the flow of the streetscape, for example, a comma, semi-colon or full-stop?
- Assessment of how the key elements and features of the design in question fulfil that role or otherwise affect the rhythm.
  - o How positively do the footprint, massing and roof-shape/pitch/ orientation of the new design and any structure planting contribute to what is required? Will they create a better or different kind of rhythm or clash with what is already valuable?
  - o How positively do the building's features contribute to the rhythm of the streetscape?
  - o How positively do the garaging, outbuildings, boundary treatments and street furniture contribute to the rhythm of the streetscape?
- What rhythm do the door and window openings, porches, decorative features, pillars, banding courses, design bays, other vertical and horizontal lines and other features provide within each individual façade?
  - o What pattern is generated by the rhythm of the features?
  - o Are features repeated?
  - o Do any features create "pause"?
  - o Do the features contribute to an overall horizontal or vertical emphasis to the building?
  - o Does the horizontal or vertical emphasis of the building contribute continuity, smooth flow, crescendo, diminuendo, an on-beat or an off-beat component to the streetscape?
  - o How well does the associated infrastructure relate to this rhythm?
- Any other relevant factors.

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Design Issue D: Identity

Part D(iv) Visual appeal

Visual or kerb appeal is probably the most subjective of the design issues considered in this advice, as well as the most difficult to define. It is a design's "feel-good" quality, style etc. However, it is also the most likely to affect public perception of the design, and will have much to do with the saleability of the development. For this reason alone it remains a significant consideration.

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Q1. How does the design allow the new building(s) to fit within the role and function of neighbouring buildings (i.e. its scale, size and prominence)?

> This question applies to all types and scales of development with the exception of change of use proposals where no alteration or extension is proposed. The level of detail required to answer this question will vary depending on the use, scale and location of the development.

Explanation

All buildings have an intrinsic character or nature, which in turn is more or less important to the community at large and this kind of cultural significance is about the different ways that people react (whether consciously or subconsciously) to the social values that buildings represent (i.e. social baggage). This is mostly clearly defined in forms of listed buildings and in conservation areas. In particular it questions the relative prominence of the new building or structure in relation to its particular neighbours and surroundings; and whether the intrinsic character of the type of building or structure it is suggests it should be more or less prominent than the existing landscape or buildings in the immediate neighbourhood. However, even if a group of buildings all have the same general role and function, it may still be appropriate for the one at the focal point of the street scene to be larger or given additional prominence in some other way. To an extent this question is dependent on fashion and immediate "gut reactions", and there will be no single "right answer" to it. Such judgements are fraught, so clarity and attention to assessment are critical, and discussion with the designer is recommended.

> *Things to consider*
>
> - What are the architectural implications of the intrinsic character of the surrounding area for the building's or structure's form (i.e. its scale, size and prominence)? What form does that intrinsic character suggest the building or structure should take? E.g.
>   - Is the site one of many (for example, in a terrace), or at a focal point of the streetscape?
>   - Is it on a one-off site, where it will not relate closely to any neighbours or even to the surrounding landscape?
>   - Is it appropriate for the design to be of similar scale, size and prominence to those around it; or more imposing; or less imposing; is comparison or contrast appropriate?
>   - How does it actually compare in size and scale; would it be more or less imposing than its neighbours, or about the same?
>   - Should it repeat characteristics of its neighbours, or is it a one-off; is there deliberate up-playing or down-playing in comparison with its surroundings?
> - What are the architectural implications of the building's or structure's own nature? In terms of scale, size and prominence, what form does that nature suggest the building or structure should take?
>   - Is the new building of civic significance in its own right, or is it suburban, rural, or of some other general cultural character?
>   - What size of house is it? Is it imposing or "self-effacing"? For instance, is it a mansion of 6 bedrooms and 3 garages, or a 4 room bungalow, or a country cottage?
>   - Is it appropriate for the new building or structure to be "loud" and "self-important, or "self-effacing", "seen but not heard"?
> - Whether or not it matches the new building's or structure's underlying purpose, does the design have characteristics that would mark it down as having some particular cultural significance? For

example,
- o Does it tell you what part of the country you are in?
- o Does it look "like an executive house", or "like a doctor's house", or "like a manse".
- o Does it "look institutional" or "like a council house"?
- o Does it have "add-on features" such as turrets, gables (especially those that are there purely for the impression rather than because of volumetric or spatial requirements), elaborate entrance details, expansive garage doors?
- Whether the building or structure is pretending to be something it isn't, is it real or pastiche, vulgar or pretentious, for example,
  - o the use of applied astragals to windows and doors in place of real ones; or mock-Georgian windows in a modern house, or otherwise using non-authentic materials to mimic an historic style;
  - o the use of chimneys which have no fire-place, or porches that will not shelter, or eaves that will not throw off the rain, or other features that suggest a particular character or role without delivering the actual function of the feature;
  - o unnecessary multiple variations of materials, colour, textures and patterns.
- How prominent is it appropriate for this building or structure to be in comparison with its setting – its neighbours, the streetscape and surrounding landscape?
- How well do the design's scale, size and prominence match what is appropriate for the particular building or structure?
  - o How well does the form of the new building relate to the intrinsic character of its setting?
  - o How prominent would it actually be in the landscape, streetscape or settlement pattern?
  - o How well does the design match its own cultural role?
- Any other relevant considerations.

Note:

Assessors will be appraising the design as it would be "presented" on the street frontage, or otherwise be seen by the public.

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Q2. How does the scale (i.e. size) of the building or structure sit appropriately within its location?

This question applies to all types and scales of development with the exception of change of use proposals where no alteration or extension is proposed. The level of detail required to answer this question will vary depending on the use, scale and location of the development.

Explanation

This issue is principally about the relation of the unbuilt area of the feu (including private open space) to the built footprint of the building and ancillary structures: the plot ratio. The range of comfort will vary depending on the type of land use and the type of site, and the height of the building or structure and the slope of the ground (e.g. a terraced house will be comfortable with a lower proportion of garden ground). If the feu slopes significantly, a development proposal which does not exploit that condition or "humour" it will be poorer than one that does both. A good guide to what is reasonable can usually be found on neighbouring feus.

Things to consider

- Is the building or structure too big for its feu, "bursting out of its seams" or is it lost within its feu?
  - o What sort of relationship exists between the building type (detached, semi-detached, terraced etc) and the plot ratio?
- How much do other factors influence the relationship? For example:
  - o How much will the height of the buildings or structures, or the slope of the ground affect that relationship?
  - o Will there be problems of privacy or over-shadowing?
  - o How much does the landscaping in and around the site affect the relationship?

- How well the building exploits any slope or other irregularity of the site. For example, on sloping sites:
  - the use of basements for car parks or garages and ancillary spaces would be good use of volume, but not if they result in excessive roads or driveways that consume potential open space (e.g. garden ground) and would be on slopes that will ice up in winter;
  - car parks or garages etc on an upper floor that is contiguous to the road may be practical, but some neighbourhoods could be badly affected by blank façades of multi-storey car parks or garage doors – a well-paved entry court which also leads to the front door could be one solution.
- Any other relevant considerations.

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Q3. How does the design create a welcoming environment (i.e. the design's "feel good" quality)?

This question applies to all types and scales of development with the exception of change of use proposals where no alteration or extension is proposed, and structures. The level of detail required to answer this question will vary depending on the use, scale and location of the development.

Explanation

This issue seeks to isolate the key characteristics of the building(s). It is a question that goes beyond the mere practicalities to whether it looks as if it would operate as, for example someone's home or office, whether you would enjoy living or working there.

Things to consider

- Is it designed as a lifeless object or does it look like it could be someone's home or workplace?
  - Does the building(s) have a human scale? For example,
    - In relation to houses, how "cosy" or "boxy" does it look?
    - Would it give a feeling of security (for example, safe access and inviting entrance), or is it cold and forbidding?
  - Does the building(s) give the impression it would be light and airy?
- Will the design provide functioning spaces for people to live, play and work in, and to observe their standard behaviour patterns? E.g.,
  - How private is the private garden?
  - How easily can you access the garden from one of the main rooms?
  - How effectively could a parent oversee children in the garden from the kitchen?
  - Is there somewhere to wash the car?
  - How clearly can you see the usual parking space from the house or office?
  - Can you entertain in the front room?
  - Is the front door easily accessed?
  - Is the car-park and garaging at the back?
  - Would the building provide good clear access for all?
  - Is there sufficient car parking?
- Are the key <u>elements</u> where people would expect them to be (whether they serve a function there or not), or will it take them out of their comfort zone?
- Does the planted landscaping make open space look inviting?
  - Is the associated planted landscaping generous?
- Any other relevant considerations.

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Q4. How does the style of the design suit the location?

> This question applies to all types and scales of development with the exception of change of use proposals where no alteration or extension is proposed, and structures. The level of detail required to answer this question will vary depending on the use, scale and location of the development.

Explanation

This issue is to do with gut-reactions, based on what you would see from the street-side when you first see the development. It may well reflect the sort of thing that is said in the blurb from a developer's catalogue, since it encapsulates what they often aspire to, but is better carried out by an original assessment or the "design attributes" of the actual scheme.

> *Things to consider*
>
> - How much would the design catch your eye as you walk down the street or would it make you squirm? Would you notice it:
>   - because the design has dignity, or charm?
>   - because it has an "oooh factor", that certain something that would make it sell even when other similar houses don't?
>   - because it is set apart by a distinctive design?
> - How well does the style of the design suit the location?
>   - Is it simply pretentious? For example,
>   - because it is full of applied ornament or a mishmash of contrasting materials and colours?
>   - because it attempts to capture kerb appeal by harking back to "chocolate-box" designs and materials?
>   - Is it out of place or "just right for where it is"?
> - Is it generous or mean?
>   - Does it come with generous planting that will ultimately cloak it in the dominant local natural landscape? OR
>   - Does it look squashed in to maximise profits, too open?
> - Any other relevant considerations.

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Glossary

Amenity	The pleasant or normally satisfactory aspects of a location which contribute to its overall character and the enjoyment of residents or visitors (i.e. something that contributes to physical or material comfort and can cover anything from privacy, light to overshadowing). Therefore, anything ugly, dirty, noisy, crowded or uncomfortable may injure the interests of amenity.
Black water	Water containing fecal matter and urine, and is also known as foul water. It is distinct from grey water. Separation of black water and grey water nowadays happens with all ecological buildings, and if black water does not contain excess water, then it is easily processed through composting.
Character of proportions	One of the dominant characteristics of a building (or of its individual elements) is set by the relationship between the following proportions: - depth of the element (front to back); - height of wall to eaves; - height of gable to ridge of roof; - angle of roof pitch. The interaction of these proportions will determine whether the building appears massive or slight, top-heavy or broad-in-the-beam, etc.
Connectivity	The interconnection of pedestrian routes and cycle ways, which make it easy and conducive for residents to come and go between their house and other parts of the town or village.
Context	Description of what influences the site (e.g. physical, LDP policy)
Cultural context	Cultural context is about the background of different ways that people react (whether by conscious or subconscious gut reactions) to the social baggage that the immediately surrounding locale of a site represents. See also cultural significance.
Cultural role	Cultural role is about the way that a design might usually be expected to respond to the social baggage within a particular cultural context. See also cultural significance.
Cultural significance	Cultural significance is about the social baggage that buildings themselves represent, and to which people react in different ways (whether by conscious or subconscious gut reactions). See also cultural context.
Design bays	Separate vertical sections in the design of each façade of a building, often differentiated by vertical features, or by a change in the pattern of features on the façade.
Designated landscape	A stretch of landscape given some formal "designation" usually in the Development Plan for the area, such as a National Scenic Area, or a recognised landscaped garden.
Elements	In an architectural context these are the large-scale components that contribute to the overall shape of the design, under the headings of footprint, massing and roof form; as opposed to the detailed features of the building.
Embodied energy	Embodied energy is the energy consumed by all of the processes associated with the production of a material, product or building, from the acquisition of natural resources to product delivery. This includes the mining and manufacturing of materials and equipment, the transport of the materials and the administrative functions that contribute to its delivery. Embodied energy is a significant component of the lifecycle impact of a home.
Environment-friendly	This is a description of how lightly the process or object involved affects the environment as a whole. For instance, in the case of energy use, this would include consideration of the embodied energy of the fuel and of the equipment needed to burn it, all the effects of combustion on the environment, and how readily the fuel can be replaced for the next generation.
Features	In an architectural context, these are the detailed components of the design, under the headings of door and window openings, porches, decorative features, pillars, banding courses, other vertical and horizontal lines, gutters, tabling, materials, patterns, finishes, textures, colours, and any other detail of significance to the particular case; as opposed to the large-scale elements of the building.

Finishes	The finish is a reference to the relative quality of the surface (for example, whether it is coursed ashlar masonry, uncoursed rubble masonry, harl or stucco; slates, tiles or shingles).
Focal point	The point in any street or landscape scene to which the eye is drawn.
FSC accredited timber	Timber from timber merchants accredited by BM TRADA Certification, which is a leading multi-sector certification body itself accredited by UKAS (United Kingdom Accreditation Service). For more information see the website at www.bmtrada.com.
Genius loci	The distinctive atmosphere or pervading spirit of a place.
Green infrastructure	The European Commission defines green infrastructure as *"the use of ecosystems, green spaces and water in strategic land use planning to deliver environmental and quality of life benefits. It includes parks, open spaces, playing fields, woodlands, wetlands, road verges, allotments and private gardens. Green infrastructure can contribute to climate change mitigation and adaptation, natural disaster risk mitigation, protection against flooding and erosion as well as biodiversity conservation."* It includes not just parks, but 'blue' infrastructure such as SuDS and water courses. Further guidance is provided in the 'Aberdeenshire Parks and Open Spaces Strategy (2011).
Grey water	Water that has already been used (for instance in the sink), but can be reused for a purpose other than drinking (for instance flushing the toilet or watering the garden).
Job spaces	Research undertaken by Scotia Homes Ltd, is the number of job spaces per dwelling calculated by the number, density, size and use of units (domestic (principally flats) and non-domestic). A good high street should be about 100-150 job spaces per 100 dwellings and a good mixed use area about 50-100.
Kerb appeal	Kerb appeal is to do with the gut-reactions of potential buyers, based on what you would see from the street-side when you first see a house – often reflected in the blurb from a house builder's catalogue in trying to encapsulate these very aspirations.
Life-cycle of the building	For the purposes of sustainability, the life expectancy of a well-designed building should be assumed to be at least 150 years – the length of time it is likely to take to replace a good hardwood. Anything less than that can be assumed to be unsustainable in terms of the resources needed to reconstruct or replace it. More than 150 years would be a bonus.
Local climate	The climate of the local area immediately around and specifically affecting the design in question.
Locally sourced	Materials that are grown, quarried or extracted within 40 kms of the site, i.e. not just bought from a merchant who sells them within 40 kms of the site!
Metric Handbook	Planning and Design Data, edited by David Adler, 2nd ed. published by Oxford: Architectural Press 1999. This publication gives authoritative guidance as to minimum sizes for ordinary spaces within houses, and is now in common use to aid the ergonomic design of domestic spaces in Britain. See also Neufert and Timesaver Standards for the European and American equivalents.
Nature of a building or setting	In an architectural context, the nature of a building refers to its intrinsic cultural character or role, which in turn is more or less important to the community at large. Effectively, the more significant the particular role is to the community, the more prominent the building can reasonably be expected to be. A town hall, which is of importance to the whole community, should not normally be less imposing than an individual's house; and a garage should not normally be more prominent than its associated house. Equally the immediate setting of the site has its own intrinsic cultural character or nature, to which the new building will have to relate, whether by comparison, contrast or in some other way.
Neufert	Architects' Data, by Ernst and Peter Neufert; edited by Bousmaha Baiche and Nicholas Walliman: 3rd ed. Oxford: Blackwell Science, 2000. This publication gives authoritative guidance as to minimum sizes for ordinary spaces within houses, and is now in common use to aid the ergonomic design of domestic spaces in Europe. The Metric Handbook is the current British and Timesaver Standards is the American alternative.

Parker-Morris standards	The minimum standards set down for the ergonomic design of spaces in local authority housing in the 1950s. See also the Metric Handbook, which is now in more common use in Britain.
Phase change	The change of scale in the design of some of its elements that is appropriate for a settlement, as it passes from being a hamlet to a village, from a village to a town, and from a town to a city.
Plot ratio	The ratio of the unbuilt area of a house and its surrounding garden ground to the built footprint of the house and ancillary structures. The range of comfort experienced with plot ratios of different scales will vary depending on the type of house and the type of site. Commonly a detached house may need a plot ratio up to or over 3:1 to avoid feeling crammed in, while terracing can be reduced to a plot ratio of, say, 2:1 without necessarily looking too tight. However, the effect will also vary depending on any slope of the ground, the width of the public road in front of the house (and how far from the road edge the house is set back), how generously the site is landscaped, and the height of the house itself. This is also related to the separation distances between houses.
Rhythm	In an architectural context, what is meant by "rhythm" is the way individual elements or features of design combine to generate a coherent pattern or shape along a frontage, in the same way that individual notes in a tune combine to create a rhythm. As with a musical rhythm, the important factors are the relative length and emphasis of each component, and the way they are grouped together, with patterns repeated or changed along the frontage, giving shape to the whole composition. In terms of streetscape, this greater "whole" is one of the most critical factors in generating a sense of place. This does not mean that every element in a streetscape should be the same, any more than every note in a tune should be the same; but without rhythm different notes are just a jumble, and all the design in the world would not deliver a sense of place.
R/H ratio	The ratio of road coverage to number of housing units served by those roads, or R/H ratio, can vary from a very efficient 60m² to a very inefficient 180m² of road per house. This not only affects the materials that go into the roads, but a distinct mark-up ensues from the knock-on effects of providing water supply, drainage and all the other pipes and ducts that follow the line of the roads, and from their lifetime usage.
Secure by design	This is a set of design principles intended to make public areas as secure from criminal activity as possible. Great care must be taken, however, to avoid creating a featureless plain with no trees, shrubs, bushes or walls etc: such a scheme may well be secure, but not worth living in.
Semi-private space	The private area of a house (for example, the front garden path) to which strangers might normally be expected to have access, although only for specific purposes (for example, to knock on the door). If this area is not clearly demarcated and overlooked, it can make it easier for intruders to stray into the more fully private areas unobserved. See also semi-public space.
Semi-public space	Areas of public ground (for example, within a shared courtyard), to which strangers have an absolute right of access, but in which the neighbouring residents are likely to take a proprietorial interest. If these areas are both overlooked and clearly demarcated by the arrangement of the buildings and street design, the more likely it is for children to be allowed to play in them and for neighbours to interact socially within them. See also semi-private space.
Sense of place	The recognisability of a unique identity of a location, usually provided by the distinct shape or "signature" of its layout, often around a designed open space, or possibly including a distinctive focal point. Critical to the sense of place is whether local residents do or do not identify with it.
Separation distance between houses in relation to length of frontage	If a detached house is to have enough room to be itself without looking absurd, then it requires a minimum distance to its neighbour of one and a half times its own frontage length, and more is recommended. If units need to be closer together (as a result, for instance, of land-values), then some designed connection should be provided, or a terrace form can be employed. This is also related to plot ratios.

Social baggage	Social baggage is about the different ways that people react (whether consciously or subconsciously) to the social values that buildings, streetscapes and landscapes represent. For instance, a cottage, a manse, a tenement, an executive villa, a council house and a Georgian townhouse are not only physically different shapes: they are also imbued with social and emotional "baggage" that will mark most people's reaction. The same differences of gut-reaction also apply on a larger scale, for instance, to "quaint old villages", semi-industrial areas, modern suburbia and the different forms of rural landscape. In practice, as a result of decades or even centuries of custom, particular sizes, shapes and looks of house and the general character of an area give off social signals about wealth, status and other social characteristics.
Street furniture	All the bits and pieces of operational equipment that are needed to make a street function, including street-lighting, signs, bins, benches, post-boxes and bus-shelters.
Structure planting	Major blocks of tree-planting intended to have a specific effect (such as providing a shelter-belt or generating biodiversity), and which are significant at the scale of the whole neighbourhood, rather than just the immediate area.
SuDS	*Su*stainable *D*rainage *S*ystems (SuDS) include a variety of measures, such as the use of swales and retention ponds, whose aim is to mimic natural drainage, attenuating both water and pollutant impacts with minimal adverse effect on people and the environment. Using them can free up capacity for the treatment of waste water and reduce the frequency of flooding. Government policy is to promote SuDS as the preferred solution for the drainage of surface water run-off, including roof water, for all new development, unless it is impracticable. SuDS can also be designed as attractive amenity features, to the benefit of the local community.
Sunny areas	The critical thing for the enjoyment of a house is to provide at least 25m² (about one room's worth) of private garden in a sunny space, which is also protected against chill wind and is preferably contiguous to a public room. It is the kind of space where you could leave a baby safely outside in the pram, or put the washing out and expect it to dry, or grow some vegetables, or hold a barbeque.
Timesaver Standards	Timesaver Standards, by Ramsay and Sleeper, was the preferred text for guiding architects and students in the USA from the 1930s. It remains in print. The <u>Metric Handbook</u> is the current British and <u>Neufert</u> is the European alternative. Each of them will give guidance as to minimum sizes for ordinary spaces within houses.
Topography	Is the detailed description of a place and can include not only relief (i.e. hills/terrain) but also vegetative and human-made features, and even local history and culture.
Unusual architectural style	The use of materials, construction methods or form in a deliberately unconventional way, often as a "trompe l'oeuil", to achieve a humorous or thought-provoking effect. By way of comparison, something such as "rainwater goods: black cast iron look-alike pvc" does not, sadly, count as an architectural joke.
Urban grain	The grain of a town is characterised by the key <u>elements</u> that set the shape of the town's layout (or that of a neighbourhood) as a whole. Thus, for instance, it might be in the form of a fishbone layout (characteristic of mediaeval burghs), a formal squared layout (characteristic of 18th and 19th century new towns), an organic layout (characteristic of non-planned towns that have just grown naturally over the years), or a series of cul-de-sacs (characteristic of standard late 20th century town growth). A similar consideration can be applied to the grain of an area's landscape, to distinguish, for instance, between the pattern set by dense forest, wooded parkland, enclosed farmland and open moorland.