



Building Materials & Elements Standards

FROM:

 PRINCE'S FOUNDATION

THINK BEFORE YOU INK.

The United Kingdom has some of the most interesting and varied geology in the world and for this reason many towns and villages are very visually distinctive. This section is written as an outline specification for building materials and elements for new buildings and has recorded a range of local precedents with written specifications and descriptive text. Well-designed places have a natural hierarchy where more important buildings use more distinguished materials and details and less important buildings generally have simpler details and less expensive materials. New development should therefore clearly set out a palette of materials with a logical hierarchy of use of materials and details for small, medium and larger homes.

BUILDING MATERIALS, SUSTAINABLE CONSTRUCTION, AND DESIGN

ADAPTABILITY

Buildings should be robust and adaptable, and the basic structure should be built for a target lifespan of 200 years. Developers must demonstrate that they have contemplated conceivable future change of use in producing their first use design. Each house should demonstrate its flexibility to other residential uses, and where buildings have other uses indicated by a land use plan, they must demonstrate how they can be converted to the other plan type/s specified. Mixed-use and apartment buildings should also demonstrate how they may be laterally converted within the building and, if required, through to adjacent buildings. All buildings should be designed based on plan types that have been proven to adapt well over time. These historical types should be carefully refined in both plan and elevation to incorporate new requirements of minimising energy consumption in the building and the changing climate.

LOCAL MATERIALS

Developers should look to source materials from within a 100-mile radius of the site, where reasonable. This will help to reduce the transport impacts of development and contribute significantly to the local economy. The target for

sourcing local materials should be 65% bulk materials by mass, from a distance no greater than 100 miles by road. All developers should be able to demonstrate efforts to achieve this target.

Materials used in the construction of roads and external hard surfaces should utilise at least 30% recycled content from local reclaimed or recycled sources within 100 miles by road.

All of these requirements may be modified with regard to:

- Availability
- Ethical production
- Lifespan
- Renewability of source materials
- Energy performance
- Practical or viable feasibility

Local materials are defined as either:

- a) Found in the area as raw material
- b) Produced in the area from materials that are either from, or outside of the area.
- c) Processed in the area but the source material is found either within, or outside of the area.

LOCAL AND REGIONAL VERNACULAR

This area and the wider regional towns have largely grown organically along local high streets and often with more formal planning interventions in the Regency period.

WALLS

Developers should follow the predominant hierarchy of wall materials.

- Ashlar masonry/rubble stone masonry: Should be used primarily for primary/secondary façades of key commercial or public buildings, and houses at important junctions.
- Rubble stone walling may be lime washed with colours to match render noted above. Rubble stone, where used for boundary walls, should be from brown/grey/red slate material, laid coursed random rubble with pale lime mortar and course textured sand. Walls should be finished with a slate/mortar cap.
- Rubble stone retaining walls, particularly at banks, should be laid vertically, without mortar.
- Brick: use for primary/secondary façades, boundary walls and garages. Brick should have a handmade sandcast appearance for domestic buildings, and may be good quality wire cut, with engineering brick allowed for key details on commercial buildings or mews. Bricks shall be laid in English or Flemish bond in lime-based mortar, flush cut.

- Render shall be lime based or approved premixed (Bayosan, K-rend, Marmorite or similar). Corner beads should not be used. A wood float or rough-cast finish should be employed for vernacular-style buildings.
- Coloured buildings should have white door and window surrounds. Off-white buildings should have coloured doors and window surrounds.
- Timber: use primarily for primary/secondary façades, smaller buildings, and outbuildings: timber may either be natural hardwood without finish (e.g. English oak, cedar) or stained with pale colourwash or painted gloss paint. Timber should generally be horizontal boarded but some vertical boarding may be acceptable in specific locations.
- Lintels: Where rendered walls are built, lintels should typically be finished by flush (not to be express scored). Profiled render mouldings are encouraged and are suitable for more formal buildings. Exposed steel lintels are not permitted. Stone walls should utilise stone lintels (and surrounds if required). Brick walls should use gauged brick lintels or rough brick arches.
- Slate hanging: Slate, where used, should be dark grey coursed hung walls. The slate should be contrasted with white painted joinery. Ground floors may be rendered with slate-hung walls above. A high quality of lead detailing should exist on slate hung buildings (especially, for instance, below windowsills).

ROOFS & EAVES

Slate roofs should be laid to a minimum of 22.5. Clay tile roofs to a minimum of 35. The majority of roofs to be simple pitched, approx. 42.5 or 47.5. Steeper pitched (54 to 70 degrees for mansard) roofs are appropriate where accommodation is desired within the roof at the time of construction, or in the future, which will become increasingly common.

The design and orientation of the roof should, where possible, seek to maximize the performance of current and future embedded renewable devices.

Ridges should be black clay, lead, or stone.

The treatment of eaves should relate to local precedent and to architectural style. The majority of houses should be simple boarded eave and gutter. Fascias and box soffits may not be used.

More formal buildings should have deeper eaves/correctly designed cornices or parapet walls with a classical cornice and hidden gutter for more classical houses.

Flat roofs (or portions of roof) may only be employed when used as terraces, balconies, or roof gardens, specifically for grey water collection, for concealing solar thermal/photovoltaic, or as green roofs. Where flat roofs are employed on tops of buildings, they should have parapet walls designed with proper cornice and coping stone details, or be flat patches of mansard roofs.

ROOFS MISCELLANEOUS

Exposed television aerials, antennae and satellite dishes are not permitted. Roof lights may be of 'Conservation' type, and must not be raised above the line of the roof.

RAINWATER GOODS

Rainwater goods for all properties facing the street should be cast iron or cast aluminium, painted black, or coloured to match the house joinery. Plastic rainwater goods may be used for non-street facing properties.

CHIMNEYS

Each building should have a chimney (including a working flue), which should be located above a party wall (or internal structural wall for semi or detached dwellings). Chimney materials should be appropriate for the style and material of the walls below (not fibreglass replicas). They should be a minimum of 450 mm x 675 mm and rise generously above the ridge line.

VENTILATION

Vent stacks should be located in chimneys where practical. Where this is not possible, vent stacks (and other penetrations) must be located at the rear roof slope and be clad in an alternative to lead where possible. Ridge vent tiles should not be used, unless proven low profile and not visible from street level. Passive ventilation flues should also be placed in chimneys where used.

WINDOWS

Window types for use in this area should be drawn from local regional precedents and openings should typically form a square to double square in proportion. Square or canted bay windows, particularly rising from the first and second floor and overhanging the ground floor, are a strong characteristic local feature. Panes should generally be proportioned so that they are taller than they are wide unless employing Regency models of window, which are often horizontal with vertical side panes.

Windows with 'clip-on' glazing bars will not be permitted unless there is a thermal performance gain and no discernable visual detriment. Glazing bars should have related packers within double glazed unit.

Sash windows shall be double hung type (a top-or bottom-hung hinge is acceptable for cleaning or escape purposes only).

Plain frosted glass may only be used in obscured windows, and should not be patterned or textured. Coloured glass is not permitted except as small segments in corners of windows or borders. Obscured windows are not permissible at the front elevation of any building. Bathrooms may be situated at this location. Window reveals should allow for future fixing of shutters, top hung or side hung or external blinds to cater for increased summer temperatures.

Frames to all windows should be painted, stained wood, or oak. The majority of joinery should be painted white, or off-white, but developers may use black or coloured windows where this is an essential part of the architectural composition.

SHUTTERS

Shutters should be generally in timber to match windows but may in some circumstances be metal if integral to the architectural design.

DORMER WINDOWS

Dormers should typically have posts at corners with lead or slate hung cheeks and simple cornices to shed water. If gabled, fascia boards should be in scale with the size of dormer as a whole.

EXTERIOR DOORS

Doors should be simple 4 or 6 panelled painted wood doors to the majority of dwellings, painted in a coordinated range of heritage colours. The top two panels may be glazed where no fan-light can be accommodated. Varnished hardwood doors, doors with pressed mouldings, uPVC & metal doors are not permitted. Cottages and more vernacular buildings may use tongue & groove vertical boarded doors. 'Stable' doors may be used where appropriate to architectural style. Front doors should typically be recessed from the front face of the house by at least 100 mm and in houses without porches, by a full wall thickness.

DOOR SURROUNDS

Door hoods should be closely integrated with the vocabulary of the building. Their materials should relate to the main house.

The following styles of door surround are appropriate:

- Simple bracketed painted timber canopies with a flat lead or equivalent roof;
 - Engaged (connected to the wall) stone or timber door surrounds with architrave and simple pediment;
 - Free-standing columned porches for use on a very limited number of more formal buildings.
- Care must be taken to ensure that classical elements are correctly detailed and installed.

CONSERVATORIES

Conservatories should not be fully visible from the public realm. uPVC conservatories will not be permitted where they are seen from the public realm.

HARDWARE, SIGNAGE

Lighting or signage on private buildings must be integral to the overall design of the building. House numbering should occur on the fanlight above the door, or (where no fanlight is present)

on the door itself. Simple, black painted, architectural brass or stainless steel hardware should be employed.

RAILINGS, BALCONIES

Railings shall be in cast iron, wrought iron, mild steel, and cast aluminium generally finished off black or a heritage colour to match joinery. Timber railings shall be either natural hardwood or match joinery colour.

VERANDAS AND PORCHES

Whilst not that common, verandas and porches will be encouraged to deal with the changing UK climate of hotter and wetter weather. Verandas and porches should be designed in keeping with balconies and be mainly of delicate metal work as found with cast or wrought iron detailing. Other metals may be used with a hand painted finish. The metal work should mainly be off-black or a heritage colour to match joinery.

WILDLIFE NESTING BOXES

In each Reserved Matter application, the most appropriate locations must be identified for the provision of a variety of nest boxes for wild birds, bats, and owls.

- Within these general locations, nearest to food sources, two types of boxes may be used.
- Flat-backed, to site on buildings or trees

Purpose made boxes to incorporate into buildings during construction if compatible with the method and materials.

They should be sited no lower than 4 metres and preferably be 5-6 metres above the ground.

VEGETATED ROOFS

In order to enhance the ecological value of the development, vegetated roofs (“green” or “brown” roofs) may be installed on certain flat or shallow pitched roofs on community and commercial buildings (e.g. office buildings, schools, health centres).

Vegetated roofs may be prescribed for specific areas if associated with large and complex buildings, or groups of buildings.

Green Roofs

Green roofs may be possible on aspects of buildings such as schools and health centres, where they are not visible from the public realm and subject to the approval of the relevant authorities. Green roofs have a significant depth of growing medium and support grass, small plants, and herbs. A roof garden is the furthest extreme and may contain shrubs or small trees. Weight of soil and water logging must be addressed.

Green roofs may be made up by incorporating sedum mats. Maintenance is minimal and they are usually not suitable for walking on.

Vegetated roofs are not proposed for residential buildings unless incorporated as part of flat roofs to apartment buildings and set behind appropriate balustrades or they may be considered appropriate on roofs orientated towards the centre of the block.

Management

This will depend on the initial design and subsequent purpose of the vegetated roof. However, as much as possible, the roofs should be managed in an extensive manner, with minimal human intervention once they have been created. Wherever possible, these roofs should be left to vegetate naturally.

The vegetative succession will need to be maintained at an early stage. This will require, at a minimum, an annual visit to disturb vegetation on selected parts of the roof (never totalling more than 20% of the area on any given visit). There may also be a need to remove undesirable weed species.

ENCLOSURE

Design which establishes clear distinctions between town and country, public and private space, thus encouraging appropriate activities within each.

Encourages: Safe environments and the full and appropriate use of available space.

Discourages: Wasteland and degraded no-go areas.

MATERIALS

Design that uses materials that are, wherever possible, indigenous, have a natural harmony with the landscape, and which are selected with care to ensure they improve with age and weathering.

Encourages: Buildings that have a natural resonance with their environment and that can be easily repaired.

Discourages: Long distance transportation of materials and buildings with short life spans that look worse with age.

DECORATION

Design whose decoration not only enhances the quality and beauty of a building, but also helps engender emotional value and personal and cultural relevance.

Encourages: Local visual identity and interest for pedestrians, as well as potential use of local skills.

Discourages: Functional anonymity.

CRAFSTMANSHIP

The care and attention with which a building is made, rewards both the maker and the user and makes them likely to last and be valued for future generations.

Encourages: Longevity, the inspiration of generations of potential practitioners of building crafts as an art form.

Discourages: Quick-fix solutions and low-grade buildings that rely on assembly only.

COMMUNITY

The carefully facilitated, early involvement of the local community in order to create places which have a civilizing influence, which meet people's needs, desires, and aspirations, and engender civic pride.

Encourages: A proactive, holistic approach to planning with community buy-in.

Discourages: A reactive, piecemeal approach to planning, and a reactionary local community.