



**Design Details**  
**Architectural Details**  
**V.1**



## Content

### Design Detail Section

#### 1. Architectural Details

- Building form
- Modelling
- Dormers
- Placing of openings
- Solid and void
- Balance
- Windows
- Appropriate use of materials
- Appropriate detailing for the materials used
- Chimneys
- Porches
- Other details
- Protection from noise sources
- Indicative house types
- Daylight and sunlight
- Garden size
- Rear privacy
- Private sitting-out areas

#### 2. Internal Design Details

- Accessibility for disabled people to dwellings
- Internal space provision
- Extendable houses
- Sound insulation
- Nationally described space standards

#### 3. Layout Details

- Permeability and legibility of the layout
- Legibility
- Criteria for layout at densities
- Below 20 dwellings per hectare
- Criteria for the creation of urban space at densities over 20 dwellings per hectare
- Criteria for placing buildings at densities over 20 dwellings per hectare
- Criteria for development types over 50 dwellings per hectare
- Housing layout and design – plots and internal spaces
- Urban grain
- Movement
- Mixed uses
- Private space

- Densities for sustainable development
- Influences upon sustainability
- Renewable energy for developments
- Electric vehicles

#### 4. Parking Design

- Accommodating the car
- Types of parking
- Visitor parking
- Residents parking
- Underground parking
- Under-deck parking
- Multi-storey parking
- Under-croft parking
- On-street parking
- Parking for electric cars, cycles, autonomous vehicles and mobility aids
- Car-sharing and car clubs
- Cycle facilities

#### 5. Street and Roads

- Services
- Post boxes
- Television and radio aerials and satellite dishes
- Street name-plates and markers
- Refuse collection
- Pedestrian and cycle movement
- Designing streets in support of buses
- Vehicular movement in residential areas
- Character and speed
- Street design
- Access to non-residential uses
- Speed restraint
- Surface materials
- Gateways
- Shared surfaces
- Smart technology
- Car-free zones
- Adoption criteria
- Street trees
- Public art

## 6. Highways Technical Manual

- Street type table
- Street type description
- Parking square
- Pedestrian and cycle movement
- Bus stops, routes and termini
- One-way street
- Speed restraint within a 20mph zone
- Junction types and design
- Junction spacing
- Visibility
- Planting in sight-splays
- Turning heads
- Vertical clearance under structures
- Driveways to individual dwellings
- Bollards
- Kerbs
- Street lighting
- Access for fire tenders
- Commuted sums
- Adoption and maintenance of roads, footpaths and open spaces

- Recommended plant species
- Urban public space
- Mental health
- Successful criteria for public open spaces
- Ecology and Biodiversity

## 7. Flooding

- What are Sustainable Drainage Systems?
- Sustainable development
- Design criteria
- Local principles
- Local standards
- What are watercourses?
- Consulting the Lead Local Flood Authority

## 8. Landscape and Greenspaces

- The benefits of Green Infrastructure and Biodiversity
- Landscape - key requirements
- The key principles of public open space
- Allocating space for green areas
- Community space for growing food
- Public space for growing food in developments
- Technical and practical considerations of food growing
- Use of landscape in urban spaces
- Public open space

## 1. Architectural Details

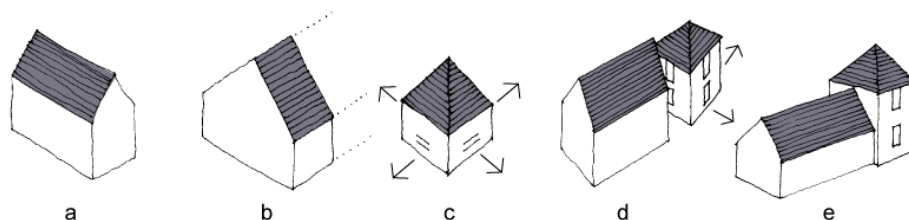
Getting the architectural details right is critical to ensuring new developments are appropriate to the setting and context. The Essex Design Guide includes a series of key principles which should be applied any new development. Noise, daylight, rear privacy and garden size are all important elements in designing appropriate developments which address key habitual needs. While elevation design, materials and fenestration design all seek ensure that building designs is based on.

### Building Form

- 1.1 This section considers the form and design of individual buildings, a matter of architecture. Because a major proportion of the new buildings constructed in Essex are not designed by anyone with formal architectural training, it is legitimate to set out the design requirements of the planning authority.

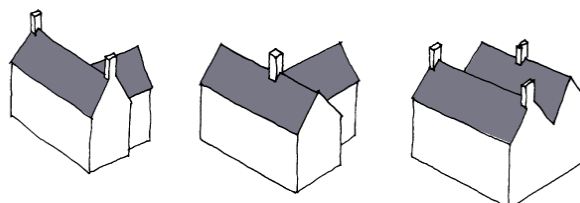
#### Regional Building Forms

- 1.2 The traditional buildings of Essex are typically made up of rectangular rather than square plan forms, with pitched roofs spanning the narrower plan dimension. Such spans are rarely greater than 6.5m in width, but more usually of the order of 5m. In order to fit in with the existing urban landscape of Essex, new buildings should also employ these forms and dimensions.



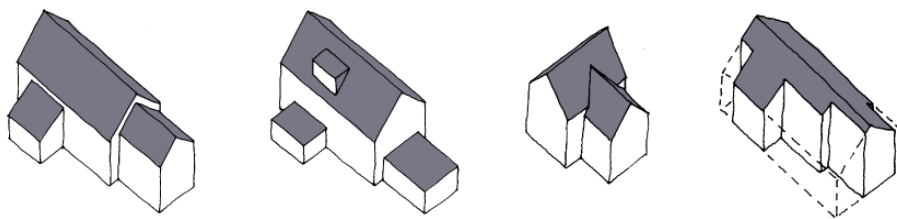
- a. Roof pitches should follow the vernacular pattern and span across the narrowest plan dimension  
b. Roofs like this should be avoided, as in the Essex context they appear incomplete  
c. Square plan forms suggest a pyramid roof and each elevation should be treated equally  
d. Such square plan forms need to be isolated in space as they otherwise appear uncomfortable in conjunction with other structures  
e. One exception is with abutting blocks, where this problem is less apparent

- 1.3 Buildings of more complex form should combine such forms to create (for example) L-plans, T-plans or deeper plan forms made up of parallel ranges. In all cases, each element of the plan should have a roof pitched over the shorter dimension. Such roofs should typically be pitched at approximately 50°.



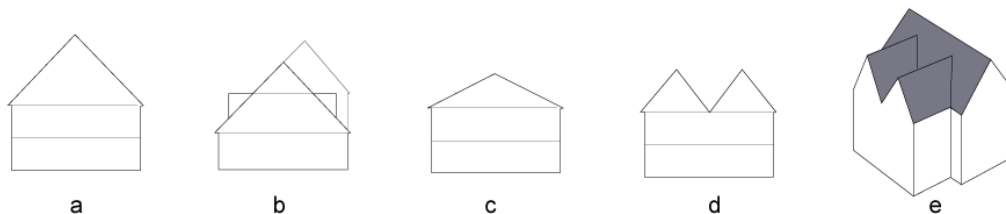
Complex forms

- 1.4 Each building should be composed of a ‘family’ of forms, with roofs of similar pitch and without discordant flat-topped elements. In any such combination of forms, there should be a principal element to which subsidiary elements are added. Complex plans should not be enclosed in an enveloping volume out of which pieces are cut to create subtractive forms.



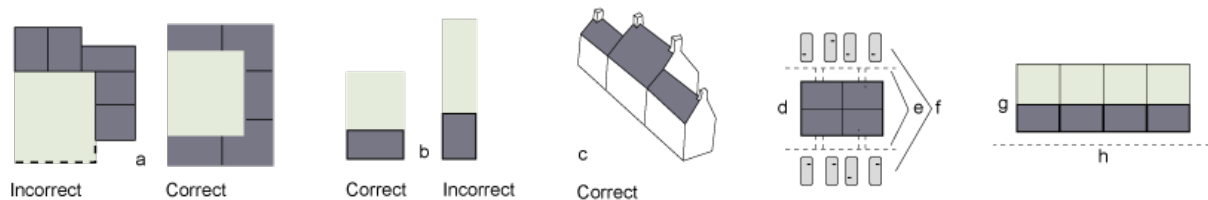
### Families of form

- 1.5 The use of deep-plan (i.e. more than 5m deep) buildings roofed with a single span results in wide gable ends uncharacteristic of traditional buildings in Essex. It can also lead to roofing problems. With the roof pitched at 50°, the depth of the plan creates an uneconomically large roof space. This can then lead to the temptation to lower the eaves level and place the upper storey within the roof. Another undesirable solution is to slacken the roof pitch to an extent uncharacteristic of traditional buildings. The traditional solution to the deep-plan form is to use parallel roof spans.



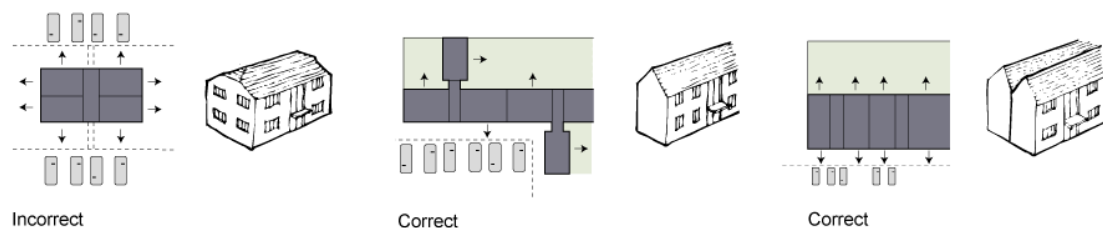
- a. Uneconomically large roof space  
b. Lowering of eaves with upper storey in roof  
c. Untraditional slack roof pitch  
d. Traditional solution: parallel roof-spans  
e. Traditional solution: projecting gables

- 1.6 Deep-plan terraces are best avoided altogether, as the resulting narrow frontage to each dwelling means less frontage width is available for enclosing urban space. Rear gardens also have to be made inordinately long and thin to provide the minimum required area. However, if deep-plan terraces are unavoidable, the gable ends should be concealed.
- 1.7 Sometimes, the deep-plan form results from the placing of small dwellings back-to-back. This is seldom a satisfactory solution, due to the lack of a private garden side to the dwelling, the need to bring car parking close to both sides of the building and the impossibility of joining such a block to other buildings (due to there being windows on all sides). Small dwellings are therefore better arranged in normal terraces.



- a. Deep-plan houses result in less frontage width available for enclosing space
- b. Deep-plan houses result in longer, thinner gardens for the same garden area
- c. Gable ends of deep-plan terrace concealed by shallow plan houses on ends
- d. Lack of private garden
- e. Car parking both sides
- f. Small dwellings back-to-back
- g. Street
- h. Small dwellings in terrace

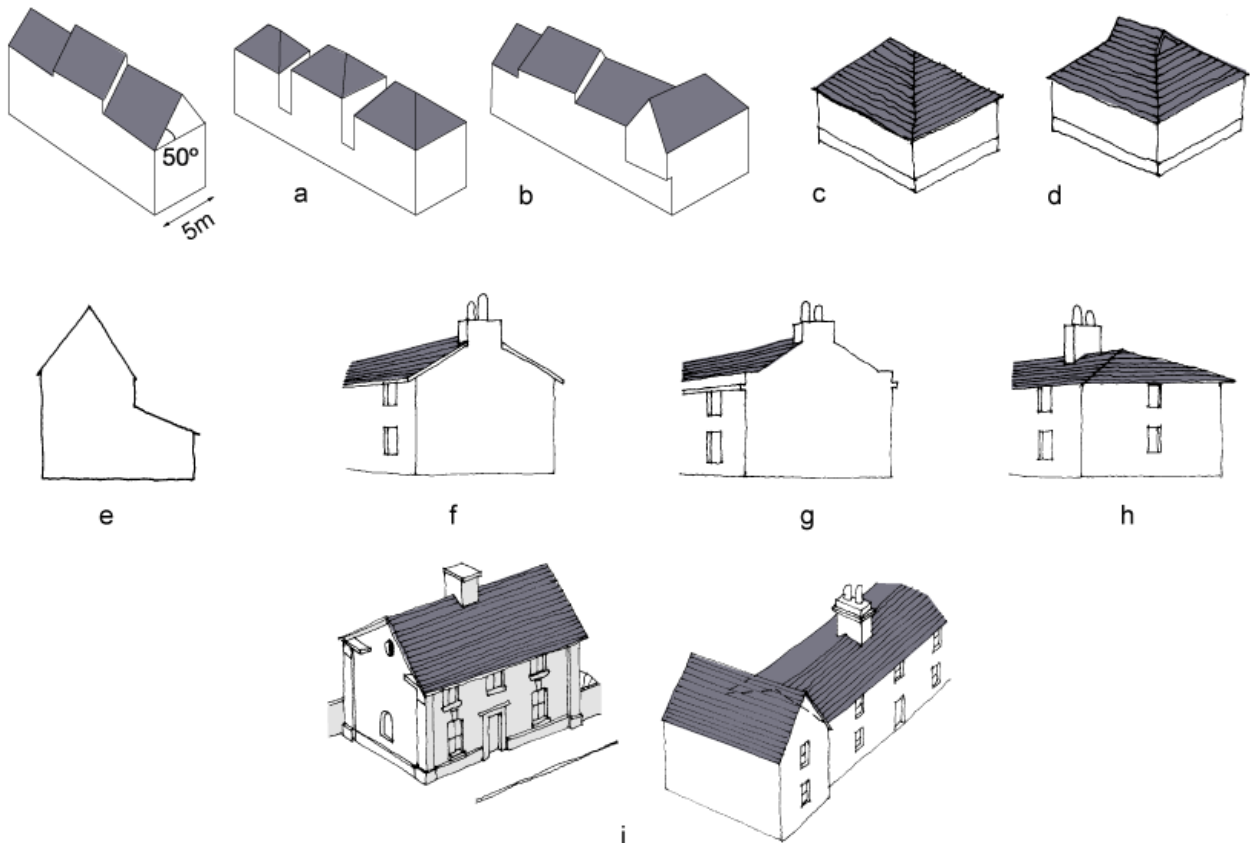
1.8 The placing of flats back-to-back results in the same problems of wide gable ends and difficulty in joining blocks together to enclose space. Furthermore, a block of flats with aspects in all directions increases problems of overlooking. Blocks one flat deep are thus a better and more flexible solution. If roads, car parks and access are located on both sides of a block of flats, this can result in a lack of screened amenity space suitable for sitting out. Sufficient space for amenity use should be provided adjacent to the building on at least one side.



## Flats

- 1.9 Typically, in order to conform to the traditional Essex roofscape, roofs should be pitched at approximately 50° over spans not exceeding 5m. Such roofs are more attractive gabled than hipped. The use of hips on both ends of a house gives it a suburban look and makes it difficult to integrate into the street scene. Hips should therefore be used sparingly, for example on the rear end of a cross wing, or on a freestanding house. A hipped roof at the end of a terrace will lead the eye round and provide continuity into the adjoining street.
- 1.10 Roof pitches in the range 35°-40° may be used in exceptional circumstances, for example for a rear lean-to or a deeper plan house. In the latter case, this roof pitch should only be used in conjunction with either a wide eaves overhang or a parapet, as well as with substantial chimney stacks centred on the ridge-line.

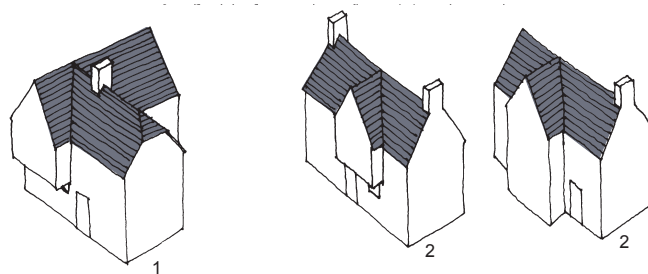
- 1.11 If the stack is not situated on the gable end, it should be centrally positioned and the gable should be replaced by a hip with a wide eaves overhang. Centrally placed windows on the end elevation can help break up the width.
- 1.12 In the case of a longer terrace or the important exposed end of a deep-plan house with 36°-40° pitched roof, the treatment of the gable end may be strengthened by brick relief detail, to give the impression of a pediment resting on corner pilasters (see picture K). These measures will bring such a building into the vocabulary of forms typical of the 19th century and frequently encountered in Essex. In such cases, slates should be used in roofing. It may also be preferable to conceal an otherwise unsightly wide gable end with a front-to-back cross wing at right angles, thereby presenting a narrow gable to the street.



- a. Hips are difficult to integrate into street scene  
 b. Correct use of a hip in the urban context  
 c. Hips with a short ridge should be avoided  
 d. Gables can sometimes provide a solution  
 e. Shallower roof pitch on rear lean-to  
 f. Deeper plan with eaves overhang  
 g. Deeper plan with parapet eaves  
 h. Deeper plan with eaves overhang  
 i. Narrow, steep-pitched cross wing conceals wide, shallow-pitched gable end

## Modelling

- 1.13 The three-dimensional modelling of buildings using set-backs, projecting bays or gables should play a deliberate role in the street scene. Such modelling can have significant effects on shadowing and the play of light. An overhanging first floor or jetty is a useful device which visually separates each floor of a house, allowing greater flexibility in the positioning of windows. Houses or parts of houses that rise to three storeys are useful ingredients in the townscape. They can enclose space, terminate a view or add variety.



*Shallow projecting gables (2) should be avoided unless forming part of a fully articulated cross wing (1).*



*(Left) Overhanging jetty allows more flexibility of fenestration. (Right) Insertion of three-storey element adds variety.*

- 1.14 Present-day living requirements have created a tendency to group single-storey elements outside the main, two-storey volume of the house – usually around the entrance. Such elements include enclosed porches, bin stores, cloakrooms and meter cupboards.
- 1.15 While enclosed porches can provide a buffer against traffic noise and weather (as well as reducing heat loss), traditionally such additions were added to the rear of the house. Current practice compromises the clarity of the dwelling and its relationship to the street. Where necessary, these elements should fall within the main, two-storey volume of the house or to the rear of it. Though of course, this is not as crucial in low-density situations where the house does not relate so closely to the street.



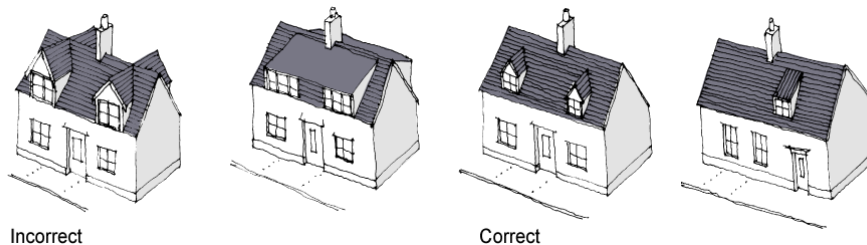
Ancillary accommodation in front of the house damages its relationship with the street





## Dormers

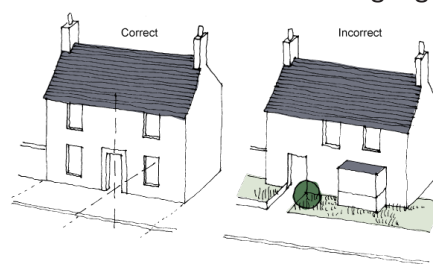
- 1.16 Dormers in new housing are often the result of an attempt to provide habitable accommodation within the roof space. This makes them over-dominant in the composition. It is often preferable to include this accommodation within the main volume of the house by raising the eaves level. Dormers should be a minor incident in the roof plane. Their purpose should be to light the roof-space, not to gain extra headroom over any great width. They should not be located close to verges or hips and should have gabled, cat-slide or flat lead roofs. Rooflights should be used sparingly. They should appear on rear elevations only and not in conjunction with dormers.



*Dormer design*

## Placing of Openings

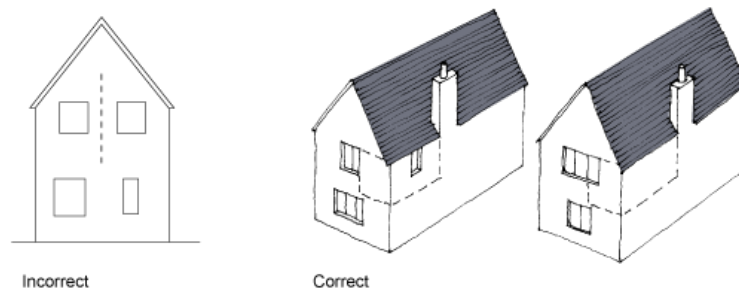
- 1.17 The best solution for the front elevation of an average medium-to-narrow frontage house is a symmetrical pattern of openings arranged around an opening placed on the central axis (preferably the front door). This arrangement provides a tightly ordered grouping of features and a strong visual presence – and is particularly crucial where the front elevation consists of a single gable.



*(Left) Correct. A symmetrical elevation has a powerful presence, commanding the adjoining space and tying house and space into a single composition. (Right) Incorrect. A casual arrangement where the house is only tenuously connected to the street space.*

- 1.18 Front-facing gables containing windows are a welcome and enlivening feature of many houses. Narrow-fronted houses often take the form of a front-facing gable end. However, there is a temptation to maximise the use of the extra volume this creates by splitting the gable into two rooms, each with a front-facing window. The resulting pair of windows creates an uncomfortable duality either side of the gable axis, which is not traditional.
- 1.19 The effect is worse if the windows are of unequal size and spacing. Traditional buildings in the region typically only have one room in the gable end, with a single, centrally placed window which both coincides with and reinforces the gable axis. This practice should be followed in new buildings wherever possible.

- 1.20 If a second room is unavoidable, the window of the larger room should be centrally placed on the gable axis and that of the smaller room relocated to the flank elevation. Alternatively, incorporate a wider, mullioned gable window and position the partition between the rooms so as to butt up against a mullion.



### *Window arrangement example*

- 1.21 Departures from strict symmetry are possible so long as the central axis is strongly emphasised. Unfavourable solutions are those which are almost symmetrical and which, when applied to a number of adjacent houses, contribute to a visually poor streetscape.



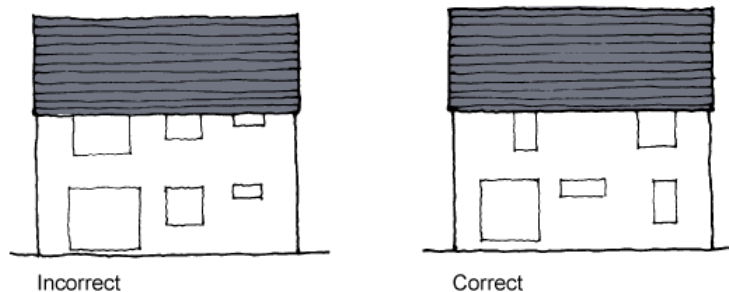
### *Adjacent, almost symmetrical layouts can be unsightly*

- 1.22 A strongly centralised composition is not always required for houses with wider front elevations, due to the weakening of the central axis. In such instances, asymmetrical arrangements can look attractive – though the front door remains the most important element and should form the basis of the pattern.
- 1.23 When houses are linked in terraces, the street elevation includes more than one house, with each unit forming part of a larger composition. This makes greater freedom of composition possible.



### *Houses linked in terraces*

- 1.24 While the front elevation is the most crucial, the same principles may apply to the rear and side elevations of houses – though a more relaxed approach may be viable if the elevation in question is not publicly visible.
- 1.25 It is common practice to use a window type appropriate to the room it serves. For example, a small, high-level window for a toilet, a raised sill for a kitchen or a patio door for a living room – irrespective of position or the patterns of openings thereby produced on the elevation. This can create unbalancing effects (such as a false perspective). Randomness of window size and positioning should be avoided, and a coherent pattern of openings created where possible.



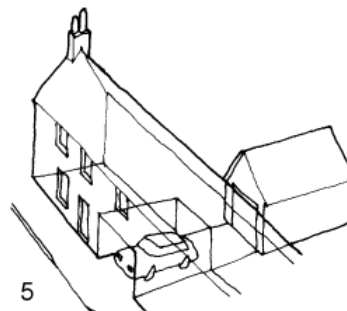
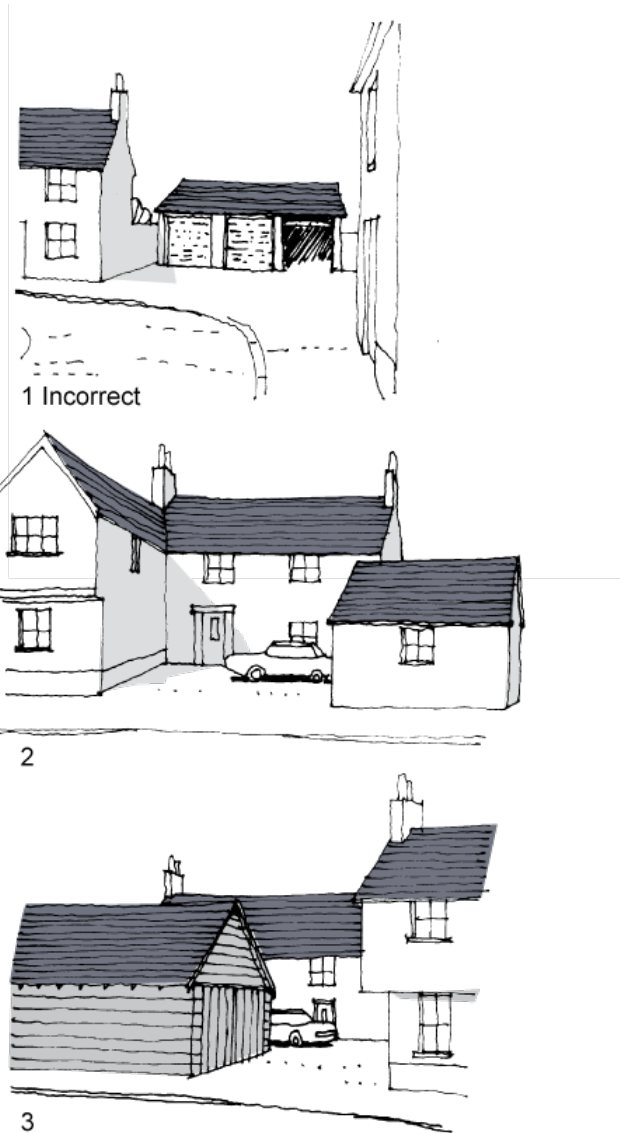
*(Left) Incorrect. Variety of windows can produce ‘false perspectives’. (Right) Correct. Composed randomness.*

- 1.26 This does not mean that ‘composed randomness’ may not form part of a coherent pattern. Such an approach may be appropriate in some instances – for example, for a rear rather than a front elevation.
- 1.27 An integral garage can result in a large garage door that dominates the front of the house, compromising the importance of the front door and the relationship of the dwelling to the street. It also adds a distinctly utilitarian feature to the otherwise domestic character of the front elevation. If the house is narrow-fronted, the effect is even more dominant.



*Integral garage doors can be unduly dominant and damage the scale*

- 1.28 The prominent positioning of garage doors at the end of a cul-de-sac, road junction or bend in a road constitutes a visual downgrading of the townscape just at the point where a strong element (such as a ‘landmark’ house) is required. The solution is to be more flexible in the positioning of garages so that they can face in various directions or combine to form larger structures. These larger structures may then perform a more positive role in the wider townscape.

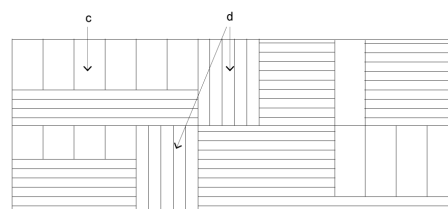
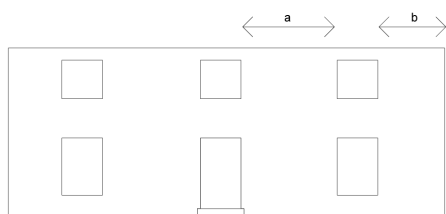


1. Incorrect. Prominent positioning of garages at bend in road
2. Correct. Sideways facing garage.
3. Correct. Double garages placed back to back to form barn-like structure
4. Correct. Timber garage door inset within opening. Front door dominates.
5. Correct. Garage in back garden, visitor space under carriage arch.

1.29 In the case of integral garages in terrace houses, the metal up-and-over door is a feature of poor visual quality, and is better located in the back garden, with a visitor parking space set within a carriage arch under the building. A well-designed timber door inset within an opening at least 200mm deep is another acceptable solution.

## Solid and Void

1.30 In the case of masonry buildings, the total area of the window and door openings in any single elevation should be less than the total area of solid wall. Openings should be arranged so as to emphasise the visual strength of the wall by allowing as wide a solid pier as possible between openings. Openings should also be positioned as far as possible from the corners of the building to give an impression of solid corner buttressing. This approach can be varied in the case of timber-framed buildings where an impression of lightness is appropriate. In such cases, the module of the frame should determine the positioning of the openings.

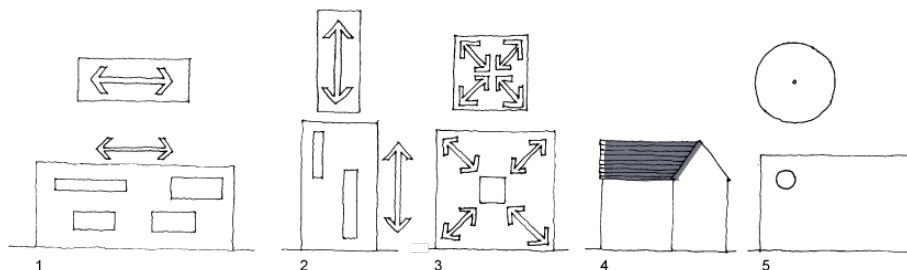


### Masonry building

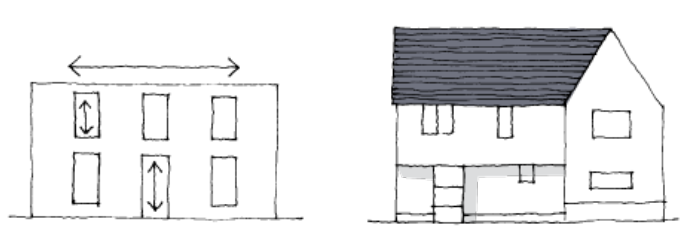
a. Wide pier between opening b. Solid corner buttressing

### Framed building

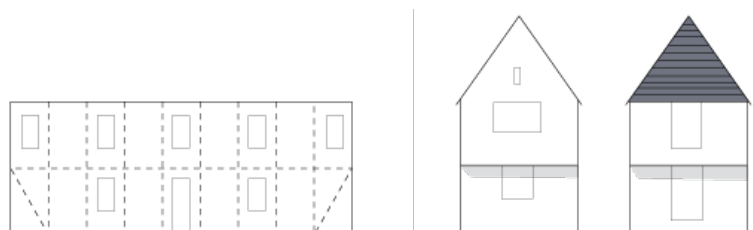
c. Larger glazed area d. Closer juxtaposition of openings



1. Unresolved horizontals 2. Unresolved verticals 3. Squares draw the eye along the diagonals 4. Beware of square elevations 5. Circles draw the eye



### Balancing the rectangles



### Timber-framed building



## Balance

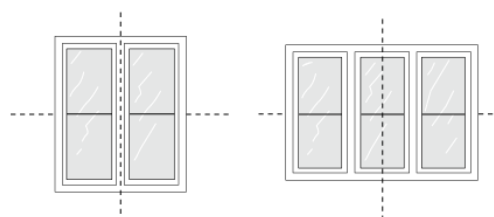
- 1.31 In order to achieve the best visual effect, the directional emphasis of an elevation should be counteracted by the directional emphasis of the openings within it. This means that a horizontally proportioned elevation should contain vertically proportioned window openings, while a vertically proportioned elevation should contain horizontally proportioned window openings.
- 1.32 A square-proportioned window, though it attracts the eye, is neutral, and imparts no directional emphasis. Square windows may be used on an upper storey above vertically proportioned window openings – the vertically proportioned windows will suffice to balance a horizontally proportioned facade.
- 1.33 Where a horizontally proportioned window opening is essential, it may be placed in a projecting part of the facade, such as a wing or gable, which has a vertical emphasis that will balance the emphasis of the window. Alternatively, the window may be modified to provide a vertical element.



*(Left) Vertically proportioned openings used with square openings to balance a horizontal elevation. (Right) Horizontally proportioned opening balances a vertical projecting wing*

## Windows

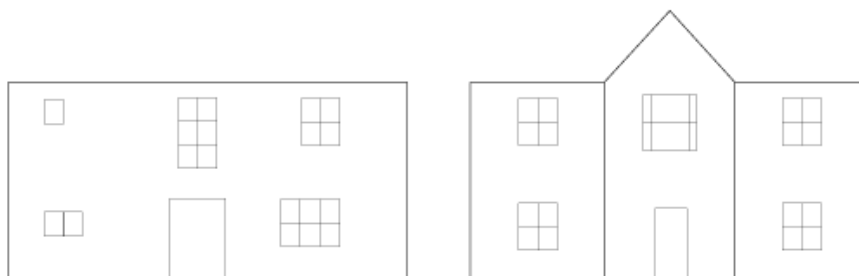
- 1.34 Unevenly subdivided windows can disrupt the balance of a well-composed elevation (see the section on ‘Balance’). Window subdivisions should be arranged symmetrically about the horizontal and vertical axes of the openings. Large, un-subdivided panes of glass should not be used, as they can distort the visual scale of the building.



*Incorrect*

*Correct*

- 1.35 The use of a regular pane size for all windows can help to unify windows of different sizes. Conversely, variation in the pattern produced by subdivisions can highlight particular parts of the elevation – for example, the central axis of a gable.
- 1.36 All windows and doors should be of painted timber, in keeping with the building traditions of Essex. The drab effect produced by stained joinery is to be avoided. Microporous paints, where used, should be of high build quality.



*(Left) Regular pane size unifies windows of different sizes. (Right) Variation among subdivisions highlights the central axis of the gable.*

- 1.37 Wide patio doors can be a disruptive element in a front or rear elevation, creating the effect of a void. They should be no wider than 1.5m and located under a projecting first-floor bay. In the case of a framed building, they may form part of a larger glazed area.
- 1.38 Subdivided french doors can be used more flexibly, but are best located on a central axis or on a projecting or receding part of an elevation not shared with another window.

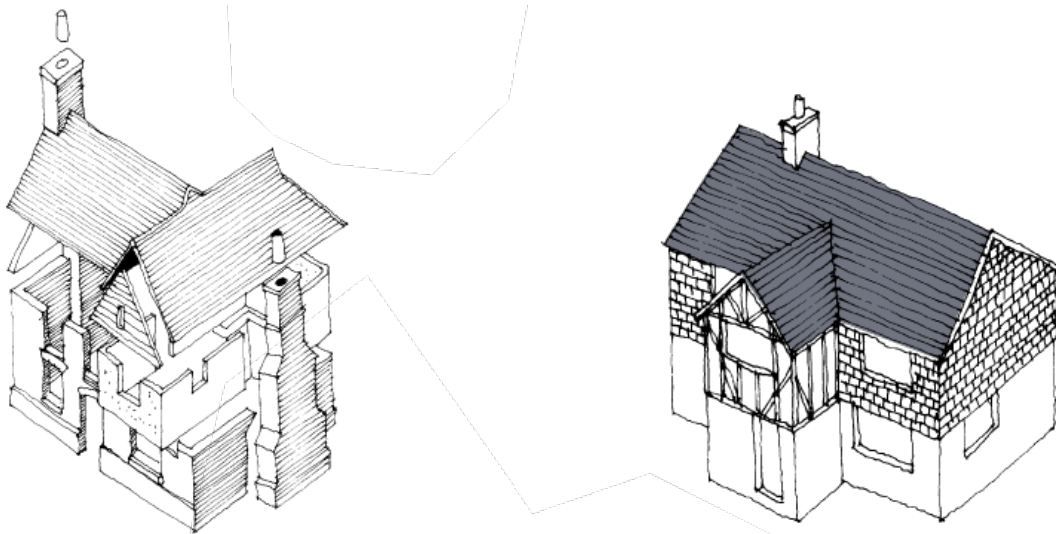


- a. Incorrect. Wide patio doors create effect of a void*  
*b. Correct. Patio doors under projecting bay (1.5m)*  
*c. Correct. Patio doors as part of larger glazed area*  
*d. Correct. Subdivided French doors on central axis*  
*e. Correct. Subdivided French doors on projections not shared with another window*



## Appropriate Use of Materials

- 1.39 Facing and roof materials should be selected from the range of regional materials characteristic of Essex, or of that part of Essex where the project is located. This means using those materials present on pre-20th century buildings in the locality. The traditional range includes red, yellow stock and white gault bricks, smooth rendering, black- or white-painted horizontal weatherboarding, plain clay tiles, clay pantiles, slates and thatch.

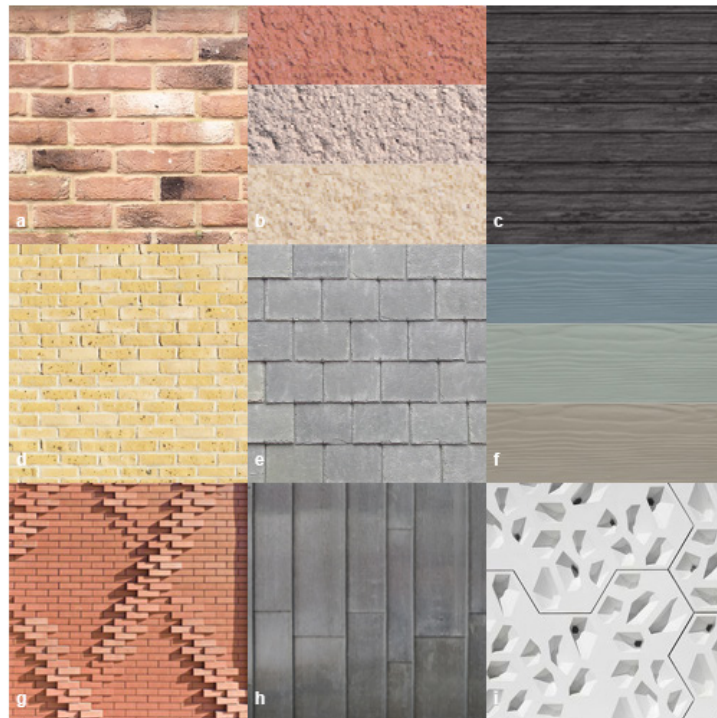


*Material changes and detailing should be used in such a way as to explain the building*

*False half-timbering and alien materials such as the tile-hanging should be avoided*

- 1.40 The use of clay pantiles should be limited to single-storey ancillary buildings. It is appropriate to use different facing materials on different houses in a development, and to use different materials on different parts of a house. However, feature panels of a different material – such as false half-timbering or vertical tile-hanging – are not appropriate (and also not characteristic of Essex).
- 1.41 If different facing materials are to be used on a single house, the change from one to another should appear logical. Typically, different materials might be used on different storeys or in order to articulate different parts of the structure – such as a front facade or architectural feature like a gable triangle, bay window or plinth. Elements such as lintels and plinths can also be enhanced by picking them out in a different material, or through the use of decorative detail. Used in this way, material changes and detailing can help to ‘explain’ the building.
- 1.42 Historic streets in Essex towns and villages invariably have a majority of rendered houses. If, as is desirable, the character of historic settlements is to be reproduced in new development, this high proportion of rendered houses should be perpetuated.



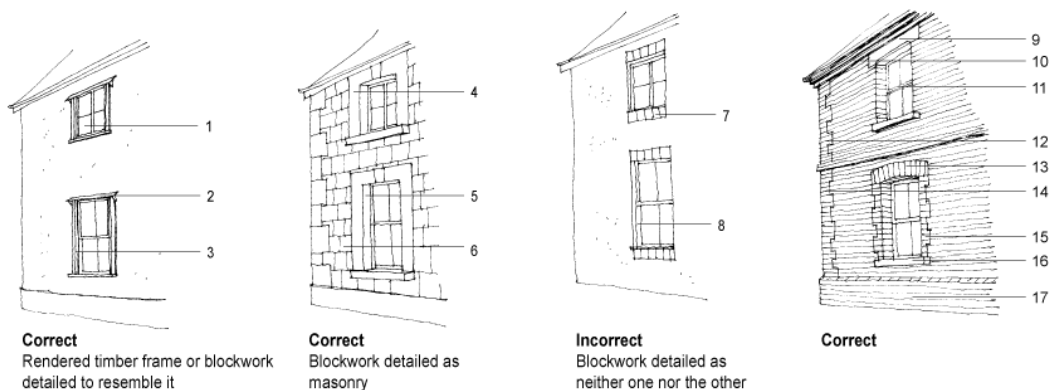


### Material Matrix

Traditional: a. Red Brick b. Traditional Coloured Render c. Black Weather Boarding  
 Traditional/ Contemporary Mix: d. Buff Brick e. Slate/ Tiles f. Coloured Weather Boarding  
 Contemporary: g. Brick Patterning h. Zinc i. Panelling

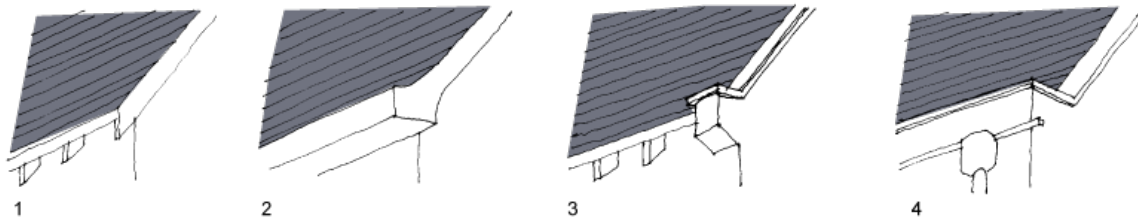
## Appropriate Detailing for the Materials Used

- 1.43 Any detailing used should emphasise the character of the material – and where appropriate, be of a type that has evolved traditionally.
- 1.44 Some common forms of brick detailing:



1. Window on face of wall 2. Pentice board 3. Painted timber architrave 4. Heavy head sill and surround 5. Window inset within opening 6. Ashlar effect markings 7. Brick detail inexplicably showing through 8. Window slightly inset 9. Lintel in different material 10. Projecting eaves course 11. Window inset within opening 12. String course 13. Lintel that appears adequate for load 14. Quoin 15. Contrasting window surround 16. Sub-sill 17. Plinth

- 1.45 The solidity of brickwork should be expressed by inseting doors and windows within their openings by at least a half-brick depth, and by using sub-sills.
- 1.46 Openings should have an arch or lintel which appears adequate to carry the load of the brickwork above. A lintel may be picked out in a different material.
- 1.47 The form of the building may be emphasised by string courses, plinths and projections at the eaves. Variations in bond and colour can be used to decorative effect. Corners and openings can be emphasised by quoins and window surrounds in a different colour or material. Rendered or boarded timber-framed buildings should have windows and doors set near the face of the wall to express the thinness of the construction. Painted timber architraves around the openings and pentice board heads will add a similar emphasis.
- 1.48 Buildings of rendered blockwork may follow one of two approaches:
- To reflect the appearance of a rendered timber-frame building, with appropriate detailing (i.e. without exposed brick detailing).
  - To appear to be of masonry construction, with suitably heavy windowheads and sills and deep opening reveals. Ashlar false joint markings will further enhance this effect.
- 1.49 Where plain clay tiles are used, roofs must have a pitch of 50°; where roofs are in the range of 35-40°, slates should be used instead – or in the case of single-storey structures and outbuildings, clay pantiles.
- 1.50 Open soffit eaves details are preferable to boxed eaves, which produce a heavy verge that contradicts the expression of the roof plane. Parapetted gables and eaves are possible alternatives.

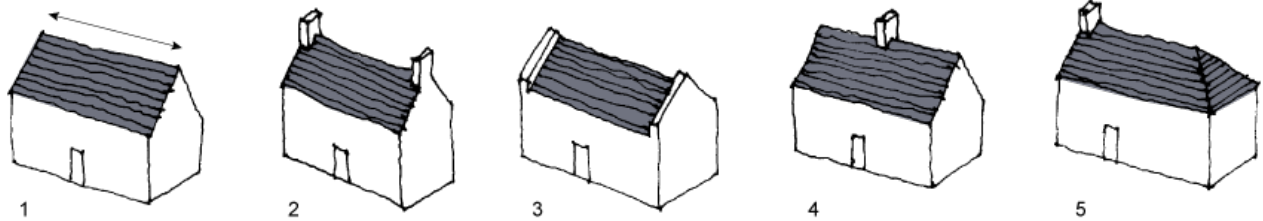


1. Correct. Open soffit eaves  
2. Incorrect. Boxed eaves  
3. Correct. Parapetted gable  
4. Correct. Parapetted gable and eaves

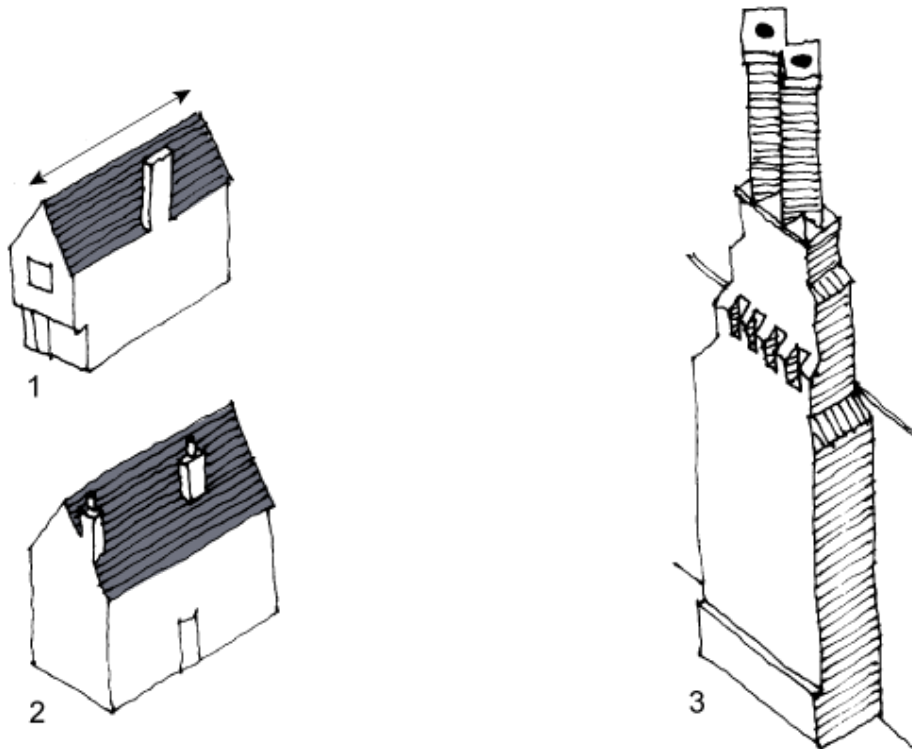
## Chimneys

- 1.51 Chimney stacks are commonly found on older buildings and help to punctuate rooflines and provide visual interest. For the purpose of keeping open the choice of fuel, houses should be provided with Class I flues and chimneys.
- 1.52 Traditionally, chimneys play an important architectural role in the composition of houses, and should therefore be of suitably massive construction. This will also enable them to contribute to the structure of the building.
- 1.53 They should be positioned on the ridge line of the roof, centrally on a gable end or against an outside wall, and should have pots. In the case of small dwellings without fireplaces, gas flues or soil and vent outlets can be combined into chimney structures.

1.54 On flank gable ends, chimney stacks should be flush with the wall or else project sufficiently that the stack appears strong enough to stand unsupported.



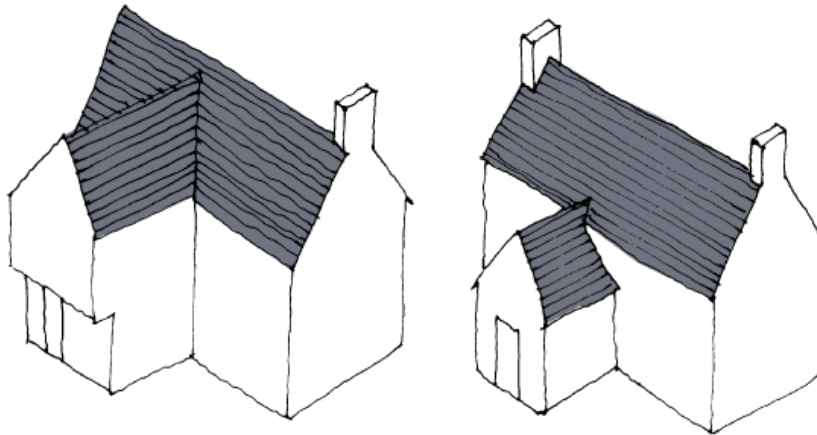
1. Directional emphasis of roof unresolved  
2, 3, 4 & 5. Directional emphasis suitably suppressed to harmonious effect



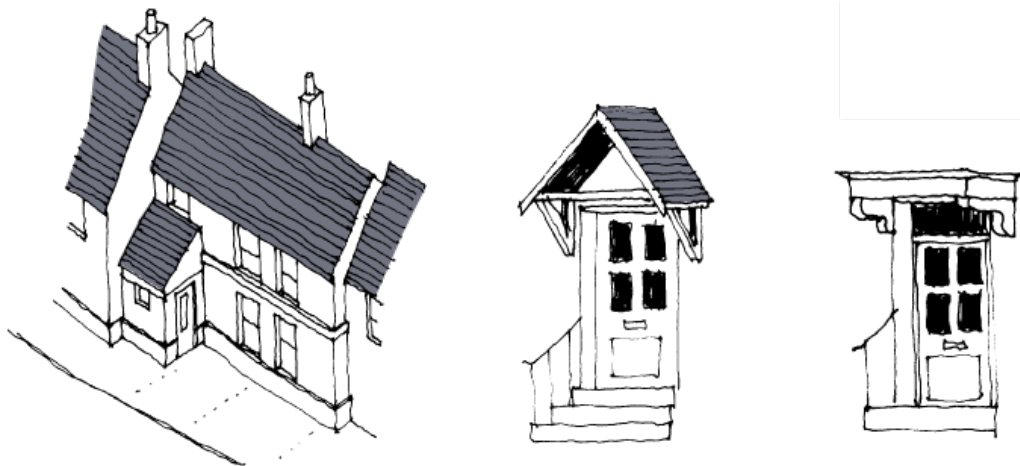
1. Stack emphasises directional force  
2. Stacks should not appear unrelated to the basic geometry of the dwelling  
3. Late 16th century Essex stack should appear to be able to stand up independently of building

## Porches

- 1.55 Open porches and hoods are preferable to and easier to assimilate than enclosed porches. A pitched-roof porch should project from the building by at least the width of its span – though obviously this could prove a cumbersome element on a small elevation.
- 1.56 Gabled and flat-topped hoods are alternative possibilities, but lean-to and flat-topped enclosed porches detract from the form of the house and are undesirable. A lean-to enclosed porch with side entry may be acceptable on a longer, asymmetrical facade.



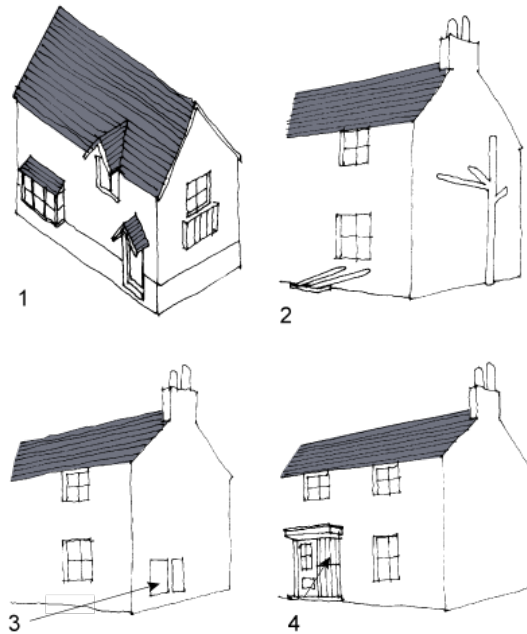
*Such projecting gables should project at least as far as they span*



*Lean to enclosed porch with side entry*

## Other Details

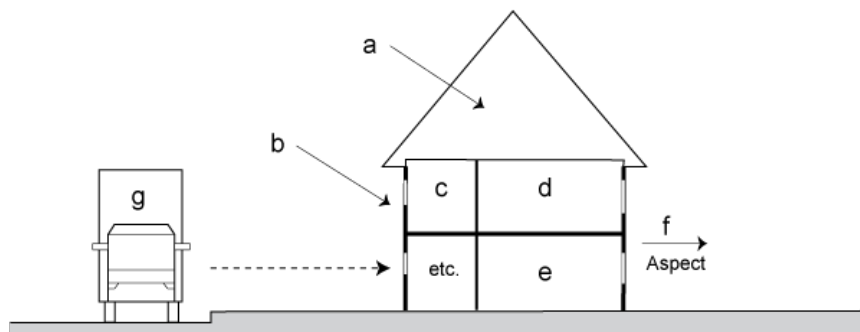
- 1.57 Overuse of 'skin-deep' detail such as applied gables and oriel windows of minimal projection should be avoided. If balconies are provided, they should be proper, accessible balconies or full-height, inward-opening doors with a balustrade in front – not 'clip-on' metal structures in front of waist-high windows. Bay windows should be substantial elements, preferably of storey-height.
- 1.58 Vent pipe outlets in roofs should either be grouped and incorporated in chimney features or located on rear slopes. Soil and waste plumbing should be run internally and not appear on the outside of buildings. Grey rainwater goods should be avoided and black used instead.
- 1.59 Meter cupboards and service intakes should be located out of sight on flank elevations or in ground-level chambers, provided they are screened by planting or accommodated in purpose-made joinery that fits the pattern of openings on the elevation.



1. 'Skin-deep' features should be avoided
2. Soil and waste plumbing should be run internally
3. Cupboards on flank Purpose-made joinery
- 3 & 4. Acceptable positions for meters and service intakes

## Protection from Noise Sources

1.60 The best way to limit the effects of external noise is to locate new housing away from major noise sources such as main roads, airports or heavy industry. Noise problems may also be averted by building new housing to a higher specification or by suitably protecting site boundaries from noise sources. Barrier blocks of single-aspect housing and earth mounds can also be used to shield sites from noise.

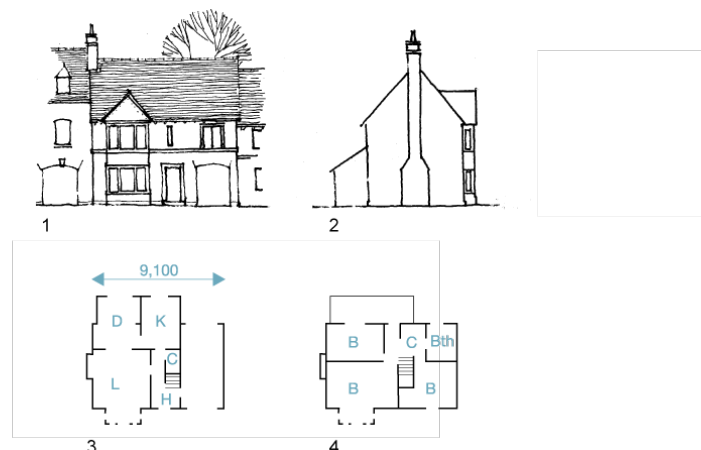


- a. Continuous barrier block
- b. Small, acoustically double-glazed windows
- c. Bathroom
- d. Bedrooms
- e. Living rooms
- f. Interior of site protected from noise by barrier block
- g. Noise source

## Indicative House Types

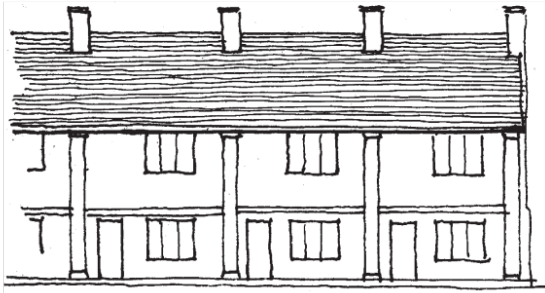
- 1.61 Many architects reasonably believe that the way forward is to celebrate high technology and pursue other trends that interest the profession. But this approach risks losing sight of certain factors of vital importance in today’s housebuilding market.
- 1.62 Major housebuilders, building societies and the house-buying public retain their attachment to the traditional and ubiquitous masonry envelope with its tiled roof. The exploitation of this established formula is likely to remain a fundamental issue. Current solutions to entice the buying public involve the application of ‘historic features’ provided for their symbolic, rather than visual, qualities. The objective should be to abandon pointless efforts and return to basic good design.
- 1.63 The realisation of well detailed, harmoniously proportioned and long-lasting structures based on unambitious construction is an objective worthy of the most talented of designers. Working to such a purpose and within such parameters is a challenge that has exercised the minds of architects for centuries, and a wide variety of successful solutions have been achieved – some of which remain valid today despite the changes in our way of life.
- 1.64 However, there is still room for a range of new inventions that respect the visual and technical limitations of the format while achieving a special new impact. The answer lies partly in rediscovering and exploiting old virtues such as texture and modelling, which for too long have been neglected and made more difficult to achieve by the use of poor materials.
- 1.65 Given that the house envelope itself provides relatively little scope for drastic rethinking, the layout of an estate provides much greater opportunities. The process of grouping dwellings together to make attractive spaces should be the real challenge for the designer.
- 1.66 Scale, continuity, light, shade and surprise are essential tools of this trade. While we tend to look to the towns and villages of the past for inspiration, new circumstances should give rise to new experiences, which will provide human environments appropriate to our new lifestyles.
- 1.67 The illustrations on the following pages demonstrate some of the possibilities inherent in this particular approach. They also demonstrate how it is possible to devise practicable building plans that result in built forms that assemble readily into harmonious groups and enclosing spaces.

### 1-Bedroom terraced houses, medium frontage, various elevations

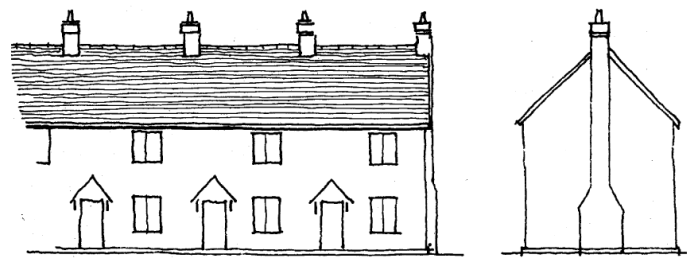


1. Front elevation 2. Side elevation 3. Ground-floor 4. First-floor





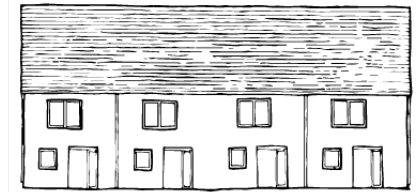
Front elevation with larger openings and facade subdivided to emphasise individual houses



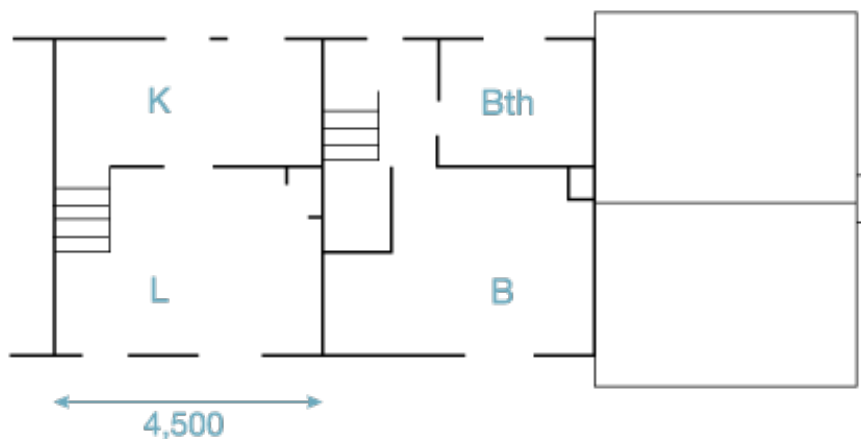
Front elevation with minimum openings. Illusion created of larger houses: door opening could control windows to either side



Front elevation with larger openings and facade subdivided to emphasise individual houses



Front elevation with minimum openings. Illusion created of larger houses: door opening could control windows to either side



First-floor plan

**2-Bedroom, 1½ or 2-storey house, wide frontage with separate garage. Can be built as part of a terrace.**



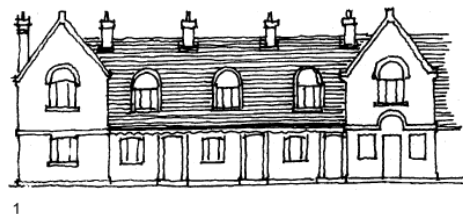
1. Front elevation 2. Section 3. First-floor 4. Ground-floor

**3-Bedroom, 2- storey house with drive-through parking. Can be built as part of a terrace or as part of street composition of various house types.**

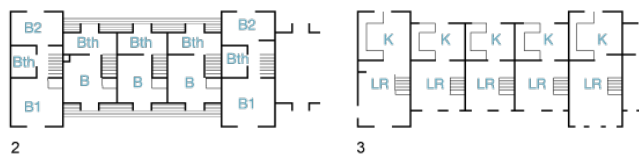


Front elevation

**1 & 2-Bedroom houses, narrow frontage, suitable for squares with small gardens or communal gardens**



1



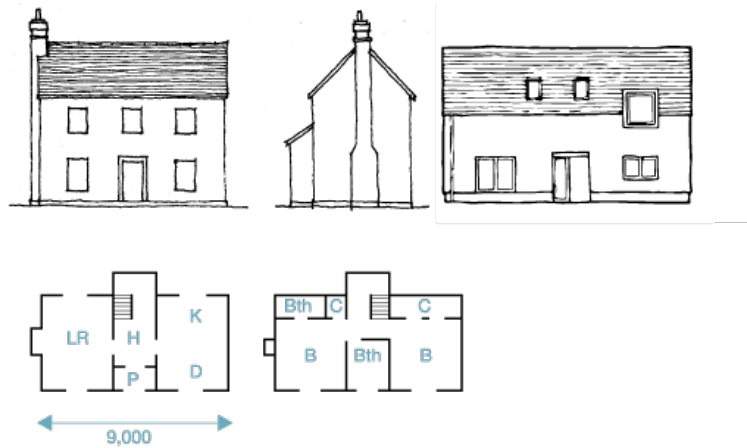
2

3

1. Narrow gable with central windows. Typical street of square elevations 2. First-floor plans (combination of 1- & 2-bed terrace houses) 3. Ground-floor plans (combination of 1- & 2-bed terrace houses)



**2-Bedroom house, wide frontage, useful for maintaining built frontage where rear privacy requires use of 'Z' plan (no windows to habitable rooms at first-floor level of rear elevation). Can be built as part of a terrace, one of a pair of semi-detached houses or as part of a street composition of various house types.**



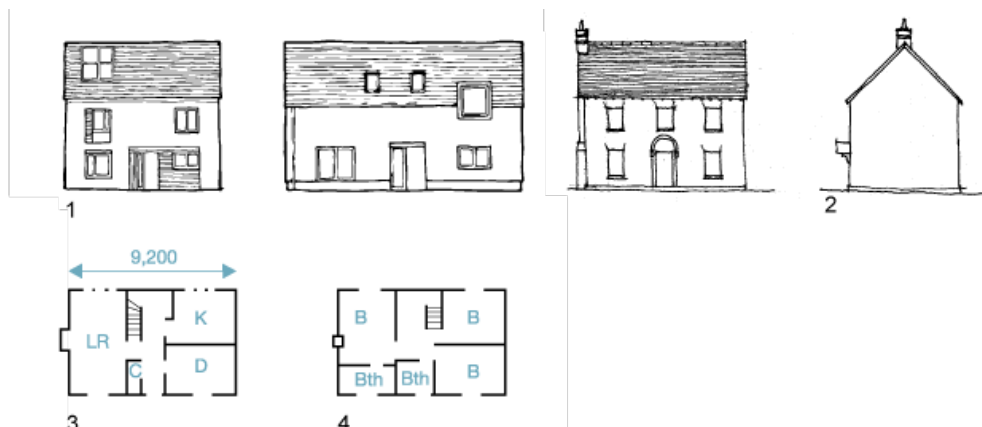
Front elevations and floor plans

## Gable end houses



Front elevations

**3-Bedrooms, various elevations. Larger 2½ & 3- storey houses with and without integral parking. Can be built as detached houses, part of a terrace or as part of a street composition where taller buildings are required**



1. Front elevations 2. Side elevations 3. Ground-floor 4. First-floor

**3-Bedroom, 2½ or 3-storey house with drive-through parking, various elevations. Can be built as part of a terrace.**



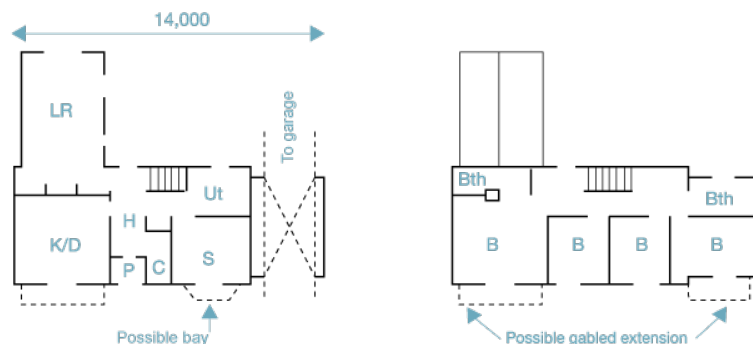
1. Front elevation 2½ storey 2. Side elevation 3 storey 3. Front elevation 3 storey 4. Ground-floor 5. First-floor 6. Second-floor

**3 or 5-bedroom, 2 ½- or 3-storey house with separate garages, various elevations. Can be built as part of a terrace**



1. Ground-floor 2. Front elevation 3. Side elevation 4. Front elevation 5. Front elevation 6. Ground-floor 7. First-floor 8. Second-floor

**4-Bedroom house with carriage arch driveway to rear garage, various street elevations. Useful for building street frontages in combination with other house types as well as for turning corners. ‘Privacy by design’ also possible as rear elevation at first-floor level can be to ‘non-habitable’ rooms. High-level windows.**



(Left) Ground-floor. (Right) First-floor



Front elevations

**4-Bedroom house with carriage arch driveway to rear garage, various street elevations. Useful for building street frontages in combination with other house types as well as for turning corners. 'Privacy by design' also possible as rear elevation at first-floor level can be to 'non-habitable' rooms. High-level windows.**



1. Front elevations 2. Ground-floor 3. First-floor

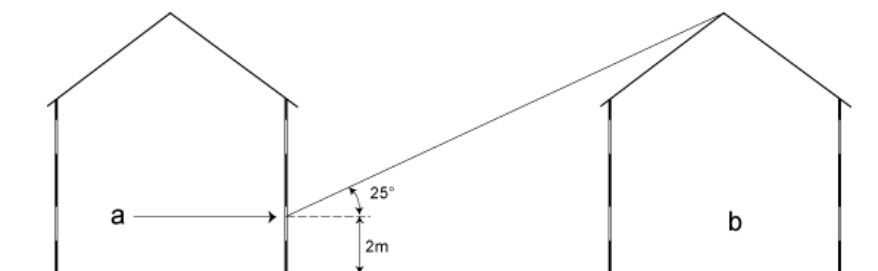
**1-Bedroom flats to provide 3-storey street frontage with carriage arch to rear parking**



(Top) Front elevation. (Bottom) Ground-floor plan.

## Daylight and Sunlight

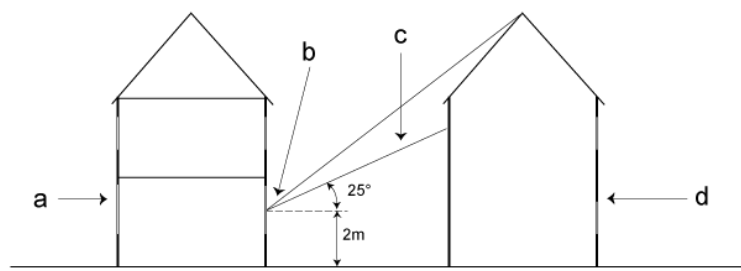
**Natural light makes dwellings more attractive, pleasant and energy-efficient. Housing layouts should be designed to maximise daylight and sunlight while taking into account other factors, such as privacy and the attractiveness of the wider streetscape.**



*a. Reference line for daylight calculation*

*b. Obstructing building*

- 1.68 Local authorities will usually only approve a planning application if it will not have an adverse effect on the daylight and sunlight received by neighbouring properties. The daylight and sunlight tests normally used when considering planning applications are set out in the Building Research Establishment (BRE) document 'Site Layout Planning for Daylight and Sunlight: A guide to good practice' (2011).
- 1.69 This document suggests that adequate daylight in interiors is achieved at an unobstructed 25° angle from a point 2m above floor-level at the facade. This would result in spacing of at least 10m between opposing house-fronts. In most cases, however, and in order to develop and maintain an attractive townscape, it is desirable for this spacing to be less.
- 1.70 In houses one room deep, the amount of daylight may be supplemented from the rear. Other ways to increase the amount of daylight in closely spaced buildings include:
- Raising window head-heights and keeping rooms shallow in plan.
  - Application of the 45° rule to projections and extensions.
  - In houses on the north side of such streets, ensuring that ground-floor habitable rooms take daylight from both front and rear.



*a. Additional light from rear*

*b. Raised window head-height*

*c. Daylight obstructed*

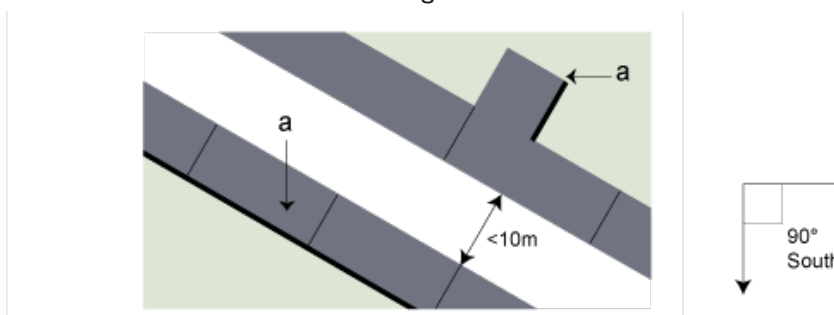
*d. Obstructing building*

*e. Shallow plan*

*f. Less than 10m*

## Sunlight

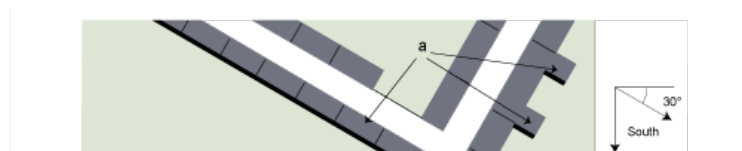
- 1.71 It is not reasonable to require all dwellings to have sunlit rooms; often, a view onto an external sunlit space is preferable. However, a room will be sunlit if at least one main living room window faces within  $90^\circ$  of due south and is not obstructed according to the criteria above.



a. Suitable elevations for main living room windows to benefit from sunlight

## Passive Solar Gain

- 1.72 To reduce heating costs during winter, buildings should be oriented and designed to accommodate solar heat gain – though it should be noted that this is not feasible for all types of dwelling.
- 1.73 Any wall containing windows oriented within  $30^\circ$  of due south will benefit from solar heat gain. Of course, this does not mean that all houses have to be aligned east-west: for example, projecting rear wings on a house aligned north-south can still benefit from passive solar gain.



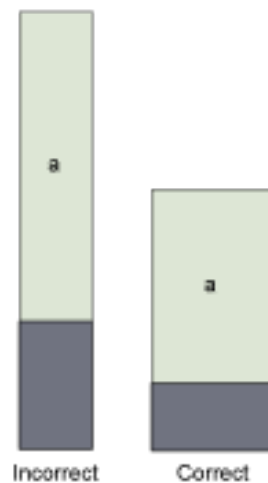
a. Elevations that would benefit from passive solar gain

- 1.74 In such cases, it is necessary to incorporate larger glazed areas – especially full-height windows facing the sun – and to zone internal spaces so that living rooms lie behind facades within  $30^\circ$  of due south. Such windows should not be obstructed by buildings or evergreen trees above a  $13^\circ$  vertical angle from the mid-height of the window. Projections which cause permanent shade should be avoided on north facades.

## Garden Size

- 1.75 The 1973 Design Guide required a minimum private (i.e. rear) garden size of  $100\text{m}^2$  for most types of houses. This provision has been found to be an acceptable and workable minimum size that accommodates most household activities and is at the same time adequate to offer visual delight, receive some sunshine, and encourage plant growth. Storage sheds and space for drying areas and wheeled bins are often required. Allowance should be made within the scheme design. The BRE report “Site Layout Planning for Daylight and Sunlight” recommends that certainly no more than two fifths and preferably no more than a quarter of the garden should be prevented by buildings, walls or fences from receiving sunshine on 21 March.

- 1.76 The 100m<sup>2</sup> minimum garden size is easily achievable for three or more bedroom houses provided the houses are of wide frontage format, but narrow fronted houses may result in longer, narrower gardens. Given the constraints of rear access this can be a reason for minimising the use of this type of house.
- 1.77 Generally, designers should try to create as far as possible usable rectangular garden shapes. Some local authorities may have different minimum garden sizes, and applicants should consult the relevant District Council Planning Department.



*a. equal garden area*

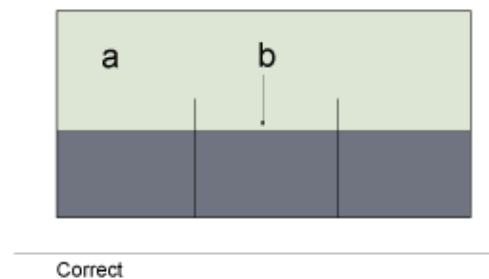
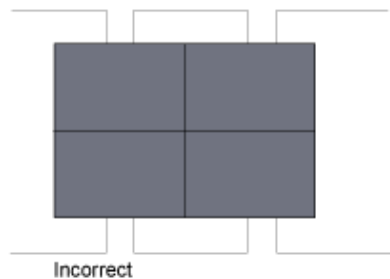
*(Left) Incorrect. Narrow frontage house*

*(Right) Correct. Wide frontage house*

- 1.78 There are circumstances under which the insistence on a minimum 100m<sup>2</sup> garden size is not appropriate. These are as follows:

### Houses of One or Two Bedroom Size

- 1.79 Such houses usually have such a small footprint that provision of a 100m<sup>2</sup> garden is not practicable without being excessively long and thin. In any case, since these are dwellings for smaller households the requirement by residents for garden area is less. Different local planning authorities have varying garden size standards for one and two-bedroom houses. 50m<sup>2</sup> is the most common, but applicants should consult the relevant District Council Planning Department.
- 1.80 These houses must be indicated as being either extendable or unextendable. In the case of an extendable house, the initial planning application must show the shape of an eventual extension, and the garden area must be calculated excluding the ground that would be occupied by the eventual extension. Unextendable houses will have the householder's right to extend under the General Permitted Development Order withdrawn. Permitted Development (PD) rights to extend will also be withdrawn where the garden is less than 50m<sup>2</sup>. In the case of unextendable houses some local planning authorities may allow communal garden provision. In such cases this will be to the standard for flats, i.e. 25m<sup>2</sup> per dwelling minimum, and a planning condition will be imposed that the garden is to remain communal in perpetuity.
- 1.81 This garden space is to be entirely on the private, non-entrance side of the house and to contain a screened, un-overlooked sitting-out area adjacent to each house. Again, applicants should consult their local planning authority to see whether they accept communal garden provision in such situations.



*(Left) Incorrect*

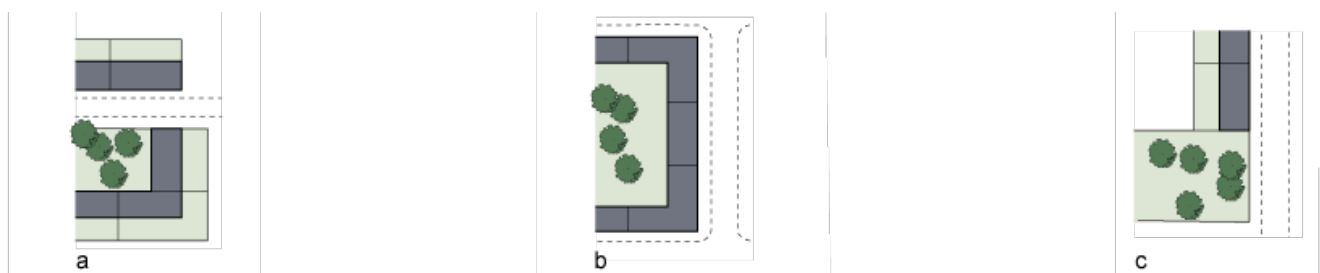
*(Right) Correct*

*a. Communal garden*

*b. Private sitting out area*

## Walled Patios or Private Courtyards

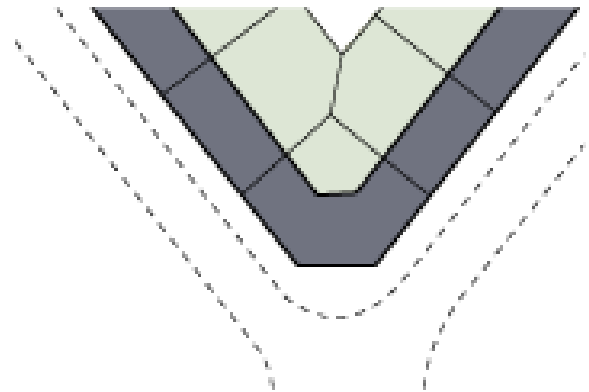
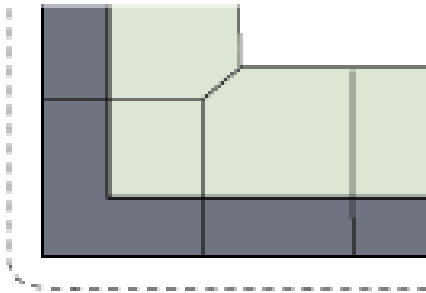
- 1.82 In higher density situations it may be appropriate to reduce minimum garden sizes provided a private, sitting-out area for each house can be achieved, un-overlooked by any window either at ground or first-floor. The loss of sunlight in such situations may be an acceptable price to pay for a tighter urban format or closer proximity to central facilities for example. PD rights to extend will be withdrawn in these cases.
- 1.83 Houses facing, backing on to, or adjacent to a substantial area of well landscaped and properly maintained communal open space
- 1.84 This is the situation analogous to the Georgian square, in which residents have immediate access to the communal space for children’s play and sitting-out. In such cases a private garden may not be required, though different planning authorities will have varying policies. Again PD rights to extend will be withdrawn.



*a. Houses facing open space b. Houses backing onto open space c. Houses adjacent to open space*

## Houses Performing a Particular Role in the Layout

- 1.85 Where the majority of houses comply either with the 100m<sup>2</sup> minimum garden size or one of the other standards above there may be some houses which, due to their situation in the layout, cannot be provided with a private garden to the required standard.
- 1.86 These may be, for example, houses which turn external corners or are required for townscape reasons in locations which are hemmed in at the rear. If the standard were strictly adhered to there would be gaps in these positions, and the whole street scene would be the poorer for their lack. In a development comprising a number of houses, purchasers will have the choice whether or not to buy one of these ‘special’ houses, and planning authorities should therefore be flexible as to how much private garden area they will require in such situations.



(Left) External corner

(Right) House performing townscape role

## Flats

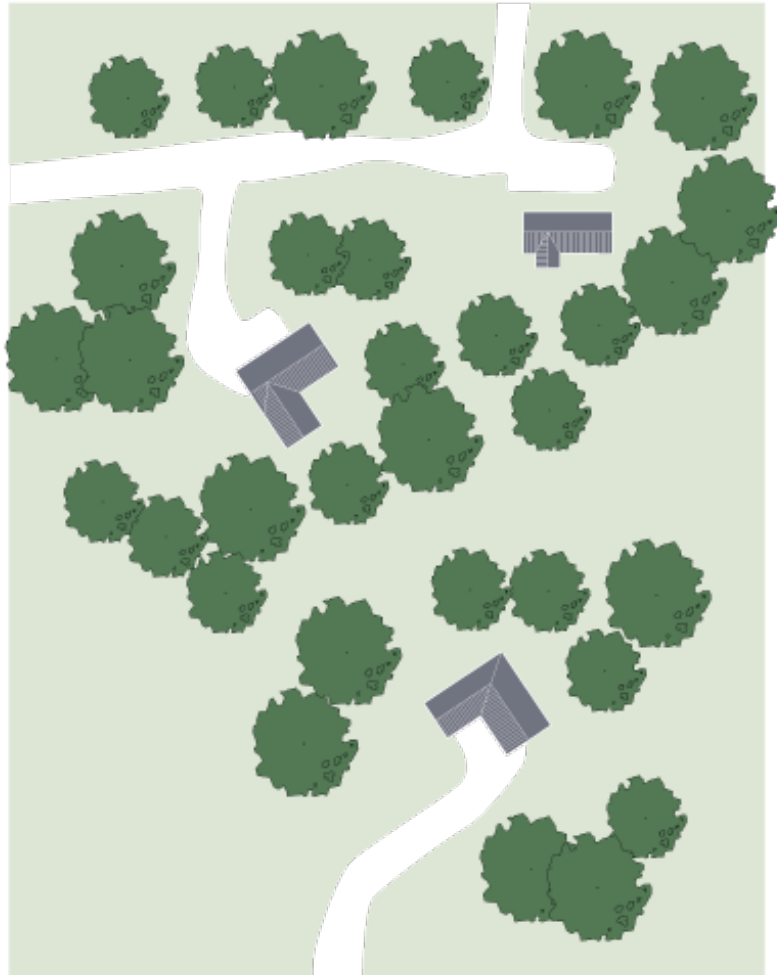
- 1.87 For two or more bedroomed flats communal residents' gardens must be provided on the basis of a minimum area of 25m<sup>2</sup> per flat. They must be screened by above-eye-level walls or hedges, and must contain a sitting-out-area that receives sunshine during at least part of the day. Unusable strips of space between car parks or roads and buildings will not be counted as part of the communal garden provision. Although similar provision is welcomed for one-bedroomed flats it is recognised that residents of such flats may be happy to forego this amenity if there is access to other local open space, and in order to have the benefits of living in a town centre or other core area. Applicants should check with their local planning authority the circumstances under which a garden for one-bedroomed flats may be foregone.
- 1.88 In addition balconies may provide outdoor amenity space in closer proximity to an upper storey dwelling. A balcony or terrace over 5m<sup>2</sup> in extent will count towards the total garden provision for the flats. In an urban situation on sites of less than 0.1h such a balcony or terrace would be acceptable as the only outdoor amenity space for a flat. Care must be taken to limit overlooking of nearby private gardens and sitting out areas from balconies or terraces. It may be necessary to provide other space around the development additional to this minimum requirement in the case of flats located in a Boulevard planned area.

## Rear Privacy

- 1.89 Residents have a higher expectation of privacy from the private or garden side of the dwelling. A low-density layout should be able to avoid any overlooking, but at normal urban densities (above 20 houses per hectare or eight per acre) some overlooking is inevitable.
- 1.90 Significant efforts should be made to avoid the overlooking of rear-facing living room windows. This may be achieved by:
- remoteness;
  - design; or
  - a combination of the two.



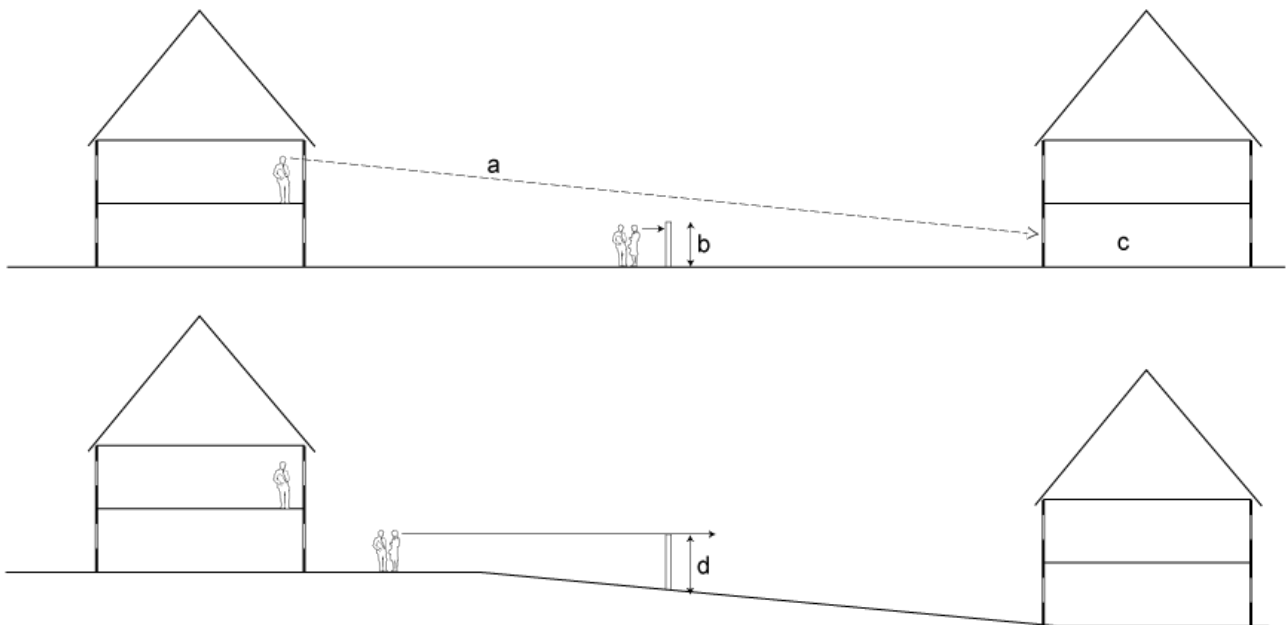
1.91 Privacy achieved through design is usually more effective.



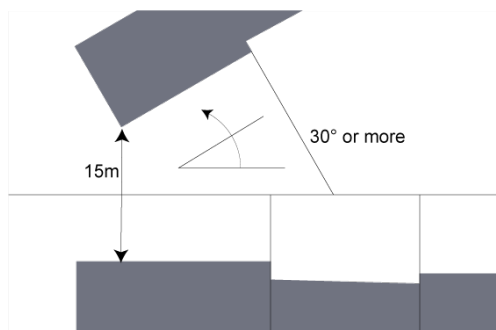
*Traditional arcadian privacy achieved by remoteness*

## Remoteness

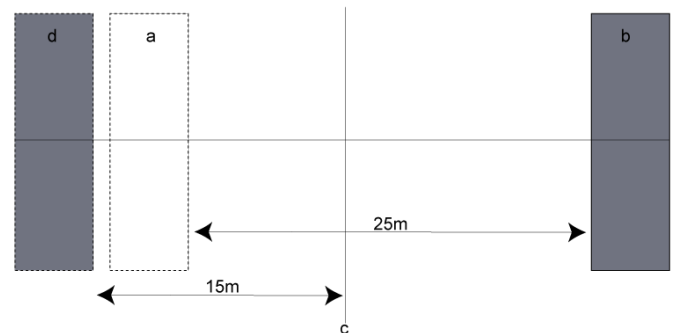
- 1.92 Where habitable rooms are located at the rears of neighbouring properties and the rear facades face each other, a minimum spacing of 25m between the rears of the properties is required. An intervening fence or other visual barrier of above eye-level height (as viewed from the potential vantage point) should be incorporated to maintain an adequate level of privacy.
- 1.93 These requirements may differ between local planning authorities; applicants should consult their own local planning authority on this and other rear spacing requirements.
- 1.94 Where the rears of neighbouring properties face each other at an angle of more than 30°, the minimum spacing may be reduced to 15m from the nearest corner. These dimensions and limits should also be applied when considering future extensions with rear-facing windows. Again, applicants should always check with their local planning authority as to whether these dimensions will be acceptable.
- 1.95 Note: the above provisions also apply to the sides and flanks of houses containing habitable rooms with windows.



a. Eye-to-eye distance b. Above eye-level screening c. Living rooms d. With slope, barrier has to be higher



Back of houses at more than 30 degrees to one another. Separation to be reduced to 15 metres from the nearest corner



a. New house b. Existing house c. Existing rear boundary d. New house to be set back at least 15m

- 1.96 Where new development backs on to the rear of existing housing, existing residents are entitled to a greater degree of privacy to their rear garden boundary. Where the rear faces of the new houses are approximately parallel to those of the existing homes, the rear of the new houses may not encroach any closer than 15m to an existing rear boundary – even though with a closer encroachment, 25m between the rears of the houses could still be achieved.
- 1.97 Where the rears of the new houses face those of the existing homes at an angle of more than 30°, this spacing may be decreased proportionately, down to a minimum of 1m from the boundary.
- 1.98 Where the rears of the new houses face those of the existing homes at an angle of 90° and where there are no windows in the flank end and where there are no problems related to overshadowing, the new houses may encroach up to 1m from the boundary. Please note, however, that some local planning authorities may require greater spacing.

- 1.99 Upper-storey flats can cause problems due to overlooking from living rooms. Any rear-facing upper-storey living room should therefore be no closer than 35m from the rear of any other dwelling. It should, however, be acknowledged that oblique views over side boundaries from upper-storey living rooms can also be a problem; this should be safeguarded against.



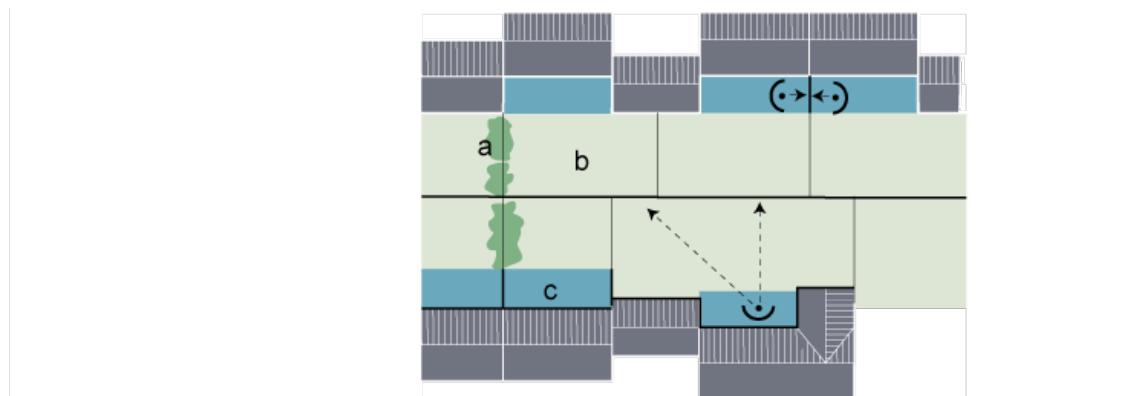
a. Living rooms b. Eye-to-eye distance 35m c. Above eye-level screening

## Design

- 1.100 The rears of houses may be positioned more closely together than stipulated above if one or both of the houses concerned is designed so as not to overlook the other. This would require an intervening fence or other visual barrier set above eye-level between facing ground-floor windows. It would also prohibit rear-facing, upper-storey bedroom or living room windows.
- There are several ways to achieve this:
  - Upper-storey windows may face in other directions.
  - Projecting rear wings may be used to block the view.
  - Accommodation may be zoned internally so that only bathrooms and landings provided with above eye-level windows are rear-facing.
- 1.101 An above eye-level secondary window may also be used in a bedroom located on a privacy-sensitive elevation. In the case of an elevation with no windows, the house could be positioned on the boundary provided it did not cause unacceptable overshadowing of a neighbouring house or garden.

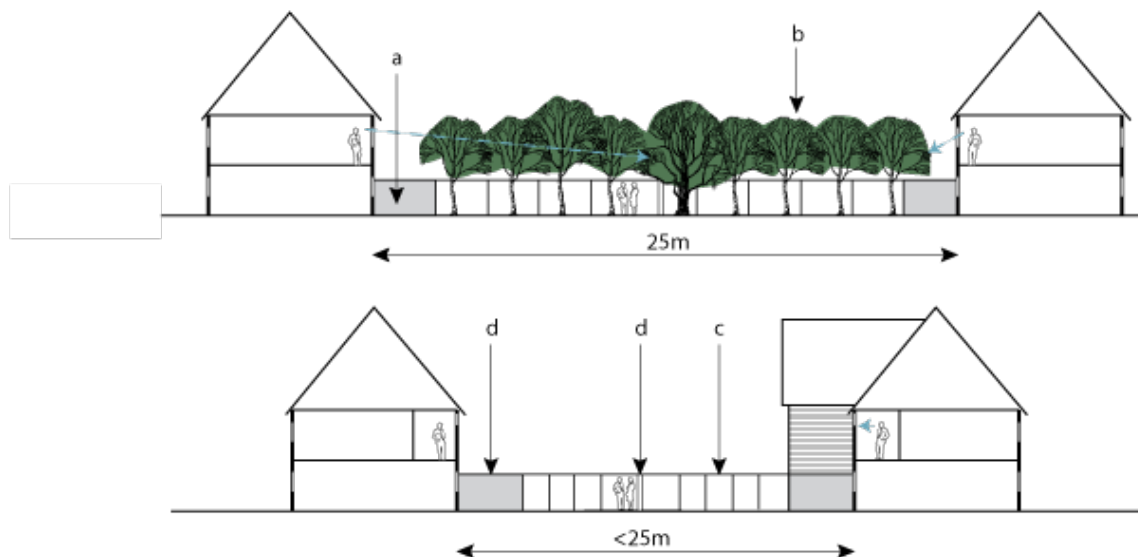
## Private Sitting-Out Areas

- 1.102 All houses should have a private sitting out area not overlooked by adjacent or opposite living rooms or sitting out areas. This area should extend at least 3 metres and be screened from adjacent properties by walls or fences above eye level from a potential vantage point.



a. Optional screening or planting b. Garden c. Private zone

- 1.103 An acceptable degree of privacy would be as for rear-facing living room windows, i.e. either an intervening above eye-level fence or other barrier and a rear separation between the backs of houses of at least 25 metres. Alternatively the design of the opposite house should be such that windows face in other directions. (With the same proviso as for rear-facing living room windows, i.e. that where the houses are at more than 30 degrees to one another the separation may reduce to 15 metres from the nearest corner)



a. Private zone b. Screen planting effectively blocks first-floor overlooking c. Fencing d. Walls

- 1.104 Particular attention must be paid to the potential problem of overlooking from the living rooms of upper storey flats, which should be no closer than 35 metres to a private sitting-out area unless it is effectively screened from view.
- 1.105 Sitting-out areas should be located so that they receive sunshine during at least part of the day. On north-facing rear elevations, care must be taken to avoid rear projections that result in permanent shade. In some cases it may be preferable to locate the sitting-out area elsewhere in the garden than against the rear of the dwelling, and if so it must be subject to the same privacy requirements. Private sitting-out areas should also be incorporated as part of the garden requirement for flats (see Garden Size).