URBAN DESIGN LESSONS
Housing Layout and Neighbourhood Quality

January 2014
## Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preface</td>
<td>3</td>
</tr>
<tr>
<td>Key points</td>
<td>4</td>
</tr>
<tr>
<td>Quality assessment criteria</td>
<td>5</td>
</tr>
<tr>
<td>1. Legibility &amp; permeability</td>
<td>5</td>
</tr>
<tr>
<td>2. Active frontage</td>
<td>8</td>
</tr>
<tr>
<td>3. Street design</td>
<td>11</td>
</tr>
<tr>
<td>4. Parking</td>
<td>14</td>
</tr>
<tr>
<td>5. Landscape</td>
<td>17</td>
</tr>
<tr>
<td>6. Building form</td>
<td>20</td>
</tr>
<tr>
<td>Drawing clarity</td>
<td>23</td>
</tr>
<tr>
<td>Conclusion</td>
<td>26</td>
</tr>
</tbody>
</table>
Preface

The Homes and Communities Agency (HCA) is keen to disseminate examples of good practice in design that it finds from the range of its functions. The external environment and good urban design feature in resident surveys and feedback gained through our programme of quality audit visits.

This report is based on a large number of examples submitted by applicants for a recent framework procurement exercise and seeks to use that evidence to outline good practice and potential lessons learnt from a range of submissions. The proposals show a range of approaches to urban design and demonstrate that good urban design can be achieved without increasing cost, if considered from an early stage, and throughout the process.

The report shows examples of attractive neighbourhoods where residents and visitors can navigate easily, where the streets and spaces between buildings become places in their own right and where a sense of community and social interaction may be fostered, and where people are likely to feel safe.

The HCA’s statutory duties include contributing to good design and improving the quality of housing, and this document is part of that work. It is intended to be useful both for clients, in the assessment of the design quality of proposals, and to those undertaking the design development of new schemes.

The document outlines a range of themes and for each theme, outlines good practice (including references to guidance where applicable) and lessons, and provides examples of cases which may be considered to exemplify good practice and those where some lessons may be drawn.
Key points

As part of a recent framework procurement process, bidders were asked to submit a design response on specific sites and a detailed financial appraisal of the scheme. There were four case study sites, one for each of the geographical areas of the framework. Looking at 100 different layouts throughout the country offered a valuable opportunity to analyse and capture good practice and lessons learnt.

When assessing designs for the same site that respond to the same constraints, differences were found which could impact on the overall quality of place. The best third of the proposals, scored three times higher on quality than the lowest third. This represents a significant difference in design quality, which can ultimately result in costs or added value to quality of life. Equally, our comparative analysis of urban design quality and the accompanying indicative financial assessments, show that better design can deliver benefits to developers, in terms on the return on their investment. Overall, our key findings are:

1. **Cost**
The comparative analysis has shown that good quality urban design does not cost more than a less well considered outcome. On average, most bids reported similar costs for roads and sewers and for professional fees. A strong focus on design can lead to good urban design quality with short and long term benefits and ensure that expensive architectural features with limited benefit to the user are restricted. The need to focus on cost and achieve financial viability need not be an impediment to delivering better quality urban design.

2. **Layout efficiency**
Good urban design will help deliver highly efficient layouts, which can deliver greater number of units. We found that schemes that scored highly on design quality were designed to accommodate higher density. However, better design quality does not automatically follow from higher density.

3. **Revenue**
We found that bids with higher design scores reported higher revenues in three out of four case studies. This in some cases was directly related to accommodating higher density, but in some cases was related to more efficiency savings from better arrangement of circulation and outdoor spaces.

4. **Urban Design principles**
Designing for urban design quality does not have to be complicated. The table below outlines key urban design principles and sub-topics to be considered in design development, as well as in assessing quality of proposals. The case studies have been carefully selected to demonstrate good practice or highlight matters for consideration, under each of the key urban design principles. Further guidance can be found in HCA’s *Urban Design Compendium*. 
Quality assessment criteria

<table>
<thead>
<tr>
<th>Legibility &amp; permeability</th>
<th>Active Frontage</th>
<th>Street design</th>
<th>Parking</th>
<th>Landscape</th>
<th>Building form</th>
</tr>
</thead>
<tbody>
<tr>
<td>perimeter blocks</td>
<td>minimised blank walls and continuous garden fences lines</td>
<td>pedestrian friendliness / paving quality</td>
<td>minimised rear courts and front garden parking</td>
<td>public street trees / green SUDS green front gardens</td>
<td>minimising single-sided flats (central corridors)</td>
</tr>
<tr>
<td>through routes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. **Legibility & permeability**

It is considered good practice to design a housing layout incorporating perimeter blocks which ensure that streets are fronted by the active façade of the homes and that private spaces and gardens are located securely facing other back gardens.¹

Ideally, streets around the blocks provide through routes for both pedestrians and cars. This ensures that people can conveniently access all parts of the site without the need for detours and makes it easy to find their way around. Perimeter blocks and shared routes also encourage people to use their front doors and make all routes feel safe for pedestrian use at all times.

**Lessons**

- **Perimeter blocks**: A clear and sensible layout based on perimeter blocks, overlooking and shared through routes, helps to deliver a successful place.

- **Through routes**: Street design, high quality materials and landscaping are more effective in achieving positive and distinctive character and identity than unusual site layouts or atypical block shapes.

¹ HCA (2013) *Urban Design Compendium 1*, chapters 3.7, 4.1, 4.4
**Legibility and permeability – Example 1**

**Positive factors**

The example above uses a layout with perimeter blocks that ensure well fronted streets and secure private rear gardens. Through routes for both pedestrians and vehicles make the site easy to understand, accessible and well linked to its surroundings.
Factors for consideration

The example above lacks permeability. For example, there are four site entrances, without any links between them, not even for pedestrians. As such the street pattern is less legible and long detours may be required to visit a neighbour or walk to a local facility. The green left-over space, often along rear garden fences and blank gables could become un-used and difficult to maintain, rather than valuable public space.
2. **Active frontage**

A street or space is formed by the buildings that surround it, much like a room is formed by the walls around it. Well-defined streets and spaces are created by relatively continuous building frontage. Active frontage made up of front doors and windows (especially to ground floor habitable rooms) create lively and well-supervised streets. This is a key requirement for creating safe and attractive public spaces. Keeping gaps between buildings limited and avoiding blank walls and garden fences which face the street are important considerations. To achieve this, long perimeter blocks, wide frontage dwellings and bespoke dual-fronted corner dwellings can all contribute to active frontage.\(^1\)

**Lessons**

- **Minimising blank walls and garden fences:** Buildings fronting onto streets and spaces are key to quality of place and the animation of the public realm.

- **Continuous building lines:** A poor block layout is likely to make it harder to provide relatively continuous active frontage; however a good block layout alone may not be enough and may be further supported by limiting gaps between buildings.

---

\(^1\) HCA (2013) *Urban Design Compendium 1*, chapters 5.1, 5.2, 5.3.3
Active frontage – Example 1

Positive factors

The example above provides a continuous building line, active frontage and relatively well-enclosed streets, considering the constraints of the retained mature trees. This is likely to make the streets and spaces better overlooked and therefore feel safer. Side gables and garden fences onto the streets are minimised. The existing footpath to the north of the site does remain without frontage or overlooking, although an active parallel route is provided by the street south of it.
Active frontage – Example 2

Factors for consideration

The example above does not provide active frontage. The buildings may be perceived as scattered over the site. This has created many instances where streets are faced by rear garden fences and side gables, which may be blank gables. Building lines are discontinuous and streets and spaces are not well-defined or enclosed. The site entrance and many parts of the layout are dominated by parking.
3. **Street design**

The pattern and detailing of streets determines both the way they look and the experience for pedestrians, drivers and other users. In residential streets, shared spaces can be considered. Creating streets for all and balancing the way all users share the space can significantly improve street quality compared to designs that segregate users and prioritise cars.

In shared surfaces (with level surface and no kerbs, often referred to as ‘Home Zones’) pedestrians have priority and on-street parking, soft landscaping and quality paving ensure that vehicle speeds are low and drivers exercise extra caution. Research has shown that reduced vehicle speeds have also been shown to increase social interaction.\(^1\) Tarmac and long straight road surfaces may be considered inappropriate for shared surfaces.\(^2\)

Where roads with separate footpaths are proposed, using block paving instead of tarmac, for roads as well as the footpaths, can improve the look and feel, or kerb appeal, of the scheme. Additionally, using permeable concrete block paving can be cheaper than tarmac, due to reduced costs in drainage systems.\(^3\)

**Lessons**

- **Pedestrian friendliness:** Distinguishing between major transport routes where car movement is the main priority and the majority of local streets where pedestrians have priority is key to achieving sense of place.

- **Paving quality:** The overall experience of a scheme can be improved through better good design and paving quality. Attention to detail and clearly defined material specifications support good quality places.

---

\(^1\) Joshua Hart (2011) *Driven to Excess*
\(^2\) Department for Transport (2007) *Manual for Streets 1*, chapter 7.2
\(^3\) Scott Wilson / Interpave (2006) *The Costs of Paving*
Street design – Example 1

Positive factors

The example above shows attention has been given to surface materials, contributing to a pedestrian friendly and attractive streetscape. Marking the shared surface areas very clearly can help to avoid confusion.
Factors for consideration

The example above uses a highway design that tends to prioritise the car and reduce the pedestrian friendliness of the scheme. Streets corners have large radii which can encourage speeding. The traffic island at the southern site entrance is not necessary and can be more difficult to navigate for pedestrians and cyclists. No paving is indicated and no designated parking spaces are shown, which may result in cars parking on footpaths.

The majority of spaces in front of dwellings appear to be hard-standing for parking, which may result in unattractive streets. The majority of trees shown in the plan are located within rear gardens. They may not be delivered by the developer.
4. Parking

Car parking can determine both the look and feel of streets and the ease of use for residents. A wide range of parking options is available\(^1\) and most schemes combine several of these. The type and density of developments influences which options are viable. For example, for high density developments, underground parking can be viable, while this may not be efficient for smaller developments.

On-street car parking can be efficient and enliven the street scene, reduce vehicle speeds and allow for social interaction through chance encounters on the street. If un-allocated, the total amount of spaces required will be lower because provision can be based on average levels of car ownership, rather than maximum levels. Furthermore, additional visitor parking may not be required as visitor times often coincide with other residents being away. On-street parking can be used to reduce vehicle speeds in shared surface areas.

With lower densities, parking in-between homes can be an efficient use of space that minimises the visual impact of cars in the street, while providing safe and convenient access to the front door. Parking two cars in a row (tandem) is most efficient. When using this arrangement, care should be taken to maximise the active frontage in between, for instance by using wide frontage homes, or by alternating with other car parking options.

Conversely, while rear parking courts reduce the amount of cars within the street-scene, they can create poorly supervised areas potentially encouraging crime. Cars may be inconveniently far from front doors, causing residents to use the back garden as a main entrance, rather than the front door, leaving streets less active.

On-plot car parking in front of the house can also be considered less favourable, as it reduces visual contact between neighbours and the positive effect of active frontage and ground floor windows. It also reduces the opportunity for green front gardens and their contribution to attractive streets and social interaction.\(^2\)

Integral parking, such as integral garages or under-croft parking, (which can be hard to identify from high-level plans) may also be detrimental to street quality as it can reduce active ground floor uses and windows, although may be compensated with extra-wide-frontage house types.

**Lessons**

- **Range of parking types:** A successful parking solution is likely to offer a range of parking solutions that are convenient and efficient. This can mean maximising on-street, side-of-property and underground parking; while minimising rear courts, integral garages and front-garden parking.

- **Sustainable travel plan:** Early decisions on car parking as part of a wider travel plan, taking into account existing and proposed public transport provision, can be key to delivering sustainable places.

---

\(^2\) HCA (2013) *Urban Design Compendium 1*, chapter 4.5.2
Positive factors

The example above provides the majority of parking spaces to the side of the properties, in a space efficient manner. This leaves space for green front gardens and cars are safe and close to the front door, without being visually dominant in the street-scene. Rear parking courts are avoided and parking in front gardens is minimised. Inclusion of on-street parking, especially for visitors, could have been considered.
Factors for consideration

The example above relies almost entirely on rear parking courts that can be both inconvenient and potentially unsafe, as the parking courts are not overlooked. Residents wanting to park close to the front door, to be able to see their car, may be tempted to park illegally on the footpaths, resulting in conflicts with pedestrians.
5. **Landscape**

An important element in the creation of high quality neighbourhoods can be the introduction of green (vegetation) and blue (water) infrastructure in both public and private spaces. Natural elements such as planting, trees and surface water within residential streets have been shown to be important for quality of life in a range of ways including social, environmental, mental and health benefits. There is evidence to show that these elements can also increase saleability and value of homes.\(^1\)

Sustainable urban drainage systems (SUDS), such as swales and retaining ponds can form cost efficient and attractive landscape features while permeable paving can also form part of a sustainable drainage solution. Early consideration of landscape and drainage features can improve the design quality of green infrastructure and help ensure that the space required and the associated costs are kept to a minimum.\(^2\)

Where trees are proposed within the street or public space, it is more likely that these will be provided and maintained, for example by the council or a management company looking after them. Those proposed in private front or back gardens are more likely to be merely indicative, for example as a potential future provision by a resident. Large specimen trees within the public domain are considered preferable to small trees planted close to buildings which may not flourish. Clients and assessor may wish to obtain details of the specification of the type and size of tree or shrubs to be provided in order to assess the landscaping value of proposals. When retaining existing trees on the site, enforcing ‘root protection zones’ may be needed to ensure trees do not die due to root damage.

Front garden size can have a variety of effects. Small front gardens are less likely to be used, while overly large front gardens can reduce contact between the home and street, discourage neighbours from chatting in the garden, and also impact on the overall scheme design by reducing street enclosure and housing density.

**Lessons**

- **Street trees:** Trees and well-designed and maintained green space can be an inexpensive and effective way of providing positive street character and adding value. Designers and clients should consider retaining existing mature trees and other natural features wherever possible.

- **Front gardens:** The size of front gardens can be an important consideration to ensure they provide most benefits to residents.

- **Urban drainage:** The local topography and drainage requirements, if considered from an early stage, can provide the basis for innovative SUDS that can be turned into attractive features, potentially saving costs.

---

\(^1\) CABE (2004) *The Value of Public Space*

\(^2\) HCA (2013) *Urban Design Compendium 1*, chapter 3.5
Landscape – Example 1

Positive factors
The example above shows all streets lined with trees within the public realm. The central open space has been designed to accommodate the group of existing mature trees, retained to add value to the site. Furthermore, all houses have private front gardens which have the potential to further soften and enliven the streets. This would be even more significant if the front gardens were larger in size.
Factors for consideration

The example above shows a significant lack of soft landscaping which could create harder and less attractive streets. Most front gardens are narrow privacy strips that are less likely to be used or planted. The existing mature trees have been removed; whereas other proposals retained them to add value to the development.
6. **Building form**

Several factors have to be taken into account when designing blocks of flats and these include urban design considerations. The layout and shape of blocks impact on the quality of surrounding spaces. Buildings with a clear front and back, views onto attractive streets and spaces, dual aspect apartments and sufficiently large balconies (south-facing wherever possible), can deliver a building block that is successful in urban design terms, as well as one that delivers good quality internal environment for its residents.

The way the building and the individual flats are accessed can have an impact on the quality of life for residents, and also the outside environment. Providing ground floor flats their own front door and private gardens can maximise advantages for the residents as well as provide an active and attractive streetscape.

Deep blocks with central corridors can create problems with the internal environment such as single aspect dwellings and lack of natural light and ventilation. Large blocks of flats may also lack the flexibility to provide active frontage and fit into the surrounding streetscape.¹

**Lessons**

- **Responding to internal and external environment:** Designers and clients will want to consider the size and form of a block of flats with a view to achieving an efficient and positive internal layout, as well as to fit in to the emerging street pattern, to contribute to the public realm.

¹ HCA (2013) *Urban Design Compendium 1*, chapter 5.3.2
Positive factors

The example above shows an apartment block (north of the triangular open space) that effectively provides active frontage onto three routes. The block continues the streets and building lines of neighbouring houses. Most apartments are south-facing and overlook the public green space.
Flat design – Example 2

Factors for consideration

The example above shows a very large and deep block of flats (incorporating other uses on the ground floor). This may result in many north-facing flats, with the car park as their outlook and with access through long central corridors.

Large internal areas at the corners of the building will have limited daylight. The plan does not indicate where entrances are located and there does not appear to be a logical front to the building.
Drawing clarity

Clear drawings with sufficient detail can play an important role in supporting good design. Although adding detail to the drawn proposal may not necessarily improve quality, it can:

- Encourage the designer think about a wide range of elements of good design
- Allow someone who is reviewing the proposal to make a more informed assessment of the scheme
- Provide certainty and assurance as to the way the development will be delivered and a place created, including detail about materials and specifications.

Lessons

- A clear drawing with adequate detail (visually and in words) that is representative of the proposal supports a constructive design development process.
- While attractive and detailed graphics can instil more confidence in proposals, their core purpose is to provide a sound basis for the assessment of urban design quality.
Urban Design Lessons

Drawing clarity – Example 1

Key
- Sea Boundary
- 10 Mile
- Avenue (The Walk)
- Site
- Lane (Shared Circ & Footpath/Cycleway)
- Mews
- Parking Sheds
- Parking Court
- Existing Trees
- Proposed Trees
- Wildlife Meadow
- Play Area
- Sustainable Urban Drainage System (SuDS)

3.3 metre shared drives also form north-south footpath/cycleway linking development to surround areas.

Existing hedgerow trees retained and used to form local points of interest.

Large block space within centre of development.

Secondary gateway links development to existing milestone boundary.

Primary gateway forms memorable and creates strong approach into development.

Homes look outwards across shared drive and footpath to wider open space network, providing surveillance.

Hayes path link connects site to wider area.

Nature Play Space site between two parcels of parkland. Play inspired by the natural world using timber equipment set into and onto rolling mounds. Ribbon safety surface used to enable year round use.

Footpath link to Costain’s Village Green.

Informal and naturalistic parkland developed with uneven ground, wildflower meadows and stands of native trees to create a series of wildlife habitats as well as space for informal relaxation and general recreation.
Positive factors

Example 1 provides a clear image with an adequate level of detail. It includes a key, north arrow, measuring scale, explanatory text next to the drawing and labels within. Individual properties, garden paths, hedges and parking spaces are visible, as are the immediate surroundings of the site. A shadow line helps to visualise the three dimensional buildings, as does the indication of the roof shapes, with lines, shadows and dormer windows. A specification of surface materials is required to assess the quality of finishes.

Drawing clarity – Example 2

Factors for consideration

The example above has a lack of detail that may raise questions; for instance about the number of dwellings and the location of parking. For example, the front gardens, while indicated as green areas, could be paved areas for parking. Most of the trees shown may be within the private front gardens and may not be provided by the developer.

The key does not specify the surface materials or explain the colours and the elements in the key lack clarity. It is not clear what makes the buildings indicated ‘landmark’ or ‘focal’.
Conclusion

The lessons from this document seek to demonstrate factors which designers may wish to take into account when designing schemes and they support clients in preparing briefs and assessing quality. Considerations of how to relate buildings to the streets, where to locate parking and how to include landscape elements into the streetscape directly influence the quality of a development. In order to achieve successful outcomes designers and clients may wish to consider including specific urban design expertise in the design team. The instructions to the design team and their integration within the development process are important to the overall scheme quality, as is the brief from a client to prospective bidders.

The review and comparison of the examples in this document seeks to demonstrate that it is possible to create well designed schemes, by considering key design principles from an early stage. Better urban design quality did not incur additional cost based on the analysis of the 100 design proposals and financial development appraisals. Good urban design has the potential to increase density, revenue and quality at the same time. Schemes of higher urban design quality generally reported higher total scheme revenues.