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How to Create a Successful Site Layout

Street and Road design

Each of the streets and roads identified in the above hierarchy has a different character. The character of individual streets and roads depends on the nature of the street, traffic usage and the surrounding buildings.

Design streets for legibility, permeability and pedestrian movement

Successful residential streets usually have a width of between 12 and 18 metres between the frontages of buildings, although this can vary depending on the nature of the street. Mews developments, for example, can have street widths of 7.5 metres whereas large squares and boulevards can be up to 30 metres wide. The most appropriate street width should be determined by the height of the buildings along the street and the sense of enclosure to be created.

The length of streets can also vary. However to aid legibility and permeability, streets should be designed with straight stretches (up to 70 metres in length), followed by a change in direction. Such changes in direction can be marked by a landmark building to further aid legibility.

Streets should not be dominated by or designed around the car. Traditional village street layouts pre-date the car and consequently have more character than many twentieth century estate roads.

Avoid standard hammerhead turning heads

Where a new development is permeable and offers a choice of well connected routes, the need for standard hammerhead style turning areas will be reduced. Where turning is necessary it is better to be integrated into larger squares or courtyards.

A typical village street in the Vale illustrates how the carriageway does not need to dictate

239 **Car focused road design**

240 **Car focused road design**

241 **Pedestrian focused road design**
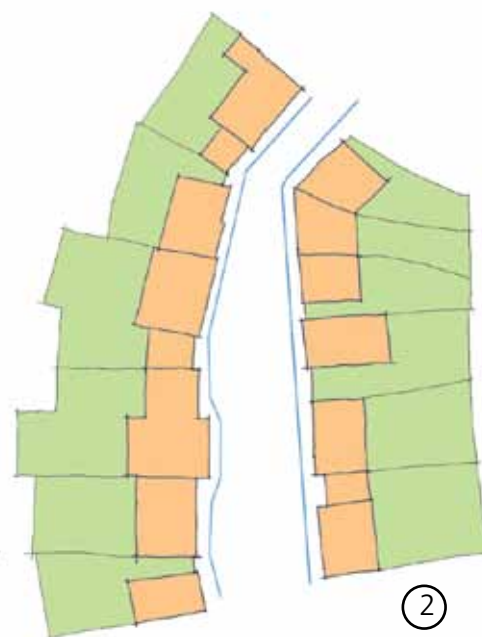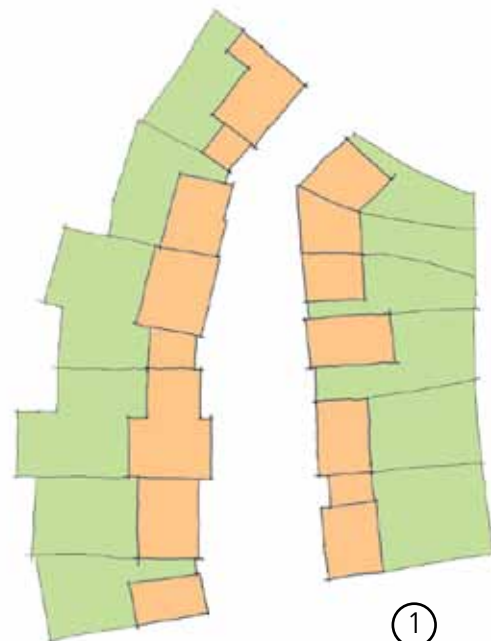

242 **Pedestrian focused road design**

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How to Create a Successful Site Layout

the positioning of buildings. Analysing vehicle movement and tracking the amount of space actually required for cars and service vehicles can help determine the size and layout of the carriageway. It can also be used to ensure that the amount of reversing required for service vehicles to access the properties is minimised.

Buildings can be positioned to create a street that reflects the character of the area, and the remaining space can then be utilised for improved pedestrian and cycle facilities, landscaping, open space or on-street parking. Image 243 illustrates this approach.

① Priority is given to buildings and enclosure. Arrange buildings based on site analysis.

② Design footpaths to follow the building line. Measure and layout the minimum space required for footpath

③ Measure and layout minimum space required for roadway (using vehicle tracking to check appropriate widths for vehicle types). Use resulting space for hard or soft landscaping with parking as appropriate.

The result should be a layout which is naturally traffic calmed by the positioning of buildings which reduces sight lines - causing drivers to slow.

243 Successful approach to road design

Pedestrian Friendly Environments

Create pedestrian and cycle friendly environments to reduce the need to travel by car

The aim with residential developments should be to create a 'walkable neighbourhood' where a range of facilities is available within easy walking distance. Where possible, pedestrians will select the most direct route to a destination. Wherever practical, therefore, existing indirect routes should be redirected or improved.

Pedestrians and cyclists are more likely to use routes which do not have high volumes of vehicular traffic. Where speed is an issue on existing or proposed roads, traffic calming measures to slow down vehicles and improve the pedestrian environment should be considered.

A further factor to aid walking and cycling is to design routes which are safe and inviting. Consideration, therefore, should also be given to introducing and improving pedestrian crossings and ensuring that pedestrian routes are open and well overlooked, particularly if they are separate routes from the roads.

There are various ways to create pedestrian focused environments, as set out below.

Shared Surfaces

In a shared surface the footway and carriageway are normally surfaced in the same material. The absence of demarcation between the pedestrian and car is an effective traffic calming tool as pedestrians are given priority when drivers have to slow down to negotiate the space with other users. Shared surfaces are best utilised in small areas such as mews or courtyards where traffic levels are low.

*This design guide aims for inclusive design and where the term pedestrian is stated, this includes wheelchair users, prams, pushchairs and other similar items.

244 **Shared surface, Buckland**

245 **Shared surface, Wantage**

246 **Shared surface, Wantage**

247 **Shared surface, East Hendred**

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Design shared surfaces for all users

A significant concern with shared surfaces, however, is that the absence of a kerb can undermine the mobility of some disabled people. An alternative approach is to use a contrasting line of different materials to demarcate the carriageway. These can be setts or block pavers in contrasting colours which are visible to pedestrians and can be felt by those with sight problems. They can also help delineate parking bays in shared surfaced areas.

Traffic Calming

Unfortunately, the most well known traffic calming measure is the speed hump, which has become a familiar feature in many British towns. Traffic calming, however, can include a much broader range of measures to slow traffic and improve the pedestrian environment.

In residential environments, trees or other landscaping, narrow streets with tight corners, on street parking and changes in surface materials can alter a driver's perception of an area and so help reduce vehicle speeds.

Home Zone

A Home Zone is an area in which pedestrians and cyclists take precedence over the car.

Home Zones are best designed from the outset, but can be retrofitted. When designing from the outset, they will normally have shared surfaces.

When retrofitting a Home Zone into an existing street, good community consultation is essential to ensure the needs of all existing and future residents are met. All Home Zones should have entry and exit points marked by signs and physical features, which identify it as a Home Zone.

248 **Traffic calming using landscaping and signage**

play

249 **Home Zone with on-street parking**

Parking

By the nature of their size and number, cars represent a significant design problem in the residential environment. The level and type of parking provision required for a residential development should be determined by the Council's adopted car parking standards.

Car parking is rarely aesthetically pleasing. There are various ways of providing car parking, as set out below.

Garages & Car Ports

Separate garages in rear courtyards should not be in large blocks and should be well overlooked by the living rooms od neighbouring dwellings to provide surveillance. There should also be direct and convenient access to the pedestrian access of the dwelling.

Integral garages can detract from the design of dwellings, as they can be bulky and garage doors can dominate the front elevations. Where garages are integrated into the overall dwelling plan, they should be designed as subordinate features and set back from the front façade of the dwelling.
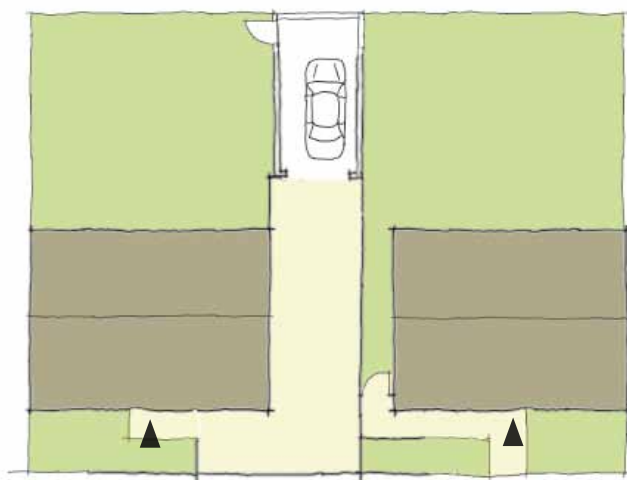
Separate garages in rear courtyards should not be in large blocks and should be well overlooked by neighbouring dwellings to provide surveillance.

A single garage should be able to accommodate a car, storage and sufficient space for bicycles, with an internal floor area of 3 metres x 6 metres.

Section 3.4 provides specific guidance on the appropriate design and materials for garages and car ports.
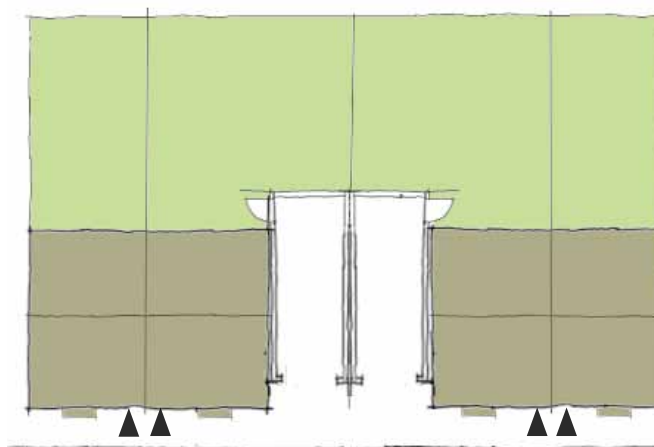
Off-Street Parking

The design of a parking area should be appropriate to the scale and location of the residential development.

Garages large enough for storage, including cycle storage

250 **On plot parking to rear of dwelling**

On plot parking slightly recessed from frontage (up to 1m or greater than 6m to prevent the problem of blocking the footway), suitable for a typical village core. Alternatively the garages can present a continuous frontage, this is particularly suitable for a mews street. In either instance cars are not able to park on and dominate the front of the plot.

251 **On plot parking slightly recessed from dwelling**

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How to Create a Successful Site Layout

Courtyards can be larger and more formal in urban developments, and they can have more than one entrance. In villages and rural locations, one or a number of smaller courtyards may be more appropriate. In both instances, entrances should be carefully designed to create a semi-private space (perhaps including archways or gate piers), and the areas should be well overlooked by neighbouring dwellings to provide surveillance and security.

Lines of on street parking should be broken up into blocks of a maximum of 5 bays separated by kerb build-outs. This allows pedestrians to cross the road without visibility being blocked and for trees to be planted or other street furniture placed, to minimise the visual impact of the parking.

Wherever possible, direct pedestrian access should be provided from the rear or side of dwellings to the parking areas.
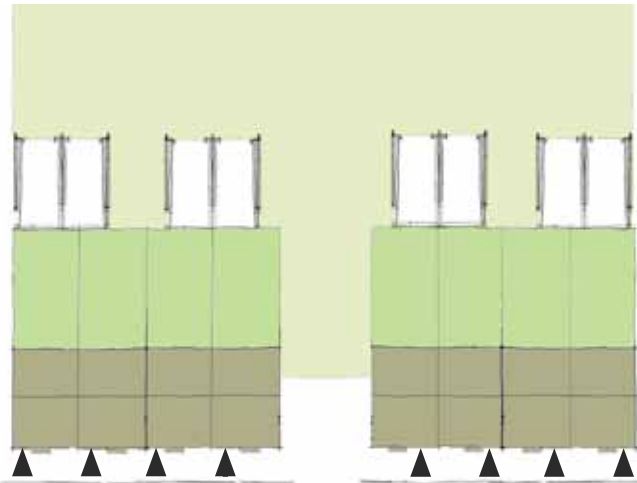
The appearance of parking areas can be softened with careful tree and shrub planting. When planting trees, ensure that the species chosen will not drop leaves, berries or sap which could damage cars.

Parking areas should be surfaced using a permeable material to provide adequate natural drainage.

On-street parking

If on-street parking is proposed, it should be designed from the outset to ensure that the impact of parked cars on the street scene is minimised by carefully considering the location of the parking spaces and by the use of appropriate hard and soft landscaping.

Lines of on-street parking spaces should be broken up into blocks of a maximum of 5 bays separated by kerb build-outs. This allows pedestrians to cross the road without visibility being blocked and for trees to be planted or other street furniture placed to minimise the visual impact of parking.
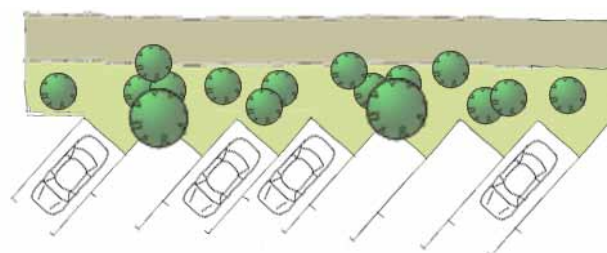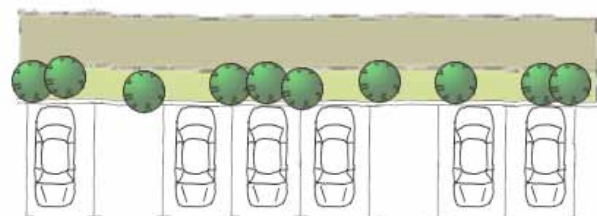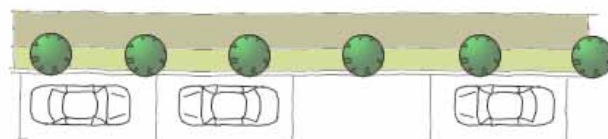

Parking courtyard to the rear - potentially with gated access depending on location. Garage large enough for storage and to store a cycle and accessed via rear gardens

252 **Courtyard Parking**

253 **Carriage arch can provide access to courtyard**

254 **Types of on-street parking**

3.2
How to Create a Successful Site Layout

In wider streets and avenues, small groups of parking spaces can be provided at right-angles to the carriageway and set within a framework of planting.

In larger developments, squares can be designed to include parking, but it needs to be broken up by formal planting and/or green spaces.

Parking should normally be set out in marked bays to ensure efficient use of space. However, in villages and rural areas this may not be necessary.

Cycle Parking

For cycling to become an attractive alternative to the car, bicycles must be readily accessible and securely stored.

The type of storage will depend largely on the type of dwelling and the scale of the development.

Wherever possible, cycle storage should be accommodated within each plot, such as within a garage or outbuilding.

Secure and convenient cycle storage for flats should be provided within the main buildings, preferably close to main entrances. External communal stores are usually inappropriate as they are unlikely to offer convenient access for all residents and they are less secure.

Dedicated visitor cycle parking should also be provided for flats. Wherever possible, visitor provision should be covered. Simple and unobtrusive designs are preferable.

255 **Cycle parking in integral garage**

256 **Secure visitor cycle storage - "Bikeaway"**

257 **Visitor cycle storage - Sheffield stands**

3.2
How to Create a Successful Site Layout

Section 3.4 provides specific guidance on the appropriate design and materials for cycle storage.

Public Transport

In developing any residential scheme, safe and convenient access to public transport routes must be considered. Ideally, new dwellings should be within 400 metres of a bus stop.

For larger-scale developments, opportunities to route bus services through the site should be investigated.

258 **Abingdon bus**

3.3
How to Create a Harmonious Built Form

Urban Grain

*"Layout: urban grain -
The pattern of the arrangement of street blocks, plots and their buildings in a settlement".*

Once a site layout has been planned and designed, and the connections between a site and the surrounding area have been established, the next step in the development process is to create an appropriate pattern of streets, blocks, plots, buildings and open spaces.
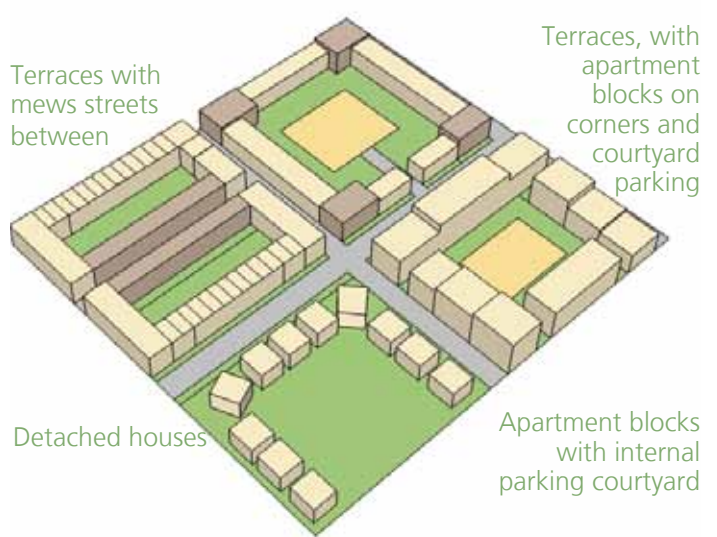
Create or contribute to perimeter block forms

The grid approach, described in Section 3.2 above, allows for development to be planned in perimeter blocks. The perimeter block structure is an accepted format for achieving successful development. In particular it:

- Ensures the efficient use of land.
- Optimises connections to surrounding areas.
- Provides a clear distinction between public and private spaces.
- Allows enhanced permeability and legibility.
- Increases natural surveillance of the street.

When designing the layout of development using perimeter blocks, it is important to ensure the blocks vary in size and shape. The blocks should take into account natural features, orientation and topography, as well as the building types that are to be accommodated.

In general, blocks between 70 - 125 metres in length provide a better network for both pedestrians and vehicles. Given the size and character of the settlements in the Vale, larger blocks are unlikely to be appropriate.

Terraces with mews streets between

Terraces, with apartment blocks on corners and courtyard parking

Detached houses

Apartment blocks with internal parking courtyard

Perimeter blocks can allow the designer the greatest freedom of choice to accommodate a range of building types and densities. A range of building types including two storey terraces, mews streets, apartment blocks and semi detached houses can all be accommodated within a perimeter block structure.

259 **Perimeter block**

Perimeter blocks create a defined front and back which allows private space to be clearly marked. There is no public access to the rear of properties and the frontage can be defined by hedges, railings and gateways appropriate to design of the development and the character of the area.

260 **Perimeter block**

261 **Buildings wrap around a block layout**

3.3
How to Create a Harmonious Built Form

Density

Historically, some of the most successful settlements include high density development, such as medieval village and town centres, and Georgian, Victorian and Edwardian terraces.

There are different measures of density and the most common is the number of dwellings per hectare (DPH). The problem with the DPH approach, however, is that it does not highlight how much space a building will take up on a plot.

An alternative approach is to calculate the plot ratio, which is the ratio between the size of the plot and the amount of space that buildings take up on it. This approach can be helpful when assessing the impact of a new development on the character of the surrounding area. For example, if the surrounding area is characterised by buildings set in large landscaped grounds (i.e. a low plot ratio), a single large building which occupies the majority of the plot (i.e. a high plot ratio) would be likely to look out of character irrespective of the number of dwellings it provides.

Make efficient use of land

Using land efficiently is a key consideration in planning. Government advice is that new developments should achieve a density of at least 30 dwellings per hectare. In some locations, a lower density will be more appropriate, such as rural locations and historic areas. In some urban areas, however, a higher density will be more appropriate in the interest of creating a sustainable pattern of development.

Density must be appropriate to the context of the site

The density of new developments should be informed by their context and by the Council's adopted policies. The table overleaf sets out an indication of the range of densities in different locations. However, in any particular location, the density of new development should be informed by the site's context and the Council's Adopted Policies.

Typical modern semi-detached houses with parking on the front of the plot - six houses

Victorian terraces with on street parking allow for a greater floorspace with accommodation over three floors - ten houses

Modern townhouses and/ or apartments - with designated parking set back from a public square - ten houses and twelve apartments

Rural courtyard development with continuous built frontage and a mix of on plot, street and rear parking - ten houses

262 **Density comparisons**

Location/ Settlement Type	Indicative Density	Indicative Style of Development
Rural - replacement/ conversion	Like for like replacement or low density as appropriate	Single conversions or replacements. In exceptional cases, it may be appropriate to replace with a small group of dwellings - each assessed individually
Small Village - Infill	30-40dph	Development should reflect village density and not suburban character.
Village - Development Plan Allocation	30-50dph	Generally low density periphery (30dph) with high density core & focal areas. Development should reflect village density and not suburban character.
Urban/ Rural Buffer	30-40dph	There may be exceptional contexts where 20dph is appropriate - or graded density through the site.
Outer areas of Medium/ Large Village	30-40dph	Higher density used near public transport routes & local facilities
Centre of Medium/ Large Village	40-55dph	Use upper figure of range on sites within walking distance of public transport and facilities.
Outer areas of Larger Settlements	30-50dph	Use small areas of upper end of range to create key groups or near local facilities.
Centre of Larger Settlements	Over 50 dph	Use upper figure of range on sites within walking distance of public transport and include new mixed uses where possible.

263 Indicative density range in settlements in the Vale

264 Single dwelling village infill

265 High density village infill

266 High density urban housing

267 High density urban apartment development

3.3
How to Create a Harmonious Built Form

Building Line and Frontages

The siting of buildings in relation to the street can have a significant effect on the success of a development. The most successful layouts have 'public fronts and private backs'. These streets have clearly defined 'edges' and allow for natural surveillance.

New development should provide continuity in the streetscene. The provision of a continuous built frontage maintains the public front of a street and creates a positive rhythm in the street scene.

On-street parking must be carefully located and include appropriate landscaping to soften its impact on the street frontage.

The relationship of buildings to the street must respect the hierarchy of streets and public spaces within the development.

Identify building lines that relate to the character of the area and the proposed development

The distance that buildings are set back from the street help to define the character of the street. The existing building line should inform the design and layout of a new development.

Define building lines that separate public and private space

The distance that the building line is set back from the street also defines the level of privacy enjoyed by a dwelling. It may, therefore, be appropriate to introduce a setback which offers a buffer between public and private realms. Even the smallest setback can help privacy and security as well as provide practical storage areas for cycles or refuse.

Where dwellings are accessed directly off the street, front entrance areas need to be clearly identified. Doorways can be recessed to help provide a more private entrance.

Streets should not mix fronts and back - this creates a negative public realm

268 Streets should not mix fronts and backs

269 Buildings with small setback provide defensible space

Buildings can abut the street frontage, where rear courtyards allow for servicing.

Building line maintained, but varied by following a hierarchy of streets and spaces

270 Building lines

Scale, Form and Massing

The scale, form and massing of new buildings have a visual impact on the quality of the streetscape.

Scale is a measure of the relative size of a building – i.e. its height, width and depth. People usually evaluate the scale of a building using the size of individual components such as windows, doors or brick or stone courses.

Form and massing are the overall shape and bulk of buildings.

Scale, form and massing need to be appropriate to the site's context

The scale of existing buildings in Abingdon and Wantage town centres is typically three storeys with frontages up to four bays wide. This scale reduces to two-storeys and two bays wide in less central locations, and narrow single bay widths in many of the Victorian and Edwardian terraces.

In the villages and rural areas, buildings are typically two-storeys with wide frontages.

Add visual interest to the street scene

In some circumstances, noticeably taller buildings can be acceptable to provide visual interest, a landmark in the street scene, or to help break up the mass of the development. Subtle variations in height can also be used to add visual interest. This can be achieved with differing ridge and eaves heights, as commonly found in traditional streets.
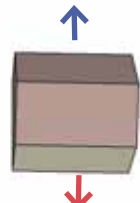
Similarly, variations in frontage widths and plan forms can add further interest to the street scene. This can be appropriate in both urban and rural locations.
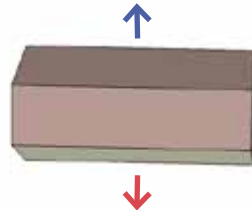
Use simple building forms

The majority of traditional buildings in the Vale, in both urban and rural areas, adopt a very simple
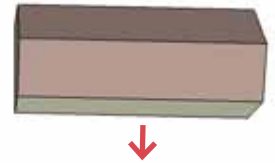

Urban Houses: narrow frontage with deep aspect. Dual aspect with overlooking public realm to front and private space to back.
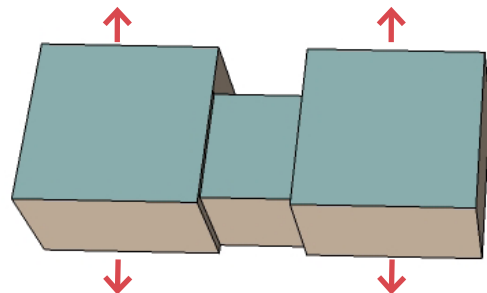
All areas House: square form allows linking of all forms. Dual aspect with overlooking public realm to front and private space to back.
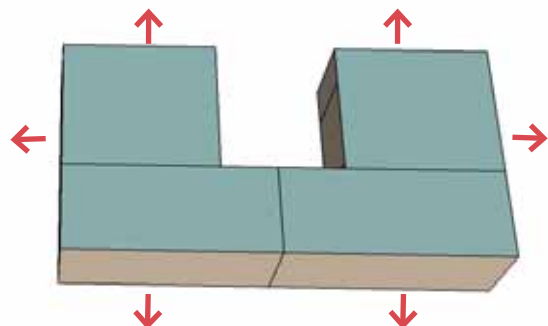
Rural Houses: wide frontage with shallow aspect. Dual aspect with overlooking public realm to front and private space to back

All areas Apartments/ Houses: wide frontage with shallow aspect. Single aspect with overlooking public realm - links awkward areas where no rear private space can be provided. Amenity space required to side for houses.

Urban Apartments: square linked forms. Allows for dual aspect visibility to public realm or to rear communal space.

Urban Apartments: mix of square and rectangular linked forms. Allows for visibility on all aspects including internal courtyard communal space.

271 **Building forms found throughout the Vale**