



Topography & the Built Form

2.8 Topography and the Built Form

2.8.1 Introduction

The landscape form contributes greatly to the overall identity and character of the West Northamptonshire settlements. The rolling hills add a further dimension to the overall quality of the landscape in the rural areas and to the townscape in urban areas.

It is the close relationship between the levels of the land and the built form that has resulted in the distinct places found within these settlements. Particularly within the rural areas, the collective arrangement of buildings set within the landscape, further unified by planting and features such as boundary or retaining walls providing a clear sense of enclosure and definition to the streetscape.

This section of the Manual continues with the Context Appraisal looking at the varied responses to topography that are found within the settlements of West Northamptonshire.

2.8.2 Response to Topography

The responses to topography arise, broadly, from two circumstances whereby:

- streets run across contours, or
- streets run along contours

This section explores these options in further detail, looking at case studies that are taken from the different settlements, both urban and rural, found within the West Northamptonshire region. These vary from the towns of Northampton and Daventry to rural villages of Welton, Flore, Badby and Norton. Daventry and its surrounding villages fall within the Northamptonshire Uplands, with the majority of such examples being found in these areas.

The photograph to the left depicts a village street in Welton that slopes down the contours providing wide views of the surrounding countryside and immediate views of the mix of mature landscape and built form

Key characteristics of streets that run across contours

Characteristics of this pattern are:

- Buildings along the side of the street either step up or down with changes in level, creating a staggered roof line
- Views are achieved from and along the length of the street
- Variation in levels may be used for parking or for part basements
- Development along these streets is usually more difficult to construct due to high infrastructure costs but can yield dramatic results
- The street slopes.



Example of a street running across the contours

Key characteristics of streets that run along contours

Characteristics of this pattern are:

- Views are achieved from within individual units
- Variation in levels can be used for parking or for part basements
- Buildings along one side of the street are located at the same level but may differ from buildings on the opposite side of the street
- Easier to construct as streets follow contour lines thereby minimizing infrastructure costs
- The street can remain level.



Example of a street running along the contours

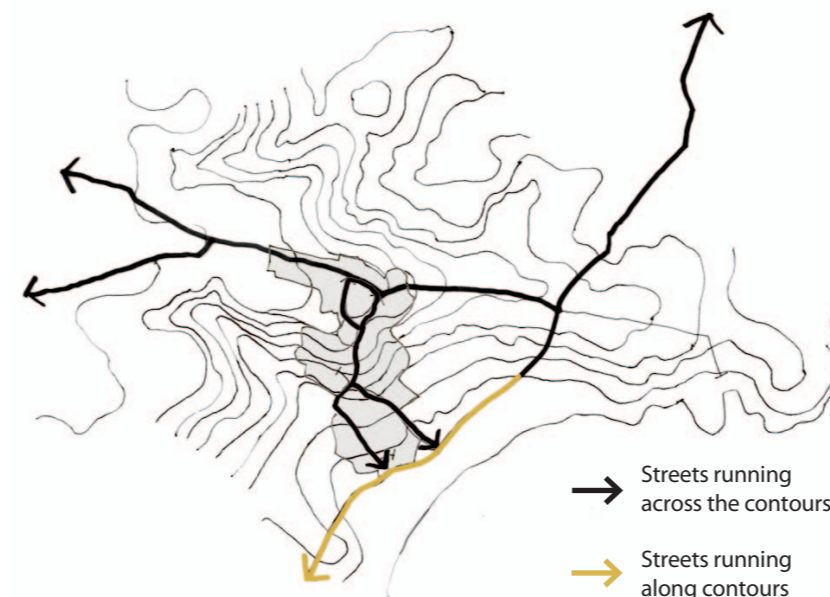


Figure 206 - Diagrammatic plan demonstrating the two options in the layout of streets in relation to topography

Summary

The undulating form of landscape contributes greatly to the overall identity and character of the West Northamptonshire settlements

The responses to topography arise, broadly, from two circumstances whereby:

- streets run across contours - creates a more dramatic streetscape as the streets slope. Views are achieved along the length of the street
- street run along contours - stepping occurs between two sides of the street and the street does not slope. Views are achieved within individual units. Infrastructure costs are lower due to reduced earth works

2.8.3 Streets that run across contours

Depending on the level of the gradient, when streets defined by a tight built form cut across contours, the resulting streetscape can be fairly dramatic and greatly contribute to the identity of a town or village. In the area of West Northamptonshire, there are a variety of examples where streets cut across the gradient of the land. These streets tend to be straight.

The following pages present a number of case studies taken from the study area, which demonstrate a variety of scenarios. In each scenario, the resulting streetscape can differ considerably between urban, suburban and rural situations.

In urban areas, particularly within the Town Centre of Daventry, the resulting streetscape is of great interest formulated out of the tightness and typology of the built form, higher density and the response to the contours of the land.

Urban



Townscape Views

Sheaf Street within the Daventry Town Centre is a good example of a street that cuts across contours, resulting in a stepping of buildings and their roof line. The street focuses on a central square and pavilion with views well framed by the surrounding built form, as demonstrated in the above image. The street slopes in both directions with a high point in the middle.



Level difference between road and buildings

While Daventry is located within a topographical bowl, its Town Centre is situated on higher ground. Therefore, routes out of the Centre slope downwards. This is particularly evident on Abbey Street where the street slopes sharply downhill creating a dramatic townscape whilst the buildings remain at a higher level than the road supported by a retaining wall that provides a characteristic edge to the road, in keeping with the West Northamptonshire typology of boundary walls. Figures 196 and 198 illustrate the scenario. In such cases, the area available under the buildings can potentially be used for undercroft parking or storage.



Dramatic streetscape in Newnham as a result of a street that cuts across the contour



Figure 207: Plan of Sheaf Street and the buildings that enclose it



Figure 208: Diagram illustrating the two way slope of Sheaf Street with a square and a pavilion strategically situated at its high point

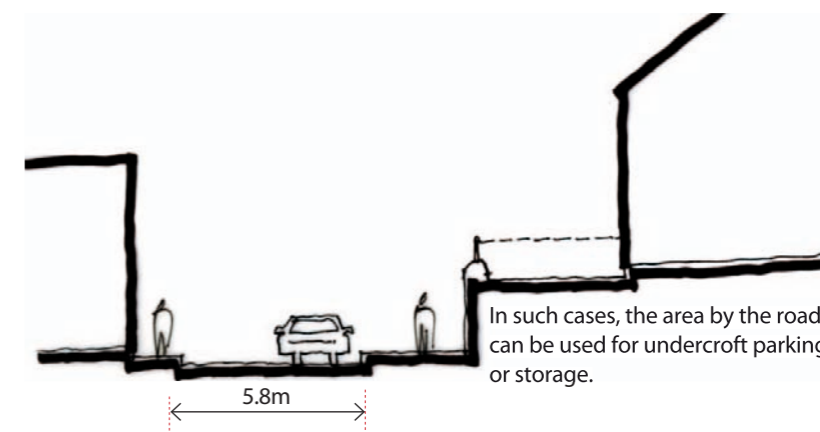


Figure 209: Indicative cross section through Abbey Street where the street slopes down from Daventry Town Centre. At parts, buildings remain at a higher level, and are supported by a retaining wall

Suburban



Buildings aligned on slope

The two examples above and below depict varying scenarios. In the above example, the slope is gentle and is subtly discernible in the Victorian terraces. While the drawing below depicts a street with a steeper slope where the buildings step along the gradient. The stepping pattern is evident not just in the roofscape but also in the building elevations.



Figure 210: Indicative section through a street that steeply slopes resulting in a stepping pattern evident in the terraced houses



Figure 211: Indicative section through Abbey Street in Daventry. Some of the buildings remain at a higher level than the street

Rural



Elevated built form

In the above rural setting, the buildings are set back from the road and are at a higher level. The individual houses gain from the elevated views of the surroundings. The sloping front gardens provide a setting for the individual houses.

The drawing below with its associated longitudinal section depict a row of houses in Welton where the street has a gentle gradient and the buildings remain elevated from it.



Figure 212: Street in Welton on a gentle gradient with buildings located on a higher level than the street.



Landscape green

A sloping landscape green provides the setting for the house. Landscape verges help to create smooth connections between contours. This can be helpful particularly when gradient levels are too steep to be buildable.

Landscape verges also allow for visual connections between buildings and focus planting creates a landmark or marker.



Figure 213: Plan and longitudinal section through a row of houses in Welton on a street with a gentle slope

2.8.4 Streets that run along contours

The streets that run along contours require limited earth works and therefore are easier to construct. Depending on the gradient of the land, there would be a level difference between the streets and the buildings that front it. As the contours rise, buildings on the two sides of the street would be at different levels from each other.

At times, it becomes necessary to create a retaining wall or a landscape bank on the sides of the street to reinforce its edges. Several examples of the landscape bank are evident through the villages of Welton and Flore. In certain cases, the pavement can also be raised from the level of the street such as in the approach to Daventry Town Centre where as the hill rises, the road skirts around it.

Roads that run along contours can be circuitous, depending on the curve of the contours. In the case of new developments, this provides the opportunity for an organic layout that is responsive to the site and its natural characteristics. Where possible, it is recommended that natural features of the site and its landscape are followed and retained.

The characteristics of streets that run along contours differ between urban, suburban and rural scenarios as the following examples demonstrate. The tightness of grain in urban situations requires streets to be reinforced by retaining walls with the buildings forming a close edge to the street. In rural areas, the sides of the roads are reinforced by gently sloping landscape banks which, in some cases, work as front gardens. Both in rural and suburban areas, landscape and planting play a stronger role in defining streets.



In rural areas, landscape plays an important role in providing definition to streets with retaining walls and grass banks

Urban



Daventry Town Centre

The route out of Daventry Town Centre circles to the north of the outcrop. The rising contours reinforced by the retaining wall create an elevated pedestrian walkway as shown in the section below. This latter feature can also be found in some of the villages, as in Preston Capes.

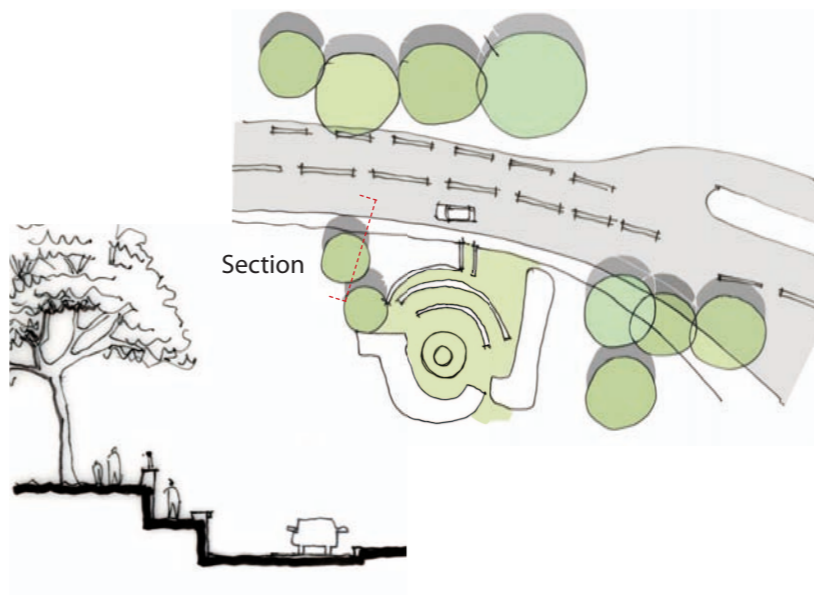


Figure 214: Indicative plan and section illustrate the road that follows the contours and circles around the outcrop at Daventry Town Centre

Suburban



Buildings elevated from the street level

This suburban example shows houses that are elevated and set back from the street. This creates a significant physical separation between the public (street) and private spaces. The houses still front the street but have increased privacy due to the greater separation from the street. However, large separation distances may create issues of detachment from the street and a lack of opportunity for natural surveillance and overlooking.

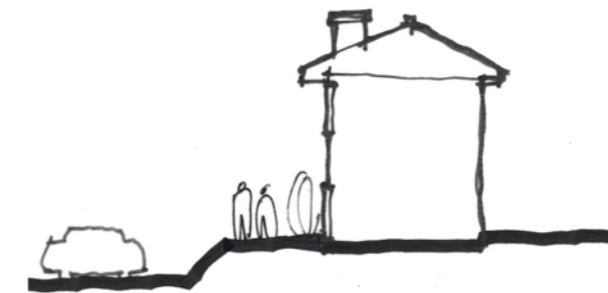


Figure 215 - Cross section through a part street where houses are slightly elevated from the street

Rural



Stepping back the built form

These examples illustrate rural scenarios where buildings are stepped back from the road. The green slope separating the house and road creates a setting for the building and provides it with elevated views of the surroundings.

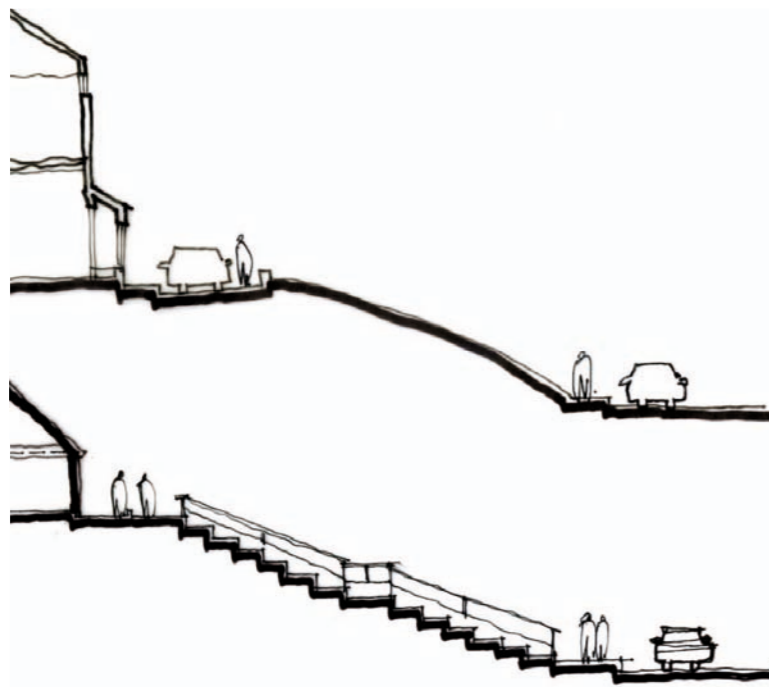


Figure 216: Indicative sections demonstrating the elevated position of the residential dwelling with respect to the road. In the first section, a secondary lane provides vehicular access to the house



Responding to contours

The settlement pattern in villages around Daventry is greatly influenced by the undulating topography of the natural landscape.

The pattern of the built form responds to contours creating vistas and views to the surroundings. Key buildings are located at high points within the settlements.

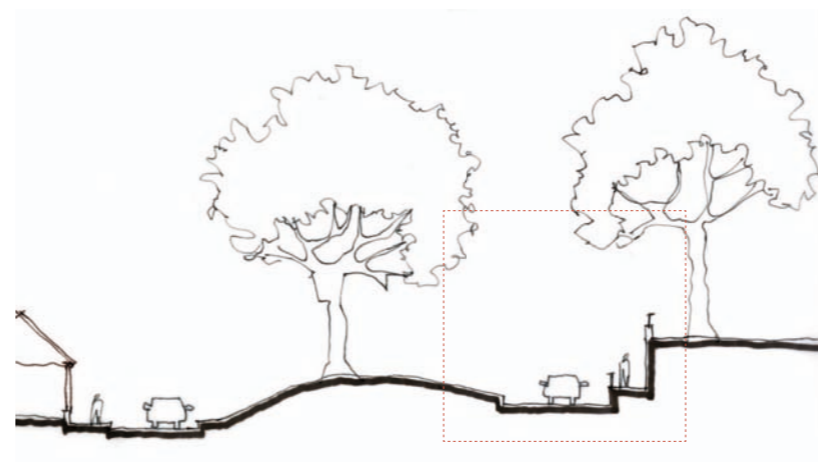


Figure 217: A mix of mature planting and landscape with retaining and boundary walls provides a good sense of enclosure to the street



In the above example, an elevated outcrop creates a green at the junction of two streets. The elevated green frames the turn in the street which is further highlighted by a feature tree. Buildings are set back from the road. They follow the road line and are buffered by the green.



Figure 218: A landscape green is created on an elevated outcrop at the junction of two streets

2.8.5 Building Response to Slopes

The natural response of buildings to topography contributes to formulating the overall character of the West Northamptonshire vernacular. Buildings are positioned in response to contours, utilizing the level differences as opportunities. This section considers the various situations in which buildings have responded to the topography and have created unique features, particular to the West Northamptonshire region.

Many of the following examples have been taken from rural settlements since vernacular buildings have historically been built in keeping with the natural characteristics of the land and vegetation and have, in fact, used these to their advantage.

Building response to slope can either have strategic implications whereby it adds to the overall character of a settlement or it can be a detail that contributes to the character of a place or an area.

The following examples present varying scenarios of individual building response to slope and demonstrate how these contribute to the formulating the character of the settlement.



Key Buildings located on higher levels

Positioning key buildings at higher levels has strategic implications as it adds to the overall character of a settlement. It forms a key feature of the West Northamptonshire landscape where settlements can be seen from afar with churches and their spires rising above the level of the built form. This is evident in Daventry where the main church located on a small outcrop at the western edge of the town centre can be seen from views out of the town, to the north.

Another example is the church in Althrope (above), which enjoys a strategic location at the cusp of a hill, commanding views from the surrounding countryside.



Terraces stepping down the street

The above example illustrates the effect of topography on houses in the village of Newnham while the drawings below show houses in the suburbs of Northampton. In both scenarios, the houses step along the slope resulting in a varied roofline that reflects the quality of the land and creates interest in the streetscape.



Figure 219: In these examples from the suburbs of Northampton, the natural topography of the land has been utilized to create a degree of separation between the private realm of the houses and the public realm of the street, parking courts and pedestrian walkways



Residential Courts

Changes in levels can be used to further demarcate space particularly between the private space of front gardens and the public space of streets and footpaths. Level differences are also used to segregate areas for parking into courts. In the above example, houses are located on lower ground. A grassy bank then creates a degree of separation between the houses and the parking within the residential court but does not hinder natural surveillance.



Figure 220: Subtle changes in level are evident in the form and orientation of the houses and the collective roof line



Figure 221: Houses form an enclosure round a sloping green space where the gradient is highlighted through the stepping down of units

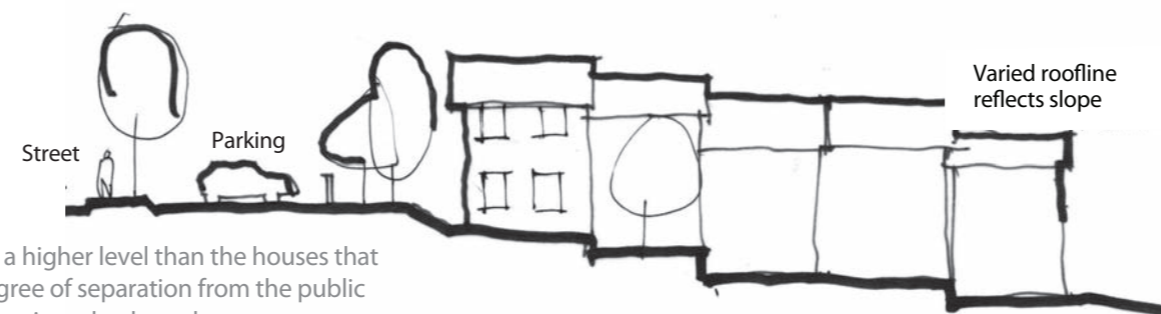


Figure 222: The street is at a higher level than the houses that slope down, creating a degree of separation from the public space of the street and the private back gardens



Slope and landscape

The natural features of the site are highlighted when a development respects existing contours, particularly when these are enhanced through the use of features such as steps, banks, retaining and boundary walls.

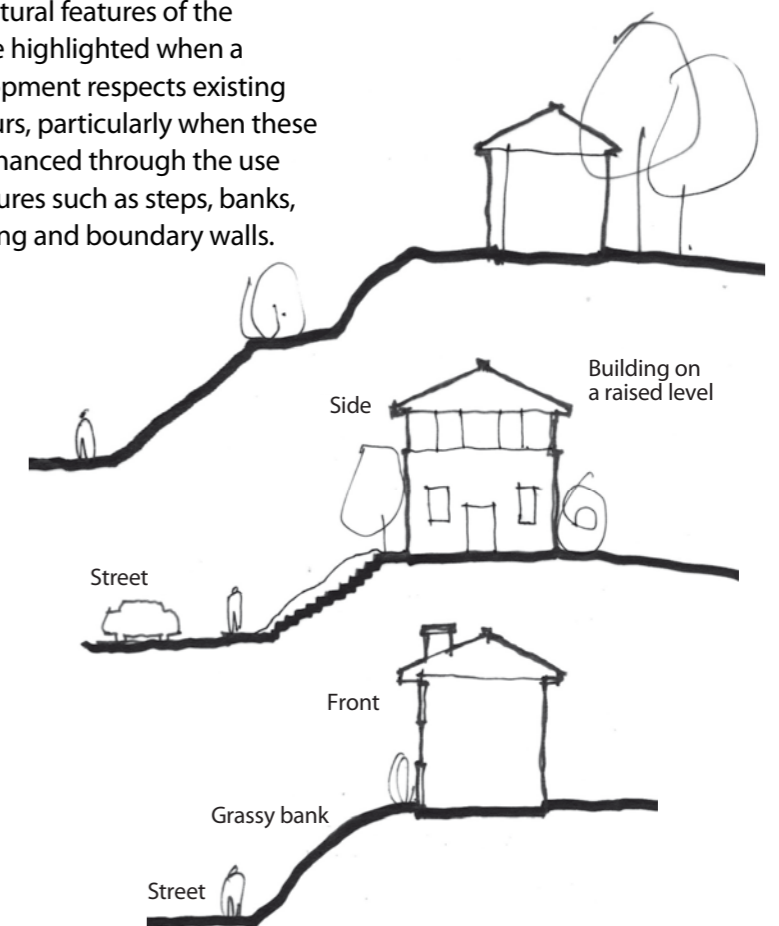


Figure 223: Examples of buildings located at a higher level from the street with the front garden in the form of a grassy bank

2.8.6 Contours, Gradient & Street Design Case-Study of Coed Darcy, Wales

The following case-study has been considered in order to demonstrate a vernacular response to topography.

The site at Coed Darcy is located near the village of Llandarcy in Wales and spreads across two small hills with a valley in-between. The surrounding natural landscape has many steep slopes in excess of 10%, many of which are not developable.

The unique topography of the site calls for a special response to the constraints set by the contours. The masterplan was therefore developed specifically with a set of streets that run along the contours and others that cut across, thereby resulting in dramatic streetscapes terminated by wide views and vistas of the surrounding countryside.

Further to the street pattern, the block typology was also developed in response to the varying situation of the contoured site. The blocks utilise the contours by creating undercroft parking that can be tucked within the slopes and shallow basements/ground floors. The stepping pattern of the buildings also allows for individual units to partake of the surrounding views.

The overall block pattern was developed to be fairly orthogonal thus when superimposed with the contours of the site, it took on an organic form, resulting in the characteristic pattern of the overall masterplan.

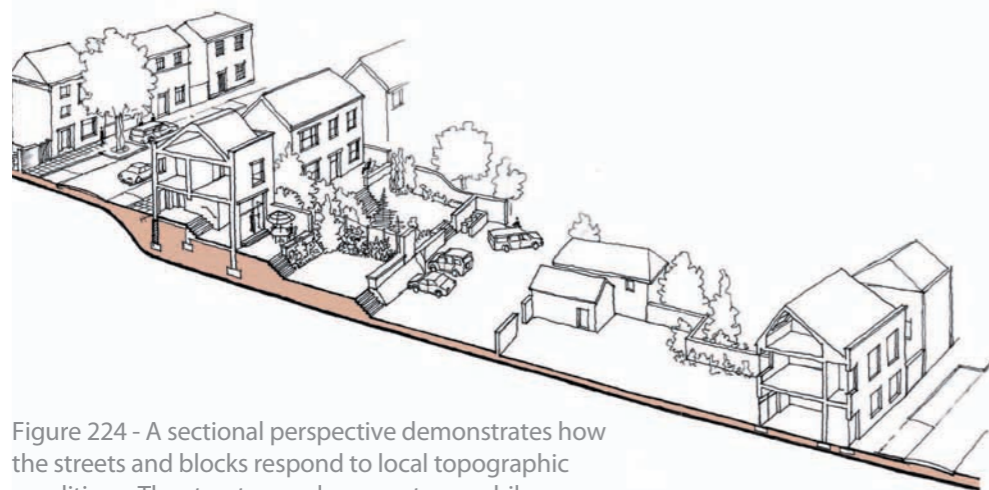
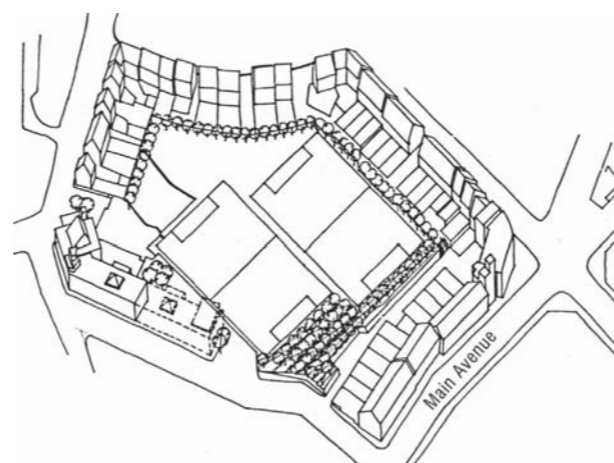
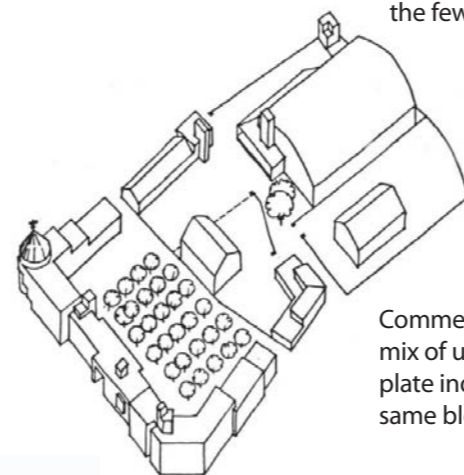


Figure 224 - A sectional perspective demonstrates how the streets and blocks respond to local topographic conditions. The street runs along contours while buildings step down, creating an additional storey between the street and the back garden

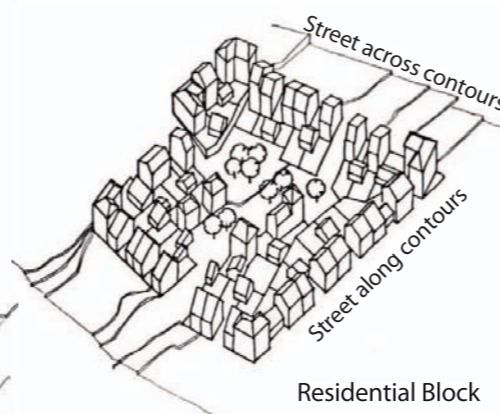
Figure 225: Coed Darcy - Block Typology



Block incorporating residential and educational uses. The gradient is relatively level as the school and its playing fields are located within the few flat areas



Commercial Block: Accommodating a mix of uses together with large floor plate industrial buildings within the same block and provision for services

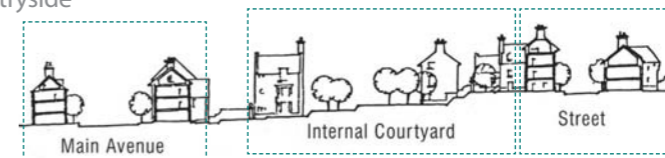


Residential Block surrounded by streets that cut across and along the contours

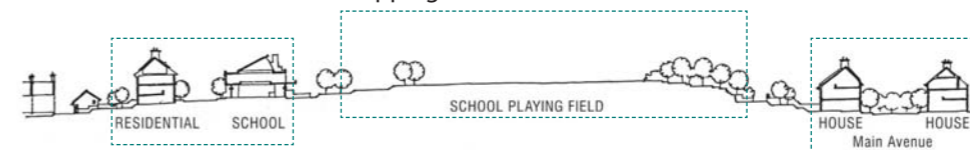


Figure 226 - Coed Darcy Masterplan - The blocks are laid out in an orthogonal manner where the streets either follow the contours or run across them, thereby terminating in wider views of the surrounding countryside

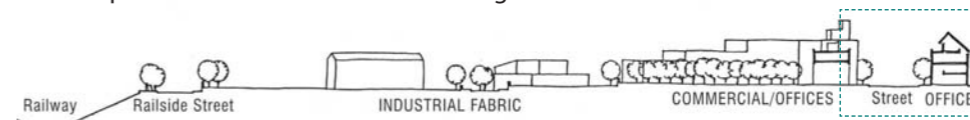
Figure 227 - Indicative sections through the different blocks



Section through a residential Block demonstrates the stepping within blocks and streets



Section through a residential and school Block showing the playing fields located on a flat plateau that rises above surrounding streets and houses



Section through a commercial block located on predominantly flat land

2.8.7 Summary

The topography of the land has contributed greatly to the unique identity of settlements in the West Northamptonshire region. The slopes and contours are manifested in the layout of streets and buildings either in the form of framed views of surrounding areas or in the stepping of buildings.

It is important therefore to acknowledge the role of topography and understand that despite advanced engineering and the ability to alter levels through the use of heavy machinery, the natural lay of the land should be respected and responded to. Such a response requires the advent of unique solutions that contribute to the character and identity of the place.

A natural response to topography is particularly evident in the vernacular and historic buildings and settlements of the region. Natural responses to topography arise, broadly, from two circumstances whereby:

- Streets run across contours - Can create a dramatic streetscape as the streets slope. Views are provided along the length of the street.
- Streets run along contours - Stepping occurs between two sides of the street and the street remains level. Views are provided within individual units. Infrastructure costs are lower due to reduced earth works.

Streets that run across contours

- These streets require greater earth works yet can yield a more dramatic streetscape that can greatly contribute to the overall identity of the place.
- These streets tend to be fairly straight though they can be circuitous in the cases of a greater degree of slope.
- Streets can culminate and frame wide and dramatic views of the surroundings.
- Individual buildings gain from elevated views of the surroundings. Sloping front gardens can provide for a setting for individual houses in suburban areas.
- Landscape verges help to create smooth connections between contours, particularly across steeper slopes. They also allow for visual connections between buildings.

Streets that run along contours

- Such streets require limited earth works and therefore are easier to construct.
- These streets can be circuitous, depending on the curve of the contours providing the opportunity for an organic layout that is responsive to the site's features.
- Depending on the gradient of the land, there tends to be a level difference between the streets and the buildings that front it.
- At times, it becomes necessary to create retaining walls with steps or a landscape/grassy bank with planting on the sides of the street to reinforce its edges.
- In rural areas, the sides of the roads are reinforced by gently sloping landscape banks which, in some cases, work as front gardens. Both in rural and suburban areas, landscape and planting play a stronger role in defining streets.

Building response to slope

- A natural response to topography is particularly demonstrated in the vernacular and historic buildings of the region as vernacular buildings have been historically built in keeping with the natural characteristics of the land and vegetation.
- Buildings are positioned in response to contours, utilizing level differences as opportunities.
- Building response to slope can either have strategic implications whereby it adds to the overall character of a settlement or it can be a detail that contributes to the character of a place or an area.
- Positioning of key buildings, such as churches, at higher levels of a settlement, can have strategic implications. They form key features in the wider landscape where settlements can be seen from afar with churches and their spires rising above the level of the built form.
- Within residential areas, changes in levels help to further demarcate space particularly between the private, communal and public.
- Whilst maintaining visual connections with surrounding houses.

Overview of topography and slope

1. Streets running across contours



2. Streets running along contours



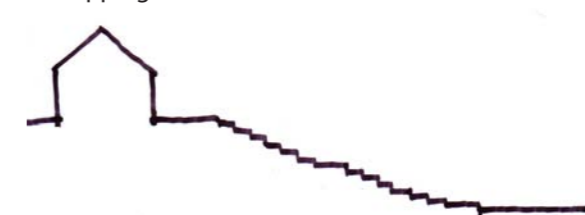
3. Key Buildings located on higher levels



4. Level separation between buildings and roads



5. Stepping back the built form



6. Village Green/landscape verges



Figure 228 - Indicative sections illustrating the relationship between built form and topography