2 Town Centre Appraisal

2.1 Introduction

This chapter provides a comprehensive review of Llantrisant’s historic development and the resulting urban topography, which have contributed to the physical shaping of the historic settlement – together with an overview of the surviving historic fabric, distinctive architectural forms, materials and treatments and the significant elements of town and streetscapes, land use functions and movement appraisal. The aim is to provide an appreciation the past and the present - the diverse range of factors that have combined to create Llantrisant’s distinctive sense of place.

2.2 Historic Character and Listed Building Appraisal

2.2.1 Historic Context

Llantrisant is an ancient medieval market town set on the crest of a hill, overlooking the picturesque Taf Vale. The main catalyst for the development of the town was the establishment of the Parish Church and the Norman castle stronghold before 1100, although there were earlier fortifications at this location dating back to 500AD and the Church is noted for its early Christian origins (as celebrated by the “Beating the Bounds” ancient Christian ceremony). Occupying a strategically important location connecting the Taf Vale to the Upper Rhondda, the Castle, Church and adjacent lands were controlled by the De Clare family (Earls of Gloucester), and were used as a temporary safe retreat for King Edward II in 1326 before his eventual capture and execution. However, the fortified town was often subject to repeated attacks by local Welsh rebels, and the Castle was eventually destroyed around 1404 (rumoured to be the result of an attack by Owain Glyndwr).

During this medieval period, Llantrisant developed as an important market town, with traditional homes clustered along cobbled streets between the Castle, Church and market square area. The town was awarded its Town Charter in 1346, associated with the involvement of the town’s longbowmen fighting within the Battle of Crecy under the Lord of Glamorgan (Hugh Despencer). The Charter was re-issued in 1424 and gave those Burgessess, or Freemen, absolute possession of the land and trade licensing rights, their own court of law and overall control of the town’s market and fairs. This was eventually superseded by the establishment of a Town Trust in 1889, with responsibility for managing The Common (Cymdda Fawr and Bach), Y Graig, Toll House and the Town pumps, while admitting new hereditary Freemen on an annual basis.

Llantrisant continued to develop as a small yet influential borough town, with fairs often held upon the Castle green, with bull baiting taking place within the Bull Ring until this practice was disallowed in 1827. However, following the repeated Welsh rebel attacks and Black Death epidemic, by 1514 the Castle was reduced to ruin and the town had declined to a small village of just thirty white-washed homes, although the Parish Church was rebuilt with a new west wing and tower added by 1490. By 1784, a workhouse, the first in Glamorgan, was constructed on the site of cottages on Swan Street to deal with local poverty problems, and was replaced a century later with a larger premises closer to the Bull Ring.
The Victorian era witnessed the refurbishment of the Parish Church and the appearance of several landmark properties (including several inns, shops, houses and chapels) within the town centre. Fairs and markets continued to be held annually within the open square adjoining the town hall and the Market House. However, this economic boom was somewhat curtailed by the growth of neighbouring Pontypridd as a result of the establishment of the Glamorgan Canal and Taf Vale Railway connecting to Cardiff. During this period, Llantrisant was the home town of two significant individuals — Sir David Evans, born in 1849 at Glannychydd Farm near the site of the Royal Mint. He was a freeman of the town and in 1891 was made Lord Mayor of London. The Community Council has erected a plaque in his honour in the Guild Hall; and Dr William Price, the pioneer of cremation, who lived near the site of the former Zoar Chapel. To commemorate the 100th anniversary of his death, the Council constructed a memorial Heather Garden on the Southgate/High Street approach to the town centre.

In modern times, Llantrisant’s stance as a trading centre has diminished in favour of Pontypridd and Talbot Green, although it has continued to expand as a popular residential commuter town due to its strategic proximity to the M4. The recent development of craft shops at the Model House and in the town centre has also helped to establish Llantrisant as a tourist attraction.

### 2.2.2 Llantrisant Castle – A Scheduled Ancient Monument

The catalyst for Llantrisant’s development was the construction of the Castle by Richard de Clare around 1246, although there may have been an earlier stronghold built by Robert Fitzroy (first Earl of Gloucester and Lord of Glamorgan) before 1147. The Castle was an important strategic stronghold during de Clare’s campaign against Hywel ap Maredudd (Lord of Meisgin and Glyndwr), as it defended a key route over the steep escarpment to the uplands of Glamorgan. However, the Castle and neighbouring plots were severely damaged during attacks in 1259, 1294 (Madog’s rebellion), 1314, 1316 (during Llewellyn Bren’s rebellion), 1321 (following the Henry of Lancaster’s uprising against Hugh le Despenser and Edward II), and the Castle was all but destroyed in a final attack by Owain Glyndwr in 1404.

Since then, the Castle has been used as a detention cell by the local court, and as an allotment garden, but has now been all but abandoned and has fallen into a state of decay and disrepair (Photo 2.1), with many of the original stones reused to repair local buildings. Despite some patches of repair work carried out during the nineteenth and twentieth centuries, all that now remains is a large ruinous fragment of a tower and a circuit of low, overgrown walls, with an array of banks and ditches indicating the larger extent of the original castle. The Taff Ely Borough Council purchased the Scheduled Ancient Monument site in 1993, and carried out some works to improve its surroundings, including fencing the site off for safety reasons.
The Castle site remains a significant heritage asset that has potential to contribute to the regeneration of the area as a heritage tourism attraction, but the ruins are now in need of urgent consolidation and restoration works. The site currently presents a number of health and safety issues due to its untouched state and fragility – the stonework is becoming dislodged with potential for a catastrophic collapse of the larger masonry structures, and plant growth continues to destabilise the standing walls and disturb potential undiscovered archaeological remains.

The “Llantrisant Castle Feasibility Study” (Page & Dean Consulting, 2004) has undertaken some further investigative works to establish the potential options for the Castle site (ranging from (i) a “do nothing” option, (ii) undertaking a full archaeological study, (iii) part or full consolidation to the Raven Tower and other main parts of the curtain wall, (iv) construction of an amphitheatre using the consolidated Castle as a backdrop; and (v) a range of options for reconstructing a “new” steel, glass and timber clad tower reflecting the dimensions of the original tower’s footprint, toilets and other facilities, with a lift and stairs leading to a top viewing platform containing interpretation material on the Castle’s history.

2.2.3 Listed Buildings

There are twelve listed buildings with Llantrisant’s Old Town centre, including:

- **Church of St Illtyd, St Gwynno and St Dyfodog**: This is a Grade II* listed building (Photo 2.3) due to its prominent medieval tower. The Church also boasts the seventh century “Resurrection Stone” artefact and the east window (dated 1873), which features a stained glass image of the Crucifixion depicting a beardless Christ, which is apparently one of only three known such windows to exist. The original church structure (built in 1096) was partially rebuilt around 1246 and has undergone further major restorations during the nineteenth and twentieth centuries (including re-pointing the tower, restoration of the tiled roof to its medieval appearance, the installation of a new heating system, and the reconstruction of a retaining churchyard wall) (Photos 2.3 & 2.4). The Churchyard offers attractive panoramic views across the Vale, but does have some maintenance issues and previous illumination of this prominent landmark building has proven successful in the past.
**Former Parish Offices**: This Grade II listed former civic building off George Street is renowned for its Gothic architectural character (Photo 2.5). It originally was built as the parish offices in 1873, and housed the community council from 1974-2000 but has now been converted to residential use. Although previous restoration work used inappropriate fenestration and finishes/render and the original timber frame windows have been replaced with UPVC double glazed frames (Photo 2.6), this remains an attractive building occupying a prominent location on Yr Allt. It is part of a group of buildings forming an important backdrop to the Church of St Illtyd, St Gwynno and St Dyfodwg.

**The Peniel Presbyterian Chapel**: Located towards the top of the High Street, the Chapel (first built in 1776 and later rebuilt in 1826) is Grade II listed for its architectural significance as an early nineteenth century chapel with a lateral-entry type. The Chapel is currently in a relatively good state of repair, but requires some restoration to the external street façade and has also recently ceased to be used as a place of worship.

**The Guild Hall**: This Grade II building (Photos 2.8-2.9) was originally built in the fourteenth century, then rebuilt in 1773 with a corn market beneath, with the building forming the fourth side of a market square with stalls around the other sides. The Guild Hall now houses the Llantrisant Town Trust.
- **Llanrisant House**: This attractive building was originally built in the 1830s, and is Grade II listed for its early Victorian character and detail.

- **The New Inn**: This Grade II listed building is a well-preserved late Georgian Inn located on Swan Street. The recent renovation works have helped to improve its visual appearance, but the fenestration details are somewhat unsympathetic to the original character.

- **Y Felin Wynt Tower**: This structure has a Grade II listing as a late Victorian folly thought to have been created from the tower of an early windmill destroyed during a battle in the thirteenth century. It survived as a tall tower until 1890 when it was restored from a ruin to a folly with the addition of steps and wide copings. The Tower has seen no alteration since its restoration in 1890 and provides panoramic views across the Rhondda Valley.
The Malt House: A Grade II listed rare agricultural building, thought to have been built around 1750, and converted from a malt house to an agricultural building when the surrounding land was bought as a farm in 1870. The Malt House has seen little alteration and still remains as an agricultural building, and has been listed due to its facade imparting considerable character to the townscape setting.

Number Two Yr Allt & Attached Stable: This Grade II listed building is a rare surviving early nineteenth century cottage with attached stable range within a town setting. The building is currently being renovated, and will need to retain much of its original historic façade features if it is to continue making such a positive contribution to the distinctive historic charm of the cobbled Yr Allt streetscape.
Cefn Mably Farmhouse: This building is Grade II listed as a rare surviving early nineteenth century farmhouse, but many of its original characteristics have been removed during recent renovation.

Toll House Cottage: This building is Grade II listed for its historic significance as a former tollhouse, built in 1785 in line with the 1756 Turnpike Road Act. The adjoining property was built in the nineteenth century, and was rather insensitively re-clad in the late twentieth century to accommodate an electrical store and residential flat above. The cottage is now in a derelict state and is at risk of loss.

- **Castellau House**: Located on the east side of a narrow lane which runs north from Castellau to Gelli-wion and on to Pontypridd, this Grade II* Georgian House is a fine Regency-style villa, with an interior of particular merit.

- **Castellau Congregational Chapel (including gates, piers, boundary walls and bridge)**: Located at a road junction to the north of Llantrisant Common, on the west side of a lane which joins Castellau Road and Heol Ddu, Castellau Welsh Independent Chapel was built in 1843. It is Grade II listed as a distinctive Gothic chapel in a rural setting retaining its character and with a fine later nineteenth century interior.

- **Water Pump including surrounding revetment walls on Heol Las**: This Victorian cast iron water pump is still located in its original position and was restored by the Community Council in 1993. The pump is one of three in Llantrisant town centre, and is the best preserved. It has a Grade II listing based upon it being a well-preserved item of street furniture contributing character to the area.

### 2.3 Visual Character and Public Realm Appraisal

The Old Town Centre has a distinctive charm created by the mix of attractive Welsh vernacular architecture and Welsh Pennant stone paving, kerbs and setts particularly around the Church of St Illtyd, St Gwynno and St Dyfodwg, Yr Allt and the Bull Ring. The historic core also has attractive walled, stone pitched, cobbled lanes and narrow streets, punctuated by landmark buildings such as the Cross Keys public house, the Model House, the Church/Chapels and the Castle. The relatively consistent streetscape of terraced buildings (particularly within the Bull Ring, Yr Allt, Heol-y-Sarn and Swan Street) also helps to create an attractive and distinctive sequence of spaces leading visitors through the town centre, into hidden parts of the historic core and out towards the Billy Wynt Windmill and The Common.

However, the visual quality of the historic core is marred in places by derelict/vacant properties, insensitively designed or tatty elevations and shop fronts, unattractive “wirescape”, abundant double-yellow lines, and problems with the stone pitching giving way to concrete block-work and inappropriate detailing (e.g. within the Bull Ring, the granite setts and abundant double-yellow lines can give an unwelcoming “hard” appearance, which detracts from the character of the Conservation Area).
Photos 2.20-2.23 illustrate some of the good quality facades identified within Figure 2.1, which contribute to the quality of townscape character.

Other key problems affecting the visual character and quality of the public realm include:

- Footpaths are often narrow, discontinuous, and some are in a poor state of repair (particularly along the High Street and Heol y Sarn);
- Signing is often cluttered, confused and unwelcoming - better signage is particularly needed at key gateway entrances into the town centre, and between public car parks and key destinations;
- Much of the town’s street furniture is outworn, poorly maintained and inappropriately located, which can restrict pedestrian mobility, particularly at narrow pinch points;
- Parts of the historic core need to be repaved in traditional, natural materials with sensitively located and designed street furniture and lighting; and
- There are inappropriately designed shop fronts and facades that detract from the visual quality of the historic core.

Photo 2-20 The Hill Top Gallery, High Street: A sympathetic restoration, with sympathetically designed fenestration and shop front façade reflecting the original building style. This presents an attractive active street frontage, although the original façade was not rendered.

Photo 2-21 The former Police Station, off George Street: An attractive conversion for residential flats, which has retained much of the original façade, with sensitively designed timber fenestration, and the original stonework has not been inappropriately rendered.
Photo 2-22 The Pottery on Swan Street, Photo 2-23 Shop on George Street, facing the Bull Ring: Another sensitive renovation of timber fenestration reflective of the building’s original style, although it would not have been rendered and the signage is not sympathetic to the building’s original character. Shop on George Street, facing the Bull Ring: The façade of this building has changed very little since 1910. A recent renovation has sensitively restored the original signage, timber fenestration and original shop front. However, the original building was not rendered.
Figure 2-1 Visual Quality of Façades in Llantrisant Town Centre
2.4 Movement Appraisal

The local highway network consists of High Street, Commercial Street and Heol-y-Sam, which are often sub-standard in width, with difficult alignments in certain locations, limited pedestrian facilities and accommodating relatively high flows of general traffic (i.e. associated with the new retail park at Talbot Green, local employment opportunities and service facilities (e.g. Royal Glamorgan Hospital). Key problems include:

- Despite road improvements (i.e. the dualling of the A4119, Talbot Green bypass), there remain serious peak congestion problems associated with through traffic seeking to avoid congestion on the sub-regional network – namely the A473 and A4119. There is a need to consider how through traffic movements can be discouraged while still allowing ease of movement for internal locally generated trips.

- Whilst concerns have been expressed over vehicle speeds, the nature of the narrow, meandering road layout, often with poor sight lines, discontinuous pavements and high adjacent side-walls, and the occurrence of parked cars act as a natural traffic calming measure. Consideration should be paid to revising speed limits and traffic calming along certain routes (such as the Common Road, which currently has a 40mph speed limit but, vehicles tend to enter the town too fast because of the open nature of the road – an urban 30mph limit should be considered).

- Waiting restrictions (double yellow lines) have been installed throughout much of the High Street, Commercial Street and School Street. However, the narrow road widths mean that the yellow lines are often self-enforcing, but there are some locations (such as within the Bull Ring), where the orders appear unnecessary.

- Pedestrian linkages to the town centre and key destinations such as the Model House, the Castle, the Churchyard and the Common are inadequate. The Leisure Centre’s access is restricted by poor pedestrian linkages along High Street (i.e. steep topography, discontinuous pavements, lack of pedestrian crossings), which encourage people to drive to the Leisure Centre rather than walk. Better linkages need to be provided.

- There are a number of potential vehicle/pedestrian conflict points (usually in areas with no pavements and difficulties because of gradients, steps or materials for the mobility impaired – such as along parts of the High Street and Heol-y-Sam). While it would be impossible to provide standard footway widths throughout these areas, it will be necessary to at least consider margin safety strips.

- Many of the town centre properties have no off-street parking which can lead to indiscriminate and inappropriate parking, although on-street parking does reduce traffic speeds and can help to calm traffic movement (i.e. such as along Heol-y-Sam and, to a lesser degree, in Swan Street).

- At present there are three off-street car parks – Commercial Street (13 spaces), Swan Street (28 spaces including 3 disabled spaces) and the large car park off Gwaunruperra Road. Although the car parks at Commercial Street and Swan Street are generally well used, the Gwaunruperra Road car park would benefit from improved signing to encourage use by visitors to the town.
- Additional off-street parking sites are limited (due to isolated location from the town centre, land ownership issues, or would be costly for the number of spaces that could be provided).
- Public transport provision within Llantrisant town centre is limited to bus services due to the steep topography, and the main bus station at nearby Talbot Green acts as an important nodal connection to Church Village/Pontypridd, Tonyrefail, and Cardiff. Llantrisant could benefit from more regular services to/from Talbot Green with better service information provided at the four bus shelters located within the town centre.
- The junction of the High Street and Cross Inn Road is a particularly difficult junction with regard to alignment and gradient (i.e. vehicles on the B4595 have to make a 270° turn, with larger vehicles having to cross the centre line of the carriageway).
- The directional signing at the approaches to Llantrisant and, to a lesser extent in the Old Town, are confusing and appear cluttered, with a non co-ordinated appearance.

2.5 Town Centre Uses and Function Appraisal

The town centre comprises a mix of commercial, residential, tourism and community uses, and key buildings (notably the Castle, the Church, Guildhall, Model House and the Old School). The main land use functions within the town centre include:

- **Retailing and Eating Establishments:** The Bull Ring/Heol-y Sarn area has an attractive general store and post office for local needs, and a range of specialist shops selling toys, gifts and craft products, which contrasts in character and scale with the major retail park at Talbot Green (which includes a large superstore and range of comparison shopping outlets). There are also several public houses, a café and a restaurant which all serve food, with evidence of opening times gradually extending to most days of the week.

A secondary hub area has also developed along the High Street, which has a few retailing units and public houses, including a hairdressers and the Wheatsheaf public house. A Local Farmer’s Market was also held on the Castle Green in Llantrisant’s Old Town in December 2004, which included a park and ride in operation from Llantrisant leisure centre to Llantrisant Castle. This was considered to be successful and is planned to be repeated several times per year, in rotation with other towns of Rhondda Cynon Taff.

- **Tourism:** Llantrisant has a small yet growing tourism industry developing from the range of heritage features (such as the Castle and the Church), and specialist art and craft shops (such as the Model House as illustrated in Photo 3-28) and eating establishments located around the Bull Ring, which provide an attractive environment for the casual visitor.
The Model House Craft & Design Centre: This was originally built as a workhouse in 1784, and then became a public house, a grocers and later a general store, and a glove manufacturing factory until the late 1960's. It then stood empty for some years before being bought by the local authority and converted in 1989. It has now become an award-winning contemporary craftwork gallery and shop, with fifteen studio workshops for local artists provided on the upper floors. The Centre is open Tuesday-Sundays (10am-5pm) and on bank holidays, and currently hosts contemporary craft exhibitions (including glass, ceramics, jewellery and textiles), with a gift shop and permanent exhibition of Royal Mint coining, and craft workshops for adults and children. A total of 38,000 visitors were recorded in 2004. The rear of the Model House building is occupied by Llantrisant Library, which is contained in a separate unit without access into the main building.

- **Commercial Businesses:** The main commercial businesses within the town centre are the garage and Pritchard’s Saddlery, located off Commercial Street/Newbridge Road. The Saddlery has a display area in the foyer exhibiting saddlery and agricultural equipment from the past. The Royal Mint (which transferred to the 38 acre site near Llantrisant in 1967) is located two miles north of the town centre, and includes visitor facilities, a gift shop, a museum archive of British coinage (no longer open to the public, although an exhibition of historic coins and the Royal Mint is provided on the upper floors of the Model House in Llantrisant’s town centre). This, together with the Llantrisant Business Park (Ynysmaerdy) and the Talbot Green retail park are the major local employment locations.

- **Residential:** Houses prices are relatively high within the local area, with pressure for more development particularly on infill sites that offer spectacular views. Outside of the Bull Ring/Heol-y-Sarn/High Street area, the majority of Llantrisant is residential in character. There is a mix of high quality Welsh vernacular architecture within the Old Town Centre. This is in contrast in character to the modern housing developments to the north and occasional pockets of inappropriately designed properties within the historic core.

- **Community/Recreation:** The Leisure Centre is located at the bottom of Llantrisant Hill, and offers a range of recreational and sport, health and fitness activities and facilities with good parking provision and disabled access/facilities. There is also a community centre on Newbridge Road (constructed in 1997), a Church Hall on Swan Street/School Street, and a local authority-owned Social Hall off Heol Penmaen/High Street (which is now closed and presents a site for sensitive redevelopment).
Llantrisant’s library is located to the rear of Model House on Swan Street. It is open for limited hours on Mondays and Thursdays and longer hours on Tuesdays and Fridays, but is closed on Wednesday and Saturdays.

- **Ecclesiastical:** There are three churches/chapels within the town centre, including the prominent St Illtyd, Gwynno and Dafodwg’s Church; the Tabor Baptist Church and the Penuel Trinity Church – a listed building that has recently closed for worship.

- **Health Services:** The Royal Glamorgan Hospital (a recently built general hospital serving the Rhondda Cynon Taff and Caerphilly areas) is located near to Llantrisant. The nearest GP surgery is located within Talbot Green.

- **Education:** Education facilities within Llantrisant are now limited to the Ysgol Gymnadd Coed-yr-Esgob (153 pupils aged 3-11 years) since the relocation out of the town of Ysgol Gymnadd Gymraeg Llantrisant. There are currently no nursery/creche child-care facilities within the town centre, although there is a private nursery facility (“Little Inspirations”) available within the Llantrisant Business Park (Ynysmaerdy), and pre-school playgroups and creche facilities at the Leisure Centre and Pennwygasi Community Centre. There is also an after-school club that meets in the basement of the Guildhall. The nearest secondary schools are Y Pant Comprehensive School (Talbot Green), Ysgol Gyfun Llanhara and the Cardinal Newman Comprehensive School. The nearest adult education centres are located at Tonyrefail Comprehensive School and Porth Community Education Centre.

- **Vacant/Derelict Buildings:** There are a number of buildings along the High Street (including the former “New Buildings” retail units, and a former bookmakers near the Cross Keys public house) which are now vacant/under-utilised, and their appearance detracts from the key gateway approach into the town centre’s historic core. The former Ysgol Gymnadd Gymraeg (which had 250 pupils aged 3-11 years) closed in April 2005, due to the school’s relocation to a new site in Cefn-yr-Hendry.

**Photo 2-25** **The Old Victorian School:** The former Welsh Medium School occupies a prominent location on Llantrisant hilltop, and closed in April 2005. The original building remains, with the more modern outbuildings in the process of being demolished by the Council. From May 2005, the building will be occupied for a year by two users (the County’s music service hosting evening classes and housing the RCT County Orchestra; and the Model House, who will be running craft workshops and providing workshop space within the building). The site is scheduled for redevelopment in 2006, and the Regeneration Strategy will need to consider what alternative uses the building could accommodate.
2.6 Constraints and Opportunities

Figure 2.2 summarises the key opportunities and constraints identified within the appraisal that have been taken into further consideration when developing the Regeneration Strategy. The key issues are summarised as follows:

- **Heritage:**
  - Llantrisant has several attractive listed building, some of which have recently been sensitively restored with the sympathetic reinstatement of key features.
  - There are some negative examples of inappropriate use of render, insensitively designed UPVC windows, illuminated signage and metal shutters which detract from the historic character of the Conservation Area.
  - The Conservation Area boundary currently includes the whole settlement, including the modern housing estate and The Common to the north. This does not accurately reflect the extent of the historic core.
  - Greater enforcement is needed within the core of the Conservation Area.
  - The Castle (a scheduled ancient monument) is an important heritage asset but is in a poor state of repair.

- **Public Realm:**
  - The quality of the public realm is relatively good throughout the historic core, but is marred in places by derelict/vacant properties, insensitively designed or tatty elevations and shop fronts, unattractive “wirescape”, poorly maintained narrow or discontinuous footpaths and cluttered street furniture, abundant double-yellow lines, utilitarian lighting and signage, and problems with the stone pitching giving way to utilitarian concrete block-work and inappropriate detailing.
  - Many of the vacant buildings have potential for alternative re-use.
  - Parts of the historic core should be repaved in traditional, natural materials that reflect the historic character of the Conservation Area.

- **Tourism:**
  - The Model House has been a successful catalyst for stimulating the establishment of quality craft shops, eating establishments and specialist retailing in the town centre.
  - Llantrisant has potential to further develop as a day visitor attraction for both residents and tourists staying in the Borough and adjoining areas, with the planned temporary expansion of the Model House to the Old Victorian School, and attractive heritage features.
  - There is little heritage interpretation information available and the historic archive/exhibition information currently available (such as at the Model House) is not widely known or easily accessible to visitors.

- **Movement:**
  - Key problems are associated with traffic congestion problems along High Street and Heol-y-Sam; narrow, discontinuous and steep pavements;
restricted on-street car parking; problematic junctions; cluttered directional signage; and restricted pedestrian mobility.

- However, many of these elements currently act as natural traffic calming features.

**Figure 2-2** Constraints and Opportunities Appraisal