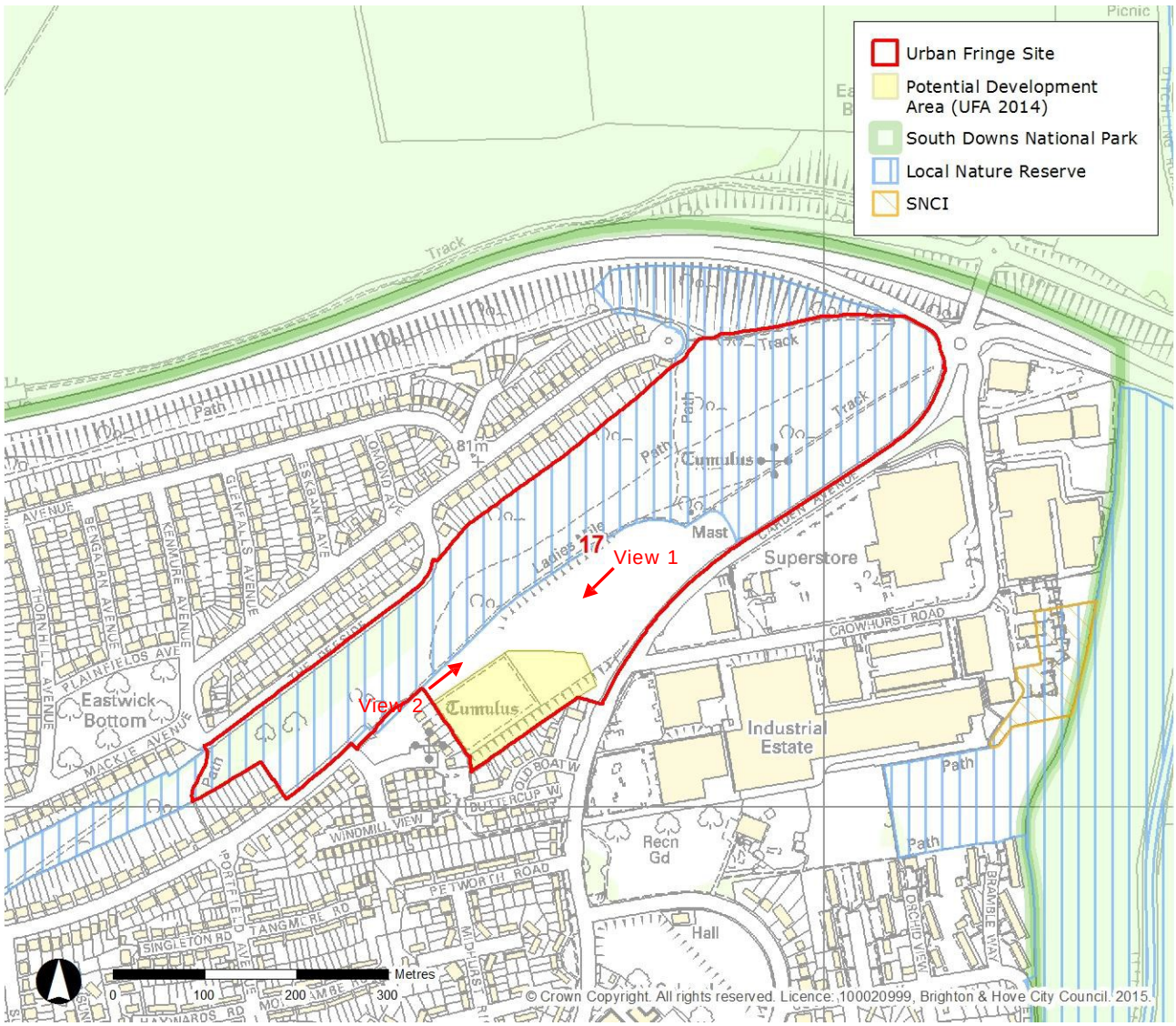
8 L5/E4 (Site 17) - Patcham: Landscape and Ecology Assessment

Background

Study Area	**L5/E4**	Location	Patcham
Site	17 – Land at Ladies Mile, Carden Avenue		
Study Area Overview			
The Ladies Mile is a distinctive ridge extending north-eastwards from the centre of Patcham towards Stanmer Park. The western half of the ridge was developed from the 1930's as the Ladies Mile estate but the eastern half, in which Site 17 has been defined, remains largely open, unimproved chalk grassland, much of which is designated as a Local Nature Reserve. The area suggested in the 2014 UFA as having potential for housing development was 1.5ha on the southern edge of the Study Area, adjacent to Carden Avenue to the south and Windmill View to the west, a location formerly occupied by the playing fields of the Patcham-Fawcett school (the buildings of which were located on the land now occupied by the Windmill View estate).			



Representative Views - local

View 1: looking west across potential development area towards Windmill View housing

View 2: looking east along the ridge towards Great Wood, Stanmer Park, from adjacent to Windmill View

Overall Conclusions of the 2014 Assessment
"While much of the site contains significant ecological, heritage, landscape and open space constraints, a small portion of the site is suitable for residential development. The southern corner of the block of flat amenity greenspace in the southern half of the site is a significant distance from the scheduled monument in the north of the site and outside the Local Nature Reserve. Furthermore, while development would result in a net loss of amenity greenspace and natural/semi-natural greenspace, there is currently an over provision of such open space in the area. The top of the ridge, in particular towards the eastern end, can be considered the most sensitive area in landscape terms, and the scrub-covered northern slope which forms a backdrop to housing in the vicinity of Mackie Avenue and continues west beyond the site is also very sensitive, but the southern part of the site in which school sports facilities were formerly located is less sensitive, with housing already occupying the highest part of the ridge to the west and the large scale retail buildings beneath the ridge affecting landscape character. New planting to continue the line of vegetation that separates the houses in Windmill View from the main track along Ladies Mile would provide mitigation. New residential development should sufficiently mitigate for the increased demand for open space associated with the increased population density, improve facilities in the Local Nature Reserve and create new, needed, open spaces within the undeveloped portion of the amenity greenspace, such as allotments being provided in addition and adjacent to residential development."

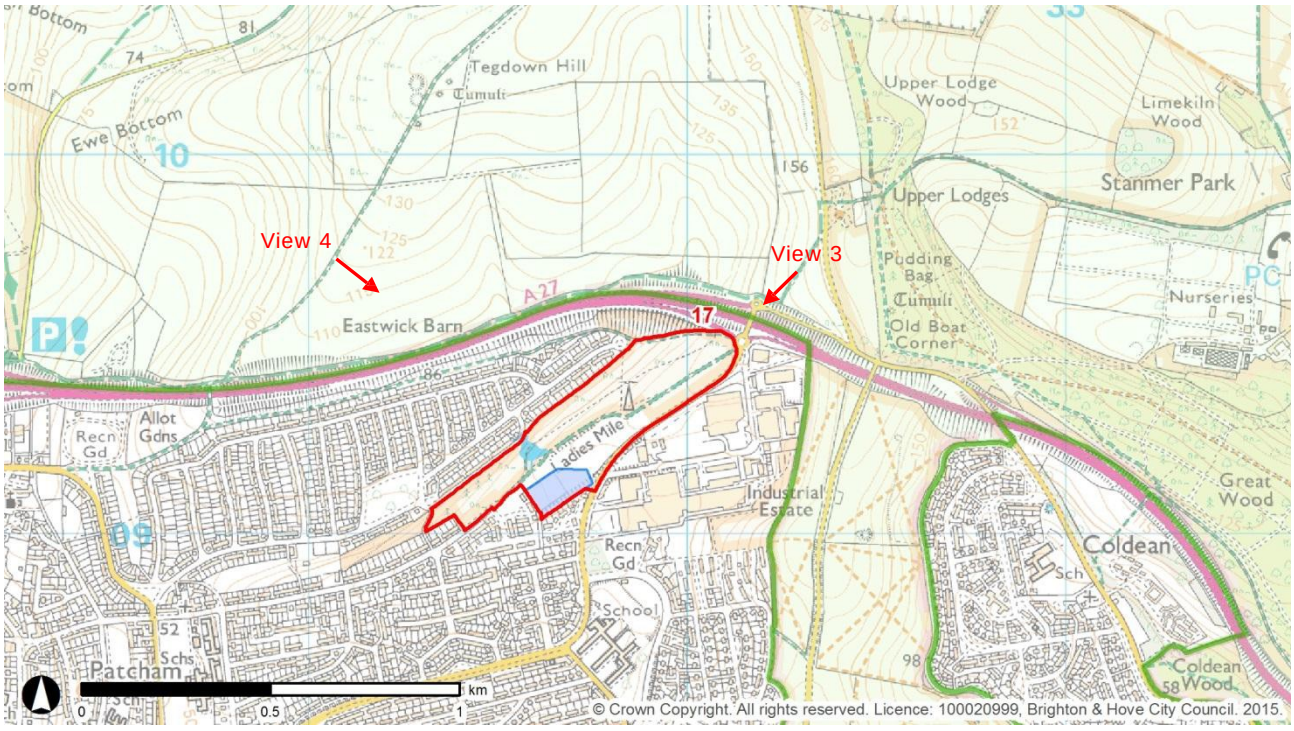
Overall Site Area	15ha	Area with development potential	1.5ha	Suitable dwelling density	Low: 25 per ha	Potential number of dwellings	35

Landscape Assessment

Landscape Sensitivity Assessment	
Physical character	The ridge along which Ladies Mile runs is an evident topographical feature, but one which is already much affected by development in the western half, along the southern slopes, and by the creation of the A27 which introduced a degree of physical separation from the downland to the north. The open grassland and scrub margins of the Study Area still represent a distinct undeveloped landscape, but there is some difference between the unimproved chalk grassland with scrub in the northern and western parts of the Study Area and the level, former playing fields that form much of the potential development area.
Settlement form	Development on higher ground in and around the City is typically more sensitive than housing focused on valleys/denes, but housing in the potential development area would represent an eastward continuation of housing along the southern side of Ladies Mile (Windmill View) and to the north of Carden

	Avenue (Old Boat Walk), rather than a distinct expansion into a different landscape. The industrial/commercial development along Carden Avenue already occupies the southern slopes of Ladies Mile to the east. Hedging runs along the backs of the houses, but there is no clear physical barrier to the settlement edge.
Settlement setting	The potential development area is on rising ground, but the ridge plays only a limited role as a setting for nearby residential areas given the proximity and extent of existing development, both residential and commercial in nature, and also the extent of tree cover within the wider Study Area. There is a sense of connection between the ridge and the SDNP beyond, but this is experienced principally by those walking out along the ridge (View 1 above) rather than as a setting for a large residential area.
SDNP setting	The A27 together with its associated dense scrub margins forms a clear visual separation between Ladies Mile and the SDNP to the north, which limits any sense of connection in views from high ground within the latter (see View 3 below). The scale of the industrial/commercial estate to the east affects the sense of connection between the potential development area and the SDNP in views from the east, on and near Ditchling Road.
Visual receptors	The Ladies Mile ridge is less distinctive in views from the SDNP than might be expected by its topography, being partially screened by tree cover in views from lower ground and, from more elevated viewpoints, appearing in the context of extensive surrounding development, including the houses on Windmill View (which create a developed backdrop to the open ridge when viewed from the north) and the adjacent industrial estate (see View 4 below). The principal visual receptors will be recreational users of the Ladies Mile Nature Reserve. This is a valued recreational space in which development would represent increased intrusion, but to an extent that would be limited by the proximity of existing development and by the extent of screening provided by the slope of the ridge and/or by existing vegetation (e.g. limiting visibility from the Nature Reserve to the north of the ridge crest).
Perceptual qualities	Whilst the ridge provides some sense of separation from surrounding urban areas it cannot be considered isolated, particularly on the south-eastern side, including the vicinity of the potential development area, where there is more exposure to traffic noise and proximity to development. The transmitter mast at the centre of the ridge also detracts from landscape character.
Cultural & historic value	The Ladies Mile represents a historic link between rural and urban areas, having been a drove road between Patcham and Stanmer Park, popular in Victorian times as a location for women to exercise their horses. The area of development potential, having been altered to create school playing fields and being located adjacent to existing housing and commercial development, is less important in this respect than the unimproved chalk grassland that characterises the rest of the Study Area, and in particular the open ridge crest.

Representative Views – wider area



View 3: from public right of way between A27 and Ditchling Road (in SDNP)

View 4: from public right of way on Tegdown Hill (in SDNP)

Potential Level of Landscape Effect

Development as indicated in the 2014 UFA would represent further encroachment on a landscape valued for recreation, and with historic associations as a route out to the Downs, but it would not represent a step change in effects on landscape above that which has already occurred as a result of past development along the ridge. So whilst development would be likely to give rise to some adverse landscape and/or visual effects these would potentially not be major enough to warrant rejection of proposals on landscape grounds alone.

Avoidance, Mitigation and Enhancement Options

Landscape and visual effects will reduce the more development is contained close to the southern edge of the Study Area, adjacent to Windmill View and Carden Avenue and away from the central ridge-top track.

Allowing a transitional belt of open scrub vegetation to develop between the chalk grassland of the Nature Reserve and a denser hedgerow planted around the housing perimeter would help to soften views of the built edge.

There is scope to increase the area for potential development further to the north-east (see figure under **Conclusion**), potentially to link up with Carden Avenue in the vicinity of the Crowhurst Road junction if this were to be acceptable in terms of traffic impact, but it would be important to stay close to the southern edge of the Site and not encroach further north towards the main ridge-crest track. Any sense of development creating a barrier or obstruction to movement along the open ridge, and any development too far east, where there is an increased sense of connection to the SDNP, or on the steeper, more vegetated northern slope, would be likely to have significant adverse landscape effects.

Ecology Assessment

Ecological Baseline

Biological Records

There are no internationally designated sites within or adjacent to the Study Area.

A large portion of the Study Area sits within the **Ladies Mile Local Nature Reserve**. The LNR is designated in part given calcareous grassland habitat (with large areas of horseshoe and kidney vetch specifically cited). Large areas of calcareous grassland were identified within biological records in the Study Area, with small areas within the south of the potential development area.

The following records of protected and/or notable species have been identified within the Study Area:

- Small heath;
- Small blue*;*
- Dingy skipper*;*
- Small cudweed*;*
- Adonis blue*;*
- Grizzled skipper*;*
- Cinnabar moth *Tyria jacobaeae.*

Habitat Description (see Figure 8.1)

Semi-improved Calcareous Grassland

Semi-improved calcareous grassland was noted to the east of the Study Area. Species present included abundant meadow oat-grass and red fescue, frequent eyebright, occasional field, common knapweed, red clover and common toadflax. Ladies bedstraw and yellow rattle were locally frequent and rough hawkbit and mint *Mentha* sp. were locally abundant. Bird's-foot trefoil and round-headed rampion were present but rare. A small area of ornamental species which included Canadian goldenrod was noted near the eastern boundary of the Study Area.

Semi-improved Neutral Grassland

Semi-improved neutral grassland was noted in a band running north-east to south-west in the west of the Study Area. Here the grassland was dominated by creeping bent-grass, cock's-foot and Timothy. Red fescue was abundant and ribwort plantain was frequent in the sward, with brome *Bromus* sp., common knapweed and eyebright occasional.

Semi-improved neutral grassland was also noted adjacent to the housing estate in the south of the Study Area. The grassland was not directly accessed, however it was viewed through the adjoining fence and was noted to have a rough sward structure dominated by false oat-grass and cock's-foot. This area had been identified as calcareous grassland within biological records, although no indicator species were recorded and scrub was colonising the area at the time of the survey.

Poor Semi-improved Grassland

Towards the south of the Study Area an area of slightly rank poor semi-improved grassland was dominated by creeping bent-grass, cock's-foot and Timothy. Red fescue was abundant and ribwort plantain was frequent in the sward, with brome *Bromus* sp. occasional.

Semi-natural Broadleaved Woodland

Semi-natural broadleaved woodland was noted along the northern boundary of the Study Area. Several mown paths were noted throughout the woodland. Access away from the paths was hindered due to an extremely dense shrub layer, however species included sycamore, which was dominant in the canopy; frequent ash and occasional horse chestnut, oak and yew. The shrub layer was dominated by hawthorn with frequent traveller's joy, elder, and dog rose. The ground flora along the paths was similar to the poor semi-improved grassland habitats elsewhere within the Study Area.

Scrub

Scattered scrub was noted within the semi-improved calcareous grassland and was dominated by hawthorn.

Dense scrub was noted along part of the eastern boundary of the Study Area and was dominated by hawthorn and hazel with frequent dogwood.

Tall Ruderal

Tall ruderal vegetation was noted along the access footpath in the south-west of the Study Area. This was dominated by common nettle, with couch-grass *Elytrigia repens* locally dominant. Perennial rye-grass, mugwort *Artemisia vulgaris* and red deadnettle *Lamium purpureum* were all abundant. Cock's foot, white deadnettle *Lamium album* and dock *Rumex sp.* were frequent, and bristly ox-tongue was locally frequent.

Hedges and Treelines

A species poor hedge with trees was noted along part of the southern Study Area boundary, and was dominated by elder with frequent ash and occasional beech trees.

A treeline was noted in the south of the Study Area, dominated by beech with occasional sycamore and apple trees rarely recorded; and a further treeline dominated by cherry *Prunus* sp. and occasional horse chestnut was noted in the central part of the Study Area.

Bare Ground

An old sports/games pitch dominated by bare ground was noted in the south of the Study Area. A few patches of vegetation were present, particularly to the south and these were dominated by stonecrop *Sedum* sp., with abundant yarrow, occasional smooth hawksbeard and common toadflax. Perforate St. John's wort was present but rare.

Buildings

Buildings within the Study Area included a radio mast and ancillary buildings, located in the centre of the Study Area.

Fauna

Potential was noted for the following protected or notable species to be present within the Study Area:

- Nesting birds – associated with trees, hedgerows and scrub vegetation throughout the Study Area. Ground nesting is considered relatively unlikely given disturbance from recreational use of the Study Area.
- Reptiles – associated with grassland habitats, including areas with scattered scrub and edge habitats.
- Badgers – potential foraging habitat provided throughout the Study Area, with woodland and dense scrub providing optimal opportunities for sett building.
- Invertebrates – given their high floristic diversity, the chalk grassland habitats in particular are likely to be of value for invertebrates. Any development proposals should specifically consider impacts on those species discussed above in biological records.
- Bats – the habitat mosaic may provide a valuable foraging resource for bats, whilst mature trees within the woodland may provide opportunities for bats to roost.

Great crested newts are unlikely to be present within the Study Area due to the lack of waterbodies within 500m of the Study Area (further investigation would be required). Dormice are also unlikely to be present within the Study Area given the isolation of the woodland and hedgerows from larger areas of suitable habitat.

Ecological Appraisal	
Designated Sites	No internationally designated sites are present within or adjacent to the Study Area. The majority of the Study Area is designated as the Ladies Mile Local Nature Reserve, largely given the presence of calcaerous grassland habitat, as described above. The potential development area is located outside of this designation and will not result in any loss of the LNR. There is however, the potential for development to impact the LNR, for example as a result as a result of contamination during construction or due to increased recreational pressure as a result of an increase in the local population.
Habitats	As recognised within the designation, the Study Area supports calcareous grassland which is recognised as a priority habitat in the The Brighton & Hove Local Biodiversity Action Plan (including chalk scrub), and as a 'habitat of principal importance for the purpose of conserving biodiversity' under the NERC Act (2006). Other habitats present within the Study Area are generally common and widespread in the urban fringe and adjacent countryside, although the habitat mosaic across the Study Area is likely to be of value to a range of species. The habitats within the potential development area itself largely comprised bare ground and species-poor grassland habitats of low ecological value, with semi-improved grassland also extending further to the north east along Carden Avenue (identified as calcareous grassland within biological records). As above, these are common and widespread habitats and their value lies in the protected species they may support.
Species	Without detailed ecologial surveys, it is not possible to confirm the value of the Study Area for notable and protected species, although there is potential for such species to be present throughout the majority of the Study Area with chalk grassland and scrub habitats most likely to be of greatest value to a wider range of species. The potential development area itself is likely to be of relatively low value to notable and/or protected species. Key constraints may include: • Reptile populations within grassland areas; and

	• Notable invertebrate species which may use bare ground habitats. Dusty skipper, a Brighton and Hove LBAP priority species, has been recorded in the Study Area but would be unlikely to use the habitats present within the potential development area. • Nesting birds could also be affected by any removal of scrub or trees. Ground nesting is considered unlikely given relatively high levels of recreation wihtin the Study Area. Impacts on bats are considered unlikely, with the potential development area providing relatively low quality bat foraging habitat in comparison to the wider area, although any external lighting could potentially impact a wider area of foraging habitat given lighspill.

Ecological Avoidance, Mitigation and Enhancement Options

Further surveys

Detailed development proposals must be informed by an updated Extended Phase 1 Habitat Survey and species surveys to ensure that potential impacts are identified and appropriate mitigation developed. This may include the need for more detailed vegetation surveys, given identification of a small area of calcareous grassland within the potential development area, and reptile and invertebrate surveys.

Avoidance, Mitigation and Enhancement Options

Potential impacts on the LNR will require mitigation including ensuring best construction practice is employed to avoid contamination impacts (detailed in a Construction and Environmental Management Plan or similar). Any development will also result in an increase in visitor pressure. Therefore mitigation should be undertaken to guard against this including improvements to footpaths to help manage access, and provision of high quality greenspace wihthin the development as an alternative resource to sensitive habitats. Additional hedgerow or scrub planting to the north and east of the potential development area may help buffer the LNR from some disturbance (including lighting), whilst providing habitat in its own right and improving ecological connectivity through the Study Area, although any such planting must avoid areas of higher value grassland habitat.

Grassland and scrub management would also be of benefit, by enhancing the diversity of calcareous grassland within the LNR and increasing species richness in other retained areas of less diverse grassland. This would also provide appropriate mitigation should small areas of calcareous grassland be confirmed within the potential development area. Long-term management of habitats should be detailed in a Landscape and Habitat Management Plan (or similar), to include both retained habitats within the wider Study Area and newly created habitats within the potential development area. Remedial measures should also be included should monitoring record declines in habitat quality.

If notable or protected species are confirmed as present, mitigation requirements may include:

- Timing of works to avoid impacts on nesting birds;
- Measures to prevent harm to reptiles, such as translocation from the potential development area to a receptor site which has been suitably enhanced to support the translocated population (ideally within the wider Study Area);
- Enhancement of habitat outside the potential development area to provide additional opportunities for species impacted by the proposals, such as invertebrates;
- Sensitive design of any external lighting to minimise lightspill to adjacent habitats.

Other mitigation or enhancement opportunities may include:

- Incorporation of green infrastructure within the development to provide opportunities for wildlife, such as green roofs or walls, SUDS, wildlife-friendly planting (native species or those providing known benefits to widlife, such as species of benefit for pollinators), and incorporation of nesting/roosting opportunities for birds and bats. As above, any habitats should be managed in line with an LHMP.

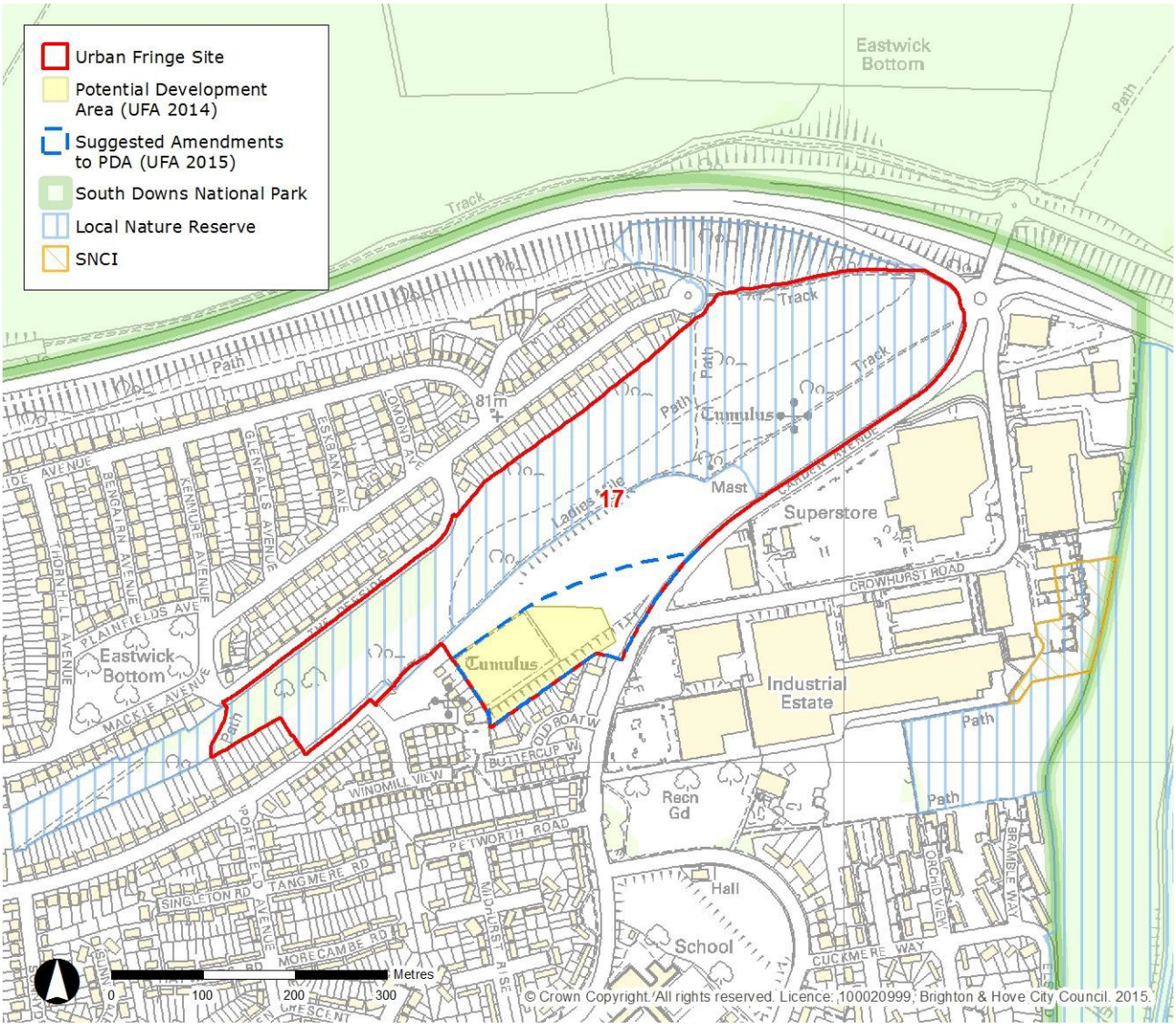
Conclusion

Overall Conclusion

In conclusion, it is considered that housing can be delivered at the potential development area within Study Area L5/E4 without significant impacts on landscape and ecology, on the assumption that:

- Scrub habitats are encouraged/planted to provide screening/habitat (assuming avoidance of higher value grassland habitat).
- Incorporation of robust mitigation measures to address any impacts on protected species.
- Provision of habitat enhancement can be assured within the remainder of the Study Area, including within the development.

There is potential to expand the potential development area to the east to allow for additional housing, as illustrated in the below figure.



Brighton & Hove Urban Fringe Assessment

Figure 8.1 Phase 1 Habitat Survey Map Study Area L5/E4

- Urban Fringe Site
- Potential Development Area
- Target note
- Mixed Parkland/scattered trees
- Broadleaved woodland - semi-natural
- Scrub - dense/continuous
- Calcareous grassland - semi-improved with scattered scrub
- Calcareous grassland - semi-improved with scattered trees
- Neutral grassland - semi-improved
- Calcareous grassland - semi-improved
- Poor semi-improved grassland
- Other tall herb and fern - ruderal
- Defunct hedge - species-poor
- Hedge with trees - species-poor
- Buildings
- Bare ground

Map Scale @ A3: 1:3,200

LUC

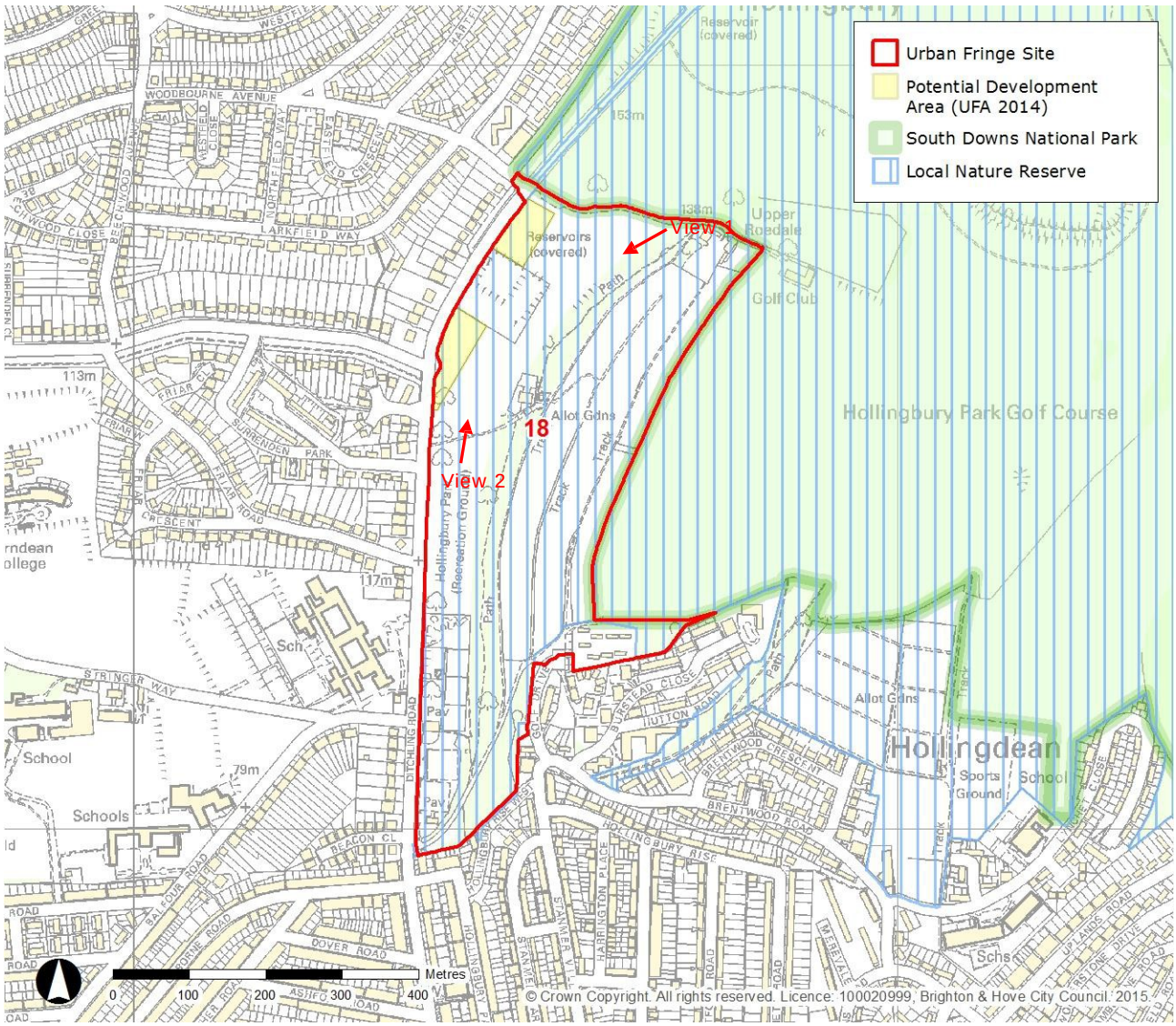
0 140 280 Metres

CB:JH EB:Johnny_H LUCLON 6555-01_007_Phase_1 12/11/2015 Source: LUC

9 L6/E5 (Site 18) – Hollingbury: Landscape and Ecology Assessment

Background

Study Area	**L6/E5**	Location	Hollingbury
Site	18 – Land south of Hollingbury Golf Course and east of Ditchling Road		
Study Area Overview			
The Study Area includes three distinct, linear areas on land forming the floor and western side of a valley running southwards down from Hollingbury Hill. To the east, bordering Hollingbury Hill Golf Course, allotments occupy the valley floor and lower slopes, in the centre the valley-side is wooded and to the west, on higher slopes, open amenity grassland adjacent to Ditchling Road gives way to formal recreational facilities at the southern end of the site (including tennis courts, a playground and a bowling green). A covered reservoir is situated towards the top end of the grassland. The areas suggested in the 2014 UFA as having potential for housing development were limited to two small areas of grassland, to the north and south of the covered reservoir.			



Representative Views - local

View 1: looking south-west across the northernmost potential development area, with the covered reservoir beyond, from the woodland edge at the northern end of the Site

View 2: looking north-east towards the southernmost development area (marked) and the covered reservoir beyond

Overall Conclusions of the 2014 Assessment

"*The site has some potential for residential development. While over 90% of the site is a proposed Local Nature Reserve and most of the site is of high landscape sensitivity, the land to the north and south of the covered reservoir in the north western corner of the site has more limited ecological value as mown amenity greenspace, for which there is an over provision in the area, and relatively low landscape sensitivity. Development here would be partially screened by the woodland belt to the east, and would not significantly stand out from existing development to the west and north in longer views. Although, development to the north and south of the covered reservoir would still have some adverse impact on views south from the golf course, these could be minimised by retaining the views to the east of the reservoir and maintaining public access alongside the woodland belt.*

There are pockets of open spaces in the south of the site that lie outside the proposed Local Nature Reserve; however, this portion of the site is in open ground sloping southwards. Mature trees at the southern end of the park screen views of much of the city centre and from the upper part of the open area the sea is visible above the tree line, adding to the sensitivity of the landscape.

The belt of woodland running north-south through the centre of the site is an important component of views across the city from Hollingbury Castle, and also contributes to the contained, tranquil character of the allotments in the Roedale coombe which forms the eastern side of the site.

There is a low risk of surface water flooding on the site that would have to be overcome, although this would not be insurmountable."

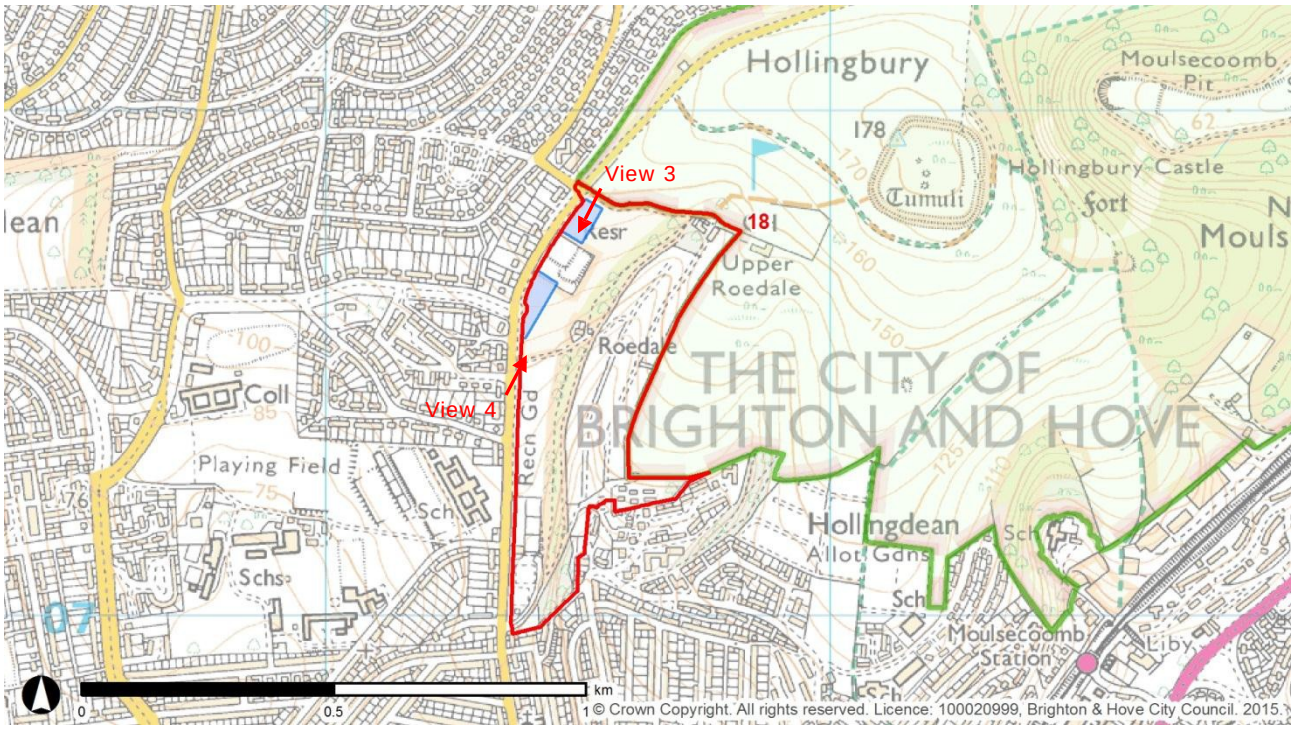
Overall Site Area	20.1ha	Area with development potential	0.75ha	Suitable dwelling density	Low: 25 per ha	Potential number of dwellings	20

Landscape Assessment

Landscape Sensitivity Assessment	
Physical character	The sloping landform on which the two potential development areas are located does not have high sensitivity in the local context, where much development has already occurred on similar terrain, and the covered reservoir is a man-made landform which can be seen to reduce the naturalness of the landscape, but the area does form part of a more extensive hillside which continues up to Hollingbury Castle. There is no particular landscape value associated with the amenity grassland.
Settlement form	The Study Area is adjacent to development along Ditchling Road, and sits well within the outer extents of the wider urban area. Wedges of green space which penetrate south into the urban area are charateristic features of the local townscape, but the Study Area accounts for only a very narrow, peripheral

	strip of the undeveloped land around Hollingbury Hill.
Settlement setting	There has been no development on the east side of the road other than to the south of the Study Area. Therefore the approach to central Brighton along Ditchling Road therefore retains a settlement edge character, with housing further east in Coldean and Moulsecoomb occupying a distinctly separate, more contained, valley floor setting, separated from this Study Area by the intervening woodland belt. The mature trees which line much of the roadside along the Study Area edge add to the sense of separation.
SDNP setting	The National Park boundary wraps around the north and east sides of this Study Area, following the edge of the golf course. There is no significant relationship between the SDNP north of the A27 and the Study Area, and only a limited relationship between the open grassland to the west, where the potential development areas are located, and the bulk of the SDNP area south of the A27.
Visual receptors	Hollingbury Castle is a key location in the SDNP, from which the urban form of Brighton and its relationship with its landscape setting can be appreciated, but the corridor of woodland through the centre of the Study Area limits visibility of the potential development areas and the existing backdrop of housing limits sensitivity to built development. There are, however, views southward from the pedestrian and cycle route alongside Ditchling Road (created in 2014 to enhance off-road access to the National Park from the City) and the small public car park nearby (on the access road to the golf course) in which the potential development areas sit at the centre of views down over the City centre to the sea (View 3). Ditchling Road is a busy route into the City from which the undeveloped character of the area to the east of the road can be appreciated, although tree cover does seasonally limit the extent of visibility.
Perceptual qualities	Traffic noise and visibility of the urban edge affect the character of this location, but the trees along the Ditchling Road boundary and woodland belt to the east frame this as an open area which is distinctly separate from existing development. The open green space and perimeter trees add to the scenic value of sea views from the northern end of the Study Area.
Cultural & historic value	There are no known historic or cultural associations that would add to the sensitivity of the landscape in this area. The tram shelter adjacent to the southern potential development area is a listed structure but the open space does not contribute significantly to its historical value.

Representative Views – wider area



View 3: looking over northernmost potential development area from car park off Ditchling Road at entrance to Hollingbury Park Golf Course (on SDNP boundary)

View 4: from Ditchling Road just to the south of Surrenden Park

Potential Level of Landscape Effect

There is a clear distinction between the tree-lined Ditchling Road and the undeveloped green corridor to the east, and sea views from the north, including from the marked public route alongside Ditchling Road, would be affected. Any development on this site would be likely to have significant adverse landscape impact in terms of settlement setting and the relationship between Brighton and the South Downs National Park.

Avoidance, Mitigation and Enhancement Options

Reducing the scale of development from the potential housing numbers identified in the 2014 UFA would not significantly reduce the intrusion represented by development in this area, and planting to screen housing would also be detrimental to views.

Ecology Assessment

Ecological Baseline

Biological Records

There are no nationally or internationally designated sites within or adjacent to the Study Area.

A large portion of the Study Area is designated as the **Wild Park proposed LNR**. The LNR is designated in part given remnant areas of species rich chalk grassland.

A small area of calcareous grassland was identified within biological records associated with a covered reservoir in the north east of the Study Area.

The following records of protected and/or notable species were identified within the Study Area:

- Slow worm;
- Common lizard;
- Pipistrelle bat;
- Serotine bat;
- European hedgehog;
- Basil-thyme;
- Early sipder orchid;
- Dense-flowered fumitory;
- Small fumitory;
- Tuberous pea;
- Cornfield knotgrass;
- Freckled dapperling;
- White-letter hairstreak;
- Scarlet tiger moth;
- Small heath butterfly;
- Small blue butterfly;
- Dusky thorn moth;
- Dingy skipper;
- Wall butterfly;
- Adonis blue;
- Buff ermine moth;
- Grizzled skipper.

Habitat Description (see Figure 9.1)

Semi-natural Broadleaved Woodland

Hollingbury Wood comprised semi-natural broadleaved woodland in a band running north-south through the centre of the Study Area. The canopy was dominated by sycamore with abundant ash, and beech locally frequent. Wych elm was locally frequent to locally dominant. Yew and English Elm were present but rare. The shrub layer was dominated by sycamore and elm regeneration. Ground flora was generally sparse, however glades were noted supporting species such as cock's-foot, wood false-brome, common nettle, and dock *Rumex* sp..

Semi-natural broadleaved woodland was also noted in the south east of the Study Area where the canopy

was dominated by ash with frequent sycamore in the north, and dominated by sycamore in the south. The shrub layer was dominated by hawthorn and sycamore regeneration with abundant bramble, locally frequent traveller's joy and occasional butterfly bush. The ground flora was mostly sparse, comprising of abundant cow parsley and frequent wood avens. However along the edges of a footpath where the woodland became more open cock's-foot and hemp agrimony were abundant and Ploughman's spikenard was occasional to locally frequent. Nettles and bramble were also frequent throughout.

Semi-improved Calcareous Grassland

Semi-improved calcareous grassland was noted in the north-west of the Study Area. The grassland had been recently mown and therefore some species were not readily identifiable. However the grassland was dominated by perennial rye-grass with abundant white clover and yarrow, and frequent greater plantain, smooth hawk's-beard and dandelion. To the north of this area, mown paths were present within a slightly longer sward length and here wild carrot was abundant, smooth hawk's-beard frequent and wild marjoram occasional. A covered reservoir was noted to the west of this part of the Study Area and this supported similar habitat. To the west, along the boundary with Ditchling road, an un-mown strip of vegetation included species such as fleabane, white deadnettle, red clover, common mallow, bristly ox-tongue and wild mignonette which were all occasional to abundant.

Amenity Grassland

Amenity grassland was noted in the west of the Study Area and comprised Hollingbury park and recreation ground. A bowling green also comprising amenity grassland was noted in the south-west of the Study Area. The recreation ground grassland was dominated by perennial rye-grass with abundant white clover and frequent greater plantain. Access to the bowling green was not available at the time of survey.

Allotments

The Roedale Valley Allotments formed a band along the east of the Study Area. Access was not available at the time of survey, however the area supported a mosaic of habitats characteristic of allotments including cultivated plots, tall ruderal/ephemeral communities, scrub and numerous mature trees also noted.

Tall Ruderal

A small area of tall ruderal was noted in the north-west corner of the Study Area, associated with an artificial chalky bank. Here the vegetation was dominated by common nettle and mugwort. It also supported occasional knapweed, pineapple weed, wall barley, hedge mustard and ox-eye daisy. Common orache, groundsel, cornflower, bladder campion, purple toadflax, mullein and viper's bugloss were all present but rare. It is presumed that some of these species may have been a result of possible wildflower sowing.

Hedges and Tree Lines

Several tree lines were present on the western boundary of the Study Area. These were dominated by hornbeam *Carpinus betulus* and English elm in the south, and Wheatley elm further north along the boundary, where the trees formed an elm hedge.

Buildings

Buildings within the Study Area included a nursery and pre-fab buildings associated with the bowling green and tennis courts (in the south-west of the Study Area), and several houses in the east of the Site, south of Hollingbury Golf Course. A derelict building was also noted within the southern part of Hollingbury Wood, whilst another private residence was noted in the centre of the Study Area, at the western edge of Hollingbury Wood. In the north of the Study Area, several grounds maintenance buildings were noted to the north-west of the golf course car park.

Fauna

Potential was noted for the following protected or notable species to be present within the Study Area:

- Nesting birds – associated with trees, hedgerows and scrub vegetation throughout the Study Area. Ground nesting is considered unlikely given the managed nature of the grassland and disturbance from recreational use of the Study Area.
- Reptiles – associated with grassland habitats, particularly any areas of longer, rough grassland adjacent to woodland/scrub, and to a lesser extent woodland glades. The habitat mosaic provided by the allotments would also be suitable to support reptiles, particularly slow worm.
- Badgers – potential foraging habitat provided throughout the Study Area, with woodland and dense scrub providing optimal opportunities for sett building.
- Great Crested Newts – Potential terrestrial habitat provided throughout the Study Area, with woodland and grassland providing foraging opportunities. If ponds are present within the allotments this may provide suitable aquatic habitat (further investigation would be required).
- Invertebrates – the calcareous grassland habitats may be of value for invertebrates (such as those listed in biological records above), although other edge habitats may also provide valuable habitat. The bund at the north of the site may provide opportunities for notable invertebrates, including those requiring bare ground for burrowing and flower-rich habitats.
- Bats – the habitat mosaic may provide a valuable foraging resource for bats, whilst mature trees and buildings within the Study Area may provide opportunities for bats to roost.

Dormice are unlikely to be present within the Study Area given the isolation of the woodland and hedgerows from larger areas of suitable habitat.

Ecological Appraisal	
Designated Sites	The majority of the Study Area is designated at the Local Level as the Wild Park proposed Local Nature Reserve, largely given the presence of calcaerous grassland habitat. The identified potential development area is located within this designation and will result in the loss of small areas of the LNR, including small areas of calcareous grassland. There is also the potential for development to result in other impacts on the LNR, for example as a result of contamination during construction or due to increased recreational pressure as a result of an increase in the local population. However, the potential development area is a relatively small proportion of the LNR which is already subject to recreational access.
Habitats	As recognised within the designation, the Study Area supports woodland, parks and gardens, and calcaerous grassland, all recognised as priority habitats in the The Brighton & Hove LBAP (including chalk scrub). Furthermore woodland and calcareous grassland are listed as Habitats of Prinicipal Importance under the NERC Act. The habitats within the potential development area itself largely comprised semi-improved calcareous grassland habitats as discussed above.
Species	Without detailed ecologial surveys, it is not possible to confirm the value of the Study Area for notable and protected species, although there is potential for such species to be present throughout the majority of the Study Area, with the mosaic of calcareous grassland and scrub habitats most likely to be of greatest value to a wider range of species. The potential development area itself is likely to be of relatively low value to notable and/or protected species. Key constraints may include the presence of reptile populations within the grassland areas (if allowed to develop a longer sward structure than was present at the time of survey) and the potential for notable invertebrate species to use bare ground habitats, particularly along the northern boundary, as well as calcareous grassland habitats (with notable species recorded in the Study Area including the Dingy skipper, a Brighton and Hove LBAP priority species.

	Nesting birds could also be affected by any removal of scrub or trees. However, the area of habitats located within the potential development area is relatively small compared to the wider Study Area. Impacts on bats are considered unlikely, with the potential development area providing relatively low quality bat foraging habitat in comparison to the wider area, although any external lighting could impact wider commuting habitat.

Ecological Avoidance, Mitigation and Enhancement Options

Further surveys

Detailed development proposals must be informed by an updated Extended Phase 1 Habitat Survey and species surveys to ensure that potential impacts are identified and appropriate mitigation developed. In particular, given the location of the potential development area, this may require more detailed National Vegetation Classification surv eys to confirm the value of the calcareous grassland habitats, as well as surveys for reptiles, great crested newt and notable invertebrate species.

Avoidance, Mitigation and Enhancement Options

Mitigation would be required to address the loss of habitat within the LNR designation, including calcareous grassland, although the extent of mitigation should recognise that the area of LNR/calcareous grassland within the potential development area is relatively small.

Mitigation should include grassland and scrub management within retained habitats, with the aim of enhancing the diversity of calcareous and other grassland habitats within the LNR. Long-term management of habitats should be detailed in an Landscape and Habitat Management Plan, to include both retained habitats within the wider Study Area and newly created habitats within the potential development area.

Mitigation should also be undertaken to address any increase in recreational pressure including improvements to footpaths to help manage access, and provision of high quality greenspace wihthin the development (or wider area) as an alternative resource to sensitive habitats. The above habitat enhancments would also increase habitat robustness to any increase in recreational pressure. Additional hedgerow or scrub planting to the periphery of the potential development area may help buffer the LNR from some disturbance (including lighting), whilst providing habitat in its own right, although this must avoid areas of higher quality grassland habitat.

Best construction practice would also need to be ensured to avoid indirect impacts, such as contamination, as detailed in a Construction and Enviornment Management Plan.

If notable or protected species are confirmed as present, mitigation requirements may include:

- Timing of works to avoid impacts on nesting birds
- Measures to prevent harm to reptiles, such as translocation from the potential development area to a receptor Study Area which has been suitably enhanced to support the translocated population (ideally within the wider Study Area). Similar measures may be required for GCN, implemented under a Natural England European Protected Species licence, should waterbodies suitable for GCN be present and GCN be recorded
- Enhancement of habitat outside the potential development area to provide additional opportunities for species impacted by the proposals, such as invertebrates
- Sensitive design of any external lighting to minimise lightspill to adjacent habitats

Other mitigation or enhancement opportunities may include:

- Other enhancement opportunities could include management to increase habitat diversity within the recreation ground, and improved woodland management, for example the introduction of a coppicing regime to enhance diversity of the ground flora and increase structural diversity.
- Incorporation of green infrastructure within the development to provide opportunities for wildlife, such as green roofs or walls, wildlife-friendly planting (native species or those providing known benefits to widlife, such as species of benefit for pollinators), and incorporation of nesting/roosting opportunities for birds and bats. This could specifically include the incorporation of calcareous grassland “meadow” within the development.

Conclusion

Overall Conclusions
In conclusion it is considered that it would not be possible to avoid or mitigate significant landscape impacts if housing were delivered at study Area L6/E5 (although ecological impacts could be mitigated given the relatively small areas of habitat within the wider Study Area affected). It is therefore recommended that this Study Area is removed as an urban fringe site with potential for housing.

Brighton & Hove Urban Fringe Assessment

Figure 9.1 Phase 1 Habitat Survey Map Stufy Area L6/E5

- Urban Fringe Site
- Potential Development Area
- Target note
- Intact hedge - species-poor
- Defunct hedge - species-poor
- Hedge with trees - species-poor
- Broadleaved woodland - semi-natural
- Calcareous grassland - semi-improved
- Other tall herb and fern - ruderal
- Cultivated/disturbed land - amenity grassland
- Allotments
- Buildings
- Hard standing

Map Scale @ A3: 1:4,100

LUC

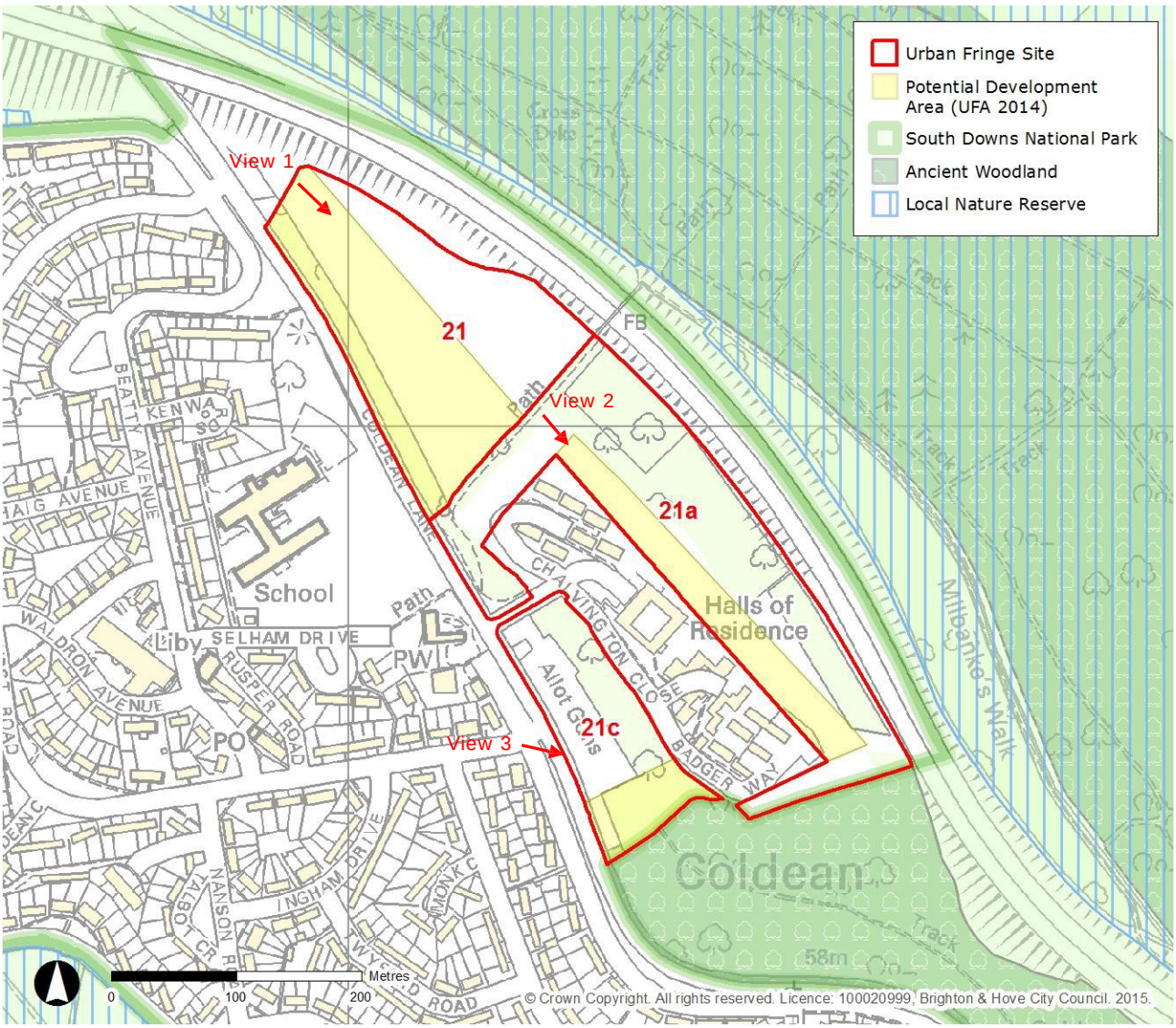
0 180 360 Metres

CB:JH EB:Johnny_H LUCLON 6555-01_007_Phase_1 12/11/2015 Source: LUC

10 L7/E6 (Site 21, 21a and 21c) – Coldean: Landscape and Ecology Assessment

Background

Study Area	**L7/E6**	Location	Coldean
Sites	21 – Land to north east of Coldean Lane		
	21a – Land north of Varley Halls		
	21c – Land south of Varley Halls		
Study Area Overview			
This Study Area occupies the steep northern slopes of the coombe in which Coldean is located, and is set in well treed surrounds around the existing Varley Park university halls of residence. Site 21, which constitutes the majority of the Study Area, is managed grassland with mature trees along its boundary with Coldean Lane and younger, dense scrub along its boundary with the A27 to the north. Site 21a, separated from Site 21 by a tree-lined public footpath, includes undeveloped areas around the existing halls of residence, which are partly wooded and partly open grassland. Site 21c is a block of allotments and a belt of trees between the halls of residence and Coldean Road. The areas suggested in the 2014 UFA as having potential for housing development were the lower half of Site 21, a grassland strip in Site 21a located between the existing development and a woodland block, and a small area of allotments and woodland at the eastern end of Site 21c.			



Representative Views - local

View 1: looking south-east across Site 21 – the potential development area is the lower half of the field

View 2: looking south-east along the open grassland strip that is identified as a potential development area in Site 21a

View 3: looking north-east at the potential development area in Site 21c (Varley Halls are visible in the background)

Overall Conclusions of the 2014 Assessment

Site 21: "*Despite being a proposed Local Nature Reserve and sitting within the Grade II listed Stanmer Park Historic Park and Garden and Archaeological Notification Area, the site has some potential for high density residential development in the south western half of the site. Any development would require significant mitigation measures to improve the remaining parts of the proposed Local Nature Reserve, which may help to create new habitats and contribute to habitat connectivity, helping to mitigate significant negative effects and enhance parts of the existing habitats.*

In addition, residential development in the site could enable investment in interpretation boards and monitoring to facilitate peoples' enjoyment of the reserve, improve its role as an educational resource, and provide for long term management.

The steep slope and busy road to the north of the site sever the site's connection with the remainder of the Historic Registered Park and Garden. The majority of the site is recognised as countryside, which is not recognised as an open space. The remaining 20% of the site is natural/semi/natural greenspace, of which there is current over provision in the area.

Development on the lower half of the site would have little impact on the character of the wider landscape and would maintain the band of woodland and scrub to north. The upper slopes would benefit from planting of characteristic chalk scrub species, with a mixture of dense scrub and open grassland which could enhance the proposed Local nature Reserve and merge visually with Great Wood in views from Ditchling Road and Hollingbury Castle. Mitigation could also incorporate the adjacent band of woodland and scrub in site 21a to the east. It would be important to retain the avenue of trees along which the public footpath connecting Great Wood to Coldean runs."

Site 21a: "The open strip adjacent to the university buildings could be developed without significant impact on wider landscape character, but tree belts and the larger block of woodland in the centre of the site should be preserved as buffers. The upper slopes would benefit from planting of characteristic chalk scrub species, with a mixture of dense scrub and open grassland which could enhance the proposed Local nature Reserve and merge visually with Great Wood in views from Ditchling Road and Hollingbury Castle. Mitigation could also incorporate the adjacent band of woodland and scrub in site 21 to the west. It would be important to retain the avenue of trees along which the public footpath connecting Great Wood to Coldean runs."

Site 21c: "The site is suitable for a small portion of development at the south eastern end of the site.

Development would be more appropriate in landscape terms in the south western half of the site containing allotments; however this would result in a net loss of open space that would be difficult to replace within the remaining areas of the site, i.e. the steep topography of the north eastern half of the site.

As there is currently an overprovision of allotment open spaces within the ward, the loss of the small band of allotment in the south eastern corner would have a limited negative impact on overall open space provision in the area."

All Sites: "Taken as a whole, sites 21, 21a, 21b and 21c represent a cluster of sites all of which either include some development or have potential for development. However, in order to develop dwellings in some sites, mitigation and enhancement measures are required in others. If all of them were developed there would be a significant impact on the proposed Local Nature Reserve that covers sites 21, 21a and 21c.

Therefore, the number of dwellings that could be developed across the cluster has been limited to 75% of the sum total of all the developable sites so that the necessary mitigation and enhancement measures required to develop dwellings within this area of the urban fringe can be accommodated. This limited total provides a more accurate estimate of the total capacity of this area of the urban fringe."

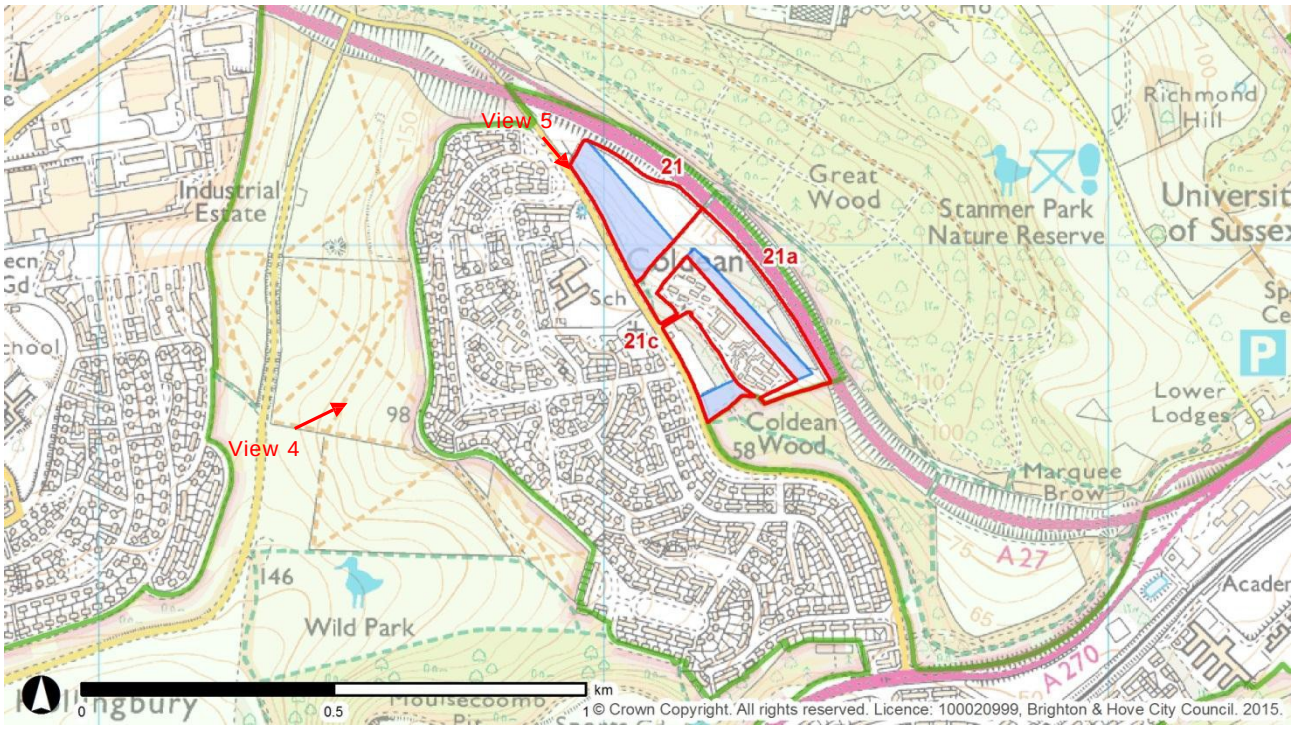
Overall Site Area	9ha	Area with development potential	*2.8ha*	Suitable dwelling density	High: 75 per ha	Potential number of dwellings	130

Landscape Assessment

Landscape Sensitivity Assessment	
Physical character	A fairly steep coombe-side managed grassland slope (other than Site 21c, which is more level), but not unusually so in the Brighton context. The proximity of mature tree cover does add a degree of sensitivity, with belts of trees alongside Coldean Lane and between Sites 21 and 21a, and a larger block of ancient woodland (Coldean Wood) adjoining Site 21c. Breaking the tree-line along Coldean Lane to provide access to Site 21 would have some adverse landscape impact, but the fact that the tree line is already broken to provide access to Varley Park limits the extent of this. Potentially more of an issue in terms of access, although not specifically a landscape impact, is the presence of a steep bank beneath the trees on Coldean Lane adjacent to Site 21.
Settlement form	Housing in this location would be at a high elevation in comparison to most of the City, extending some distance up the slope of the coombe, but sensitivity is much reduced by the presence of housing at a similar height just to the west, across Coldean Lane (see View 4). The trees along Coldean Lane create a degree of separation between Site 21 and the rest of Coldean, but this is diminished by the halls of residence just to the east. Development in Site 21 would therefore fill a gap in the developed form, rather than extend it into new territory. Also significant is the position of the sites to the south of the A27 and beneath the extensive Great Wood, which forms a strong edge to the developed area.
Settlement setting	Great Wood in Stanmer Park forms a distinctive backdrop to views out from Coldean and other nearby suburbs and from open, recreational space and rights of way. The impact of development within Sites 21 and 21a would have little impact on this. Site 21c forms part of the undeveloped space between the tall Varley Halls and the housing estate to the south of Coldean Lane which helps to accommodate the former within the local setting.
SDNP setting	Great Wood screens this Study Area from view from the main SDNP area to the north of the A27. The trees that form the northern edge of the Study Area, blocking ground level views, are only visible from the immediate edge of Great Wood, where a footpath descends to cross the A27 via a bridge. There are clear views from the SDNP to the south of the A27 in the Wild Park Local Nature Reserve to the north of Hollingbury Hill (View 4), and also views from the western end of Falmer Hill, but Great Wood is the dominant landscape feature, visually containing the urban area.
Visual receptors	The SDNP locations noted above provide the principal views, but in views from the south any development would be contained by its wooded backdrop and seen in the context of adjacent development. Local residential and road views from Coldean would be unlikely to be greatly affected by development which presevered roadside trees and was not so high as to form a skyline feature above the woodland backdrop. The appearance of buildings above the perimeter trees in views from the edge of Stanmer Park would be more intrusive, but the area in which this impact would be experienced is very small, and would be seen in the context of the dominant presence of the A27.
Perceptual qualities	Surrounding tree cover makes Site 21 very separate from its immediate surroundings, although there are glimpsed views of both open and developed higher ground in the distance. There is no sense, however, of being in a rural landscape: the adjacent A27 although not visible is clearly audible, and there is an absence of any visual connectvity between the Study Area and a wider rural landscape. Sites 21a and 21c are more exposed to the existing development.
Cultural & historic value	The Study Area forms part of the historic Stanmer Park estate, and lies within the area designated as Grade II on English Heritage's Register of Historic Parks and Gardens. The focus of the estate – the house, associated buildings, gardens and pleasure grounds – is to the north of Great Wood, and the

	character of the Study Area is much altered as a result of its truncation from the main estate area by the A27 and by the development of Varley Halls, so in terms of historic landscape character the impact of development would be very limited. It is noted, however, that the trees along Coldean Lane form the estate boundary, and whilst the flint wall which marks the estate edge in some places is not present adjacent to the site there is a section of it just to the west (visible in View 5 below). Development which resulted in significant change to this boundary would therefore have a greater impact in terms of historic character.

Representative Views – wider area



View 4: from Wild Park Local Nature Reserve, to the north of Hollingbury Hill (approximate extents of potential development areas in each Site are indicated)

View 5: from Coldean Road looking south-east from just north of Hawkhurst Road

Potential Level of Landscape Effect

Development as indicated in the 2014 UFA on Sites 21 and 21a would be unlikely to have a significant adverse impact on landscape if new buildings were not of a height that would result in loss of the wooded skyline that frames Coldean, and if access could be achieved without a strong visual impact on the tree belt along Coldean Lane. Development on Site 21c could potentially have a greater impact due to its juxtaposition between Varley Halls and housing on Coldean Lane, but if the scale of any such development were limited the effects might not amount to a significant level of adverse landscape impact.

Avoidance, Mitigation and Enhancement Options

No avoidance measures are identified for this Study Area.

If it can be established that the Stanmer Park boundary wall formerly ran along Coldean Lane adjacent to Site 21 there may be some potential to mitigate adverse impact of access works by recreating this feature.

Ecology Assessment

Ecological Baseline

Biological Records

There are no nationally or internationally designated sites within or adjacent to the Study Area.

A large portion of the Study Area comprises part of the Stanmer Park **proposed Local Nature Reserve** (pLNR) on account of the presence of calcareous grassland with several rare species identified, such as early spider orchid. Records do not identify calcareous grassland within the Study Area.

Coldean wood, which abuts the Study Area in the south-east is also listed on the Ancient Woodland Inventory.

The following records of protected and/or notable species were identified within the Study Area:

- Pipistrelle bat; and
- Hobby

Habitat Description (see Figure 10.1)

Semi-natural Broadleaved Woodland

Semi-natural broadleaved woodland formed a band running along Coldean Lane forming the western boundary, through the centre of the Study Area, along the north-eastern boundary, with a small area in the south of the Study Area. The woodland in the south of the Study Area was dominated by sycamore

with occasional ash in the canopy. The shrub layer was sparse but holly was present rarely. The ground flora was dominated by dog's mercury and ivy. The woodland elsewhere also comprised sycamore and ash in the canopy, however the shrub and ground layers were more diverse. Wild privet was occasionally recorded in the understory, and hawthorn, beech, English elm and elder were all present but rare. The ground flora was dominated by dog's mercury and ivy, with locally frequent common figwort and frequent common nettle. Lords-and Ladies were present but rare.

Semi-Improved Neutral Grassland

Semi-improved neutral grassland was noted in the northern part of the Study Area (Site 21). The grassland has been recently mown and supported abundant perennial rye-grass, creeping bent-grass and Yorkshire fog; abundant to locally dominant ribwort plantain; locally abundant wood false brome, frequent creeping buttercup, locally frequent eyebright and common daisy; occasional to frequent ground ivy; and occasional creeping thistle, bramble and greater plantain. Imperforate St. John's wort and common knapweed were present but rare.

Tall Ruderal with Scattered Scrub

Tall ruderal with scattered scrub was noted in a band within the southern to central area of the Study Area (Site 21a). The scrub was dominated by sycamore regeneration with traveller's joy locally dominant in the centre of this area. Bramble and dogwood were both locally frequent, and greater willowherb occasional. Other species included abundant strawberry *Fragaria* sp., and species suggesting a calcareous nature such as locally abundant thyme *Thymus* sp., locally frequent Devil's bit scabious and occasional blue fleabane. Violet *Viola* sp, and *Cotoneaster* sp. were present but rare.

Within this area were small areas of a grassland character. In addition to the species above these included wood false brome, cock's-foot, false oat-grass and brome *Bromus* sp.

Allotments

A small area of allotments was noted in the south-east of the Study Area. The allotments included a mosaic of habitats including regularly cultivated areas, bare ground, some tall ruderal vegetation and species poor hedgerows around the periphery.

Fauna

Potential was noted for the following protected or notable species to be present within the Study Area:

- Nesting birds – associated with woodland and scrub vegetation throughout the Study Area.
- Reptiles – associated with grassland and tall ruderal habitats, including areas with scattered scrub and edge habitats.
- Badgers – potential foraging habitat provided throughout the Study Area, with woodland and dense scrub providing optimal opportunities for sett building. A seven-entrance sett was noted within woodland in the east of the Study Area.
- Invertebrates – the grassland habitats and those non-grassland habitats of a higher floristic diversity may be of value for invertebrates, with areas of bare ground and other edge habitats also providing potentially valuable habitat.
- Bats – the habitat mosaic is likely to provide a valuable foraging resource for bats, whilst mature trees within the woodlands may provide opportunities for bats to roost.
- GCN – there is the potential for GCN to be present within the Study Area if suitable waterbodies are present within the allotments

Dormice are unlikely to be present within the Study Area given the isolation of the woodland and hedgerows from larger areas of suitable habitat.

Ecological Appraisal	
Designated Sites	The majority of the Study Area forms part of a potential LNR. The potential development area is located within this proposed designation and will result in the loss of areas of the pLNR and associated habitats, including grassland. There is also the potential for development to result in other

	impacts on the pLNR, for example as a result of contamination during construction or due to increased recreational pressure as a result of an increase in the local population. The eastern boundary of potential development site 21c abuts an area listed as ancient woodland on the Ancient Woodland Inventory (Coldean Wood) and therefore potential impacts resulting from development in this location would include habitat loss, root compaction, distubance of the soil profile and those resulting from recreation pressure could occur.
Habitats	The Study Area supports woodland which is recognised as a priority habitat in the The Brighton & Hove Local Biodiversity Action Plan and as a 'habitats of principal importance for the purpose of conserving biodiversity' under the NERC Act (2006). Potential impacts on these habitats are discussed above in relation to the pLNR designation. Habitats which may be lost given the location of the potential development area include semi-improved neutral grassland, semi-natural broadleaved woodland, scrub and tall ruderal vegetation. Woodland habitats in particular are of a high ecological value and have the potential to support a range of protected species. In addition, areas of the tall ruderal habitats within the Study Area supported vegetation of a calcareous nature and included notable species such as wild thyme which could be lost as a result of any development.
Species	Without detailed ecologial surveys, it is not possible to confirm the value of the Study Area for notable and protected species, although there is potential for such species to be present throughout the majority of the Study Area, with the mosaic of grassland, woodland and scrub habitats likely to be of value to a wide range of species. The potential development areas themselves have the potential to support notable and/or protected species. Key constraints may include: • reptile populations within the grassland/tall ruderal areas if allowed to develop a longer sward structure than was present at the time of survey(Sites 21 and 21a • badger populations within the Study Area, in particular the presence of setts within woodland and/or scrub (Sites 21, 21a and 21c). Badgers may also use grassland habitats throughout the potential development areas for foraging. • bats which may be roosting within the woodland using tall riuderal, scrub and grassland vegtation within the potential development areas for foraging and commuting, • notable invertebrate species may be present within species rich and bare ground habitats (in particular Sites 21 and 21C). • GCN may be present within open terrestrial habitats, or sheltering within scrub/tall ruderal and woodland within the potential development areas should suitable waterbodies be present within the allotments. • Nesting birds could also be affected by any removal of scrub or trees. In addition, although not recorded at the time of the survey, there is potential for impacts on notable plant species, such as early spider orchid, should they remain as present.
Ecological Avoidance, Mitigation and Enhancement Options	
Further surveys Detailed development proposals must be informed by an updated Extended Phase 1 Habitat Survey and species surveys to ensure that potential impacts are identified and appropriate mitigation developed. In	

particular, further survey requirements would include detailed vegetation surveys (to confirm whether notable plant species are present), and reptile, badger, bat and invertebrate surveys. Surveys should also seek to identify any waterbodies within the allotments, with GCN surveys required if suitable waterbodies are identified.

Avoidance, Mitigation and Enhancement Options

Any development proposals should seek to retain woodland and mature trees where possible, maintaining habitat connectivty and screening, as well as habitat for protected species including bats and badger. This will in particular affect the amount of development which can be accomodated in the potential development area within Site 21 which includes the woodland band along Coldean Lane, with a suggested reduction in the potential development area illustrated in the figure under **Conclusion** below. Loss of woodland in Site 21c may be acceptable given its relatively low value, assuming a sufficient buffer is retained alongside the Ancient Woodland (guidance suggests a buffer of at least 15m is required) to minimise impacts. Therefore reducing loss of woodland and retaining a buffer against ancient woodland may impact on the quantum of development achievable here.

In addition, where possible loss of semi-improved neutral grassland should be minimised, and informed by detailed vegetation surveys. This will again restrict development in Site 21. Mitigation will be dependent on the retention of some of the grassland outside of the potential development area, allowing for its enhancement (through habitat management) to mitigate for loss. Inclusion of areas of calcareous grassland "meadow" within the development footprint would also provide mitigation for loss of grassland habitats. Translocation of notable species, such as early spider orchid, may be required if found to be present within the potential development areas and if it is not possible to retain these through detailed design.

Other retained habitats would also need to be enhanced, in particular woodland, to increase their value to mitigate for any loss. Management of the woodland, for example the introduction of a coppicing regime would enhance diversity of the ground flora and increase structural diversity. Impacts on retained habitats within the pLNR and adjacent ancient woodland will also require mitigation to address indirect impacts, including ensuring best construction practice as detailed in a Constrution and Environmental Management Plan (CEMP), or similar to avoid contamination impacts, and the enhancement of habitats within the pLNR to increase their robustness to any increase in recreational pressure.

If notable or protected species are confirmed as present, mitigation requirements may include:

- Timing of works to avoid impacts on nesting birds
- Measures to prevent harm to reptiles, such as translocation from the potential development area to a receptor Study Area which has been suitably enhanced to support the translocated population (ideally within the wider Study Area). Similar measures may be required for GCN, implemented under a Natural England European Protected Species licence, should waterbodies suitable for GCN be present and GCN be recorded
- Measures to prevent impacts on badger including sensitive timing of works in the vicinity of setts (and potentially under NE licence) and best practice construction measures
- If bat roosts are located which cannot be retained within the proposals, a range of mitigation measures will be required including provision of replacement roosts and proceeding with works under a Natural England European Protected Species licence;
- Enhancement of habitat outside the potential development area to provide additional opportunities for species impacted by the proposals, such as invertebrates
- Sensitive design of any external lighting to minimise lightspill to adjacent habitats

Other mitigation or enhancement opportunities may include:

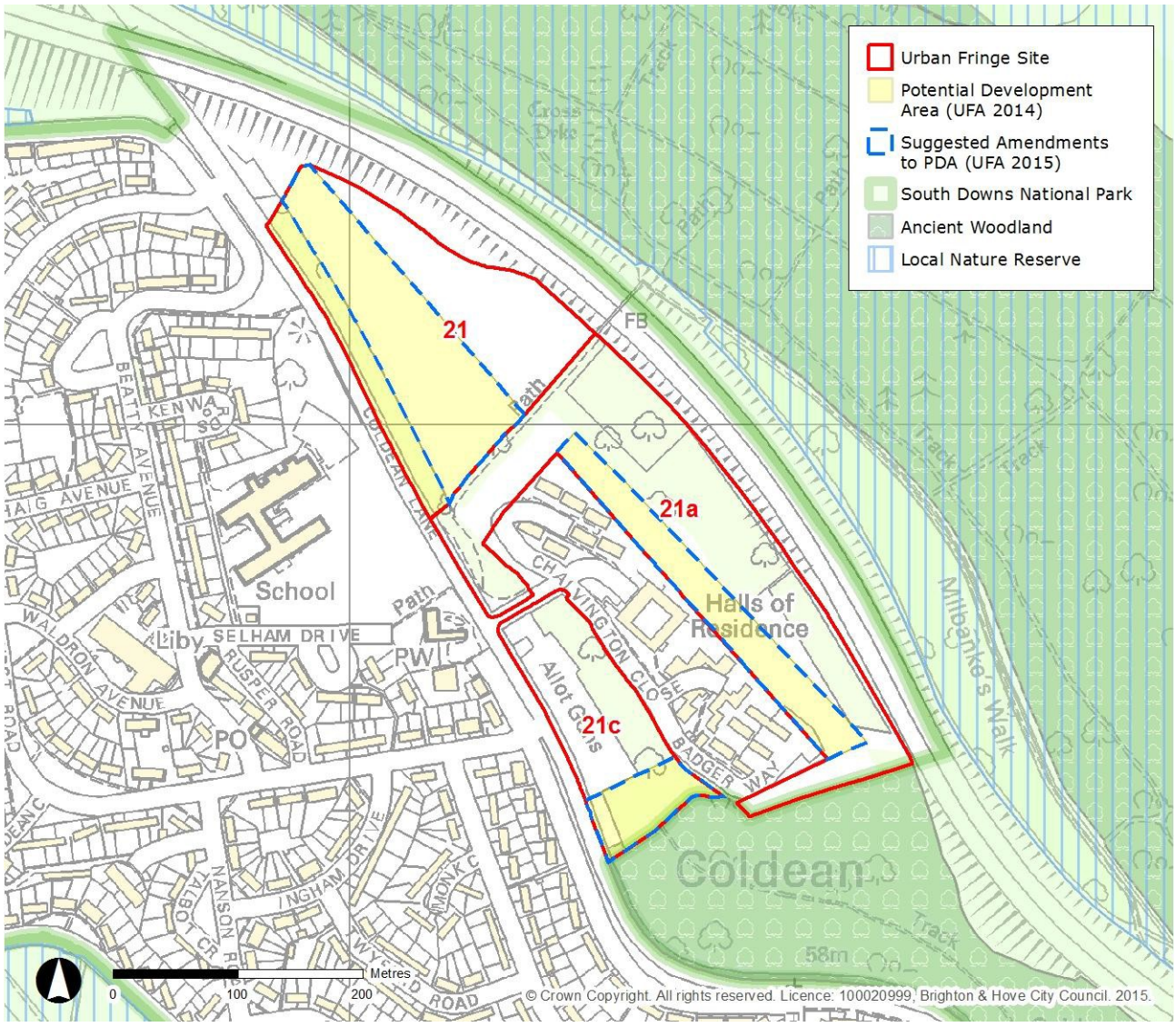
- Incorporation of green infrastructure within the development to provide opportunities for wildlife, such as green roofs or walls, SUDS, wildlife-friendly planting (native species or those providing known benefits to widlife, such as species of benefit for pollinators), and incorporation of nesting/roosting opportunities for birds and bats.

Conclusion

Overall Conclusions

In conclusion, it is considered that housing can be delivered at the potential development areas within Study Area L7/E6 without significant impacts on landscape and ecology, on the assumption that

- The size of the potential development area in Site 21 is reduced to avoid impacts on woodland habitat and screening, and to minimise impacts on grassland habitats (see figure below).
- Habitat enhancement can be assured within the remainder of the Study Area, including within the development.
- The yield on site 21c is limited, including to facilitate retention of a buffer alongside the adjacent ancient woodland habitat.
- Incorporation of robust mitigation measures to address any impacts on protected species.



Brighton & Hove Urban Fringe Assessment

Figure 10.1 Phase 1 Habitat Survey Map Study Area L7/E6

- Urban Fringe Site
- Potential Development Area
- Target note
- Broadleaved woodland - semi-natural
- Scrub - dense/continuous
- Tall ruderal with scattered scrub
- SI SI Neutral grassland - semi-improved
- Allotments
- Hard standing

Map Scale @ A3: 1:2,600

LUC

0 110 220 Metres

CB:JH EB:Johnny_H LUCLON 6555-01_007_Phase_1 12/11/2015 Source: LUC