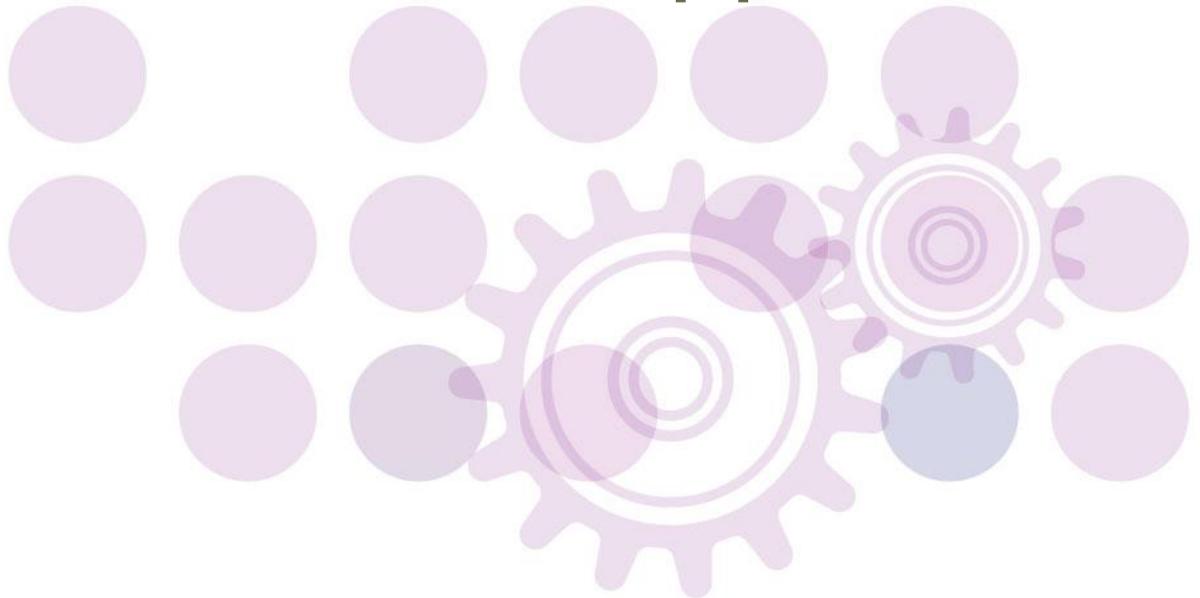


spd

supplementary planning document

Draft for public consultation
from 27 February to 10 April 2017

Toad's Hole Valley Appendices



Contents

- 1 Relevant planning policies
- 2 SPD stage and Issues & Option consultation
- 3 City Plan Part One Policy DA7 Toad's Hole Valley
- 4 One Planet principles
- 5 Brighton & Lewes Downs Biosphere
- 6 South Downs International Dark-Sky Reserve designation
- 7 Toads Hole Valley Design Guidance for a Heat Network
- 8 Glossary

1 Relevant planning policies

- 1.1 Applications for planning permission must be determined in accordance with the local development plan unless material considerations indicate otherwise, as set out in Section 38(6) of the Planning and Compulsory Purchase Act 2004 and section 70(2) of the Town and Country Planning Act 1990.
- 1.2 The local development plan currently comprises the Brighton & Hove City Plan Part One (adopted in 2016) and saved Local Plan policies (adopted in 2005). In conjunction with the National Planning Policy Framework (adopted in 2012), these documents are a material consideration in planning decisions.
- 1.3 It is important to note that saved Local Plan policies we be increasingly superseded by elements of the emerging City Plan Part Two.
- 1.4 The policies listed are indicative as the relevant policies will depend on the design for the development. For this reason, planning applicants should check the local planning authority prior to submitting a planning application.

City Plan Part One policies

Special Area policies

- SA6 Sustainable Neighbourhoods

1.5 Core policies

- CP1 Housing Delivery
- CP2 Planning for Sustainable Economic Development
- CP3 Employment Land
- CP4 Retail Provision
- CP5 Culture and Tourism
- CP8 Sustainable Buildings
- CP9 Sustainable Transport
- CP10 Biodiversity
- CP12 Urban Design

- CP13 Streets and Open Spaces
- CP14 Housing Density
- CP16 Open Space
- CP17 Sports Provision
- CP18 Healthy City
- CP19 Housing Mix
- CP20 Affordable Housing

Saved Local Plan policies (2005)

1.6 Housing

- HO13 Accessible housing and lifetime homes
- HO15 Housing for people with special needs
- HO19 New community facilities
- HO21 Provision of community facilities in residential and mixed use schemes

1.7 Transport and movement

- TR4 Travel plans
- TR7 Safe Development
- TR11 Safe routes to school and school safety zones
- TR12 Helping the independent movement of children
- TR14 Cycle access and parking
- TR15 Cycle network
- TR18 Parking for people with a mobility related disability

1.8 Sustainable development

- SU3 Water resources and their quality
- SU5 Surface water and foul sewage disposal infrastructure
- SU10 Noise nuisance

1.9 Design and quality of development

- QD5 Design – street frontages
- QD15 Landscape design
- QD16 Trees and hedgerows
- QD18 Species protection
- QD25 External lighting
- QD26 Floodlighting
- QD27 Protection of amenity

1.10 Nature conservation and the countryside

- NC4 Sites of Nature Conservation Importance (SNCIs) and Regionally Important Geological Sites (RIGS)

1.11 Historic environment

- HE12 Scheduled ancient monuments and other important archaeological sites

Supplementary guidance

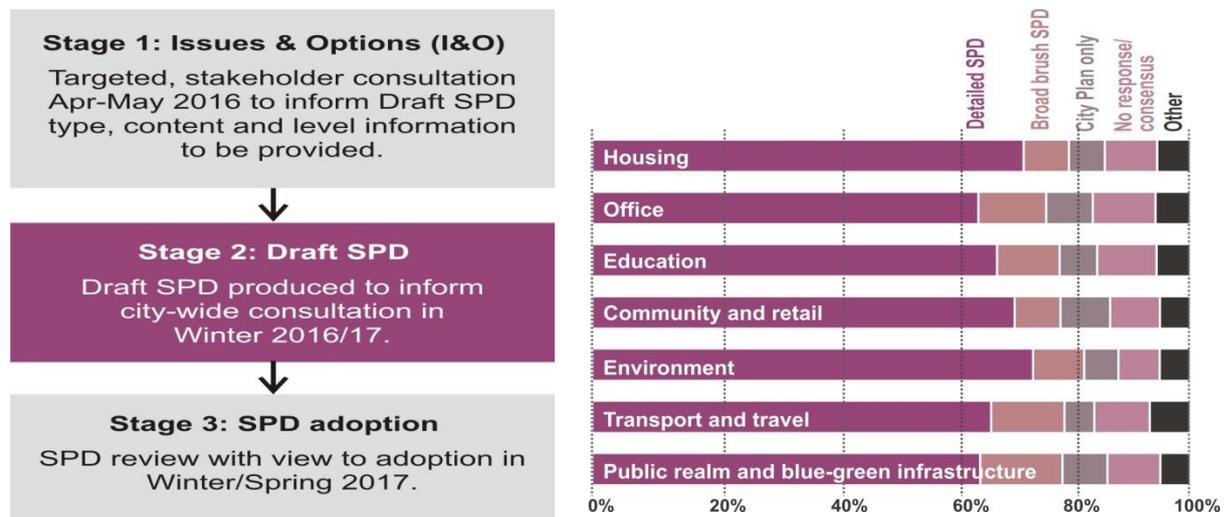
1.12 The council has also produced the following supplementary guidance which are material considerations for the future redevelopment of Toads Hole Valley:

- SPD03 - Construction and Demolition Waste
- SPD06 - Trees and Development Sites
- SPD11 - Nature Conservation and Development
- SPD14 - Parking Standards
- SPGBH 9 A guide for Residential Developers on the provision of recreational space

2 SPD stages and Issues & Options consultation

1.13 The Draft Toad's Hole Valley Supplementary Planning Document (THV SPD) takes into account the results of early stakeholder consultation held in April-May 2016.

1.14 As the graphs below indicates, this consultation is part of the first of the three stages in the production of the THV SPD and preference for producing a detailed SPD and will be subject to city-wide consultation in early 2017.



Key stages and milestones in the production of an SPD.

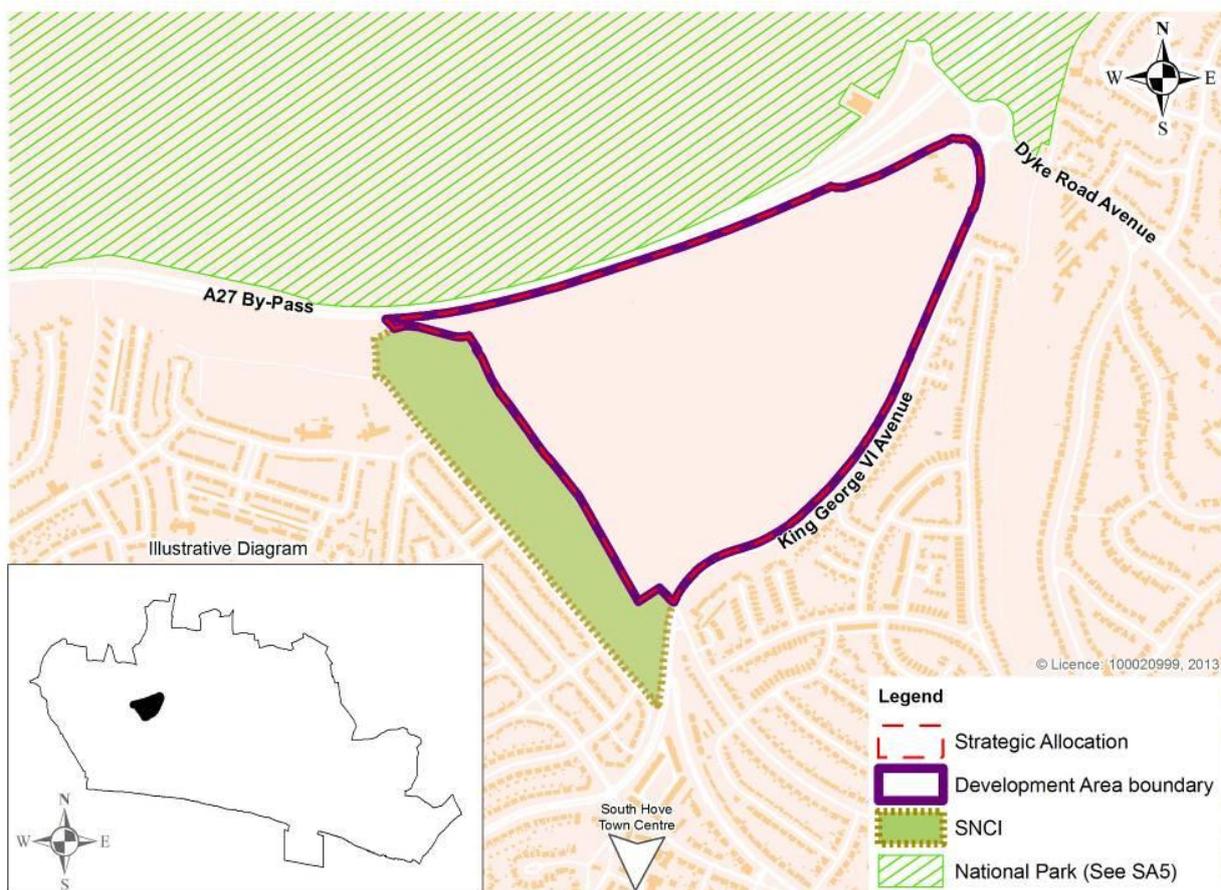
Summary of early stakeholder consultation responses by theme.

1.15 At the stakeholder stage of consultation there was support for:

- housing of varying densities, building form and scale that is sensitive to the setting of the South Downs National Park (SDNP), SNCI and neighbouring communities;
- an employment hub that has access to existing and/or new local services;
- a secondary school that accommodates shared facilities and future expansion;
- a multi-use community facility within easy access to the National Park and with links to a new neighbourhood centre and school;

- low ecological impact building design and construction with decentralised low and zero carbon energy, control of surface water run-off and reduction of the impact of heat island effect;
- transport- and design-related solutions that encourage and provide for use of public transport (in particular bus services), cycling and walking; and reduce traffic speeds, accommodate car parking needs efficiently and minimise air quality and noise problems;
- a network of multi-function, flexible streets, squares and open spaces that encourages active use and social engagement, help reduce water run-off, support food growing and provide greater people and wildlife connectivity across the site and wider area; and
- opportunities to fund delivery of development, in particular enhancement and maintenance of the designated SNCI and open public spaces.

3 City Plan Policy DA7 - Toad's Hole Valley



Context

3.81 Development of Toad's Hole Valley and Court Farm represents a major opportunity to create a model for mixed use sustainable development that will provide family and affordable housing, modern office space and a new school to meet the future needs of the city. There is also an opportunity to conserve and enhance the Site of Nature Conservation Importance on the south-western boundary of the site, to

provide new public open space and to improve links to the South Downs National Park. All new development will be expected to meet high standards of sustainability and design.

3.82 The site, including Court Farm, is 47 hectares and is privately owned land. It is located on the northern fringe of Brighton and Hove bounded by the A27 bypass to the north, the south-eastern side is bounded by King George VI Avenue, the major route from Devil's Dyke round-about into Hove, with the Goldstone Valley/Hove Park residential area to the south and Hangleton and Knoll to the west. The site is not accessible to the public with the exception of the Site of Nature Conservation Importance (SNCI) on the western embankment, which is statutory open access land.

DA7 – Toad's Hole Valley

The strategy for the development of Toad's Hole Valley and Court Farm is to secure a modern, high quality and sustainable mixed use development to help meet the future needs of the city, improve accessibility and provide new community facilities to share with adjacent neighbourhoods.

A. The local priorities to achieve this strategy are:

- 1. That the site is used efficiently and effectively to assist in meeting the development and infrastructure requirements of the city.**
- 2. The development will aim to be an exemplary standard in terms of environmental, social and economic sustainability, achieving a One Planet approach and promoting the city's UNESCO Biosphere objectives.**
- 3. Ensure that development respects the setting of the South Downs National Park and seeks to enhance links to the National Park for local residents and tourists.**
- 4. The development will provide the opportunity to benefit residents in terms of the mix of uses, an improved provision of community facilities, road safety improvements, training and job opportunities for local people and the provision of green infrastructure including public open space and natural green space.**
- 5. To improve sustainable transport links to the area.**
- 6. To incorporate appropriate landscaping and planting to maximise opportunities to increase biodiversity across the site.**
- 7. Conserve and enhance the designated Site of Nature Conservation Importance.**
- 8. Protect sensitive groundwater source protection zones from pollution and ensure no increase in surface water run-off and flood risk.**
- 9. Provide the necessary infrastructure for the development including water distribution and sewerage.**

B. The following key elements will be provided by 2030:

- A minimum of 700 residential units**
- B1 employment space – site area 3.5 - 4.5 ha**
- Site reserved for a new secondary school – site area 5ha**
- Public open space with children's play space and informal sports facilities – 2 ha**
- Provision of ancillary supporting uses – shops and cafes and multi-use**

community building

- **Food growing space – 0.5 ha hectares**
- **Green infrastructure integrated through the site to deliver Biosphere objectives and contribute to Biodiversity Action Plan targets.**

C. The strategic allocation for Toad’s Hole Valley is:

1. Toad’s Hole Valley east of the SNCI and south of the A27 embankment

Provision will be made for a high standard sustainable, mixed-use development across the site comprising a minimum of 700 residential units, B1 employment space, a new secondary school, a multi-use community facility and ancillary supporting uses.

The proposals will be assessed against the citywide policies and the following criteria:

- a) New development will be expected to make the best use of the site and residential densities should fall within a range of 50 - 75 dwellings per hectare.**
- b) There will be a minimum of 50 per cent 3+ bedroom family sized dwellings provided as part of the residential scheme.**
- c) The office element of the scheme will be high tech, modern office space that will provide a range of unit sizes to attract new businesses to the city and support growing business.**
- d) Due regard will be given to the impact of development on the purposes and setting of the South Downs National Park¹.**
- e) Environmental sustainability will be central to the design and layout of the scheme which will be expected to meet the requirements of policy CP8.**
- f) Development within this area will aim to incorporate infrastructure to support low and zero carbon decentralised energy and in particular heat networks subject to viability and deliverability.**

4 One Planet principles

4.1 Developed by BioRegional in association with the World Wildlife Federation, One Planet Living provides a framework for communities and organisations on sustainable living. The One Planet Living model is based on ten principles, helping individuals and organisations to live and work within a fair share of the planet’s resources, on the basis that it would take three planet Earths to sustain the current European lifestyle across the world’s population and five planets for the world’s population to live the current lifestyle of the USA.

4.2 In 2013 Brighton & Hove became the first city to sign up to One Planet approach as part of its strategy to becoming a more sustainable city and move

¹ National Parks have two purposes under Section 62 of the Environment Act 1995:

- Conserve and enhance their natural beauty and cultural heritage; and
- promote public understanding and enjoyment of their special qualities.

towards a low carbon economy. The City Plan Part One Strategic Objectives 7 and 8 expects new development to:

- contribute to a reduction in the ecological footprint of Brighton & Hove and champion the efficient use of natural resources and environmental sustainability; and
- ensure design and construction excellence in new and existing buildings in Brighton & Hove which responds positively to the challenges posed by local impacts of climate change, resource-efficiency, and delivers biodiversity and environmental objectives and improvements to accessible natural green space.

4.3 The THV site provides a significant opportunity to incorporate these principles from the outset of the development process and meet a wide range of City Plan Part One policy objectives as identified in the table below:

Principle	Description	Relevant City Plan policies and other plan documents
Zero Carbon	Making buildings more energy efficient and delivering all energy with renewable technologies	Spatial Strategy; Development Areas 1 -8 SA1 Seafront CP1 Housing Delivery CP2 Sustainable Economic Development CP3 Employment Land CP7 Infrastructure and developer contributions CP8 Sustainable Buildings CP9 Sustainable Transport
Zero Waste	Reducing waste arisings, reusing where possible, and ultimately sending zero waste to landfill	Spatial Strategy; Development Areas 1-8, SA1 CP8 Sustainable Building CP15 Heritage Waste and Minerals Plan SPD3 Construction and Demolition Waste guidance
Sustainable Transport	Encouraging low carbon modes of transport to reduce emissions, reducing the need to travel	Spatial Strategy Development Areas 1-8 Special Areas 1-6 CP4 Retail Provision CP7 Infrastructure and developer contributions CP9 Sustainable Transport
Sustainable Materials	Using sustainable products that have a low embodied energy	Spatial Strategy; Development Areas 1-8, SA1 SA6 Sustainable Neighbourhoods CP5 Culture and Tourism CP7 Infrastructure and developer contributions CP8 Sustainable Building CP15 Heritage Waste and Minerals Plan
Local and Sustainable Food	Choosing low impact, local, seasonal and organic diets and reducing food waste	Spatial Strategy; Development Areas 1-8, SA1 SA4 Urban Fringe SA5 South Downs SA6 Sustainable Neighbourhoods CP4 Retail Provision CP8 Sustainable Building CP16 Open Space CP18 Healthy City Food Growing Planning Advice Note
Sustainable Water	Using water more efficiently in buildings and in the	Spatial Strategy; Development Areas 1-8, SA1 SA1 The Seafront

	products we buy; tackling local flooding and water course pollution	SA4 Urban Fringe SA5 South Downs CP8 Sustainable Building CP11 Flood Risk
Land use and Wildlife	Protecting and expanding old habitats and creating new space for wildlife	Spatial Strategy, Development Areas 1- 8 SA1 The Seafront SA3 Valley Gardens SA4 Urban Fringe SA5 South Downs SA6 Sustainable Neighbourhoods CP8 Sustainable Building CP10 Biodiversity CP13 Public Street and Spaces CP14 Housing Density CP16 Open Space
Culture and Community	Reviving local identity and wisdom; support for, and participation in, the arts	Spatial Strategy, Development Areas 1-8 SA1 Seafront SA2 Central Brighton SA3 Valley Gardens SA6 Sustainable Neighbourhoods CP5 Culture and Tourism CP7 Infrastructure and Developer Contributions CP12 Urban Design CP13 Public Streets and Spaces CP15 Heritage
Equity and Local Economy	Inclusive, empowering workplaces with equitable pay; support for local communities and fair trade	Spatial Strategy; Development Areas 1-8 SA6 Sustainable Communities CP2 Sustainable Economic Development CP3 Employment Land CP4 Retail Provision CP7 Infrastructure and Developer Contributions
Health and Happiness	Encouraging active, sociable, meaningful lives to promote good health and well being	Development Areas 1-8 SA1 The Seafront SA6 Sustainable Neighbourhoods CP1 Housing Delivery CP8 Sustainable Building CP12 Urban Design CP13 Public Streets and Places CP16 Open Space CP17 Sports Provision CP18 Healthy City CP19 Housing Mix CP20 Affordable Housing CP22 Traveller Accommodation

5 Brighton & Lewes Downs Biosphere

- 5.1 In 2014, the city of Brighton & Hove, together with parts of downland within the administrative boundary of Lewes District Council, became part of the first Biosphere Reserve to be designated by UNESCO is the South East of England and the first to be established in the UK for nearly 40 years.
- 5.2 The Brighton & Hove and Lewes Downs Biosphere joined a global network of more than 600 “world-class environments” in over 100 countries, and is one of only a handful worldwide to include a city.

- 5.3 The network's aim is to connect people and nature to inspire a positive future and the various demonstration areas share three common objectives:
- Conservation - of landscapes, ecosystems, species and genetic diversity at both a regional and global scale.
 - Development - economic and social development which is culturally and ecologically sustainable.
 - Knowledge – environmental education, research and training to test and demonstrate innovative approaches to nature conservation and sustainable development.
- 5.4 The Brighton & Lewes Downs Biosphere Management Strategy (2014-19) prioritises five areas including:
- Environmental awareness – of local people, especially children and young people;
 - Tourism & Recreation – by visitors and residents, to further economic & social development;
 - 'Green Infrastructure' – enhanced networks of greenspace from town to downs, which provide multiple benefits ('ecosystem services') from access to conservation to water management;
 - Water – improving local water quality, quantity, and public awareness of our groundwater chalk aquifer, as well as coastal/marine environment; and
 - Research & Monitoring – working with universities and others to improve our applied understanding of the local environment.
- 5.5 The Biosphere Delivery Board, Working Groups and overall Partnership work to deliver a suite of identified priority projects that can help inform and support development at the THV site.

6 South Downs National Park responses to THV SPD consultation (including International Dark-Sky Reserve designation)

- 6.1 The South Downs National Park (SDNP) is a statutory consultee for planning applications for the Toad's Hole Valley site and applicants are strongly advised to need to consult the SDNP planning authority prior to submitting any planning application.
- 6.2 Below is a transcript of responses received from the SDNP authority that may help inform applicants of the issues raised during consultation events. Information about the International Dark-Sky Reserve designation is also provided.
- 6.3 Response of the South Downs National Park Authority (SDNPA) in respect of the **issues and options for the Toads Hole Valley SPD**.
- This site is highly visible from afar, including to the top of the South Downs and National Trail at Devils Dyke; it is also highly visible to and from other key public viewpoints including Monarchs Way and other public footpaths and rights of way in the vicinity, within the National Park. The SPD should

incorporate detailed guidance and context for a sensitively designed development, including appropriate design and appearance fully respecting this site in the context of the setting and special qualities of the South Downs National Park, and to reflect its recent designation as part of the Sussex Downs Area of Outstanding Natural Beauty. The landform of the Downs, with its rolling hills and valleys is the key landscape feature, dwarfing the A27 road that divides it, so the integrity of this needs to be retained and complemented in any development proposals.

- The scale, form, height, floor and ground levels and siting of any proposed development of the THV site, together with the requisite infrastructure for the site, should be landscape led and carefully considered for this site to ensure that the built environment both compliments the topography, landscape and special qualities of the THV site and how this relates to the topography and setting of the South Downs National Park; to this end it would be useful to refer to the SDNP Integrated Landscape Character Assessment. These matters should also take into account and carefully accommodate the need for a genuine urban fringe to soften the impact of the hard artificial administrative line of the nationally protected area designation. Urban fringes provide a natural green transitional buffer from built environment to the open countryside, in this case adjacent to the northern and north eastern boundaries of the designated South Downs National Park. In addition to the need for appropriate urban fringes around the other boundaries of the THV site, notwithstanding the urban infrastructure of the intervening A27 trunk road along the northern edge of the site and the junction with King George VI Avenue and Devils Dyke Road, adjoining and close to the boundaries of the SDNP respectively, the SDNPA consider it appropriate and necessary to ensure that an appropriate transitional urban fringe landscape buffer strip of an appropriate height, type, design, landscaped profile, topography, depth and planting, is provided between the built development of THV and the A27 and the junction referred to, and the SDNPA boundaries as described. This would form and contribute to the provision of an overall integrated landscaping plan for the fringes in these locations and the overall THV site, and which should also provide appropriate complementary biodiversity enhancement opportunities for the existing SNCI and for the special qualities of the South Downs National Park; further discussions with the SDNPA can help to clarify this and provide advice on such.
- Such an approach should also include attention to open green space. It should be noted that Toads Hole Valley lies within the narrowest, most sensitive part of the South Downs, with the open downland now only [...] miles wide in this area. Green spaces from school grounds, and parks to domestic gardens and other open areas, needs careful thought as to location, to help conserve and enhance the SNCI as well as complementing the surrounding landscape and biodiversity of the National Park. Such green spaces should be carefully considered from both an internal development interconnectivity and for wider connections with, and to provide cycle and footpath access to and from, the South Downs National Park.
- Significant mitigation will be needed as any development will damage and destroy the greenfield site and the biodiversity of this former Area of

Outstanding Natural Beauty. On-site green space is vital to try to minimise and reduce this, but off-site mitigation will be needed to properly compensate for the losses. The statutory Environmental Impact Assessment should identify the site's value, in order for this exercise to be accurately carried out.

- Every effort should be made to reduce the carbon footprint of the development, including meeting the highest BREEAM standards, implementation of the highest standards for sustainable homes and for sustainable transport links within the site (i.e. cars v. bicycles & pedestrian routes) and to and from the site (cars v. buses etc.). Improved bus and other public transport links would benefit the wider residential area, as well as visitors by enhancing the Devil's Dyke and other bus services. Sustainable access links are needed into the town and out onto the South Downs as part of integrated sustainable access provision, to provide safer access and more sustainable transport from the current car/road-dominated infrastructure, which has been compounded by the links to and from the bypass safe walking and cycling access is a basic need to be integrated into any development proposal for this site.
- The bypass effectively cut off the Hove / Hangleton area from its Downs hinterland. The SDNPA consider that the Toads Hole Valley SPD and any pre-application and/or planning application submitted, should detail provision for a National Park Gateway to and from any development proposal that may come forward, to re-connect this vital link with the South Downs National Park, which will be needed for the new inhabitants of the site, as well as the adjacent area. As set out in the BHCC Vision Document for the THV site such a gateway for pedestrians and cycles should be in the form of a tunnel under the A27 and a link to the old railway line up to Devil's Dyke and the South Downs Way. As set out in [the previous bullet point], such a gateway should also link up to a properly integrated and connected network of access routes to take people from public transport into the National Park by foot and cycle way, and that the costs of the necessary tunnel and other associated works to create and upgrade the route up to the Dyke (outside the scheme boundaries and within the National Park) is covered by the development through the S.106 process.
- Affordable housing: As a green field site, the SDNPA consider it appropriate to apply the relevant provision of affordable homes on this site.
- The heads of terms for and the actual S.106, and/ or other legal agreements, linked to any planning permission should include a requirement for the payment of monies for maintenance of green spaces, landscaped urban fringe buffers and the cycleway and footpath links, and tunnel under the A27 to and from the National Park and other associated works to create and upgrade the route up to the Dyke (outside the scheme boundaries and within the National Park), is fully covered by the development through the S.106 process.
- Provision should be made for any multipurpose community facility to include a National Park Interpretation/education facility.
- The SPD would need to set out the need for the submission of a fully detailed Landscape and Visual Impact Assessment which should include a

detailed analysis of the scheme in relation to the setting and special qualities of the South Downs National Park; such an LVIA may form part of any Environmental Statement submitted with a planning application.

- The SPD should set out the need for the provision of a detailed travel plan and transport assessment that would incorporate the points raised above and set out how traffic generated from the development may impact on the setting, tranquillity and special qualities of the South Downs National Park and what mitigation could be implemented to prevent and/or minimise this. The above comments are not exhaustive and the South Downs National Park Authority may make additional and significantly more detailed comments at any further consultation stages either with the SPD or through the pre application and/or planning application processes.

International Dark-Sky Reserve designation

- 6.4 In May 2016 the South Downs National Park became the world's newest International Dark Sky Reserve (IDSR). We think our star-studded skies overhead are as valuable as our beautiful rolling landscapes and, with properly dark skies in the South East of England under threat, this is a statement that the skies of the South Downs are worth protecting.
- 6.5 As the designation applies to entire National Park, any development outside of the National Park would have the potential to impact on the IDSR status and designation and would have to show due regard for any skies of sufficient quality or sensitivity within the area. Guidance will be forthcoming on obtrusive light. Therefore, the impact of all forms of infrastructure, domestic and internal and external lighting, as well as lighting from traffic from and associated with the THV development will be crucial to consider and control to the highest standards and in accordance with the Institute of Lighting Professionals (ILP) standards.

7 Toads Hole Valley Design Guidance for a Heat Network

- 7.1 This appendix sets out the high level design guidance for an on-site District Heat (DH) scheme developed as a result of the Toads Hole Valley Heat Network Study and viability work. It covers how the DH scheme's viability can be improved in the greenfield site. These include recommendation on density, phasing and infrastructure that will be required to deliver a DH scheme onsite. Further feasibility and viability studies will be needed to provide greater accuracy once

Energy strategy recommendation

- 7.2 To encourage a heat network at THV it is recommended to develop a heat network zone. A separate heating and energy solution may be appropriate for the individual houses.

Development density and a heat network zone

- 7.3 The THV site DA7 policy allocates residential density between 50-75 dwellings per hectare. Residential density is likely to be higher in areas with block of flats. It is suggested that a heat network zone be considered where local development density is increased and concentrated. This could include:
- Mixed use buildings areas (shops, cafes and community hub combined with some flats in scenarios 2 and 3 providing mixed used buildings) – density above around 84 dwellings/Ha is recommended – as per scenario 4;
 - Flats;
 - Business areas;
 - School;
 - Energy Centre; and
 - A heat network zone returns higher line density than a site wide scheme and an increased technical and commercial performance.

Energy centre

- 7.4 Space allowance should be made for an energy centre approximated as 500m².
- 7.5 To deliver a future proofed scheme and to allow for transition to renewable heat sources in future, design of the energy centre should address the following (though not all the following are compatible) and be located close to:
- the area of the development with highest block density to minimise distribution costs and efficiencies.
 - Phase 1 of the development scheme (in the Construction phasing plan) to
 - gas infrastructure to reduce utility connection costs.
 - major electrical infrastructure to allow for connection and enable future electrification of heat generation, and electricity export to the grid
 - road access for simplified delivery and plant maintenance as well as delivery and access for any potential biomass scheme,
 - Close to the A27 to allow for potential routing of a gas transmissions pipe from the Anaerobic Digestion (AD) plant at the Hangleton Bottom site in the future
 - Close to the A27 for fuel delivery to enable delivery in case of biomass heating.
- 7.6 If possible the energy centre should be located on a high part of the site, this would return lower operating pressures at the energy centre and avoid potential costs from higher pressure rated plant.

Heat sources

- 7.7 The site may have potential for Ground Source Heat Pump (GSHP), biomass plant and potentially AD (depending on the development of the off-site plant) though viability assessment has been undertaken for gas Combined Heat and Power (CHP) only. Biomass, GSHP and AD offer the lowest carbon solutions and potential for the site, it is therefore recommended that the further feasibility and viability assessment be undertaken for these options as part of the masterplan development.
- 7.8 Gas fired CHP plant is a transition technology and could kick-off the heat network before replacement in the long term by another low carbon technology depending on technology development and maturity – therefore the Energy Centre location should allow for future proofing for future transition.

Phasing

- 7.9 The energy centre location should follow the phasing plan for the development, i.e. locating the energy centre close to phase 1 buildings. This reduces distribution costs during the initial phases of the development, and safeguards the network from higher future distribution costs in the event that no further phases are developed.
- 7.10 DA7 policy suggests that the first phase of the development includes the business area in order to attract residents on site. It is therefore suggested for THV that the energy centre is located near the business areas of phase 1.
- 7.11 Modular plant installation should be considered to allow the energy centre capacity to increase with the increase in heat demand as the development progresses. This ensures the energy centre is not oversized and idle plant avoided during the first phases of the development.
- 7.12 It is suggested that the heat network phasing runs in parallel with the overall development phasing so that it meets the heat demand requirements when these appear on site.
- 7.13 It is recommended that the heat network installation runs in parallel with the installation of other utilities so that it benefits from reduced trenching costs.

Pipe network

- 7.14 The DH pipe network routing should be designed and installed to follow the phasing plan.
- 7.15 The DH pipes should be installed in a multi-utility trench simultaneously with all other utilities – this will reduce trenching costs for the DH network.
- 7.16 The network should be routed so as to avoid interfering with construction projects in future phases, which will avoid re-laying pipework.
- 7.17 Design of the heat network should be optimised to minimise the service network length.

Building Services Design

- 7.18 The greenfield nature of the development means the new development designers have the opportunity to optimise and reduce operating temperatures. Building service systems for both DHN and individual systems should:
- Comply with the CIBSE Heat Networks code of Practice for the UK: CP1
 - Operate low temperature heat emitters as recommended by the Heat Networks Code of Practice for the UK (CP1) working at a maximum of 70°C-40°C should be used. Underfloor and other radiant heating systems will typically operate with floor temperatures below 35°C and typically flow temperatures of 45°C should be used where possible which is advantageous for heat delivery this results in lowered return temperatures,
 - Adopt 2-port control and variable flow systems installations in all cases.
 - generate instantaneous Domestic Hot Water (DHW) with use of a plate heat exchanger. This should always be operated at a suitable temperature to mitigate Legionella risk.
- 7.19 It is recommended that if a District Heat Network (DHN) is installed a THV specific connection guide should be created and written into any development contracts to include compatible design guidance.

Heat network temperatures

- 7.20 The heat network should aim to minimise flow temperatures and maximise the differential between flow and return temperatures.
- 7.21 High delta T reduces peak volume flow rates leading to smaller pipes and lower costs,
- 7.22 Maintaining low return temperatures under part-load conditions is important to keep heat losses and pumping energy low,
- 7.23 Designing for lower operating temperatures will result in higher efficiencies with some types of heat sources, e.g. heat pumps.
- 7.24 Flow temperatures will be driven by the building systems (assuming a 5K temperature rise across a heat exchanger) installed with a maximum primary temperature of 75°C flow, return temperatures should be as low as possible.
- 7.25 Adopt best practice, as per CIBSE Heat Networks Code of Practice (2015), which recommends a return temperature of below 40°C for a scheme supplying only new buildings.
- 7.26 A summer network temperature relaxation should be considered but as a minimum should still be capable of providing safe DHW.

Town house solution

- 7.27 A heat network zone may exclude the individual houses from the DHN, because they indicate low line densities and poor economic performance in terms of heat network efficiency. This should be reassessed when detailed design is known. A separate approach for the individual houses may need to be developed.
- 7.28 The houses could have an ASHP solution with PV panels in place of individual gas boilers. This delivers low carbon heat in the absence of a DHN connection. ASHP central heating systems are usually based on low temperature heating,

therefore fit out of internal wet systems would be consistent with in all dwellings whether connected to the DHN or not. In this way a consistent buildings design approach is applied in the development.

Customer Protection Scheme

7.29 The heat network scheme should use a recognised industry scheme such as a Heat Trust Scheme to provide customer protection in relation to fair pricing of heat.

Design guidance summary

7.30 For the THV SPD or any further policy developed for City Plan Part Two, it is recommended that design guidance refer to:

- Energy Strategy recommendation;
- Development density and Heat network zone;
- Energy Centre;
- Heat Sources;
- Phasing;
- Pipe network;
- Buildings services design;
- Network temperatures;
- Town house solution; and
- Customer protection Scheme.

8 Glossary

8.1 This glossary provides a brief explanation of some terms used in this document.

Active frontage

Where, at street level, the buildings have a high level of activity, coming and going, 'busy-ness' visible from or spilling out onto the street e.g. as a result of shops and cafes (including street cafes). In the right place an active frontage will make a place more interesting.

Affordable housing

Residential accommodation that is provided with a subsidy to ensure that rents/prices remain at a level that is genuinely affordable by local people whose incomes mean that they are unable to meet their housing needs via the housing market.

Air Quality Management Area (AQMA)

Areas designated by local authorities because they are not likely to achieve national air quality objectives by the relevant deadlines.

Archaeologically Sensitive Areas

These are sites that have been compiled by the County Archaeologist as part of the Sites and Monuments Record on behalf of the local planning authority. These areas are judged to have county and city wide importance and are known to have archaeological remains or features, although the extent and richness of the site is often unknown. Some might on further detailed investigation merit designation as a Scheduled Ancient Monument.

Biodiversity (Biological Diversity)

The range and variety of life (including plants, animals and micro-organisms), ecosystems and ecological processes.

Biosphere Reserve

These are designated by the United Nations Educational, Scientific and Cultural Organisation (UNESCO) as centres of excellence to demonstrate conservation and sustainable practice by bringing nature and people together.

Biodiversity Action Plan

At UK level these set national objectives and targets which can be delivered through local BAPs (LBAP). Each action plan describes a habitat or species, quantifies the resource and defines the objectives and time-limited targets required to manage the resource sustainably and (if necessary) reverse past declines. Specified agreed actions by key organisations can then be undertaken and monitored to assist with meeting the objectives.

Blue infrastructure

This is the use of proprietary small footprint high-efficiency devices installed and retrofitted within existing conventional piped drainage and water treatment systems (ie. pipes, tanks, conventional treatment systems including energy-intensive water treatment systems and processes such as membranes and reverse osmosis).

BREEAM

The British Research Establishment Environmental Assessment Method is the most widely used means of reviewing and improving the environmental performance of buildings.

Brownfield

Land which is or was occupied by a permanent structure, including the curtilage of the developed land (although it should not be assumed that the whole of the curtilage should be developed) and any associated fixed surface infrastructure. This excludes:

- Land that is or has been occupied by agricultural or forestry buildings;
- Land that has been developed for minerals extraction or waste disposal by landfill purposes where provision for restoration has been made through development control procedures;
- Land in built-up areas such as private residential gardens, parks, recreation grounds and allotments, which, although it may feature paths, pavilions and other buildings, has not been previously developed, and;
- Land that was previously-developed but where the remains of the permanent structure or fixed surface structure have blended into the landscape in the process

of time (to the extent that it can reasonably be considered as part of the natural surroundings).

Built up area

Area identified within which the development of the city has occurred already. The outer limits of the built up area are defined on a policies map.

Carbon footprint

The term “carbon footprint” refers to the amount of carbon dioxide (CO₂) emitted as a result of specific activities. The carbon footprint is often considered over the period of a year and often is used specifically in relation to emissions resulting from energy use from buildings. ‘Zero carbon’ means that there will be no net annual CO₂ emissions resulting from energy use in a building

Car Club

A Car Club provides its members with flexible access to the 'hire' of a vehicle. Vehicles are parked in reserved parking spaces close to homes or workplaces and can normally be used, and paid for, on an hourly, daily or weekly basis.

CIL

Community Infrastructure Levy is a levy allowing local authorities to raise funds from owners or developers of land undertaking new building projects in their area.

Circular

Government advice published to explain or interpret Acts of Parliament.

Climate change

Accounts for long-term changes in temperature, precipitation, wind and other aspects of the Earth's climate. Often regarded as a result of human activity and fossil fuel consumption.

Code for Sustainable Homes

The Code for Sustainable Homes (CSH) is an environmental assessment method for rating and certifying the performance of new homes. It is a Government owned national standard intended to encourage improvement in sustainable home building. The Code looks at various aspects of design such as (but not limited to): energy and carbon emissions; water; materials; ecology; waste; flood risk and health impacts.

Connectivity

Connectivity or permeability refers to the visual and physical accessibility into and within an area.

Community infrastructure

The provision of infrastructure to support communities emerging from development, such as schools, community facilities, health facilities, open space, etc.

Comparison goods

Non-food items in shops.

Convenience goods

Food items in shops.

Creative industries

The creative industries include: advertising; architecture; art and antiques markets; computer and video games; crafts; design; designer fashion; film and video; music; performing arts; publishing; software; and television and radio.

Density (dwellings)

Measure used to describe the numbers of housing units associated with a given area. e.g. dwellings per hectare. Net density includes access roads within the site; private garden space; car parking areas; incidental open space and landscaping; and local children's play areas where these are to be provided. In Brighton & Hove, the method for calculating density is outlined in City Plan Policy CP14 Housing Density.

Design Code

A design code is an illustrated compendium of the necessary and optional design components of a particular development with instructions and advice about how these relate together in order to deliver a masterplan or other site-based vision.

Developer Contributions

See Planning Obligations.

District Centre

See Town Centre.

District Heating Network

This term is generally given to a system where a centralised heat generating plant (using any one of a range of technologies) provides heat to surrounding buildings in the area by means of a network of pipes carrying hot water or steam.

Downland

Usually treeless open land with only a thin covering of soil on the chalk uplands.

Ecological footprint

A tool that measures the total amount of land and resources needed by an individual, and includes their carbon footprint.

Employment site

Land suitable and available for industrial and business use/ development.

Enabling development

Development which is acceptable in its own right but generates funds to allow the provision of a strategic development objective of the local planning authority (e.g. the restoration of a building or the construction or renovation of a much needed facility). This term also applies to development of a type or use which is not designated for that specific site on the Proposals Map but that would enable the designated use to be viably implemented (e.g. some housing development on a designated employment site).

Environment

Includes the 'natural' environment (air, water, land, flora and fauna) and 'built' environment (buildings and other structures built by humans).

Environment Agency

The leading public body for protecting and improving the environment of air, land and water in England and Wales.

Green Network (GN)

A series of interlinked natural green spaces and nature conservation features connecting the urban area, urban fringe, the seafront and surrounding downland.

Greenfield Land

Site that has not been previously been built on (includes areas such as playing fields, allotments, countryside and gardens).

Green infrastructure

The provision of pedestrian/ cycle links between open spaces to maximise enjoyment of local ecology and biodiversity.

Green network

A series of interlinked natural green spaces and nature conservation features connecting the urban area, urban fringe and open downland.

Grey water

Grey water is the water from sinks, baths, showers, washing machines, etc.

Health Impact Assessment (HIA)

HIA is a practical approach that determines how a proposal (such as a development scheme or a policy) will affect people's health. Recommendations to 'increase the positive' and 'decrease the negative' aspects of the proposal are produced to inform decision-makers.

Hectare

10,000 m²

Legibility

The degree to which a place can be easily understood and traversed by people.

Local Centre

Include a range of small shops of a local nature, serving a small catchment. Typically, local centres might include, amongst other shops, a small supermarket, a newsagent, post office and a pharmacy. Other facilities could include a hot food takeaway and launderette.

Local Transport Plan (LTP)

(Also called the Full Local Transport Plan when it has been approved by the Government). It is the document prepared by the city council which sets out its transport policy and proposals and is prepared in order to bid for Government funding for all forms of transport.

Low Carbon technologies

Technologies that use grid electricity or mains gas to generate heat or power more efficiently. They are called low carbon because they result in lower CO2 emissions than using mains gas or electricity. These include: geothermal and ground sourced heat pumps (which require electricity to operate pumps); fuel cells (which require electricity to create hydrogen); gas fired CHP; or other district heating systems. The latter two are sometimes referred to as decentralised or localised energy, as they create heat and/or power local to where they are used. These technologies are sometimes referred to as microgeneration, producing heat or energy locally on a small scale.

Masterplan

A type of planning brief which outlines the preferred development for a large site or area, and the overall approach to its layout and design. The Masterplan provides detailed guidance for subsequent planning applications.

Material consideration

A matter that should be taken into account in deciding on a planning application or an appeal against a planning decision (e.g. a refusal of planning permission). When a Council (or a Planning Inspector) makes a decision on a planning application they have to take into account – and should only take into account - factors which constitute ‘material considerations’. These have been defined by the law (both legislation and the case law decisions of the Courts). They include the content of the Development Plan and supporting documents i.e. SPDs etc. but they also include ‘other material considerations’ like whether the Development Plan is sufficiently up to date, and factors which weren’t thought about when it was prepared but are now relevant.

Microclimate

Local climatic conditions.

Mitigation measures

Actions to prevent, avoid or minimise the actual or potential adverse effects of a plan, policy, development, project, etc.

Mixed use developments

A development that contains two or more uses e.g. residential, employment, leisure, community uses.

Natural England

A statutory body formed in 2006 with the bringing together of English Nature, the landscape, access and recreation elements of the Countryside Agency and the environmental land management functions of the Rural Development Service.

Nature Improvement Areas

Inter-connected networks of wildlife habitats intended to re-establish thriving wildlife populations and help species respond to the challenges of climate change.

One Planet Approach

The 'One Planet Living' 10 guiding principles are a simple way to plan, deliver, communicate and mainstream sustainable development and a sustainable economy.

PCT

Primary Care Trust.

Permeability

The degree of movement possible or permitted between public outside and private inside or between urban areas, buildings, places and spaces.

Place making

Public spaces are integral to any community. When they work well, they serve as a stage for public lives. They are the settings where celebrations are held, where both social and economic exchanges take place, where friends run into each other, and where cultures mix. Placemaking is a way to improve the streets, sidewalks, parks, buildings and other public spaces where these exchanges take place so that they invite greater interaction between people and foster healthier, more social and more economically viable communities.

Planning Obligations

Planning Obligations or Developer Contributions are secured through Section 106 of the Town and Country Planning Act 1990 to mitigate the impacts of a development proposal. They are a legally enforceable obligation entered into under section 106 of the Town and Country Planning Act 1990.

Public art

Public art includes permanent and temporary work, art facilities and arts training. Public art can create and enhance local distinctiveness and help develop a desirable sense of place. They often provide important opportunities to involve the local community and will offer work opportunities to local artists.

Public realm

This is the space between and within buildings that are publicly accessible, including streets, squares, forecourts, open spaces and public and civic buildings.

Renewable energy

Includes energy for heating and cooling as well as generating electricity. Renewable energy covers those energy flows that occur naturally and repeatedly in the environment – from the wind, the fall of water, the movement of the oceans, from the sun and also from biomass and deep geothermal heat.

Section 106 Agreements

See Planning Obligations.

Sequential approach

The preferred hierarchy of land for certain uses in descending order of preference.

Sequential Test

A risk based approach to assessing flood risk, which gives priority to sites in ascending order of flood risk, i.e. lowest risk first.

Sites of Nature Conservation Importance (SNCI)

These are locally designated wildlife sites to support both locally and nationally threatened wildlife, and many sites will contain habitats and species that are priorities under the county or UK Biodiversity Action Plans (BAP).

Small business

A business with fewer than 50 employees.

South Downs National Park Authority (SDNPA)

The South Downs National Park came into being on 31st March 2010. As a National Park, the SDNPA has statutory purposes and socio-economic responsibilities as specified in the Environment Act of 1995.

Stakeholder

Those individuals and especially organised groups having an interest in the outcome of planning decisions, for example who will be directly affected by them.

Stakeholders in planning include local community groups, groups representing local businesses, developers and landowners, and other Government departments and agencies.

Statutory consultees

Planning law prescribes circumstances where consultation must take place between a local planning authority and certain organisations, prior to a decision being made on an application. In the context of the THV site these include Natural England; the Environment Agency, Highways Authority and South Down National Park.

Strategic Flood Risk Assessment (SFRA)

Created to help appraise, manage and reduce flood risk in relation to the location of potential new development in the city.

Strategic view

The line of sight from a particular point to an important landmark or skyline.

Supplementary Planning Document (SPD)

Documents which add further detail to the policies in the Local Plan. They can be used to provide further guidance for development on specific sites, or on particular issues, such as design. Supplementary Planning Documents are capable of being a material consideration in planning decisions but are not part of the development plan.

Strategic Environmental Assessment (SEA)

The aim of the SEA is to provide a high level of protection of the environment and to ensure that environmental considerations are integrated into the preparation of plans and programmes, with a view to promoting sustainable development. The basis for SEA legislation is European Directive 2001/42/EC which was transposed into English law by the Environmental Assessment of Plan and Programmes Regulations (2004).

Sustainable development

Development that looks to balance different, and often competing, needs against an awareness of the environmental, social and economic limitations we face as a society.

Tenure

Housing tenure describes the legal status under which people have the right to occupy their accommodation. The most common forms of tenure are home-ownership (including homes owned outright and mortgaged) and renting (including social rented housing and private rented housing)

Topography

The (description of the) surface physical features (built and natural) of a place or district (e.g. hills, rivers, buildings), usually represented on a map.

Topology

The shape of the landscape.

Townscape

General view, appearance and character of an urban scene/landscape.

Transport Assessment

A comprehensive and systematic process of looking at the impact on transport of a proposed development. It identifies what measures will be required to improve accessibility and safety for all modes of travel, particularly for alternatives to the car such as walking, cycling, and public transport and what measures will need to be taken to deal with the anticipated transport impacts of the development.

UNESCO Biosphere Reserve

Biosphere reserves are sites recognised under UNESCO's Man and the Biosphere Programmes, which innovate and demonstrate approaches to conservation and sustainable development. They share their experience and ideas nationally, regionally and internationally within the World Network of Biosphere Reserves.

Urban Fringe

The land between the defined built up area boundary and the South Downs National Park.

Urban grain

General layout, pattern and footprint of buildings and streets as viewed overhead in plan form.

Use Classes

The Use Classes Order is an official document (a 'Statutory Instrument') approved by Parliament, which lists various land 'use classes':

A1 shops

A2 banks, building societies, other financial and professional services

A3 restaurants, snack bars, cafes

A4 pubs and bars

A5 hot-food take-aways

- B1** business establishments e.g. offices, R&D and light industry
- B2** general industry (i.e. other than light industry)
- B8** storage and distribution uses e.g. warehouses
- C1** hotels and guest houses
- C2** residential institutions e.g. care homes, hospitals, boarding schools, halls of residence
- C3** dwelling houses (occupied by up to 6 people living together as a family or single household)
- D1** non-residential institutions e.g. surgeries, child nurseries, schools, galleries, museums, libraries, churches
- D2** assembly and leisure facilities e.g. cinemas, swimming baths, skating rinks, gyms and sports arenas, bingo halls, casinos (but not including nightclubs or theatres – these are sui generis)

Vitality and viability

A measure of the potential success and activity levels of an area or centre.

Zero carbon

'Zero carbon' means that there will be no net annual CO₂ emissions resulting from energy use in a building.

Zero carbon technologies

Technologies that harness non fossil fuel energy to create heat or generate electricity, i.e. sun, wind, and water. They are called zero carbon because they produce no carbon dioxide (CO₂) emissions when producing heat or power. These are also referred to as 'renewable' energy sources (solar thermal, photovoltaics, wind turbines, hydropower and combined heat and power using renewable fuels such as biomass, biodiesel or renewable gas). These technologies are sometimes referred to as microgeneration, producing heat or energy locally on a small scale.

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