Councils Response to Stage 1 Matters, Issues, Questions Thursday 12th December 2019.

Matter 7 – The Broad Locations for Development – Specific Matters (Policy S6 (i) to (xi)

Main Issue

Whether the detailed policy for each broad location for development is justified, effective and consistent with national policy.

North West Harpenden S6 (viii)

1. **Question 1**

   Is the site suitable for housing and are there any specific constraints or requirements associated with it, or the need for mitigation measures?

1.1 Yes. As demonstrated in the Councils Green Belt Review and strategic site evaluations presented to Planning Policy Committee May 2018, the site is considered suitable for housing and has been included as a broad location.

1.2 Potential significant constraints, requirements and mitigations were directly considered in the Draft Strategic Site Selection Evaluation Outcomes methodology as set out Planning Policy Committee March 2018.

   The evaluation uses the criteria below, based on the approach in PPC reports mentioned above (and as similarly set out in the Call for sites and Local Plan regulation 18 consultation background materials).

   Stage 1

   1. Green Belt Review evaluation will be undertaken on the basis of a judgement of impact on (i.e. 'damage' to) Green Belt purposes (taking account of the purposes defined in and considered in the relevant parcel assessment in the GBR). Sites are rated as 'higher impact', 'medium impact' or 'lower impact' (set out as Red Amber Green (RAG)). It is important to remember that the independent Green Belt Review set out that "All strategic parcels in the Green Belt, at least in part, clearly perform a key role". The assessment is a comparative one in the context of understanding relative impacts on the Green Belt. To achieve 'further consideration for development' the site must be evaluated as lower or medium impact (Green or Amber). Any Red rating (higher impact) will rule a site out for further consideration.

   Stage 2

   2. Suitability will set out as (Red Amber Green) if there are any issues which are overriding constraints to development – eg Access, Transport, Heritage, Biodiversity, Flood Risk. Any Red rating will rule a site out for further consideration.

   3. Availability will set out as (Red Amber Green) if there are any issues which are overriding constraints to development in terms of land ownership, restrictive covenants etc. Any Red rating will rule a site out for further consideration.

4. Unique contribution to improve public services and facilities, e.g. public transport - (set out as Red Amber Green). Any Green rating is considered to be potentially significantly positive at a District wide (or even wider) scale.

5. Unique contribution to enhancing local high quality job opportunities and the aspirations of the Hertfordshire Local Economic Partnership / Hertfordshire EnviroTech Enterprise Zone - (set out as Green Amber Red). Any Green rating is considered to be potentially significantly positive at a District wide (or even wider) scale.

6. Unique contribution to other infrastructure provision or community benefits - (set out as Red Amber Green). Any Green rating is considered to be potentially significantly positive at a District wide (or even wider) scale

7. Deliverable / Achievable is there is a reasonable prospect that the development, including all key aspects (including viability) being assessed as part of the overall 'package' proposed, is viable and deliverable (set out as Red Amber Green). Any Red rating will rule a site out for further consideration. 8. An overall evaluation judgement will be recorded (set out as Red Amber Green) as how the site is evaluated for further consideration for development in the Plan."

1.3   This methodology identified two levels of constraints in the site assessment;

- Level 1: Overriding Constrains that would rule out sites as potentially 'suitable'.
- Level 2: Constraints that would need specific requirements and mitigations.

1.4   The following specific constraints were identified as part of the strategic site evaluations;

- Grade 2 Listed Building.

1.5   The specific constraints, requirements and mitigations are also being taken into account as part of the Masterplanning process, including the mitigation of impacts from heritage assets. In this case this is the single Grade 2 Listed Cooters End farmhouse, which is being taken into account in the Masterplanning work.

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2.   Question 2

What evidence is there to demonstrate that the proposed broad location is capable of delivering 580 dwellings?

2.1   The primary evidence is set out in Annex 1 of the draft Local Plan at page 98. This sets out all of the Broad Location area and Base Capacity Calculations in Hectares. For North West Harpenden this sets out;

Broad Location (BL)	BL Wider Area (Ha) (Purple on Policies Map)	Broad Location Non-Green Belt Area (Ha) i.e. Area to be removed from GB	60/40 resi / non-resi split on BL Wider Area	60/40 resi / non-resi split on non-GB Area	New Education Site in GB up to (Ha)	Net developable area when education sites are in Green Belt - 80% of Non-Green Belt area	SADC net developable area for capacity calculations x 40 dwellings per hectare =
North West Harpenden	22.3	18.2	13.4/8.9	10.9/7.3	2.8	14.5* See note below	14.5x40 = 581

* For sites with education allocations within the BL, but outside the area proposed to be removed from the GB, an 80/20 split has been used as an initial assumption

2.2   In this instance, 80% of the area to be removed from the GB is used as a basis for the capacity. There is the accompanying assumption that 20% of the area to be removed from the Green Belt is infrastructure and open space. This is because, as set out at Annex 1, in this instance the primary school location is outside the area to be removed from the Green Belt (as also is the allotment site). The general reasoning for the approach taken (primarily a 60/40 split, but 80/20 here) has been set out as Strategic Local Plan Background Note: Residential Density October 2014 (HOU 015);

Gross density calculations can be used to estimate and illustrate the potential development capacity of a site. The Green Belt Review Part 2 (SKM Enviros Consultancy Study) used the approach that up to 60% of the Gross Development Area (GDA) would be developed (termed Net Development Area) and the remaining 40% would be required to provide infrastructure, main roads, open space and public facilities.

Therefore 14.5 (developable area) x 40 (dwelling per hectare) = 581 dwellings. A small rounding down has then been applied to 580.

2.3   The appropriate densities to use and areas to which they would be applied was addressed on several occasions at PPC, including in particular PPC report January 2014, which sets out;

It is considered that 40dph is a relatively 'safe', robust assumption which can be readily achieved in suburban location housing developments in the District, particularly with a dwelling mix similar to that indicated in the recent Strategic Housing Market Assessment (SHMA). This simple calculation makes no specific allowance for infrastructure and major open space in larger development areas…

Appendix 1 provides a summary of the "Strategic" Green Belt land releases as recommended by SKM. For these areas SKM identified potential development parcels and calculated a dwelling capacity range based on net densities of 30 – 50dph. It is recommended that Plan policies are developed on the basis of achieving a mid-range overall target minimum density of 40dph. This will necessitate some higher suburban density forms of development in some locations.

2.4   Furthermore, as set out in Strategic Local Plan Background Note: Residential Density October 2014 (HOU 015), a draft of which was presented to PPC July 2014. This is includes as M7viiiQ2 Appendix 1.

Work on density assumptions in the draft Strategic Local Plan (SLP) is based on HCA research, in the form of a density matrix (Table 3.3 from the Homes and Communities Agency Urban Design Compendium – reference below). The matrix links typical residential densities to urban form ('creating urban structure'). It draws on examples of development across the UK and Europe. Average densities are based on case studies analysed as part of the Sustainable Residential Quality: Exploring the housing potential of large sites research. The matrix recommends that residential densities of 30 to 50 DPH (alongside related services) should be applied in suburban locations. This is considered to be relevant to the SKM identified sub areas assessed for the draft SLP, as they are located on the edges of existing settlements and exhibit suburban characteristics.

2.5   The landowner / developer team confirmed the capacity was appropriate, deliverable and supported as part of landowner / developer submissions summer 2018.

2.6   The landowner / developer team have also confirmed that the capacity was appropriate, deliverable and supported as part of their landowner / developer Local Plan Regulation 19 Publication formal representations in October 2018.

2.7   The significant amounts of Masterplanning work with relevant stakeholders demonstrates that this Broad Location is capable of delivering 580 homes.   As set out in the Councils response to question M6 Q5, a PPA has been signed and much work undertaken, as quoted below;

"5.3   In more detail, significant progress has been made in particular with regard to the East Hemel Hempstead (North, Central and South), North St Albans and North West Harpenden Masterplans. PPAs have been signed covering all 5 of these Broad Locations, comprising the 'first tranche' of Masterplans.

2.8   As addressed in response to other MIQs, it can also be noted that the Broad Location landowner/developer team (Legal and General Capital) have agreed a Statement of Common Ground. This includes their confirmation that they agree that the 580 figure is deliverable.

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3.   Question 3

What further infrastructure work needs to be undertaken, and is this appropriate to be left to the masterplanning stage?

3.1   Yes, further infrastructure work is required to be undertaken, and this has been identified in the Infrastructure Delivery Plan 2018/19 (INFR 001). A list of infrastructure assessed for capacity is included in M7viii Q3 Appendix 1. For North West Harpenden, this is summarised below;

3.2

LOCATION	North West Harpenden Broad Location
Infrastructure	
Transport Infrastructure:	
Strategic - LTP4 major scheme	
Local highway - on & off site	Y
Sustainable travel - public transport	Y
Sustainable travel - walking + cycling on & off site	Y
Education:	
Primary (assumes £8.7m per new 2FE primary school or £12.4m per new 3FE primary school)	1 x 2fe*
Secondary (assumes £37.3m per new 8FE secondary school)	
Early years	Y
Green Infrastructure:	
Strategic open space	
Local open space / play space	Y
Community Facilities:	
Health sq. m est floorspace provided onsite	139
Other community provision	Y
Neighbourhood Centre / Local Centre sq. m est net floorspace at groundfloor	
SUDS	Y
Energy Strategy / Renewable energy	Y
Digital Infrastructure	Y

3.3   As set out in Policy S6 viii), much of this infrastructure is set out as a policy requirement. As set out in the Council's response to M6 Q5, significant progress has been made in respect of Masterplanning for the Broad Locations of East Hemel Hempstead, North St Albans and North West Harpenden. This has included co-operations with parties expected to deliver this infrastructure such as Hertfordshire County Council, NHS and Developers, and the detail is considered to be appropriate and realistic for this stage of the process.

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4. Question 4

Should specific provision be made for a new neighbourhood centre?

4.1   No, the Council considers that specific provision should not be made for a new neighbourhood centre at this Broad Location. This is because there is an existing local centre nearby at 95-105 Luton Road.

4.2   The local centre is also identified in the Harpenden Neighbourhood Plan. Harpenden Neighbourhood Plan Policy ER6 and Local Plan Policy L12 both seek to support local centres and discourage the loss of retail or service uses.

4.3   The local centre contains a Tesco Express and other units which meet the daily needs of the existing local population and of the new residents in future too. It is considered that the new population at the Broad Location will help support the vitality and viability of the centre.

4.4   This approach accords with the NPPF para 92 which seeks to provide the social, recreational and cultural facilities and services the community needs.

d)   ensure that established shops, ….are retained for the benefit of the community; …

4.5   With regard to revitalising town centres, the St Albans Local Plan Sustainability Appraisal Report 2018 (CD 009) identifies the following for North West Harpenden Broad Location:

In terms of the economic objectives positive effects are predicted … the relative proximity of the site to Harpenden town centre means that development should help to support the vibrancy of the town centre and nearby local centres.

Councils Response to Stage 1 Matters, Issues, Questions Thursday 12th December 2019.

5.   Question 5

Should the policy refer specifically to the provision of sports facilities?

5.1   No, as also set out in the Councils response to M7i Q11, the Council considers that there is no requirement to set out specifically the provision of sports facilities in the policy here. Appropriate sports facilities will be required, but will most appropriately be identified in detail and secured through the mechanisms that the draft Plan already contains. This includes at S6 (viii):

S6(viii) – Requirement 1 - *Masterplanned development led by the Council in collaboration with local communities, landowners and other stakeholders*

S6 (viii) Requirement 8 – *Recreation space and public open space*

5.2   This also includes at L22 'Community, Leisure and Sports Facilities'

"the provision of new community, leisure and sports facilities will be concentrated in the following locations;
…
- *As part of new Local Centres within Broad Locations for development and in other major developments*
- *As part of new educational development, where joint use facilities should be provided*

…
The council will encourage new and enhanced sport and recreational facilities in appropriate and sustainable locations, including in particular:

- *"New local provision as part of major residential development at Broad Locations, including possible joint use of education and multi-purpose community buildings / halls or improvements to existing parish halls / centres near to the new housing areas"*

5.3   This also includes at policy L28 'Green Space Standards and New Green Space Provision':

Creation of new green space through development or other opportunities will be directed at meeting needs for the new development and also addressing identified needs and deficiencies in the host settlement.

Priority provision at the Broad Locations (excluding provision of country parks / wildlife habitat creation areas – Policy S6) is set out in the Table below:

Broad location	Priority provision
North West Harpenden	Strategic play Teenage areas Parks and gardens Playing pitches for junior football and junior rugby Allotments

5.4   It is noted that there has been an objection received by Sports England in relation to a lack of specific sports provisions identified in the draft Local Plan, as well as concerns with the robustness of the Playing Pitch Strategy Update 2019 (LCRT 002). The Council has been working closely with Sports England in recent months and is in the process of developing a new Playing Pitch Strategy for the District that will meet Sport England's concerns about the current version. This new document will include identifying more directly in line with current guidance and best practice the current shortfall in existing sports facilities, as well as additional requirements from projected population growth from the Broad Locations.

5.5   The new Playing Pitch Strategy will, through the Masterplanning and subsequent Planning Application processes be used to secure on site provision and appropriate contributions from S106 agreements. This new work has included working with other bodies, such as Herts FA and services within the Council to identify areas for potential improvement.

Councils Response to Stage 1 Matters, Issues, Questions Thursday 12th December 2019.

6.   Question 6

How have heritage assets been considered and is a Heritage Impact Assessment required?

6.1   The Council has directly considered heritage assets as part of the Strategic Site Selection process and the Sustainability Appraisal and in considering the draft Plan wording. The Grade 2 listed buildings and an appropriate buffer that respects their setting are proposed to be retained within the Broad Location.

6.2   The Strategic Site Selection process set out a three stage process of selecting the broad locations, with stage 2 setting out;

Stage 2 2. Suitability will set out as (Red Amber Green) if there are any issues which are overriding constraints to development – eg Access, Transport, Heritage, Biodiversity, Flood Risk. Any Red rating will rule a site out for further consideration.

6.3   The Sustainability Appraisal, sets out as part of the SA/SEA Objectives;

10.   To identify, maintain and enhance the historic environment, heritage assets and their setting and cultural assets

6.4   In consideration of the Broad Location S6 viii) it was set out in the Sustainability Appraisal that;

There is uncertainty in relation to the effects on 'historic environment' as the site contains the Grade 2 Listed Building at Cooters End Farm and could impact on its settings. The Old Bell PH (Grade 2) is also close to the site.

6.5   It is also noted in the Sustainability Appraisal Addendum that there are heritage assets within the vicinity of the Broad Location.

The site contains the Grade 2 Listed Building at Cooters End Farm and development could impact on its settings. The Old Bell PH (Grade 2) is also close to the site. Minor adverse effects are therefore predicted.

6.6   Historic England has raised objections to the Plan, highlighting the lack of evidence to demonstrate that appropriate considerations have been given to the conservation and enhancement of the historic environment, together with a lack of policy criteria for the protection and enhancement of the historic environment in relation to these large sites. In the Councils response as set out in Regulation 22C;

"Cross reference Policy L30 This supports conservation of heritage assets appropriate to their significance and seeks that development which may affect such assets is accompanied by a Heritage Statement. Such heritage assets form only a small proportion of the overall Broad Location, are acknowledged and will be treated appropriately as part of the Masterplanning / planning application processes."

6.7   A specific Heritage Impact Assessment is not considered to be required at this Plan-making stage. A Heritage Statement and a Heritage Impact Assessment will be required as part of the Masterplanning and planning application processes. These Heritage considerations have already and will continue to inform the ongoing Masterplanning being taken forward through the PPA process (see other MIQ responses).

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7.   Question 7

Is the site suitable for development in relation to flood risk?

7.1   Yes, the site is suitable for development in relation to flood risk.

7.2   The NPPF advises:

Planning and flood risk

155. *Inappropriate development in areas at risk of flooding should be avoided by directing development away from areas at highest risk (whether existing or future). Where development is necessary in such areas, the development should be made safe for its lifetime without increasing flood risk elsewhere.*

156. *Strategic policies should be informed by a strategic flood risk assessment, and should manage flood risk from all sources. They should consider cumulative impacts in, or affecting, local areas susceptible to flooding, and take account of advice from the Environment Agency and other relevant flood risk management authorities, such as lead local flood authorities and internal drainage boards.*

157. *All plans should apply a sequential, risk-based approach to the location of development – taking into account the current and future impacts of climate change*

158. *The aim of the sequential test is to steer new development to areas with the lowest risk of flooding. Development should not be allocated or permitted if there are reasonably available sites appropriate for the proposed development in areas with a lower risk of flooding. The strategic flood risk assessment will provide the basis for applying this test. The sequential approach should be used in areas known to be at risk now or in the future from any form of flooding.*

7.3   In selecting strategic sites for broad locations, flood risk was taken in to account.

7.4   The most recent Strategic Flood Risk Assessment (ENV 001) was undertaken jointly by Three Rivers District Council, Dacorum Borough Council, St. Albans City and District Council and Watford Borough Council.

7.5   The broad locations were assessed as part of the South Hertfordshire Level 1 SFRA.

Site Name	Area (ha)	Flood Zones					
		% in FZ 3b only	% in FZ 3a only	Total % within FZ3	% in FZ 2 only	% in FZ 1 only	Total % within FZ 3a + 70% climate change
West of Chiswell Green Broad Location	15.12	0%	0%	0%	0%	100%	0%
North of St Albans Broad Location	41.97	0%	0%	0%	1%	99%	1%

North East Harpenden Broad Location	33.67	0%	0%	0%	0%	100%	0%	
West of London Colney Broad Location	13.78	0%	0%	0%	0%	100%	0%	
East of Hemel Hempstead north	66.94	0%	0%	0%	0%	100%	0%	
East of Hemel Hempstead sout	59.36	0%	0%	0%	0%	100%	0%	
East of St Albans	40.17	0%	0%	0%	0%	100%	0%	
North-West of Harpdenden	18.16	0%	0%	0%	0%	100%	0%	
Former Radlett Aerodrome	4.2176	0%	0%	0%	0%	100%	0%	

7.6 The Sustainability Appraisal considered the plan in terms of flood risk, under SA Objective 3 which is replicated below.

3. Ensure that new developments avoid areas which are at risk from flooding and natural flood storage areas.
- *To avoid developments in areas being at risk from fluvial, sewer or groundwater flooding (for instance natural flood plains) while taking into account the impacts of climate change*
- *To ensure that developments, which are at risk from flooding or are likely to be at risk in future due to climate change, are sufficiently adapted*
- *To promote properly designed and maintained sustainable urban drainage systems to reduce flood risk and run off and contribute to improved water quality, green and blue infrastructure and function.*
- *To take account of additional surface water generated by new development*
- *To seek opportunities for Natural Flood Management where appropriate.*

7.7 The St Albans Local Plan Sustainability Appraisal Report 2018 Non-Technical Summary ([CD 011](CD 011)) shows that no significant effects have been identified with regard to flood risk and extracts are shown below.

	Reference Term	SA Objective	Significant effects identified
…	…	…	…
3	Flood risk	Ensure that new developments avoid areas which are at risk from flooding and natural flood storage areas	No significant effects identified

In relation to flood risk (SA objective 3), by seeking to avoid development in areas at risk from flooding, ensuring that water and flood risk are fully addressed by new development and requiring SUDS, including flood storage areas, to be incorporated into new developments (Policy L29 Green and Blue Infrastructure, Countryside, Landscape and Trees) there should be a positive effect against this objective. In addition, supporting the creation and enhancement of green infrastructure (also Policy SL29) which could provide for flood alleviation will also help support the achievement of the objective.

7.8 For the NW Harpenden Broad Location, the SA Addendum ([CD 012](CD 012)) indicates the following assessment.

Policy S6 viii) North West Harpenden Broad Location

3	Flood risk	Site is not in a flood risk zone. No predicted effects. The 2018 SFRA considers the implications of climate change: • It shows that none of the site lies in 'Flood Zone 3 + 70%CC'. • It identifies that some very small parts of the site are classified as 'RoFSW + CC (1 in 100-year + 40% CC). These will need to be taken into account in future masterplanning and detailed design.	-	-	-	-	-

7.9 The Broad Location is not within a flood risk zone, however a very small part of the site could be affected by implications of climate change. The Masterplanning process, which is a policy requirement, will take account of areas which could be affected by climate change; and will steer development to areas of lower risk.

7.10 Annex 1 of the Local Plan shows that base capacity calculations have been undertaken, which are duplicated below. It can be seen that residential is calculated at 80% of the non-GB area; and non-residential accounts for 20%, which will include provision of green infrastructure and SuDs etc in accordance with policy. The 60/40 calculation has been adjusted to 80/20 to take account of the designated education site (and the allotment). The wider Broad Location also contains additional land which is not removed from the Green Belt. Taken together with the very small area affected, this provides confidence that the Broad Location has capacity to accommodate any flood requirements which will be subject of more detailed work during the Masterplanning process.

Annex 1 - Broad Location (BL) Area and Base Capacity Calculations (in Hectares – Ha)

Broad Location (BL)	BL Wider Area (Ha) (Purple on Policies Map)	Broad Location Non-Green Belt Area (Ha) i.e. Area to be removed	60/40 resi / non-resi split on BL Wider Area	60/40 resi / non- resi split on non- GB Area	New Education Site in GB up to (Ha)	Net developable area when education sites are in Green Belt - 80% of Non-Green Belt area	SADC net developable area for capacity calculations x 40 dwellings per hectare =	60/40 excluding school but including circa 1 Ha allotment site
North West Harpenden	22.3	18.2	13.4/8.9	10.9/7.3	2.8	14.5* See note below	14.5x40 = 581	
North East Harpenden	43.2	31.7	25.9/17.3	19/12.7			19x40 = 760	
North St Albans	46.7	46.7	28/18.7	28/18.7			28x40 = 1120	
East St Albans	116.9	52.5	70.1/46.8	31.5/21	22.2		31.5x40 = 1260	
Park Street Garden Village	186.0	97.7	111.6/74.4	58.6/39.1			58.6x40 = 2344	
Chiswell Green	15.2	15.2	9.1/6.1	9.1/6.1			9.1x40 = 365	
London Colney	38.1	13.8	22.9/15.2	8.3/5.5	24.5	11.0* See note below	11x40 = 441	
East Hemel South	138.8	115 (98 for calcs*)	76.3/50.9	59/39* See note below			59x40 = 2360	
East Hemel North	159.6	67.7	95.8/63.8	40.6/27* see note below	27.7		40.6x40 = 1624	
North Hemel	87.2	66.8	52.3/34.9	40.1/26.7			40.1x40 = 1604	

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Matter 7 – The Broad Locations for Development – Specific Matters (Policy S6 (i) to (xi)

North West Harpenden S6 (viii)

List of Appendices

Strategic Local Plan Background Note

Residential Density

October 2014

Background Note

Residential Density

An earlier version of this note was considered by the Council's Planning Policy Committee on 3 July 2014. This version provides additional examples. The purpose of this Note is to illustrate housing density on some well known sites across St Albans City and District and thus to give a range of comparators for typical residential layouts / designs.

Measuring housing density is a simple way of quantifying the intensity of residential development and efficiency in use of land for housing. The measurement also gives some insight into the environmental character of housing areas.

The Note gives local examples of:

Relationship between gross and net density in recent major residential development

1. Jersey Farm; 1980's
2. Hill End / Cell Barnes; 1990s
3. Napsbury; 1990 / 2000s

Net density calculations

1. New England Street area, St Albans
2. King Harry Lane (new development in progress), St Albans
3. Jersey Farm Estate, St Albans
4. Oaklands Smallford Campus (current housing application as proposed), St Albans
5. Former Oaklands College City Campus housing redevelopment, St Albans
6. Part of Marshalswick Estate, St Albans
7. Part of Chiswell Green
8. Luton Road area, Harpenden
9. Belmont Hill, St Albans
10. Elm Lawns Close, St Albans
11. Land Rear of Sandridge Road, St Albans
12. Waverley Road, St Albans
13. St Albans Hospital site
14. Station Road, Harpenden (a)
15. Station Road, Harpenden (b)
16. Redbourn Lane, Harpenden
17. Luton Road, Harpenden

Calculation and interpretation of residential density

Decisions on what housing density is appropriate for a location are influenced by many different factors.

Building height, block size and housing typology are the main factors that influence the character of an area and perceptions of density.

However, higher density does not have to mean tall buildings with small apartments that fail to relate to local character. In fact, high buildings can be less effective in maximising the use of land, especially in terms of the relationship of developed and open areas.

Good design is crucial to achieve environmental quality. Each design scheme should establish the density appropriate for a particular location taking into consideration factors such as:

- Context - density appropriate to context and allowing respect for surrounding residential character
- Quality of public realm - a legible and stimulating public realm
- Outdoor space - high quality communal space
- Private and public space mix - ability to manage spaces
- Parking - adequate and appropriate car parking levels which do not dominate or detract from the external environment

Additional factors which might determine an appropriate density level include:

- Surrounding built form
- Housing types
- Need for different types of housing
- Need to create variety of densities – density mix
- Capacity of facilities for residents

It is important to remember that density is a product of design, not a determinant of it. Residential density should aim to support local infrastructure such as shops, schools, and local transport. Homes and Community Agency (HCA) "research has shown that there is no correlation between urban quality and density. Developments driven by average densities and shaped by blanket standards (relating to privacy, open space, parking and highway geometry, for example) stultify design and tend to produce lowest-common-denominator blandness."

In the St Albans City and District Strategic Local Plan (SLP) the factors of what 'housing types' and the 'need for different types of housing' are particularly important. The draft SLP says: "All new housing development will contribute to a mix of different housing types in residential areas, taking into account the existing pattern of housing in the area, evidence of local need and site specific factors. It will in particular require the inclusion of more small and small to medium-sized housing, including one and two bedroom flats and 2

bedroom houses, in new development schemes in suitable locations, to increase the proportion of such sized units in the district housing stock, to widen choice and to provide more relatively low cost market housing available to buy. Floorspace, as well as room numbers and bedroom numbers, will be considered in judgments of relatively low cost market housing.

The Council requires the affordable housing size, type, and mix to broadly reflect that being provided for the market element of all development.

The Council seeks the provision of a reasonable proportion of housing designed to the lifetime homes standard that can be readily adapted to meet the needs of older people and people with disabilities.

Sheltered housing and extra care housing for older people and those with special needs will be encouraged on suitable sites in areas close to a range of services.

Further detail on requirements for appropriate housing size, type, mix and proportion of lifetime homes will be given in the DLP. "

Measuring density

There are different ways of measuring density, each of which provides different information.

They include:

- Dwellings per hectare (DPH) – this a common measure to indicate residential density. However, apartments at 60dph may actually have smaller built volume than larger houses at 30dph with related garaging.

- Square meters per hectare – measuring amount of floorspace per hectare is another method to illustrate development intensity. It indicates more clearly how efficiently land is being used.

- Floor area ratio (FAR) or plot ratio – this measurement express the ratio between gross floor area and site area. It again indicates the intensity of land use and gives some indication of massing volumes.

- Bedspace per hectare – measuring bedspace per hectare indicates population capacity rather than actual use (as some dwellings may be under-occupied.)

- Habitable rooms per hectare – habitable room and bedspace densities give an indication of resident population and a calculation of population capacity. Calculating habitable rooms per hectare can be helpful in

determination of likely demand for amenities and services such as public transport.

For the purpose of this Note the simple dwellings per hectare has been adopted.

The first part of the Note illustrates how density is viewed at a gross level. It gives examples of the relationship between gross and net density calculations.   Gross density calculations can be used to estimate and illustrate the potential development capacity of a site. The Green Belt Review Part 2 (SKM Enviros Consultancy Study) used the approach that up to 60% of the Gross Development Area (GDA) would be developed (termed Net Development Area) and the remaining 40% would be required to provide infrastructure, main roads, open space and public facilities.

The second part of the Note illustrates calculations of net density. A net density measurement includes access roads within the site, private garden spaces, car parking areas, incidental open space and landscape and children's play areas but normally excludes major distributor road, primary schools, opens spaces serving a wider area and significant landscape buffer strips.

Net density is the measure of density used for the SKM recommended net development areas and thus is a comparable measure to that used in the illustrations in this Note.

Work on density assumptions in the draft Strategic Local Plan (SLP) is based on HCA research, in the form of a density matrix (Table 3.3 from the Homes and Communities Agency Urban Design Compendium – reference below). The matrix links typical residential densities to urban form ('creating urban structure'). It draws on examples of development across the UK and Europe. Average densities are based on case studies analysed as part of the *Sustainable Residential Quality: Exploring the housing potential of large sites* research. The matrix recommends that residential densities of 30 to 50 DPH (alongside related services) should be applied in suburban locations. This is considered to be relevant to the SKM identified sub areas assessed for the draft SLP, as they are located on the edges of existing settlements and exhibit suburban characteristics.

Illustrative areas analysed for the purpose of this study can be considered in the context of the Density Matrix.

The matrix is reproduced below:

		Option 1	Option 2	Option 3
Car Parking Provision		**High** 2-1.5 spaces per unit	**Moderate** 1.5-1 space per unit	**Low** less than 1 space per unit
Redominant Housing Type		**Detached & linked houses**	**Terraced houses & flats**	**Mostly flats**
Location	Setting			
Site within Town Centre 'Ped-Shed' — 6	Central			240-1100 hr / ha 240-435 u / ha Ave. 2.7 hr / u
	Urban		200-450 hr / ha 55-175 u / ha Ave. 3.1 hr / u	450-700 hr / ha 165-275 u / ha Ave. 2.7 hr / u
4	Suburban		240-250 hr / ha 35-60 u / ha Ave. 4.2 hr / u	250-350 hr / ha 80-120 u / ha Ave. 3.0 hr / u
Sites along Transport Corridors & Sites close to a Town Centre 'Ped-Shed' — 3	Urban		200-300 hr / ha 50-110 u / ha Ave. 3.7 hr / u	300-450 hr / ha 100-150 u / ha Ave. 3.0 hr / u
2	Suburban	150-200 hr / ha 30-50 u / ha Ave. 4.6 hr / u	200-250 hr / ha 50-80 u / ha Ave. 3.8 hr / u	
Currently Remote Sites — 2 / 1	Suburban	150-200 hr / ha 30-65 u / ha Ave. 4.4 hr / u		

(Accessibility index — left vertical axis)

Table 3.3 Density matrix
Average densities are based on case studies analysed as part of the *Sustainable Residential Quality: Exploring the housing potential of large sites* research (LPAC, DETR, GOL, LT and HC, 2000)

(Note: This table is a direct extract from Homes and Community Agency Urban Design Compendium 1. Second row in column one should read 'predominant'.)
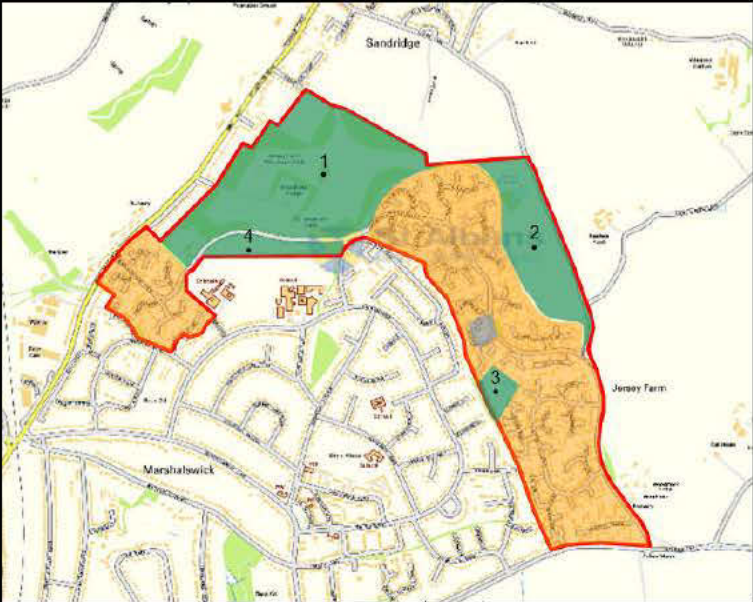
Reference:
Urban Design Compendium 2 (2007), *Delivering Quality Places* (2nd Ed), Homes and Community Agency

Relationship between gross and net density in recent major residential development – local examples

.

All figures are estimated / rounded (details noted below)

1. **Jersey Farm 1980s**

JERSEY FARM	Total area of development (Ha)	Area used for infrastructure (Ha) (mainly large open spaces, distributor roads and school sites)	Remaining area for residential development (Ha)	Dwelling numbers	Notes on assumptions / estimates
	102 ha	44 (**43%**)	58 (**57%**)	1800	• Infrastructure taken as including schools (see below), local centre (1 Ha) woodland park / schools (32 ha) eastern OS (9.5 Ha) local centre OS (1.5 ha) • Above area used for infrastructure includes approximately 25% of Wheatfields and Sandringham school sites to reflect use and expansion for the Jersey Farm estate (albeit this site

Legend:

- Site boundary
- Developed area
- Undeveloped area
  1. Woodland Park OS
  2. Eastern OS
  3. Central OS
  4. Part of school site OS
- Local Centre
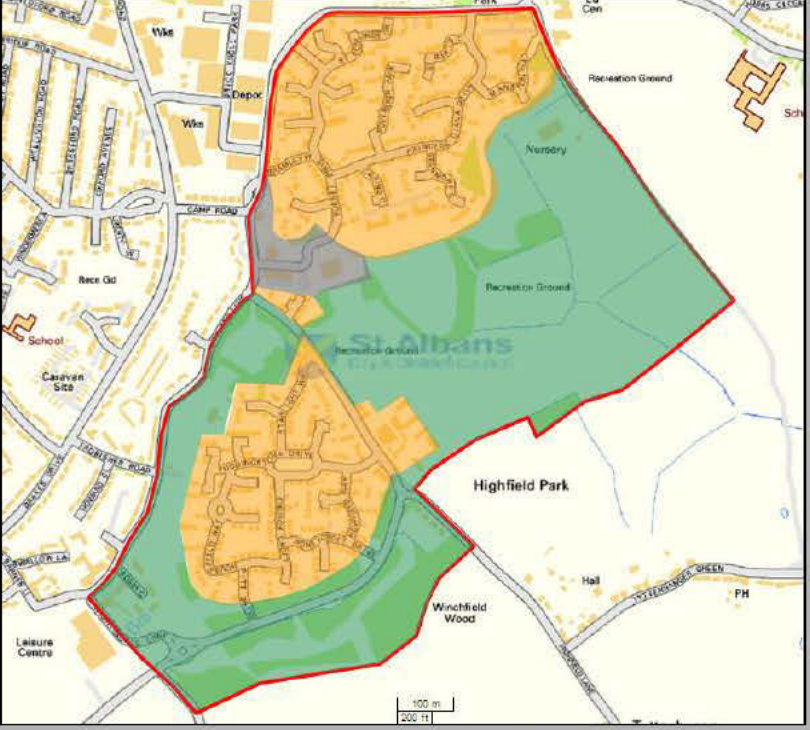
is pre existing and also serves Marshalswick)

- Area used for infrastructure is probably an underestimate as, for ease of calculation, parts of the distributor road corridor and Jersey Lane are not included because they would require micro level area measurement

- Dwelling numbers are estimated as Census super output lower level areas (SOAs 007C, 007B, 008A) and address point area adjustment. SOAs do not co-incide exactly with the estate to the NW corner. A cautious adjustment has been used

Density calculations - dwellings per Ha (dph)	Gross		Net		
	1800 dwellings on		1800 dwellings on		

	102 Ha = **18 DPH**		58 ha = **31 DPH**		

2. Hill End / Cell Barnes 1990s

HILL END / CELL BARNES (HIGHFIELD)	Total area of development (Ha)	Area used for infrastructure (Ha) (mainly large open spaces, distributor roads and school sites)	Remaining area for residential development (Ha)	Dwelling numbers	Notes on assumptions / estimates
	78 ha	46 ha **59 (%)**	32 ha **41 (%)**	800	- Infrastructure taken as including local centre (1.8 Ha), Highfield Park recreation areas (26 Ha) and Winchfield Wood OS (13.4 Ha). Full map of the Highfield Park facilities can be found here. The remainder is general open space and community facilities. - Dwelling numbers are estimated from Census super output lower level areas (SAOs) 015A and 015B and address point data

| | Site boundary | | Developed Area |
| | Undeveloped Area | | Local Centre |

adjustment. SAO 15B covers Tyttenhanger Village and parts of Colney Heath Lane schools.

Density calculations - dwellings per Ha (dph)	Gross		Net		
	800 dwellings on 78 Ha = **10 DPH**		800 dwellings on 32 ha = **25 DPH**		

NAPSBURY	Total area of development (Ha)	Area used for infrastructure (Ha) (mainly large open spaces, distributor roads and school sites)	Remaining area for residential development (Ha)	Dwelling numbers	Notes on assumptions / estimates
	60 ha	37 ha **62 (%)**	23 ha **38 (%)**	620	• Infrastructure taken as all large blocks of open space forming the setting for the residential development (37 Ha in all). These include distributor road and some small scale recreation facilities. • Area residentially developed is quite low and includes considerable additional integral amenity open space. This is due to the special character of this historic psychiatric hospital site; recognised in its conservation area designation. The

Site boundary

Developed area

Undeveloped Area

Density calculations - dwellings per Ha (dph)	**Gross** 620 dwellings on 60 Ha = **10 DPH**		**Net** 620 dwellings on 23 ha = **27 DPH**		design context set was in the importance of maintaining the extensive parkland setting

Net density calculations – local examples

1. New England Street area, St Albans	Map and Aerial Photographs	Photographs	Density Calculations	Notes
Land enclosed by New England Street to the West, Verulam Road to the North and College Street to the South, St Albans This is a residential area with primarily 2 storey cottage terraced houses built in the 19th Century. Additional residential development took place at the beginning of 20th Century along Verulam Road. The site includes two commercial units and a social use with small pockets of open space.	 	 New England Street Temperance Street College Street	The site is 2.5 ha in area and there are 144 dwellings within the site. Net density of this site is **57 DPH.**	Some of the space adjoining New England Street has been included in the calculations to illustrate the density with a reflection of the character of the area including some public space. A major factor in high density is total reliance on-street parking.

2. King Harry Lane (new development in progress), St Albans	Map and Aerial Photographs	Photographs	Density Calculations	Notes
The development of this site is divided into two phases. Phase one (northern side) is a proposal for 126 dwellings (16 key worker units, 45 extra care/assisted living units and 65 units of accommodation for the over 55s).

Outline planning permission for phase one development was granted on appeal in February 2008.

Phase two (immediately to the south of phase one development) is a development of 150 dwellings (ranging from 2 – 2.5 storey houses) Permission for this development was granted on appeal in April 2010. | |

Illustrative Masterplan for phase one development.

Mortimer Crescent (phase two) | The site is 7.8 ha in area the total number of proposed dwellings is 276.

Based on these figures, net density for the whole site is **35 DPH.** | This is illustrative of a recently permitted development in a suburban location but including some open spaces.

Each site has different ownership but both sites share access arrangements and a coordinated design led approach. |

3. Jersey Farm Estate, St Albans	Map and Aerial Photographs	Photographs	Density Calculations	Notes
Various parts of Jersey Farm Estate. The development of the whole estate took place across 1970s and 80s. Area 1 – North – eastern part of Jersey Farm. Permission for development of this site was granted in early the early 1980s.	 	 Lincoln Close Pirton Close Sandringham Crescent	Area 1 The site is 6.8 ha in area and there are 156 houses within the site. Net density of this area is **23 DPH.**	The site consists of 2 storey detached houses. Average plot size is 300 to 350 m2. All the houses have garages and off street parking. .

Area 2 – Southern part of Jersey Farm			Area 2	Houses are set back

Area 2 – Southern part of Jersey Farm

This part of Jersey Farm Estate development consists mainly of 2 storey terraced houses.

Permission was granted for the development of 118 Dwellings (60 flats and 58 homes) in the 1970s.
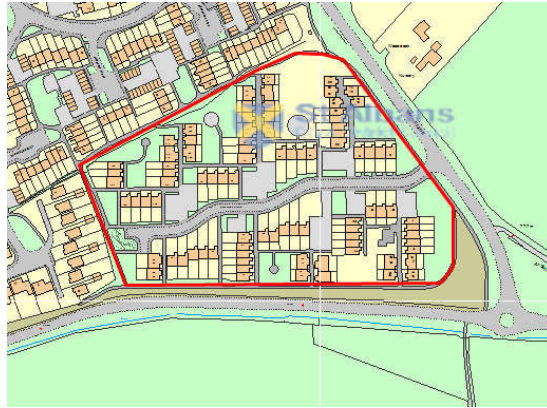
Newgate Close

Newgate Close

Newgate Close

Area 2
The site is 2.8ha wide and there are 88 terraced houses within the site.

Net density for this site is **31 DPH.**

Houses are set back from the street and have relatively large front and back gardens.

There is a significant amount of designated resident parking space and pockets of green open space which explains the relatively low density for a development of terraced housing.

Area 3 – Middle part of Jersey Farm

This is a mixed use area which includes residential dwellings, commercial and community uses

Permission for the commercial Village Centre Development was granted in the late 1970s followed by approval for adjoining residential development in the early 80s.
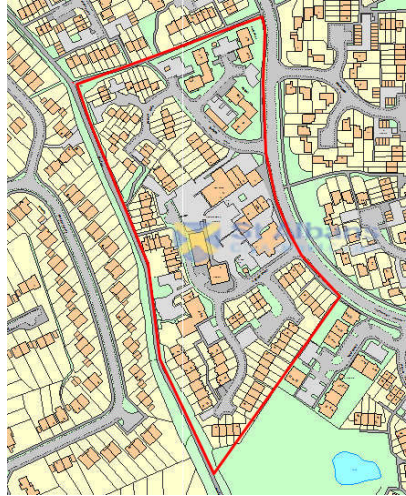
Harvesters

Twyford Road

Commercial Centre

Area 3
The site in total is 3.5 ha in area. Within the site there are 92 terraced houses, three blocks of flats (equivalent of 42 flats in total) and commercial centre (0.6 ha) which includes neighbourhood supermarket, five small retail units, public toilets, medical and community centre.

After taking away the volume of commercial centre area and its parking, the net density for the site is **46 DPH.**

This relatively high density can be explained by the high proportion of terraced housing and flats. Dwellings of this kind are often included in the design of a central area or local centre within a settlement and this will allow higher overall densities to be achieved. It also introduces variation in the character of the built environment.
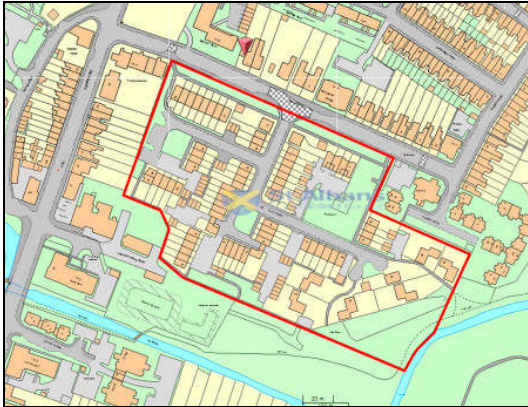
4 Oaklands Smallford Campus (current housing application as proposed), St Albans	Map and Aerial Photographs	Photographs	Density Calculations	Notes
A full application for comprehensive redevelopment to provide new and refurbished College Buildings and residential development of 348 dwellings, car parking, associated access and landscaping was submitted in May 2013. The application is still under consultation. The area marked on the map is the area proposed by the applicant for residential development.		Landscape proposal Proposed Residential Layout 	The site is 13.68 ha in area. The application proposes development of 348 residential dwellings. Within the design proposal there is a quite significant amount of structural open space in the northern part of the site and middle of the site. The overall density of the site is 26dph but after taking away the area of structural open space the net density for this development is **31 DPH.**	The scheme proposes mainly 2 – 3 storey houses. Density of the site varies depending on character zones. Proposed 'Main Streets' will be lower in density in the range of 30dph. 'The lanes' will be medium density (35dph) and 'Mews Links' will be higher density ranging from 40 - 45dph.

5. Former Oaklands College City Campus housing redevelopment, St Albans	Map and Aerial Photographs	Photographs	Density Calculations	Notes
This is a former Oaklands College City Campus site. Permission for demolition of educational buildings, change of use from educational use to residential use of eight buildings, retention of two building as hall and gym and erection of 15 apartment blocks providing a total of 329 units was granted on an appeal in August 2006. The density calculation is for part of the development - the section now redeveloped.		Newsom Place Lemsford Road 	The site in total is 3.3 ha in area. Within the site boundary there are 20 apartment blocks (equivalent of 281 dwellings), gym and hall. After taking away the area of the hall/gym buildings the net density for this development is **93 DPH.**	The scheme proposes mainly 3 – 4 storey apartment blocks. Parking is at reduced level due to proximity to City services and public transport. Some of the parking is underground. This high density development is appropriate to an urban site, but there is space for extensive landscaping.

6. Part of Marshalswick Estate, St Albans	Map and Aerial Photographs	Photographs	Density Calculations	Notes
Land along Sandpit Lane immediately to the north of current Oaklands application. Marshalswick, St Albans.		Barnfield Road Southfield Way Ardens Way	The site is 8.4 ha in area and there are 170 dwellings within the site boundary. Net density for this area is **20 DPH**.	The area consists of 2 – 2.5 storey detached houses with garages/ off street parking and relatively large back gardens.

7. Part of Chiswell Green	Map and Aerial Photographs	Photographs	Density Calculations	Notes
Land enclosed by North Orbital Road to the East and Watford Road to the West, Chiswell Green	 	 Manor Drive Watford Drive Forefield	The site is 9.7 ha in area and there are 145 dwellings within the site boundary. Net density for this area is **15 DPH.**	The site consists of a mixture of house types from 1 storey bungalows to 2.5 storey detached houses.

8. Luton Road, Harpenden	Map and Aerial Photographs	Photographs	Density Calculations	Notes
Land enclosed by Luton Road to the North and Tuffnells Way to the South, Harpenden		 Ridge Avenue Wells Close Tuffnells Way	The site is 10.8 ha in area and there are 190 dwellings within the site boundary. Net density for this for this site is **17 DPH.**	There is a mixture of house types. From 1 storey bungalows to 2 – 2.5 storey terraced and detached houses. Plot sizes vary from 1100 m2 to 215 m2. Most gardens are substantial and there is generally ample off street parking.

9. Belmont Hill, St Albans	Map and Aerial Photographs	Photographs	Density Calculations	Notes
De Tany Court at Belmont Hill, St Albans (former playing fields)		De Tany Ct and related open space (part of former playing field) De Tany Ct De Tany Ct	The site is 2.24 ha in total and there are 80 dwellings within the site. Main open spaces are 0.3 ha in total. These are retained parts of the former playing fields and can be regarded as more than amenity open space included in a net area. Density of this site is **35 DPH**. If calculated without play area and open space (south east of the site) the density of this site is **41 DPH**.	This is a residential area with a mix of 2-3 storey houses and maisonettes built in late 80s. The site includes a substantial play area and riverside open space serving the wider area and small pockets of integral open space.

| 10. Elm Lawns Close, St Albans	Map and Aerial Photographs	Photographs	Density Calculations	Notes
Elm Lawns Close, off Avenue Road, St Albans		Elm Lawns Close Avenue Road	The site is 0.4 ha in total and there are 24 dwellings within the site. Net density of this site is **60 DPH.**	This residential development is a mix of 2- 3 Storey houses This is a small site, but it illustrates higher density development with car parking in a cul de sac layout. It comprises housing in terraced form.

11. Land Rear of Sandridge Road, St Albans	Map and Aerial Photographs	Photographs	Density Calculations	Notes
Archers Fields; R/O 168 Sandridge Road, St Albans		 Sandridge Road Archers Fields Archers Fields	The site is an urban infill of 0.75 ha in total. There are 27 dwellings within the site. Net density of this site is **36 DPH.**	The site consists solely of 2 storey houses, with gardens. They are mainly terraced, but including some linked detached and detached. There is no integral / amenity open space. There is a substantial unused road frontage (south side of access road) which results in a lower density figure than the layout would achieve if the site were not urban infill, fitting into an existing urban layout.

12. Waverley Road, St Albans	Map and Aerial Photographs	Photographs	Density Calculations	Notes
Pegasus Place off Waverley Road, St Albans		 Pegasus Place Waverley Road	The site is an urban infill development of 0.74 ha in total. There are 36 dwellings within the site. Net density of this site is **49 DPH.**	The site consists entirely of 2-3 storey terraced houses with associated parking and landscaping. The houses have small gardens. There is no integral amenity open space.

13. St Albans Hospital Sites	Map and Aerial Photographs	Photographs	Density Calculations	Notes
Land adjacent St Albans Hospital, Waverley Road, St Albans.	 	 Goldsmith Way Newmarket Ct Waverley Road with entrance to St Albans City Hospital	The overall site is 9.2 ha in total. The main hospital site (shaded in red) is 3.2 ha. There are approximately 290 dwellings within the remaining site (6 Ha). Net density for the overall site is **48 DPH.**	The area includes a wide range of dwelling types including some substantial blocks of small flats. The overall site calculation includes some significant areas of open space, the site of a hospice and other hospital related uses. Densities within the overall site vary greatly. Some sub areas where dwellings are predominantly 2 -3 storey houses are considered separately below.
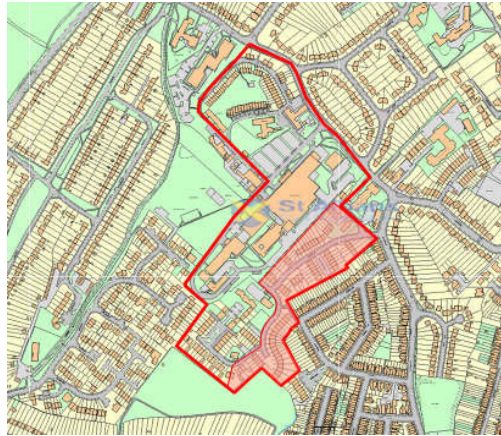
| 1. Goldsmith Way | | Goldsmith Way
 | The site shaded in red is 2 ha in total and there are 71 dwellings within selected site.

Net density for this site is **35 DPH** | Dwellings are 2-3 storey houses. Within the site there are pockets of open space and significant amount of on-street and off-street parking. |

| 2. Newmarket Court | | Newmarket Court | The site shaded in red is 1.1 ha in total and there are 43 dwellings within selected site.

Net density for this site is **39 DPH** | The site is a mixture of houses and flats with significant amount of on and off street parking space. |

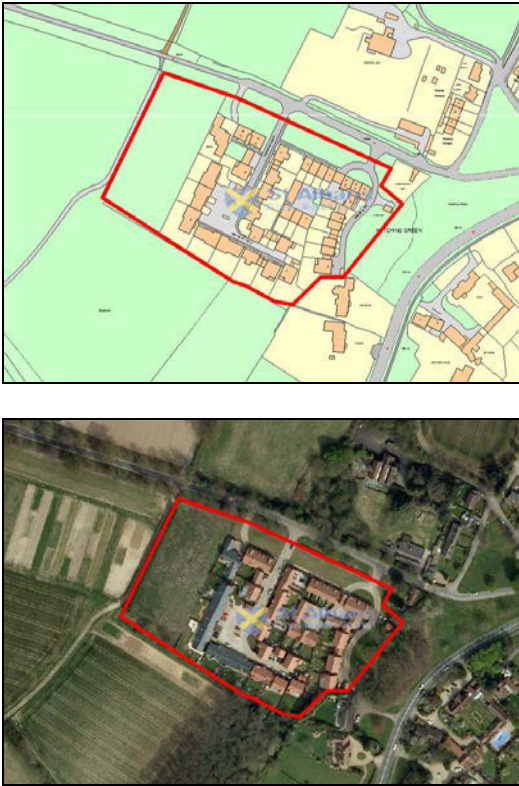| 14. Station Road, Harpenden (a)	Map and Aerial Photographs	Photographs	Density Calculations	Notes
Mallard Mews / Station Road / Waveney Road, Harpenden		\nMallard Mews\n\n\nWaveney Road\n\n\nStation Road	The site is 0.25 ha in total and there are 15 dwellings within the site.\n\nDensity of this site is **60 DPH.**	This is an infill development with a mix of 2.5 – 3 storey flats and houses and apartments. This is a part cul de sac part street frontage development.

15. Station Road, Harpenden (b)	Map and Aerial Photographs	Photographs	Density Calculations	Notes
Station Road, Harpenden (flats)		Station Road Station Road Station Road	The application site is 0.41 ha in total and there are 48 dwellings within the site. Net density of this site is **117 DPH.**	This development consists of 2-3 three storey blocks of flats with associated parking spaces to rear of blocks.

16. Redbourn Lane, Harpenden	Map and Aerial Photographs	Photographs	Density Calculations	Notes
Former Central Science Laboratories, Redbourn Lane, Hatching Green, Harpenden		Manor Close Manor Close Hatching Green (road leading to the site)	The overall site is 1.9 ha and there are 39 dwellings within the site. Density of this site is **20 DPH.** If calculated without the surrounding open space (approx. 0.63 Ha) then the net density of this development is **32 DPH**	This residential development includes consists 2 storey housing with a mix of terraced, linked detached and detached forms. There is a mix of on-street and off-street parking. There is a substantial setting of open space related to the overall character of the area. This more than integral amenity open space.

17. Luton Road, Harpenden	Map and Aerial Photographs	Photographs	Density Calculations	Notes
40 Luton Road, Harpenden	 	 View from Townsend Road View from Luton Road Luton Road	The site is 0.14 ha in total and there are 9 dwellings within the site. Density of this site is **64 DPH.**	This residential development consists of 9 apartments in a 3 storey building with accommodation in the roof space and under croft parking. This is a small infill / redevelopment scheme, but it illustrates how higher density components within an overall area / scheme can contribute to character.

8.   Assessment of Infrastructure Capacity

Table 2: Infrastructure to be assessed in the IDP

Infrastructure Category	Sector	Infrastructure Type
Social & Community Infrastructure	Health Infrastructure	• GPs • Hospitals & Acute Provision
	Health and Community Services	• Adult Care Services • Mental Health Care
	Education Infrastructure	• Primary Education • Secondary Education • Further Education • Early Education & Child Care Provision
	Emergency Services	• Police Services • Fire & Rescue Services
	Leisure and Cultural Facilities	• Sports & Leisure Facilities • Cultural Services & Public Realm • Libraries • Cemeteries
Green Infrastructure	Strategic Green Infrastructure	• Forests • Country Parks • Ecological Networks • Rights of Way • River Corridors • Flood risk
	Local Green Infrastructure	• Allotments • Amenity Green Space • Natural & Semi-Natural Green Space • Parks & Gardens • Playing Pitches • Children's Play Areas • Teenage Provision
Physical Infrastructure	Strategic & Local Transport	• Road Network • Public Transport • Walking & Cycling Infrastructure • Parking
Utilities	Water Infrastructure	• Water Supply • Water Drainage & Sewerage
	Energy Distribution	• Electricity Distribution • Electric Vehicle Charging • Gas Transmission & Distribution • Onsite Energy Provision
	Digital Infrastructure	• Internet Access
	Waste Infrastructure	• Waste & Recycling

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