

1.0 Table of Contents

# 1.0 Table of Contents

Table of Figures	ii	
List of Tables	iii	i
Introduction	1	
Central Bedfordshire Design Guide Local Policy The National Design Guide The Structure of This Document	2 3 3 4	
Context & Identity	6	
Introduction Landscape Context - the Landscape Character of Central Bedfordshire Landscape Setting and Context for Development Landscape Connections Tranquillity Skylines and Roofscapes Built Form in Central Bedfordshire Twentieth Century Development Local Built Form Characteristics Traditional Materials Typology Historic Context of Central Bedfordshire Policy Guiding Development Affecting the Historic Environment The Historic Environment Record (HER) Designated Heritage Assets Designated Heritage Assets: Listed Buildings Listed Building Consent What requires Listed Building Consent? Demolition Conversions and Change of Use Alterations and Extensions Retention of Historic Fabric and Important Features Scale, Height, Depth, Massing and Bulk High Quality Design Junction between Old and New	8 9 10 10 11 11 11 12 11 10 10 10 11 11 11 11 12 12 20 20	0 0 1 1 1 1 1 3 3 4 5 5 5 6 6 6 6 6 7 7 9 9 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Reversibility Repair and Maintenance	2	
	Introduction  Central Bedfordshire Design Guide Local Policy The National Design Guide The Structure of This Document  Context & Identity  Introduction Landscape Context - the Landscape Character of Central Bedfordshire Landscape Setting and Context for Development Landscape Connections Tranquillity Skylines and Roofscapes Built Form in Central Bedfordshire Twentieth Century Development Local Built Form Characteristics Traditional Materials Typology Historic Context of Central Bedfordshire Policy Guiding Development Affecting the Historic Environment The Historic Environment Record (HER) Designated Heritage Assets Designated Heritage Assets: Listed Buildings Listed Building Consent What requires Listed Building Consent? Demolition Conversions and Change of Use Alterations and Extensions Retention of Historic Fabric and Important Features Scale, Height, Depth, Massing and Bulk High Quality Design Junction between Old and New Reversibility	Introduction  Central Bedfordshire Design Guide Local Policy Janational Design Guide The National Design Guide The Structure of This Document  Context & Identity  Introduction  Int

Sustainability Shopfronts Heritage Assets: Scheduled Monuments and their settings Heritage Assets: Registered Parks and Gardens Heritage Assets: Conservation Areas and their settings Development within a Conservation Area Requirement for Heritage Statements Requirement for Heritage Statements: Archaeology Requirement for Heritage Statements: Historic Parks and Gardens Heritage Statements: Built Heritage and Conservation Areas Heritage Statements: What Happens if the information is not supplied? Historic Buildings and their Materials Appraising a Site and its Setting	21 21 22 22 23 24 26 27 27 28 28 28 31
Built Form	33
Introduction Urban Grain and Contextual Development Characteristics of Urban Grain Enclosure Consistency of Building line and Active Frontage Hierarchy of Spaces and Enclosure Ratios Public and Private Space Perimeter Blocks Densities Building Form Infills and Backland Development Buildings on Key Frontages Focal Point and Key Building Groups Building Design	35 35 36 36 36 37 38 39 40 41 41 41 41
Building Design Elevational Design Considerations Symmetrical/Asymmetrical Balance Subservient/Additive Form Modelling of the Elevation Flush Façade Deep and Shallow Modelling Window design	43 44 45 46 46 46 46
	Shopfronts Heritage Assets: Scheduled Monuments and their settings Heritage Assets: Registered Parks and Gardens Heritage Assets: Conservation Areas and their settings Development within a Conservation Area Requirement for Heritage Statements Requirement for Heritage Statements: Archaeology Requirement for Heritage Statements: Historic Parks and Gardens Heritage Statements: Built Heritage and Conservation Areas Heritage Statements: What Happens if the information is not supplied? Historic Buildings and their Materials Appraising a Site and its Setting  Built Form  Introduction Urban Grain and Contextual Development Characteristics of Urban Grain Enclosure Consistency of Building line and Active Frontage Hierarchy of Spaces and Enclosure Ratios Public and Private Space Perimeter Blocks Densities Building Form Infills and Backland Development Buildings on Key Frontages Focal Point and Key Building Groups Building Design Elevational Design Considerations Symmetrical/Asymmetrical Balance Subservient/Additive Form Modelling of the Elevation Flush Façade Deep and Shallow Modelling

48 53

54 55

6.22 Designing House Types

Roof design

6.25 Chimneys

6.24

6.23 Avoidance of Single Aspect Houses and Flats

www.centralbedfordshire.gov.uk/design-guide

6.26 6.27 6.28 6.29	Balconies Materials Larger Footprint Buildings Building Heights - Mixed Use Buildings  Movement	56 56 57 58	8.3 8.4 8.5 8.6 8.7 8.8 8.9	Integration of Development within the Landscape - Design Considerations Site Layout Landscape Plans On site landscape considerations Landscaping of Verges and Roundabouts Management and Maintenance Trees in the Landscape - Design Considerations	85 85 87 87 90 91
7.1 7.2	Introduction Design for Movement	61 61	8.10 8.11	Biodiversity Design Considerations for all applications	94 95
7.3 7.4 7.5	Key Design Principles – Pedestrian Networks Key Design Principles - Cycling Key Design Principles - Designing for Public Transport	64 64 65	9.0	Public Spaces	98
7.6 7.7 7.8	Street Design Principles Street Typology and Hierarchy Street Trees	66 67 70	9.1 9.2 9.3	Introduction Designing Public Open Space - The key Principles of Public Space Components of Public Space	100 100 101
7.9 7.10	School Streets and Play Streets Shared minor streets	72 73	9.4 9.5	Criteria for Urban Public Spaces Types of Public Open Space and Design Considerations	101 103
7.11 7.12 7.13	Key Design Principles Cul-de-sacs Turning and Servicing	74 75 75	9.6 9.7 9.8	Recreational Open Space Playing Pitch Strategy Countryside Recreation Sites	103 103 104
7.14 7.15	Detailed Street Design Kerb Design	75 75	9.9 9.10	Urban Parks Informal Recreation Areas	105 105
7.16 7.17 7.18	Surfacing Materials Boundary Treatments Verges, Margins and Private Strips	76 77 78	9.11 9.12 9.13	Large Formal Recreation Areas Small Amenity Spaces Allotments	105 105 105
7.19 7.20	Tactile Paving Drainage	78 78	9.14 9.15	Cemeteries and Burial Grounds Outdoor Sport Spaces	105 106
7.21 7.22 7.23	Street Lighting Signage and Street Furniture Public Art	78 79 79	9.16 9.17 9.18	Children's Play Spaces Local Area for Play (LAP) Local Equipped Area for Play (LEAP)	106 107 107
7.24 7.25	Provision for Services Accessibility	79 79	9.19 9.20	Neighbourhood Equipped Area for Play (NEAP) Locating Children's Play Spaces	108 108 109
7.26 7.27	Electric Vehicle Charging Public Rights of Way within developments	81 81	9.21 9.22	Requirements for Public Art Community Safety Considerations	112
8.0	Nature	82	10.0	Uses	113
8.1 8.2	Introduction Integrating Green and Blue Infrastructure	84 84	10.1 10.2	Introduction Mixed Use Developments	115 115

10.3	Design Principles for Mixed Use Developments	116	11.29	Annexes and Dependent Relatives Accommodation	146
10.4	Designing Gypsy, Roma and Traveller sites	121	11.30	Front Garden Buildings	147
10.5	Travelling Showpeople	123	11.31	Extensions to Dwellings within the Greenbelt	147
10.6	Extra Care Housing	123	11.32	Assessing the Impact on Neighbours	147
10.7	Designing Residential and Nursing Care Homes	127			
10.8	Key Principles for residential and nursing care homes	127			
10.9	Educational Establishments	128	12.0	Resources	150
10.10	Special needs and alternative provision	128			
10.11	Planning for sport in schools	128	12.1	Introduction	152
10.12	Key design principles for Schools	129	12.2	Key Sustainability Principles	152
			12.3	The Energy Hierarchy and Zero/Low Carbon Buildings	153
			12.4	Design Considerations	155
11.0	Homes and Buildings	130	12.5	Larger mixed-use buildings	157
			12.6	Extending and Retrofitting Existing Buildings	157
11.1	Introduction	132	12.7	Design Accreditation	157
11.2	Healthy, Comfortable and Safe Internal and External Environments	132	12.8	Careful Selection of Materials and Construction Techniques	158
11.3	Space Standards and Storage	132	12.9	Maximising Resilience, Resource Efficiency and Climate Adaption	158
11.4	Inclusive Design	133	12.10	Sustainable Water Management	159
11.5	Community Safety Considerations	133	12.11	Water Sensitive Urban Design (WSUD)	160
11.6	Frontage Conditions and Setbacks	134	12.12	Sustainable Urban Drainage Systems (SuDS)	160
11.7	Boundary Treatments	135	12.13	Components of SuDS	162
11.8	Achieving Privacy through Design	135	12.14	Design Considerations	166
11.9	Gardens and Private Amenity Space	137	12.15	SuDS: Step-by-step	167
11.10	Amenity Space for Apartments	138	12.16	Habitat and Species Considerations	168
11.11	Private Communal Amenity Space	138	12.17	Designing SuDS - Dealing Confidently with Risks	168
11.12	Waste, servicing and utilities	138	12.18	Safeguarding the Environment and Development from Pollution	169
11.13	Bin Storage and Collection - Key Principles for Layout & Design	138	12.19	Noise and Vibration	169
11.14	Servicing and Utilities	140	12.20	Contaminated Land	172
11.15	Self and Custom Build	141	12.21	Air Quality	172
11.16	Self-build plots	141	12.22	Light Pollution	173
11.17	Householder Alterations and Extensions	143	12.23	Water Pollution	173
11.18	Permitted Development	143			
11.19	Context	143			
11.20	Design Principles	143	13.0	Case Studies	174
	Front extensions	143			
11.22	Side Extensions	144	13.1	Case studies from Central Bedfordshire	176
11.23	Extensions at Corners	145	13.2	Kings Reach, Biggleswade	176
	Detailing and Materials	145	13.3	Fairfield Park, Bedfordshire	177
	Roof Design	145	13.4	Wixams, Bedfordshire	178
11.26	Dormer windows	145	13.5	Former Stewartby Brickworks, Bedford	179
11.27	Roof extensions	146	13.6	Priory View, Dunstable	180
	Garages	146	.2.0	· , · · , - · · · · · · · · · · · · · ·	.00
11.20	Ualayes	140			

# 2.0 Table of Figures

Figure 1:	The 10 Themes of a Well-Designed Place from the National Design Guide	3	Figure 32:	Diamond pattern ventilation detail at Horsemoor Farm, Woburn. One of many different	
Figure 2:	Central Bedfordshire Context Map	8		types of traditional ventilation details which can denote the type of materials that were	
Figure 3:	Downs in winter	9		formerly stored in the building.	19
Figure 4:	Landscape Character Areas	10	Figure 33:	Staircase at 39 Church Street Ampthill	19
Figure 5:	Dunstable Town Centre	11	Figure 34:	Historic console at Queen Anne Summerhouse	19
Figure 6:	Ampthill Centre	11	Figure 35:	The plan form of an historic building is an important part of its special interest. Even the	
Figure 7:	Biggleswade Market Square	12	-	simplest and most humble of dwellings can have a plan form which is worthy of retention.	
Figure 8:	Woburn Village centre	12		The example shows a typical plan form of a modest estate cottage.	20
Figure 9:	Building Materials used in Central Bedfordshire part 1	14	Figure 36:	End House, Eversholt, Extension creates a junction between old and new	20
Figure 10:	Building Materials used in Central Bedfordshire part 2	14	Figure 37:	Very good example of a traditional shopfront – Leighton Buzzard	21
Figure 11:	Someries Castle gatehouse (1464), one of the oldest brick buildings in the UK	14	Figure 38:	Fanlight, Linslade. A feature which contributes to historic character	21
Figure 12:	Biggleswade Medieval Ringwork and Prehistoric Ring Ditches	15	Figure 39:	Sympathetic contemporary addition creating a foyer to a Victorian church, Linslade	2
Figure 13:	Totternhoe Knolls Motte & Bailey Castle	15	Figure 40:	Recent development incorporating a shopfront elevation designed as an integral part of the	
Figure 14:	Historic Environment Record Resources	15	-	street scene and to terminate the view from a side street.	2
Figure 15:	Historic Environment Record GIS layers	15	Figure 41:	Scheduled Monument All Saints Church, Segenhoe	22
Figure 16:	Manor Farm onion shed Lower Caldecote	15	Figure 42:	Scheduled Monument, Knolls Bronze Age Barrow Cemetery, Dunstable Downs	27
Figure 17:	Park House, Toddington	16	Figure 43:	Flitwick Manor Park	27
Figure 18:	Listed Building, Woburn	16	Figure 44:	Archer Pavilion in snow	22
Figure 19:	Church of St Mary, Harlington	16	Figure 45:	The Swiss Garden, Old Warden Park	23
Figure 20:	85 Dunstable St, Ampthill	16	Figure 46:	The Statutory Listed Gardeners Lodge and boundary wall to Woburn Park. These structures	
Figure 21:	Interior of former Town Hall, Toddington	17	J	will also form part of the Registered Park and Garden	23
Figure 22:	Re-roofing of the stables at Harlington manor	17	Figure 47:	The Clock Tower and Square, Dunstable	23
Figure 23:	Careful and thoughtful intervention to historic buildings enables as much historic fabric		Figure 48:	Husborne Crawley Conservation Area	23
3	to be retained preserving the character and special interest of the building	17	Figure 49:	Tringrith Conservation Area	24
Figure 24:	New openings should be kept to a minimum and cart openings and doors such as those		Figure 50:	Toddington Conservation Area	24
,	at Crawley Hall Barns, Husborne Crawley should be retained as part of a conversion scheme.	18	Figure 51:	Trees in Toddington	24
Figure 25:	Large projecting cart entrance with gabled midstrey in the timber framed 18th century		Figure 52:	The Dunstable townscape	25
3	threshing barn at Longslade Lane, Woburn	18	Figure 53:	Market Square, Leighton Buzzard	25
Figure 26:	A farm complex in Sewell showing the important relationship between the farm buildings		Figure 54:	Modern materials for roofs, windows, doors, and modern utilities (gas, electricity) do not	
3	and the farmhouse, and its wider rural farmland setting. It is essential that this relationship		,	always sit well with the historic environment.	25
	between farm buildings and their setting is maintained	18	Figure 55:	New sympathetic development in the Conservation Area - Clipstone Mews, Barton-le-Clay	26
Figure 27:	Water End Barns, Eversholt. A successful conversion of a Bedford Estates model farm		Figure 56:	New development in Ampthill Conservation Area	26
3	complex into office accommodation	18	Figure 57:	Contemporary housing respects its historic setting	26
Figure 28:	Features such as shutters are important to the agricultural character and appearance of		Figure 58:	New development in the Clophill Conservation Area	26
,	a farm building and can be made a feature in works to convert a building		Figure 59:	Flitwick construction impact	26
	Water End Barns, Eversholt	18	Figure 60:	Warren Farm, Ampthill Archaeological Trial Trench Evaluation	27
Figure 29:	Bodger Barn, Sewell. Conversion of the timber framed barn to residential accommodation		Figure 61:	Archaeological Excavation at Sandy Roman Town	27
<b>J</b>	which has retained its historic character and setting.	18	Figure 62:	Reconstruction Drawing of Maiden Bower Hillfort, Dunstable in the Iron age	27
Figure 30:	Lower Farm, Millbrook. One of many model farm complexes within Central Bedfordshire		Figure 63:	The story of a building - Complex buildings with multiple building phases can often best be	
J ·	created by the Bedford Estate which consist of a compact set of red brick buildings		j	illustrated as a series of simple sketches highlighting the key phases of the building.	28
	arranged in a particular pattern (such as an E shape) which integrated all farm base	19	Figure 64:	Long thraw thatched cottage, Wrestlingworth - application of vernacular materials	_`
Figure 31:	Thatched cottage, Woburn Street, Ampthill	19	500 0 11	contribute to local distinctiveness	28
J	· · · · · · · · · · · · · · · · · · ·				_`

www.centralbedfordshire.gov.uk/design-guide iii

Figure 65:	Diamond leaded light in a Bedford Estate cottage - an important feature of the building's		Figure 96:	Indicative Map of Whipsnade Road, Dunstable (20 dwellings per hectare)	40
3	historic character and appearance. Every effort should be made to retain features such as these.	29	Figure 97:	Aerial view Whipsnade Road, Dunstable	40
Figure 66:	Toddington - Conger Hill, and bailey enclosure, with Church beyond	29	Figure 98:	Whipsnade Road Dunstable Density Street View	40
Figure 67:	All Saints Church Segenhoe Grade II* Listed Building & Scheduled Monument	29	Figure 99:	Density calculated at 12 dwellings per hectare	40
Figure 68:	Cockayne Hatley Church setting	29	Figure 100:	Aerial view of Eversholt	40
Figure 69:	Heat and moisture movement in modern buildings	29	Figure 101:	Density Street View, showing corner turning dwelling and hedge garden boundary	40
Figure 70:	Heat and moisture movement in historic building	29	Figure 102:	Examples of families of form	40
Figure 71:	Ironstone repointed using lime mortar and a sharp gritty sand providing a traditional		Figure 103:	Examples of building form: a – Deep-plan houses result in less frontage width available for	
3	finish which will preserve the integrity of the historic stonework	30	J	enclosing space; b – Deep-plan houses result in longer, thinner gardens for the same garden	
Figure 72:	Barn at Barton le Clay showing different depths of weatherboarding	30		area; c – Gable ends of deep-plan terrace concealed by shallow plan houses on ends; d – Lack	
Figure 73:	Example of good practice timber repair – sections of timber being spliced in retaining as			of private garden; e – Car parking both sides; f – Small dwellings back-to-back; g – Street;	
3	much of the historic fabric as possible	30		h – Small dwellings in terrace	40
Figure 74:	West Front of St Peters	30	Figure 104:	Design of apartments	41
Figure 75:	The damaging effects of cement painting	30	Figure 105:	Key building groups	41
Figure 76:	Some large footprint buildings can be designed as free-standing pavilions in a parkland		Figure 106:	Example of quality distinctive development at Fairfield Park demonstrating a mix of uses,	
3	setting, where their relationship to the landscape, including established trees, can		J	green amenity space and local centre	42
	enhance the scheme and be used to modify their environmental impact		Figure 107:	Illustration showing a gateway building located at a key street junction, symbolising an	
	(Cranfield University Campus)	35	<b>J</b>	entrance or arrival to a space.	42
Figure 77:	Incorporating a bus shelter into the street creating some activity and continuity		Figure 108:	Vistas	42
3	of street frontage	35	Figure 109:	Landmark corner building providing an orientation point	42
Figure 78:	Foodstore related to the scale of the footpath (Biggleswade)	35	Figure 110:	Illustration showing a focal point building on the corner at the end of a vista to provide a	
Figure 79:	Example of buildings creating a sense of enclosure around an open space	36	J	form of interest or activity	42
Figure 80:	A scheme should demonstrate a hierarchy of spaces and different senses of enclosure,		Figure 111:	Example of Gateway building in Silsoe	43
3	contributing to its character	37	Figure 112:	Example of a contemporary landmark corner building within a residential development in	
Figure 81:	Brick wall with railings providing a formal front boundary treatment (Ampthill)	37	J	Dunstable	43
Figure 82:	Hedging and railings provide a formal front boundary treatment (Marston Moretaine)	38	Figure 113:	Terminating a streetscene and emphasising the corner in the road in Fairfield Park	43
Figure 83:	Soft boundary treatment creating defensible space to the front of habitable ground		Figure 114:	Terraced properties with changes in roof forms, Linmere, Houghton Regis	43
3	floor rooms (Dunstable)	38	Figure 115:	High quality development with a mixture of house types, Mulberry Close, Houghton Conquest	43
Figure 84:	Ivy screens forming a soft and green side boundary treatment (Oxley)	38	Figure 116:	Good quality architecture in a traditional style (Ampthill)	43
Figure 85:	Different Types of Perimeter block structures	38	Figure 117:	Contemporary design (Sandringham Drive, Dunstable)	43
Figure 86:	Examples of schemes at a density of 74 dwellings per hectare	39	Figure 118:	Good quality design in a traditional style (Ampthill)	43
Figure 87:	Density calculated at 74 dwellings per hectare	39	Figure 119:	Good quality traditional architecture that has created a strong character (Silsoe)	43
Figure 88:	Aerial view London Road, Dunstable	39	Figure 120:	Learning from local precedent - attractive grouping of cottages (Tebworth)	44
Figure 89:	Density Street View	39	Figure 121:	Scale is not only defined by height and bulk, but by the size and proportions of the openings	
Figure 90:	Example Plan of Biggleswade Development- showing Density of 60 dwellings per hectare	39	J	in an elevation and the size of the units (brick or precast panel) in relation to the person	44
Figure 91:	Aerial view of Biggleswade	39	Figure 122:	Vertical Emphasis is seen in more urban contexts where vertically proportioned buildings	
Figure 92:	Density Street View	39	J	occur on a narrower fronted building, often in a terraced group. The principles outlined	
Figure 93:	Example Plan of Manor Road Development, Flitwick- Density approximately 35 dwellings			in these examples are relevant to most types and a balanced elevation occurs.	44
3	per hectare	39	Figure 123:	Interesting and lively elevational design resulting from use of windows related to room	
Figure 94:	Aerial view of Manor Road, Flitwick - Some perimeter blocks and some poorly defined		<u> </u>	functions (Broughton, Milton Keynes)	45
<u> </u>	street edges	39	Figure 124:	Size and proportion of windows should relate to the function of the room	45
Figure 95:	Manor Road, Flitwick, Density Street View	39	Figure 125:	Symmetrical elevations	45

Figure 126:	Symmetrical elevation with gable roof	45	Figure 157:	Roof pitches: a – Roof pitches should follow the vernacular pattern and span across the	
Figure 127:	Asymmetrical elevations	45		narrowest plan dimension; b – Roofs like this should be avoided; c – Square plan forms	
Figure 128:	Subservient additions to the main dominant form	46		suggest a pyramid roof and each elevation should be treated equally; d – Such square plan	
Figure 129:	The requirements of sustainable design provide opportunities for creative roof profiles and			forms need to be isolated in space as they otherwise appear uncomfortable in conjunction	
	elevations	46		with other structures; e – One exception is with abutting blocks, where this problem is less	
Figure 130:	Left; Flush façade, Middle; Deep modelling; Right Shallow modelling	46		apparent	54
Figure 131:	Examples of well-proportioned windows	47	Figure 158:	Examples of different roof designs: a - Uneconomically large roof space; b - Lowering of	
Figure 132:	Window Types	47		eaves with upper storey in roof; c – Untraditional slack roof pitch; d – Traditional solution:	
Figure 133:	Alternative Street scene elevation A	48		parallel roof-spans; e – Traditional solution: projecting gables	54
Figure 134:	Alternative Street scene elevation B (not recommended)	48	Figure 159:	Complex forms	54
Figure 135:	Two linked houses turning concave corner	48	Figure 160:	Bus stop with green roof, West Street, Dunstable	55
Figure 136:	Building that turns the corner well (Fairfield)	48	Figure 161:	Roof design options; a – Hips are difficult to integrate into street scene; b – Correct use of a	
Figure 137:	Large individual corner house: steep pitched roof and bay windows emphasise its pivotal position	49		hip in the urban context; c – Hips with a short ridge should be avoided; d – Gablets can	
Figure 138:	45° convex corner frontage type. This should be avoided as it normally results in overlooking			sometimes provide a solution; e – Shallower roof pitch on rear lean-to; f – Deeper plan with	
	and overshadowing problems in rear gardens. It is alien in alignment in traditional townscapes.	49		eaves overhang; g – Deeper plan with parapet eaves; h – Deeper plan with eaves overhang;	
Figure 139:	45° concave corner frontage type. This gives a spacious entry impression to a development.			I – Narrow, steep-pitched cross wing conceals wide, shallow-pitched gable end	55
	Appropriate in relatively formal situations. Good rear gardens.	49	Figure 162:	Simple expression of materials, lintels, and colours to convey the character of riverside buildings	
Figure 140:	Victorian cottage terminating a view	49		in the region, and to be legible in long distance views (Biggleswade)	56
Figure 141:	A strongly emphasised centreline gives a focus to the view	49	Figure 163:	A limited palette of materials helps enforce a strong character for this street (Sandringham	
Figure 142:	The architectural expression shown here is indicative only. Many ways of expressing an elevation			Drive, Dunstable)	56
	can be used depending on context i.e. urban, suburban, or rural, formal, or informal	50	Figure 164:	Careful detailing of materials to achieve a flush threshold in a rural setting (Nicolas Tye Architects	
Figure 143:	Avoid placing garages in a terminating position; they do not fully enclose the view and there is			studio near Maulden)	56
	little to focus upon	50	Figure 165:	Conventional Large Footprint Building	57
Figure 145:	An informal terrace of traditional cottages (Silsoe)	50	Figure 166:	Indicative layout considerations for large footprint warehouses within an urban fringe context	57
Figure 144:	Utilise the full range of massing of 2 to 2.5 storey houses to create formal and informal, modest,		Figure 167:	Window shading on south facing elevation	58
	or civic spaces	51	Figure 168:	Large span foodstore with structural bays expressed and south facing walls recessed to create	
Figure 146:	An informal terrace (Lidlington)	51		shading. Note also large, glazed areas allowing daylighting and creating an active frontage.	58
Figure 147:	Terraced properties with a feature building (Ampthill)	51	Figure 169:	Consider how best the site can be connected with nearby main cycle and public transport	
Figure 148:	An informal layout. Note how the use of a slight 'crank' in a house or garage plan can create an			routes and associated facilities	62
	attractive and interesting street frontage	51	Figure 170:	Pedestrian-friendly approach that Integrates with the surrounding community, links existing	
Figure 149:	Vehicular access way (Ampthill). Note also the upper windows centred over the archway	52		and proposed streets, and provides direct links to public transport	62
Figure 150:	Minimum height of arch 3.7 metres if it must be accessed by a fire appliance	52	Figure 171:	The resulting street pattern forms the basis for perimeter blocks, which ensure that buildings	
Figure 151:	Where access by a fire appliance is not required, two storey high archways should be avoided,			contribute positively to the public realm	62
	especially if topped only by a roof and spanning a full road width. This creates and emphasises		Figure 172:	Cycle friendly development at Accordia, Cambridge	63
	a large, non-domestic scale	52	Figure 173:	Creating a sense of enclosure will help to ensure that buildings take priority rather than roads	66
Figure 152:	Houses having a south facing frontage	53	Figure 174:	A clear hierarchy of avenues, streets, squares, and courts create a legible structure	66
Figure 153:	A coach-house type	53	Figure 175:	A coherent, legible street network allowing logical building layout and connections where	
Figure 154:	Single aspect types utilising a difficult internal corner	53		appropriate	66
Figure 155:	Buildings with prominent gable ends creating a strong character (Tilla Place, Dunstable)	54	Figure 176:	Frequent changes of direction and tight corners with narrow sight lines can, where appropriate,	
Figure 156:	The use of a mono-pitched roof adds character to this development (Sandringham Drive,			control speed (these should be checked by tracking and compliance with the appropriate	
	Dunstable)	54		standards)	66

Figure 177:	Shared surfaces and the reduction of signs convey to the driver a sense of entering a pedestrian		Figure 213:	High quality, well-maintained planting reflects quality in the environment, encouraging	
	priority space	66		sense of place, outdoor recreation and community cohesion	86
Figure 178:	Streets with irregular carriageway, with tracking to show underlying geometry	66	Figure 214:	Well designed and maintained landscaping along infrastructure corridors	86
Figure 179:	Assessing the street character and the focal points of the development	67	Figure 215:	Multifunctional landscapes offer opportunities for informal play	86
Figure 180:	Avenue/boulevard, Fairfield Park	68	Figure 216:	Types of landscape led boundary treatments	87
Figure 181:	Avenue/boulevard layout	68	Figure 217:	Drainage ditches, Steppingley	88
Figure 182:	Urban Street	68	Figure 218:	Woburn picket fences	88
Figure 183:	Urban Street layout	68	Figure 219:	Holly hedges, Eversholt	88
Figure 184:	Suburban Street, Ampthill	69	Figure 220:	Ironstone walling	88
Figure 185:	Suburban Street layout	69	Figure 221:	Map of Landscape Character Areas	89
Figure 186:	Square layout	69	Figure 222:	Barton roadside nature reserve serves to enrich and maintain the character of verge. Local	
Figure 187:	Shared Street puts people first	69	_	character and identity can be developed through the use of low-nutrient soils and local stone.	
Figure 188:	Mews development gives sense of enclosure, Timber Lane	70		Wildflower grassland can be particularly successful on chalk.	90
Figure 189:	Street trees incorporated into grass verges along street, Steppingley Road	71	Figure 223:	Trees provide several benefits when incorporated into the urban landscape	91
Figure 190:	Street trees incorporated into grass verge, Ampthill	71	Figure 224:	Ancient woodland - Everton Bluebells	91
Figure 191:	Careful siting of trees and using suitable species is important so that it does not obstruct		Figure 225:	Ancient hedgerow	92
	visibility, Fairfield	72	Figure 226:	Bunyan's Oak	92
Figure 192:	Blacktop carriageway and footway with small element kerb	75	Figure 227:	Bunyan's Oak - part of the Harlington Heritage Trail	92
Figure 193:	Block paving to front of houses, Ampthill	76	Figure 228:	The Old Wood	92
Figure 194:	Block paving to front of houses, Timber Lane	76	Figure 229:	Fruit Trees at Sewell Farm	93
Figure 195:	Tumbled blocks	76	Figure 230:	Ash makes up approximately 7% of urban trees, of which all European species and are	
Figure 197:	Granite setts	76	-	susceptible to Ash Dieback Disease	93
Figure 196:	Concrete blocks	76	Figure 231:	Victorian street planting, Dunstable	93
Figure 198:	Clay block paving	76	Figure 232:	1950's ornamental planting	93
Figure 199:	Concrete paving slabs laid in a radial pattern	77	Figure 233:	New hedge planting	93
Figure 200:	Short granite kerbs	77	Figure 234:	Adam's Laburnum, a feature of post war planting in Dunstable, now considered rare.	94
Figure 201:	Textured concrete slabs	77	Figure 235:	Sewell Cutting, Houghton Regis	94
Figure 202:	Concrete edging	77	Figure 236:	Underpass on the canal provides a means of dry habitat connectivity	95
Figure 203:	Pebble paving used on private strip	78	Figure 237:	The green bridge over the A21 near Scotney Castle in Kent is seamlessly integrated with the	
Figure 205:	Tactile paving	78		context and allows for wildlife to cross.	95
Figure 204:	Concrete blocks used on private strip	78	Figure 238:	Hibernacula suitable for Reptiles and Amphibians	96
Figure 206:	Granite setts used as drainage channel	78	Figure 239:	Ecological features that can be included on plot as part of the building design to increase	
Figure 207:	Blockwork drainage channel with grating	78		biodiversity	97
Figure 208:	Indicative illustration showing required access arrangement considerations when detailing		Figure 240:	Dunstable Downs	100
	approach to buildings	81	Figure 241:	Flitwick Leisure centre	103
Figure 209:	Landscape Character Assessment to ensure new development relates to the site context	85	Figure 242:	Houghton Hall Park	104
Figure 210:	Existing landscape features (A) should be connected and reinforced to create a green		Figure 243:	Houghton Hall Park visitor centre	104
	framework (B) with development integrated within landscaped setting	85	Figure 244:	Henlow Common	104
Figure 211:	Landscape connections extending green corridors through development	85	Figure 245:	Local Area for Play (LAP) (equipped) or Doorstep Play Space primarily for children up to the	
Figure 212:	Informal and formal public open space with adequate space to allow extensive planting,			age of 6	107
	including significant trees	86			

Figure 246:	Local Equipped Area for Play (LEAP) for children who are beginning to go out to play		Figure 281:	Priory View, Dunstable	125
	independently	107	Figure 282:	Wixams Care home	125
Figure 247:	Neighbourhood Equipped Area for Play (NEAP) for older children of relative independence	108	Figure 283:	Thornhill Primary built to Passivhaus standards, Dunstable	128
Figure 248:	Play area in Stewartby	109	Figure 284:	Silsoe Lower School	128
Figure 249:	Play area in Steppingley Road, Flitwick	109	Figure 285:	Thornhill Primary School, built to Passivhaus standards	129
Figure 250:	Play area in Churchill Way, Shefford	109	Figure 286:	Rectangular plans give a pronounced axis, which can either be aligned parallel or at right	
Figure 251:	Play area in Chapel Drive, Arlesey	109		angles to the street. Gentle or right-angled changes in direction can be achieved successfully	
Figure 252:	Play area in Wingfield Drive, Potton	109		with this shape	134
Figure 253:	Midsummer Place, Milton Keynes Glass, artist Anne Smyth	109	Figure 287:	Semi Continuous Frontage - medium density residential streets	134
Figure 254:	Public art at the gateway into Linmere, Houghton Regis	109	Figure 288:	Continuous Frontage - higher density central location	134
Figure 255:	Wall/seating Phoenix Initiative, Coventry	110	Figure 289:	Setbacks should be determined by the density and character of the area	134
Figure 256:	Medieval Floorscape, Shopping Centre, artist Anne Smyth	110	Figure 290:	Minimal setbacks to create a more intimate urban streetscene	135
Figure 257:	Mayfield Road Shops shutter artwork, artist Zena Jay Ellis	110	Figure 291:	Setbacks can be larger and more varied in lower density/rural areas or to emphasise green	
Figure 258:	Uncover-Discover, artist Georgia Russell, (Jubilee Library, Brighton)	110		character. Sufficient planting should be provided to soften the impact on the streetscape	
Figure 259:	Leighton-Linslade Children's Trail, artist Martin Heron (photo Hilary Western)	110		of any on-plot parking	135
Figure 260:	Public art commission: Community Hall, Stotfold	111	Figure 292:	Achieving privacy and defensible space in higher density housing (Linslade)	136
Figure 261:	Timesticks, artist Wendy Briggs	111	Figure 293:	Some methods of achieving privacy through design	136
Figure 262:	Toadstool Trail, Ampthill	111	Figure 294:	Garden sizes must be sized and shaped appropriately	137
Figure 263:	Heritage Trail, Houghton Regis	111	Figure 295:	Example bin store	139
Figure 264:	Wendy Briggs artwork at Orchard Community Centre, Biggleswade	111	Figure 296:	Well integrated communal bin stores	139
Figure 265:	Encourage a sense of security and tranquillity through a clear distinction between the public		Figure 297:	Self-build Houghton Conquest	142
3	and private side of a house.	112	Figure 298:	Plots under construction at Houghton Conquest	142
Figure 266:	Ideally dwellings should wrap around corners to ensure that all parts of the public realm		Figure 299:	Example of unacceptable front extension	144
3	are overlooked. This may require the use of double-fronted dwellings avoiding blank		Figure 300:	Large front extensions can damage the streetscene	144
	facades. Entrances clearly seen from the street. Vulnerable side entrances are discouraged	112	Figure 301:	Side extensions should be well-proportioned	144
Figure 267:	We encourage developers to follow the principles outlined in the 20-minute neighbourhood		Figure 302:	Side extensions can cause a 'terracing effect'	145
5	guidance (source: TCPA)	115	Figure 303:	Side extensions should be set back and subservient	145
Figure 268:	A) Indicative layout of new town centre at the heart of development likely to be less viable.		Figure 304:	Example of an unacceptable dormer	146
<b>J</b>	B) Indicative layout of new town centre as the interface is likely to be more viable.	116	Figure 305:	Garages set forward dominate the street scene	146
Figure 269:	Analysis plan to establish roles of a town infill site	116	Figure 306:	Garages set back help to create privacy	146
Figure 270:	Inappropriate building layout	117	Figure 307:	25 degree rule (Source BRE)	147
Figure 271:	Acceptable building layout	117	Figure 308:	Significant overshadowing is unacceptable	148
Figure 272:	Private Amenity Space for Apartments	117	Figure 309:	The 45 degree rule (Source BRE)	148
Figure 273:	Indicative layout of town centre development showing possible mix of uses	118	Figure 310:	Extensions should conform to the 45° rule	148
Figure 274:	Accessible entrance to Grove Theatre Dunstable, part of a Mixed- Use Development	118	Figure 311:	Overlooking should be avoided	149
Figure 275:	Accessible Entrance to Houghton Regis Hub, Bedford Square	118	Figure 312:	Site orientation for optimum solar gain	153
Figure 276:	Apartment layout options	119	Figure 313:	Building orientation on a sloping site	153
Figure 277:	Leighton Buzzard Town Centre is a Historic Conservation Area	119	Figure 314:	Energy Hierarchy – steps to achieving zero carbon	154
Figure 278:	Analysis plan to establish roles of a town infill site	120	Figure 315:	Combined Heat and Power system	154
Figure 279:	Indicative layout of a town centre development showing possible mix of uses	120	Figure 316:	Wind farm	155
Figure 280:	An example of a Gypsy and Traveller site layout.	122	Figure 317:	South easterly orientation maximises early morning solar gains and reduces overheating	. 55
94.0 200.	S.ap. S. a. Gypsy and national site injude		· ·gaic 5 · / ·	in the afternoon	155

Figure 318:	Deciduous trees provide effective shading from the summer sun, whilst allowing warming	1-
E: 210	sun rays through in winter months	15
Figure 319:	Internal layout designed to suit solar orientation	15
Figure 320:	Passive design principles including shading, thermal mass and insulation help to reduce	
	overheating during the summer and heat loss during the winter	15
Figure 321: Figure 322:	Cross and stack ventilation - the simplest forms of ventilation not requiring a mechanical solution Water is key to natural and managed landscapes	15 16
Figure 323:	Water sensitive urban design reduces rates of 'altered' (polluted or waste) water and increases infiltration	16
Figure 324:	Examples of SuDs providing a multitude of environmental and visual benefits, Linmere	16
Figure 325:	Green roof construction	16
Figure 326:	Rain Garden, Queensway	16
Figure 327:	Rain Garden, Dunstable Town centre, winner of the Sustainable Gardening Award at the Britain in Bloom Awards 2022	16
Figure 328:	Rain Garden, Dunstable Town centre, winner of the Sustainable Gardening Award at the Britain	
<b>J</b>	in Bloom Awards 2022	16
Figure 329:	Swale and rain garden in public open space	16
Figure 330:	Urban Pond diagram	16
Figure 331:	Features of a typical wetland	16
Figure 332:	Eventual natural succession is the ideal; note the clarity of the water in this pond (courtesy of	
_	Andre Douglas)	16
Figure 333:	Section through a naturalistic pond	16
Figure 334:	The typical urban relationship with water is to view it as a nuisance or vehicle for waste	16
Figure 335:	Components of a SuDS system - features are highly adaptable to the urban environment	16
Figure 336:	SUDS management train/conveyance gradient	16
Figure 337:	SuDS Pond at Stratton, Central Bedfordshire, hosting good bird and invertebrate populations	16
Figure 338:	Sedge Warbler	16
Figure 339:	Reed Bunting	16
Figure 340:	Mitigating the risks associated with SuDS	16
Figure 341:	Noise Impact Assessment noise considerations	17
Figure 342:	Case study Kings Reach, Biggleswade	17
Figure 343:	Case study Kings Reach, Biggleswade	17
Figure 344:	Fairfield Park, buildings addressing the street	17
Figure 345:	Fairfield Park, changes in direction and landmark buildings	17
Figure 346:	Case Study Wixams	17
Figure 347:	Case Study Wixams	17
Figure 348:	Former Stewartby Brickworks, Bedford	17
Figure 349:	Former Stewartby Brickworks, Bedford	17
Figure 350:	Priory View, Dunstable	18
Figure 351:	Priory View, Dunstable	18

# 3.0 List of Tables

Table 1:	Natural environment appraisal	31
Table 2:	Built environment appraisal	31
Table 3:	Land Use appraisal	31
Table 4:	Movement appraisal	31
Table 5:	Legibility appraisal	31
Table 6:	Character appraisal	32
Table 7:	Open Space/Landscape appraisal	32
Table 8:	Building Form appraisal	32
Table 9:	Examples of trees and size classifications	71
Table 10:	Landscape Character Areas and their planting requirements	90
Table 11:	Garden sizes	137
Table 12:	Private outdoor space requirements for apartments	138
Table 13:	Bin container dimensions	139
Table 14:	Examples of parameters that may be agreed within a Design Code	142
Table 15:	Noise standards and thresholds by development type	170

# 4.0 Introduction

- Central Bedfordshire Design Guide
- Local Policy
- ► The National Design Guide
- ► The Structure of the Document



Central Bedfordshire Design Guide Introduction

# 4.0 Introduction

- 4.1.1 This Design Guide is a Supplementary Planning Document (SPD) that supports the <u>Central Bedfordshire Local Plan 2015 -2035</u>. It should be read alongside the <u>National Planning Policy Framework 2021</u>, the <u>Design: Process and Tools National Planning Practice Guidance</u>, the <u>National Design Guide 2021</u>, the <u>National Model Design Code 2021</u>, any design related policies and guidance contained within <u>Neighbourhood Plans</u> (where it exists) and any approved Design Codes or Masterplans for the area.
- 4.1.2 This Design Guide seeks to help achieve the following Local Plan objectives:
  - ▶ SO3 seeks to preserve and enhance areas of historic environment by ensuring new development and public realm changes are of a high-quality design, appropriate to the significance and integrity of the heritage asset.
  - SO4 seeks the creation of high-quality neighbourhoods that are sensitive to local character, are distinctive, safe, functional, accessible and reinforce the local identity of townscape, landscape and public space. It encourages sustainable development which is responsive to the significance of the local environment.
  - ▶ S09 seeks to reduce reliance on the car by promoting links to public transport and improved walking and cycling links.
  - ▶ S011 seeks high quality public open spaces for sports and recreation.
  - ▶ S012 encourages the development of wildlife corridors.
  - ▶ S013 supports measures to reduce carbon emissions and protecting and enhancing biodiversity.
- 4.1.3 The Council places great emphasis on the need for new development to be of the highest possible quality, ensuring that the places created now provide a lasting legacy and are locally distinctive.
- 4.1.4 The Local Plan Identifies Central Bedfordshire as a diverse area characterised by distinctive landscapes, important heritage and wildlife assets, and a variety of settlements with their own distinctive characters. It therefore encourages new developments to be designed to respect this diversity and enhance the unique characteristics of the area. It seeks good design that creates distinctive, functional and sustainable places for residents to live, work and enjoy.
- 4.1.5 The overall aim is to therefore encourage well-designed developments that:
  - Are contextual in terms of built and landscape context;
  - Are attractive, distinct and legible;
  - Are compact, with well- defined streets and spaces, with a clear safe and accessible route hierarchy;
  - Integrate existing and new natural features, with public spaces that are accessible for all;
  - Accommodate a range of activities;
  - Provide a range of uses that support everyday activities including to live, work and play;
  - Conserve natural resources, including water, land, energy and materials;
  - Provide dwellings that are functional, accessible, sustainable, and meet the needs of a diverse range of users; and
  - Are designed to be robust, adaptable for long term stewardship.

Central Bedfordshire Design Guide

Introduction

# 4.2 Local Policy

- 4.2.1 This Design Guide provides guidance to support many of the policies within the adopted Local Plan. Policy HQ1: High Quality Development is an all-encompassing policy that sets the requirements for high quality design in Central Bedfordshire. It encourages proposals that:
  - Take account of opportunities to enhance or reinforce local distinctiveness, including the landscape setting and character, to create a sense of place, and relate well to existing local surroundings through size, scale, massing, orientation, materials and appearance.
  - Make the most efficient use of the land available through careful consideration of density, whilst reflecting the character of the local area and providing appropriate landscaping.
  - Provide safe, attractive and convenient routes which are well connected to the surrounding areas, and the landscape setting, encouraging travel by sustainable modes, meeting the needs of all users and promoting healthy lifestyles.
  - Integrate into the existing natural, built and historic environment through high quality hard and soft landscaping which seeks to increase biodiversity and green infrastructure and has a strong distinction between private and public space.
  - Maximise surveillance and increase pedestrian activity within the public realm to ensure well connected and safe communities.
  - Consider inclusive design from the outset of the design process.
  - Do not result in an unacceptable adverse impact upon nearby uses including on amenity, privacy, noise and air quality.
  - Supports the sustainable management of waste through the appropriate layout of buildings.
- 4.2.2 The Local Plan also includes Policy HQ9 which sets the requirements for Development Briefs and Design Codes. Development Briefs are required prior to a planning application and set out how national and local policy will be applied to a site to achieve high quality, sustainable development. A Development Brief applies to new sites of more than 300 dwellings, and it may also be required on smaller sites that have complex or sensitive issues.
- 4.2.3 A Design Code sets out the detailed design rules for a specific site and informs how it will be brought forward. Design Codes are required for residential developments of more than 300 dwellings, commercial developments with a total floorspace of more than 50,000 square metres, and on smaller sites which there are sensitive design issues or where there are multiple landowners and developers. The Council has prepared specific <u>Guidance for Development Briefs and Design Codes</u> which sets out the procedure and expected content for all Development Briefs and Design Codes.
- 4.2.4 A number of Neighbourhood Plans in Central Bedfordshire include specific design policies and detailed Design Statements which should be taken into consideration. Some towns and villages may also have a village design statement, which in some cases may be a number of years old but will include useful guidance and information on how the settlement has changed and should be considered when designing schemes.

# 4.3 The National Design Guide

- 4.3.1 Policy HQ1 of the <u>Local Plan</u> aligns with the <u>National Design Guide 2021</u> which recognises that the purpose of design quality of new development at all scales is to provide well-designed and well-built places that benefit people, communities and the natural environment.
- 4.3.2 The National Design Guide outlines the 10 characteristics of good places that contribute to good design. The Central Bedfordshire Design Guide is structured in accordance with the National Design Guide.



Figure 1: The 10 Themes of a Well-Designed Place from the National Design Guide.

# 4.4 The Structure of This Document

4.4.1 The Central Bedfordshire Design Guide is structured in chapters around the 10 themes of the National Design Guide:

### **Chapter 5: Context and Identity**

- 4.4.2 This chapter looks at context and identity through Landscape, Historic and Urban Design Context. This includes:
  - How the landscape and built form has evolved into the special character found in Central Bedfordshire today and gives specific guidance to preserve and enhance this character;
  - Advice on the Heritage context and key considerations for developments in the historic environment;
  - Advice on appraising a site and its setting.

### **Chapter 6: Built Form**

- 4.4.3 This chapter gives advice on:
  - Urban grain, enclosure, perimeter block structure and building lines;
  - Hierarchy of spaces;
  - Focal point, key and landmark buildings;
  - Contextual development; arrangement of roofs, chimneys, materials;
  - Relationships between buildings in a group;
  - Density and legibility;
  - Designing house types.

#### **Chapter 7: Movement**

- 4.4.4 This chapter gives advice on:
  - ► The user hierarchy prioritising walking, cycling and public transport over motor vehicle use;
  - Street character typologies and shared space streets;
  - Permeability, connections to local facilities, and neighbourhoods, designing for public transport, and the design of walking and cycling routes;
  - Boundary treatment, verges, tactile paving, wayfinding signage and street furniture;
  - Use of planting, hard and soft landscaping, street furniture, street trees.

### **Chapter 8: Nature**

- 4.4.5 This chapter gives advice on:
  - ► The landscape character of Central Bedfordshire;
  - The importance of retaining trees on development sites, specification of new planting, and enhancement of local character;
  - The local biodiversity and ways of increasing this including making ecological connections, new green corridors, green roofs, community orchards and managed open space;
  - Conservation and creation of new habitats for protected species.

#### **Chapter 9: Public Spaces**

- 4.4.6 This chapter outlines the importance of public spaces as the centre point of most developments. It also outlines:
  - Guidance on Local Areas of Play, Local Equipped Areas of Play and Neighbourhood Areas of Play including: buffer zones; surface treatments; informal surveillance; hard and soft landscaping to create natural scent, colour and texture; play equipment, and furniture for parents and carers;
  - Public art including locations, purpose and the briefing process for different types of outline applications.

## **Chapter 10: Uses**

- 4.4.7 This chapter outlines the importance of mixing uses to create diversity of activity in streets and spaces, and to contribute to the vitality and sustainability of towns and neighbourhoods. Advice is given on:
  - Mixed use development including residential, retail, commercial, and leisure depending on the context;
  - Infill and backland developments; shopfronts; and mixed tenure residential;
  - The design of mixed-use centres, the relationship to public space, increasing footfall, and ensuring strong connections to encourage pedestrian activity cycling and public transport
  - Gypsy, Roma and Travellers guidance;
  - Extra Care housing;
  - Designing residential and nursing care homes.

## **Chapter 11: Homes and buildings**

4.4.8 This chapter provides practical guidance for the creation of high-quality residential developments. It includes quidance on:

- Achieving privacy through design; community safety; space standards and storage;
- ▶ Bin storage and collection; gardens and private amenity space; frontage conditions/setbacks;
- Garden size;
- Boundary treatments;
- Inclusive design;
- Householder alterations and extensions front, side and rear extensions;
- Infills and backland development;
- Impact on neighbours;
- Self and custom build.

#### **Chapter 12: Resources**

- 4.4.9 This chapter encourages developments to follow advice on all aspects of sustainability. It advises on:
  - Optimisation of sites including location, orientation, landscaping, SuDs, and reuse of buildings;
  - The energy hierarchy of improving the insulated fabric, providing solar shading, utilising energy efficient appliances and systems, and on-site renewable energy;
  - Low carbon design and Passivhaus measures;
  - Reducing embodied energy and carbon in construction by improving speed, efficiency, using lower energy materials and reducing construction waste;
  - Reducing noise, vibration, air, light and land pollution;
  - Measures to mitigate climate change impact, such as green and blue infrastructure to absorb carbon and provide cooling; solar shading; and avoiding flood risk.

## **Chapter 13: Case Studies**

- 4.4.10 This chapter showcases some exemplar developments across Central Bedfordshire, which highlight the key themes from the Design Guide. It focuses on:
  - Priory View, Dunstable
  - Kings Reach, Biggleswade
  - Fairfield Park
  - Former Stewartby Brickworks
  - Wixams