

# Comments on 2023 draft Central Bedfordshire Council SPD

## Overview

As a specialist in this area of work, having among other things more recently consulted on the National Model Design Code, the current NPPF consultation, inputted to RTPI Cracking the Code report and currently on the Lake District National Park Design Code Committee, this is a very good draft design code.

My other credentials include the steering group for the BSI Nestbox standard, and authoring two guides on designing for biodiversity in new developments and a SuDS guide for biodiversity. What's more I'm even flattered elements from one of those publications have been used here.

Comments below are by and large a mixture of observation and, highlighting where there are errors and or greater emphasis and signposting are needed and or glaring omissions. I have also offered alternative text and or pointers where necessary to help you address issues. There are a few instances where local examples are used to help make a point. I also make complimentary observations where exceptionally deserved.

Most errors occur in text around green roofs and walls (eg: Chapter 6). This I have tried to explain and offer alternative text and reference.

Up to and including Chapter 6 require more emphasis to climate resilience and mitigation, net zero and nature-based solutions in advance of chapters where they are covered in detail. This is an area still not properly on the developers radar. They need encouragement and a constant 'drip-fed' reminder to begin understanding its relevance and value. This also applied to earlier sections of Chapter 7 where SuDS aspects are not referenced until much later in the chapter and also further in Chapter 12 where they receive very good coverage. Those earlier sections should have been 'drip feeding' these points.

Examples of gaps and or weaknesses include in landscape and use of SuDS, using plants of benefit to pollinators and avoiding Invasive Non-Native Species. I have omitted reference to sourcing pot grown plants in peat-free compost, which really need to be found a home in the text. Also I found reference to the impacts of lighting on wildlife weak and similarly use of bird and bat bricks.

Chapter 8 missed a number of important reference materials in its opening section for which I have now provided links. I have also provided where necessary links to other reference materials elsewhere.

I would like to commend all those involved in putting this document together - they are not the easiest of things. I hope you see what I have provided below as a friendly oversight and strongly consider please taking these comments and suggested revisions on-board.

*John Day*, Urban Adviser

## Comments

**4.1.2** There is scant emphasis to aims and benefits of SO9 to SO13. With particular reference to the environment in SO11, SO12 & SO13 they are very weak and noncommittal.

## Suggest

**SO11:** Seeks high quality public open spaces for sports, recreation and biodiversity that enables their contribution to delivery of net zero and climate change mitigation.

**SO12:** Encourage the development of wildlife corridors that make developments permeable, enabling wildlife to move safely through a them and that better link its green and blue infrastructure with the surrounding landscape and countryside.

**SO13:** Supports all forms of Nature-based Solutions (NbS) to reduce carbon emissions and contribute toward net zero, protect and enhance biodiversity and provide climate mitigation and enhanced amenity for residents.

**4.1.5** There is no reference to ‘contribute toward halting the decline in biodiversity’ or ‘providing a palette of Nature-based Solutions that contribute to a reduction in carbon emissions and climate change mitigation’

**4.2.1** bullet 4 has omitted the word ‘blue’ ‘.....green-blue infrastructure.....’

**4.3** The NMD (on which I commented on professionally in its consultation) should be a baseline from which all LA’s (including CBC) must be encouraging in their SPD’s, innovation above and beyond that bottom line.

**5.3 & 5.4** Encouraging that biodiversity, ecological and landscape connectivity are referenced, along with NbS such as SuDS and green-blue infrastructure.

**5.14 & 5.13** Observation/Question - why does the regions biological heritage (arguably more important as its been there longer than the buildings) never get even a passing mention? Central Bedfordshire has some amazing biological heritage (habitats and species) much of which is being eroded by development. It should at least be referenced as a valuable heritage resource.

**5.19.6 & 5.20.3** Should also refer to guidance re: nesting birds and in particular bat roosts.

**6.24.7** PV panels should be encouraged on green roofs in order to improve their operating efficiency (see appropriate section on [livingroofs.org](http://livingroofs.org)). These are known as a biosolar green roof.

**6.24.7** This is not correct and needs changing: *‘Flat roofs are an opportunity to include for green, brown or blue roofs. Green roofs are low maintenance, with thin layers of substrate and green layers such as Sedum. Brown roofs are not planted but rely on windblown seed and bird dispersal to self-vegetate from the surrounding ecosystem. Blue roofs are designed to increase rainwater attenuation and are only suitable where large expanses of roof terrace are required and can be combined with rooftop box planting [not really sure what that means?]. Use of living roofs can also be expanded into the street scene by utilising street furniture such as bus stops to expand on the greenery in the area.’*

**6.24.7** Suggest the following change:

Flat roofs are an opportunity to provide a biodiverse green or blue roof. Green roofs are low maintenance, with thin layers of substrate and a mix of appropriate wildflowers and Sedum. Sedum on its own delivers little biodiversity value and minimal water storage capacity. Blue roofs are designed to increase rainwater attenuation and are only suitable where large expanses of roof terrace are required and designed with appropriate loadings. A blue-green roof combines the two technologies of a green and blue roof. The highest quality would be a biosolar green-blue roof. Use of living roofs can also be expanded into the street scene by utilising street furniture such as bus stops, cycle and bin stores to expand on the greenery in the area. (See appropriate sections of [livingroofs.org](http://livingroofs.org) and also the [greenrooforganisation.org](http://greenrooforganisation.org))

**6.28.5** This is not strictly correct: *‘A larger footprint building will potentially have a large surface area of roof which will be suitable for intensive green roof treatment to provide a landscaped courtyard deck. Alternatively, it is the opportunity to provide large amounts of solar PV Panels.’*

Surely, the great majority of these buildings will not be constructed to facilitate a roof terrace and thus an ‘intensive green roof’.

I think what is really meant is an extensive biodiverse or biosolar green roof. [refer to the terminology on [livingroofs.org](http://livingroofs.org)]

Also this section does not reference the use of green walls as a means of screening and also thermal regulation of the building temperature. For these buildings a simple ‘façade’ is all that will be required, to support plants grown from a planting bed, as opposed to the more elaborate and expensive modular irrigated systems. [see here for terminology and different types of wall: <https://greenroofslivingwalls.files.wordpress.com/2014/07/living-wall-guide-uk.pdf>]

Any reference to green walls, particularly modular, should make the point they must be irrigated using harvested rain water or grey water recycling and not mains water. Also, where plastics are used in construction they must be recycled and recyclable and the planting substrate and plants should be in peat free materials.

**7.3 & 7.4** There is no reference in these sections to the following:

1. Permeable surfaces - the use of sealed surfaces as mentioned should not be an option when we should be making every effort to reduce impacts of surface water run-off and associated pollutants.
2. While occasional reference is made to vegetated verges, these make no reference to the multi-functionality of providing SuDS features such as flower rich filter strips or bio-retention rain gardens to reduce surface water run-off and pollutants from paths and or roads.
3. There is no reference to the use of street trees or their incorporation into the above mentioned SuDS features (NPPF 2021, par 131).
4. There is no mention or reference to use landscape as a means of segregating and protecting the health pedestrians and cyclists from roads and the effects of NO<sub>2</sub> and P10 emissions. Cyclists could be acutely affected due to greater exertion of breathing. (See NHBC. Biodiversity in New Housing Developments p21 4.4)

In addition to the above, any reference to landscape of verges should specify them to be flower rich and or planted with species of benefit to pollinators.

Appropriate landscaping of pedestrian and cycle routes will encourage greater use, potentially increase their connection with nature and provide connectivity for wildlife to move through a development.

**NB** - Having reached Section 7.7.16 & 7.8, I note much of the above to be referenced. Therefore suggest at the above, the reader is signposted to this, eg: see also .....

**7.7** Some paragraphs miss the opportunity to signpost or reference use of source control SuDS features.

**7.7.16** is the first, and welcome reference to SuDS. Interestingly, Figs: 180, 184, 188, 189, 190, 191 all perfectly illustrate previous missed opportunities to create SuDS from pre-planned landscape.

**7.8** Discussion in 7.8.4, 7.8.5, 7.8.6 refers to retention of existing trees but does not refer to how this will also simultaneously meet Biodiversity Net Gain requirements.

**7.8.8** The multiple reference to use of source control SuDS features here is very welcome.

**7.8.15** Reference to the use of modern technological solutions to reduce/prevent conflict of trees with other features such as paths, roads, services, etc is welcome.

**7.9.7 - 7.9.10** Promotion of this in developments is welcome - more of this is needed.

**7.16** There is not enough in this section to encourage use of permeable materials. Highways and pathways should be permeable, either macadam, concrete, block or conventional paving. At the very least all pathways (including those in conjunction with a parallel highway), parking areas and non-highway roads should be permeable.

**7.16.9** Use of very wide kerbs in Bedfordshire are continual cause of personal concern with respect to run-off. A proportion of the width should comprise a vegetated SuDS feature to address issues of polluted road and path run-off, at the least be permeable and or both.

**Figure 201** is a classic example of excess 'dead-space' which contributes to urban heating and run-off. This SPD should encourage a reduction of hardstand 'dead-space' in favour for soft landscaped alternatives.

The SPD must also be discouraging kerb and boundary treatments that block run-off into soft landscape.

**7.18.1** Should be referencing accommodation of SuDS features, or the alternative to be permeable block paving. Unpaved verges should be 'flower-rich' grass (eg: a proprietary flowering lawn mix) or landscaped with pollinator friendly plants.

**7.20** Reference in this section to use of SuDS is welcome, although would prefer 'consideration must be given'

**7.21** This section omits to mention the impacts lighting has on all wildlife (not just bats). Neither is use of solar lighting mentioned or path ground level solar illumination (eg: Station Road Gamlingay).

The reader should be signposted to both the Bat Conservation/Institute of Lighting Professionals guidance recently updated (Feb 23): <https://www.bats.org.uk/our-work/buildings-planning-and-development/lighting> and the Buglife guidance: [https://cdn.buglife.org.uk/2019/08/A-Review-of-the-Impact-of-Artificial-Light-on-Invertebrates-docx\\_0.pdf](https://cdn.buglife.org.uk/2019/08/A-Review-of-the-Impact-of-Artificial-Light-on-Invertebrates-docx_0.pdf)

Things to include in this SPD should be provision of dark areas and use of timed and or sensor lighting where constant lighting is not required.

**8.1.3** Further important reference materials needs to be added:

NHBC/RSPB NF9 Biodiversity in new housing developments: creating wildlife-friendly communities. NHBC Foundation

RTPI/RSPB Cracking the Code Report & Design Code appendices: <https://www.rtpi.org.uk/research/2022/march/cracking-the-code/>

The Urban Greening Factor: <https://www.london.gov.uk/programmes-strategies/planning/implementing-london-plan/london-plan-guidance/urban-greening-factor-ugf-guidance>

Urban Greening and Biodiversity Net Gain: <https://www.london.gov.uk/programmes-strategies/urban-greening-biodiversity-net-gain-design-guide>

Note: The UGF is also part of Natural England's Green Infrastructure Framework: <https://designatedsites.naturalengland.org.uk/GreenInfrastructure/Home.aspx>

RSPB/WWT Sustainable Drainage Systems - maximising the potential for people and wildlife

BS42021:2022 Integral nest boxes. Selection and installation for new developments - specification

**8.2** The use of Green-blue infrastructure in the title and first paragraph is welcome, but paragraphs 2-4 then proceed to omit the term? It is also welcome the opening paragraph makes the point of early consideration in design, although I feel this is underemphasised and should be stronger. Its not an after thought but an essential pre-requisite even pre-master planning stages and throughout the whole process.

**8.6.3** Doesn't mention the additional value of integration to wildlife, that allows it to use corridors and stepping stones to move through the landscape. This could particularly be the case for invertebrates some of which might be localised Priority Species and or reliant on specific plant species to complete their life cycles. Eg: White-spotted Pinion Moth has a stronghold within a 10km radius of Biggleswade and is Elm reliant.

**8.6.10 & 8.9.4** Consideration to distinctive plant species at a district or parish scale. Eg: the western half of Potton has a locally distinctive proportion of native Cherry Plum, *Prunus cerasifera* (not the purple-leaved cultivar) and Elm *Ulmus spp.* Cherry Plum also occurs elsewhere on the Greensand (eg: Beeston). There are more disease resistant varieties of Elm available.

**8.6.11 & 8.9.10 & 8.9.11** Reference to non-native planting should highlight the imperative to use varieties of benefit to pollinating insects. Note also needs to be made to avoid Invasive Non-Native Species listed under Schedule 9 of the Wildlife and Countryside Act and at a minimum those listed as 'critical' on the Natural England Horizon Scanning list.

**8.7.2 & 8.7.3** Neither mention to avoid use of topsoil. Sowing wildflower mixes and planting on nutrient poor substrates will reduce maintenance demands, slow the growth of aggressive competitive species and improve carbon sequestration.

We need to move away from covering everything in topsoil. It should only be used where needed, eg: allotments, gardens, and sports playing areas.

**8.8.1** Should be an 'ecological and landscape management plan'. No reference to cut and collect mowing which again reduces self nitrification, slow growth rates and reduce number of annual cuts needed.

**Figure 223:** '8 Stormwater collected by SuDS source control' (or alternative: .....collected by SuDS features). When stormwater lands it should be captured and treated by source control features before reaching a basin.

'9 Green walls for building shading'. There are more options to green walls than modular panels. Facade techniques also allows green walls to grow from ground beds or planters and probably cheaper.

**8.9.6** No reference to seek appropriate opportunities to create new community orchards

**8.9.7 & 8.9.8** No reference to benefits of retaining trees or existing hedges and compliance with Biodiversity Net Gain.

**8.9.9** There are disease resistant varieties of Elm

**8.9.10** Does not mention para 7.8.15 and its reference of alternative techniques and methods that prevent tree root damage to paths, highways and services

**8.10.3 Point 6:** 'Proposed sustainable drainage such as **detention and** retention ponds, swales, **filter strips**, and raingardens'.

**Point 7:** '*Proposed green roofs, including extensive (light weight) and intensive deep landscaped, and brown roofs (naturally seeded from the immediate ecosystem).*' This is not correct.

Presume 'extensive (light weight)' refers to a sedum roof? Sedum roofs are of no ecological use. 'Brown roofs' are no longer really a 'thing', especially detrimental is leaving them to natural regeneration. The term is replaced by 'biodiverse green roof' These are an 'extensive' roof comprised of specially formulated recycled nutrient poor substrate and seeded with an appropriate green roof seed mix or a green roof turf.

**Point 7 should read:** *Proposed green roofs, including extensive biodiverse wildflower seeded or turfed and intensive deep landscaped roofs.*

**8.11.2** '.....boundary fences **and walls**.....'

**8.11.4** Should also refer to the need of bat boxes being located in proximity of existing and or future maturing linear landscape cover, such as hedges, woodland and wetlands Including SuDS features.

**8.11.5** Add House Martin - '*(particularly, Swift, House Sparrow and House Martin)*'. Also change to: '*.....provision of new nests within the fabric of a building should comply with BS42021:2022 Integral nest boxes. Selection and installation for new developments - specification. This will contribute to maintaining and assist in promoting recovery of Swift and House Sparrow populations. Additionally, House Martin nests should be located appropriately beneath house eaves ideally in proximity of wetland including SuDS features.*'

Should be additional paragraph to mention use of bee bricks, but with the following caveats: only in external walls, such as a garden wall, or similar and within 60m proximity of high quality nectar rich landscape.

**8.11.8** The opening sentence doesn't read well. Not quite sure what it is trying to say.

**Figure 239:** Bird boxes, should read: - *integral bird boxes*  
Green/brown roofs, should read: - *Biodiverse green roof*

**9.2.2** Some paragraphs only refer to green infrastructure and not green-blue infrastructure.

**9.2.4** Underplays the role of public health, social and economic benefit, and omits reference to provision of climate mitigation and contribution toward net zero.

**9.4.1 Bullet 4** - omits in last sentence to: '.....designed **and adequately funded** to support management over a long period of use.

**Bullet 6** - should emphasise climate resilience as an example, eg: 'Of varied character and functionality to meet identified needs, **such as atmospheric cooling, absorption of airborne pollutants and surface water management**'

**9.4.6** Requires additional line indicating the opportunity to incorporate surface water management into hard landscape features to enhance amenity, and even art. eg: permeable surfaces, rills, sunken plazas and gardens, etc.

**9.5.1** Needs: '.....series of green-blue spaces.....' Also in first bullet use '...green-blue..'

**9.5.3** Requires additional bullet for: Specialists in the design of hard and soft landscape surface water management features (SuDS) for amenity value and benefit.

**9.8.4** Add that: Visitor centres should seek to include a biosolar green roofs, green walls, rain water harvesting and rain gardens, among other sustainability features and when opportunity arises look to retrofit similar on existing centres if possible during refurbishment.

**9.9 - 9.16** Each section misses the opportunity in making the point to consider how they can be used to manage surface water run-off on site and or from the surroundings.

If such opportunities are not instilled into mindsets they'll never be done.

**9.20.2** I respect and agree of the importance here to keep play areas away primarily from balancing ponds and other components of 'site control' in the management train and in relation to 9.9 to 9.16 above. But the ROSPA website also states this: '*However, well-designed and managed SuDS should offer a low risk profile for users to the area and can actually enhance the general environment.*'

This needs also to be given consideration, as innumerable [susdrain.org](https://www.susdrain.org) case studies demonstrate it is possible to include well-designed SuDS features within and around areas of play. Otherwise developers will use it as an excuse not to create SuDS with any amenity value

**9.22.5** After first sentence, should add a second: Lighting also has a negative effect on all wildlife, not just bats.

Somewhere, the reader should be signposted to both the Bat Conservation/Institute of Lighting Professionals guidance recently updated (Feb 23): <https://www.bats.org.uk/our-work/buildings-planning-and-development/lighting> and the Buglife guidance: [https://cdn.buglife.org.uk/2019/08/A-Review-of-the-Impact-of-Artificial-Light-on-Invertebrates-docx\\_0.pdf](https://cdn.buglife.org.uk/2019/08/A-Review-of-the-Impact-of-Artificial-Light-on-Invertebrates-docx_0.pdf)

**10.3** Requires a sub-paragraph to signpost the need for climate resilient design and refer the reader to previous sections. Eg: *Mixed-use developments should be designed to mitigate for climate resilience and contribute toward delivery of net zero by providing features referenced in other sections of this guide.* Or something to that effect.

**10.6.13 Bullet 5** - really welcome inclusion of this very important point. There will be those that don't understand it. How can it be made possible people are signposted to the features this means?

**10.6.14** Additional bullet required to inform landscape to avoid use of Invasive Non-Native Species and to use a diverse plant pallet of varieties attractive to pollinating insects and where appropriate plants of a sensory nature. Also, to use flowering lawns.

**10.12.1** Bullet 3 is at best weak. It needs to emphasise the point made above in 10.3.

The point made in 10.6.13, bullet 5 also applies to children being vulnerable to weather extremes, particularly heat. All schools should be designed with their own SuDS management train (from roof to basins) within the grounds - linking where possible to a management train outside of the school footprint. They should include biodiverse, or better still biosolar roofs or biosolar blue roofs, and green walls - either facade or modular. Integrated bird, bat and bee boxes, wildlife friendly landscape of high pollinator benefit, and aside of high impact sport areas, other grassland should comprise flowering lawns for regular mowing and flower-rich meadow areas. All of these features not only contribute to sustainability and delivery of net zero but provide critical educational resources for students of all ages.

**11** Haven't noticed anywhere in this section the need for development (new, extended or refurbished) to include water harvesting?

**11.4** Should also include a paragraph relating to the needs of wildlife to be incorporated in the design of houses. The should include integral boxes for both bats and birds. For birds follow guidance set out by the British Standard: BS42021:2022 Integral nest boxes. Selection and installation for new developments - specification

**11.7.3** In the following it should also include: '..... **permeable** hard surfacing or through groundcover **nectar rich** shrub **and herbaceous** planting.

**11.11.12** Garden walls should include ground provision for hedgehogs to pass through.

**Bin stores:** Needs to reference availability of biodiverse pre-fabricated bin stores (also for bikes)

**Design codes:** Omits the need to design for climate resilience and the requirement to deliver net zero - which also means the use of GI and not just the usual carbon saving features.

**Figure 297** looks a classic example of excessive hardstand.

**11.7** Needs to include drives eg: <https://www.gov.uk/government/publications/permeable-surfacing-of-front-gardens-guidance>

Also, flat roofs should be biodiverse, rainwater harvesting, fit integral bird and or bat bricks any new planting to be nectar rich and of non-invasive species.

**12.2.1 Bullet 4** - 'Brown roofs' are no longer applicable. The term is replaced by 'biodiverse green roof'. Thus: '....includes **biodiverse** and **blue roofs**...'

**12.2.3** Additional bullet: Consider using green infrastructure technology such as biosolar roofs and green walls to reduce energy costs and consumption, and thermally regulate building temperatures. **Also applies to 12.4.6**

**12.3** Misses the opportunity to reference the value of GI technology in its role of delivering net zero.

**12.3.6** Fails to mention PV Panels operate more efficiently when used in conjunction with a biodiverse green roof. (See various peer reviewed papers and [livingroofs.org](http://livingroofs.org))

**12.9.4 - 12.9.6** Really good and would be better supported by the above being included in their respective places to support the existing text in which they sit.

**12.9.11** Some really good points in here. What is missing - unless overlooked elsewhere is personal water consumption targets. I'm well aware the national target appears to be 110Ltrs/day/person. However, this is a poor target and we should be aiming for c80L/d/p. My personal consumption is about 80L and admit I could/should do better.

**12.10.1** Some really good points, need also to reference under bullet 'Habitat provision' to add '*Habitat provision and potential Biodiversity Net Gain credits*'

**12.12** Needs an additional paragraph emphasising the value and imperative of designing source control features into the planed landscape to avoid pipe to basin. Then to cite the examples, eg permeable surfaces, rain gardens and filter strips, etc.....

**12.13.1** only refers to modular walls and omits the facade option. See text and web link under 6.28.5 above.

Quite flattered some of the verbiage and illustrations have been used from my SuDS guide in 12.13!! Thank you!

**Figure 331** This perfectly illustrates the point made above in 9.20.2 in so far as correctly designed, SuDS are not a danger to children and can encourage play, education and connection to nature.

**12.14.15** The paragraph should include reference to '*....the **planed** landscape...*' '*...biodiversity provision and **potential Biodiversity Net Gain credits** thereby increase*'

**12.15.3** Should also refer to the role and value played by evapotranspiration in SuDS. Unfortunately, too many people use soil impermeability as a get out excuse for not doing SuDS.

**12.17.4** Again refer to 9.20.2 and figure 331. This paragraph also needs to make the point and quote from ROSPA made in 9.20.2. Otherwise developers will use it as an excuse not to create SuDS with any amenity value