

Green Infrastructure

Guidance Statement and Design Checklist for implementation of Green Infrastructure within Taunton Garden Town

Somerset West
and Taunton

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Definition of Green Infrastructure:

Green infrastructure (GI) is a network of green space and other urban and rural green features at all scales, which can deliver high quality of life and environmental benefits for communities. The key features of GI are that it is a network of integrated spaces that provides multiple benefits simultaneously, including social, economic, environmental, and cultural benefits.

The Natural England's Green Infrastructure Guide¹ described GI as *"a strategically planned and delivered network comprising the broadest range of high-quality green spaces and other environmental features. It should be designed and managed as a multifunctional resource capable of delivering those ecological services and quality of life benefits required by the communities it serves and needed to underpin sustainability. Its' design and management should also respect and enhance the character and distinctiveness of an area with regard to habitats and landscape types"* (Natural England Green Infrastructure Guidance 2009).

Natural England has also identified that blue infrastructure is sometimes used to describe riverine and coastal environments with a green infrastructure network. Within this document, blue infrastructure is used to describe water elements, such as rivers, canals, ponds, wetlands, floodplains. Where this document refers to green infrastructure, it should be interpreted as also incorporating blue infrastructure elements.

Type of Green Infrastructure components:

A GI network is composed of all types of green open spaces and environmental features (see definition above). It is designed and managed as a multifunctional resource that can deliver social, environmental, and economic benefits required by the communities it serves. As such, GI covers all spatial scales from sub-regional, connecting larger sites in the wider countryside, through local neighbourhood level and accessible natural green spaces within local communities and down to the building scale, amenity spaces, green and blue roofs, and gardens.

¹ <http://publications.naturalengland.org.uk/publication/35033>

Appendix A

The main components of Green Infrastructure are:

- **Natural and Semi-natural open space** - Woodlands, nature reserves, grasslands, wetlands, open water bodies, wastelands, and disturbed ground
- **Corridors (green and blue)** - Rivers/canals and their banks, road and rail verges, hedgerows, ditches, cycling routes, pedestrian paths, and public rights of way
- **Parks and green open spaces** - Country and regional parks, urban parks, and pocket parks
- **Sports facilities and play areas** - Outdoor sports pitches, tennis courts, athletics tracks, play areas, playgrounds, skateboard parks, and other more informal recreational areas
- **Other green spaces** - Allotments, community gardens, city farms, cemeteries, land used for agriculture
- **Civic open spaces** - Urban squares, plazas, and streets
- **Amenity Greenspace** - Informal recreation spaces, communal green spaces, and domestic gardens
- **Drainage elements (Sustainable Drainage Systems SuDS)** - Attenuation ponds, Bioswales and rain gardens
- **Roofs (and walls)** - Extensive, semi-intensive, and intensive green walls roofs

Benefits of Green Infrastructure:

The multifunctional nature of GI provides social, environmental, and economic benefits at the same time and therefore has the potential to tackle several problems simultaneously. In contrast, grey infrastructure refers to a human-engineered infrastructural application, such as roads, wastewater treatment plants, pipelines, and dams. This approach typically fulfils a single function, such as drainage or transport.

Green Infrastructure - the policy context:

The need for people to have contact with green open space and nature has long been considered important. More recently, following the impact of **COVID-19**, the benefits of GI have been more clearly evidenced. Organisations such as the United Nations (through its Sustainable Development Goals), the World Health Organization, Natural England, and Public Health England have highlighted the multiple benefits that GI can deliver for people's mental and physical health, responding to the climate emergency, enhancing and protecting biodiversity and improving water quality.

Over the last few years, changes to planning policy which reflect the growing importance of GI have occurred at the national, regional, and local level. At the national level, the revised **National Planning Policy Framework (NPPF)** from 2021 changes the definition of sustainable development (chapter 2), which now references the 17 Global Goals of Sustainable Development from the United Nations (paragraph 7). The NPPF also sets a clear environmental objective that all plans need to 'protect and enhance' the environment and to 'improve biodiversity' (paragraph 11).

The revised NPPF references the importance of trees (paragraph 131) in new developments. It states that new streets should be tree-lined and that opportunities should be taken to incorporate trees elsewhere as part of every new development, such as parks and community orchards. The NPPF also says that appropriate measures should be put in place to secure the long-term maintenance of newly planted trees and that existing trees should be retained wherever possible.

Other amendments in the NPPF related to GI have been made to ensure walking and cycling networks are attractive and well-designed and promote active travel (chapter 9). The revised NPPF also states that all plans should respond to climate change and take into account all sources of flood risk (chapter 14). The revised NPPF states that new developments must be 'sensitively located and designed to avoid or minimise adverse impacts on designated areas' such as National Parks, Areas of Outstanding Natural Beauty and others (chapter 15).

A Green Future: Our 25 Year Plan to Improve the Environment² report sets out a comprehensive plan for England's natural environment from the Department for Environment, Food & Rural Affairs (Defra). It is part of the UK Government's goal to be the first generation to "leave our environment in a better state than we found it".

The plan sets ten targets, four of which will have a direct impact on the management of GI. It aims to deliver cleaner air and water in our cities and rural landscapes, protect threatened species and provide richer wildlife habitats, and calls for an approach to agriculture, forestry, land use and fishing that puts the environment first.

Natural England launched "**the Green Infrastructure Framework - Principles and Standards for England**"³ in January 2023. The national framework is a commitment in the Government's 25-Year Environment Plan. It sets out the requirements and characteristics of high-quality green infrastructure to support the greening of towns and cities and promote connections with the surrounding landscape as part of the Nature Recovery Network.

The Framework provides further information and design guides on how green infrastructure should be implemented for improving health and wellbeing, air quality, nature recovery and resilience to and mitigation of climate change, along with addressing issues of social inequality and environmental decline.

The Environment Act 2021 introduces into law several of the commitments made in the 25 Year Environment Plan. The Environment Act has passed into UK law and legislates on a wide range of relevant issues. It sets clear statutory targets for the recovery of the natural world in four key areas: air quality, biodiversity, water, waste, including to reverse the decline in species abundance by the end of 2030.

Under the Environment Act, all new developments, including national infrastructure projects, are required to assess habitat and biodiversity present on the site before and after new development. The Act requires a minimum of 10% biodiversity net gain (BNG) be secured for 30 years. Regulations are expected to formally bring in this requirement from Autumn 2023 at which point any new scheme will be expected to provide a biodiversity net gain plan which should include the following:

- The set of measures that are required to minimise the impact on habitats/ecosystems

² <https://www.gov.uk/government/publications/25-year-environment-plan>

³ <https://designatedsites.naturalengland.org.uk/GreenInfrastructure/Home.aspx>

Appendix A

- The pre and projected post-development biodiversity value, showing at least a 10% net gain, based on the Defra Metric 3.0.
- Any offsite biodiversity credits and gains
- Stewardship and maintenance strategies that clearly set out net gain outcomes through habitat creation or enhancement for a minimum of 30 years after the scheme has been completed

At the local level, Taunton was designated as a **Garden Town** in 2017 and developed a **vision document**⁴ for the future growth of the town as a garden community. The Council set four main themes to deliver the Garden Town Vision into reality:

1. Grow our town greener – transforming our open spaces and streets
2. Branching out – moving cleaner, moving smarter
3. Growing quality places to live – town centre, new and existing neighbourhoods
4. New shoots and blossom – a dynamic and prosperous community founded on knowledge, culture, and business

Integrated and well-managed GI components could help to deliver the Garden Town Vision by joining up the town's green spaces, waterways, parks and play spaces, planting more street trees and woodlands and managing the water more imaginatively with wetlands and rain gardens to improve it for recreation, tourism, wildlife and reducing flood risk.

In February 2019, Somerset West and Taunton Council declared a **Climate Emergency**⁵ and prepared a **Carbon Neutrality and Climate Resilience (CNCR) Action Plan**⁶, which sets out a series of actions that are needed to work towards carbon neutrality by 2030. GI component plays a key part in adapting to and mitigating climate change.

SWT also declared an **Ecological Emergency**⁷ in October 2020 and adopted an Ecological Emergency Action Plan⁸. The action plan seeks to address ecological issues alongside the climate emergency actions, maximising opportunities by

⁴ <https://www.somersetwestandtaunton.gov.uk/taunton-garden-town/vision-for-our-garden-town/>

⁵ <https://www.somersetwestandtaunton.gov.uk/climate-emergency/>

⁶ <https://www.somersetwestandtaunton.gov.uk/climate-emergency/climate-change-strategy/>

⁷ <https://www.somersetwestandtaunton.gov.uk/news/swt-declares-ecological-emergency/#:~:text=Somerset%20West%20and%20Taunton%20Council,declaration%20made%20in%20February%202019.>

⁸ <https://www.somersetwestandtaunton.gov.uk/climate-emergency/ecological-emergency-vision-and-action-plan/>

Appendix A

combining both climate and ecological emergencies. GI has a vital role in restoring ecosystems, enhancing and protecting biodiversity assets and promoting natural recovery.

In August 2020, in response to the Dutch N Case, Natural England confirmed that the designated interest features of the Somerset Levels and Moors Ramsar Site are currently unfavourable or at risk, due to eutrophication caused by excessive **levels of phosphates**. Natural England has advised the Council that in determining planning applications which may give rise to additional phosphates within the catchment of the River Tone they must, as a competent authority, undertake a Habitats Regulations Assessment and an appropriate assessment where a likely significant effect cannot be ruled out. Appropriate assessment should demonstrate through an agreed phosphorus budget that development proposals can achieve phosphorus neutrality through the implementation of appropriate permanent offsetting measures, thereby ensuring no significant adverse impact on the affected designated area. Integrating natural based phosphate solutions and other GI components within new developments has the potential to improve water quality and help to mitigate phosphate issues.

List of key local policies and guidance related to GI:

- Taunton Deane Core Strategy 2011 – 2028⁹
 - DM4 – Design
 - CP1 – Climate change
 - CP8 – Environment

- The Site Allocations and Development Management Plan (SADMP)¹⁰
 - C2 – Provision of recreational open space
 - C3 – Protection of recreational open space
 - C4 – Protection of community facilities
 - C5 – Provision of community facilities
 - C6 – Accessible facilities
 - A3 – Cycle network

⁹ <https://www.somersetwestandtaunton.gov.uk/planning-policy/adopted-local-plans/taunton-deane-core-strategy-2011-2028/>

¹⁰ <https://www.somersetwestandtaunton.gov.uk/planning-policy/adopted-local-plans/sadmp/>

Appendix A

- A5 – Accessibility of development
 - I4 – Water infrastructure
 - ENV1 – Protection of trees, woodland, orchards, and hedgerows
 - ENV2 – Tree planting within new developments
 - ENV3 – Special landscape features
 - ENV4 – Archaeology
 - ENV5 – Development in the vicinity of rivers and canals
 - D7 – Design Quality
 - D12 – Amenity space
 - D13 – Public art
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- SWT Districtwide Design Guide SPD¹¹
 - SWT Public Realm Design Guide SPD¹²
 - SWT Local Cycling and Walking Infrastructure Plan (LCWIP)¹³
 - SWT Carbon Neutrality and Climate Resilience Action Plan (CNCR)¹⁴
 - SWT Climate Positive Planning Guidance¹⁵
 - SWT Net Zero Carbon Toolkit¹⁶

¹¹ <https://www.somersetwestandtaunton.gov.uk/planning-policy/districtwide-design-guide-spd/>

¹² <https://www.somersetwestandtaunton.gov.uk/planning-policy/taunton-garden-town-public-realm-design-guide-spd/>

¹³ [https://www.somerset.gov.uk/roads-and-transport/roads-and-transport-local-cycling-and-walking-infrastructure-plans-lcwips/#:~:text=Local%20Cycling%20and%20Walking%20Infrastructure%20Plans%20\(LCWIPs\)%20are%20focused%2C,support%20active%20travel%20funding%20opportunities.](https://www.somerset.gov.uk/roads-and-transport/roads-and-transport-local-cycling-and-walking-infrastructure-plans-lcwips/#:~:text=Local%20Cycling%20and%20Walking%20Infrastructure%20Plans%20(LCWIPs)%20are%20focused%2C,support%20active%20travel%20funding%20opportunities.)

¹⁴ <https://www.somersetwestandtaunton.gov.uk/media/2429/carbon-neutrality-and-climate-resilience-plan.pdf>

¹⁵ <https://www.somersetwestandtaunton.gov.uk/media/3280/climate-positive-planning.pdf>

¹⁶ <https://www.somersetwestandtaunton.gov.uk/planning-policy/net-zero-carbon-toolkit/>

Appendix A

- Taunton Deane Green Infrastructure 2009¹⁷
- Taunton Deane Green Infrastructure Opportunities Update¹⁸
- SWT Recreational Open Space & Community Halls: Guidance Note¹⁹
- Sedgemoor and Somerset West, and Taunton Districts 'Ecological Emergency Vision and Action Plan (EEVAP)'²⁰

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¹⁷ <https://www.somersetwestandtaunton.gov.uk/media/1328/taunton-deane-green-infrastructure-strategy-luc-2009.pdf>

¹⁸ <https://www.somersetwestandtaunton.gov.uk/media/1223/taunton-green-infrastructure-strategy-opportunities-update-2017.pdf>

¹⁹ <https://www.somersetwestandtaunton.gov.uk/media/2734/recreational-open-space-community-halls.pdf>

²⁰ <https://www.somersetwestandtaunton.gov.uk/climate-emergency/ecological-emergency-vision-and-action-plan/>

Purpose of the GI Checklist:

The purpose of the Checklist is to ensure a holistic approach is taken to Green Infrastructure (GI) from the early stages of the design process to protect, enhance and maintain Taunton Garden Town's green spaces, landscape and ecology.

The GI checklist aims to promote best practice design solutions, and whilst the checklist will not be adopted policy, it will help in determining planning applications by prompting a response from the applicant as to how key questions/issues have been addressed by the application.

Who is the GI Checklist for?

The GI Checklist is to be used by developers, design teams, consultants and contractors. The document sets out the Local Planning Authority's (LPA's) expectations in relation to GI and what drawings, reports or other evidence might be required to determine whether GI has been considered and integrated within the design proposal.

How will the checklist be used?

It is intended that the Local Validation Checklist be updated to include a requirement for applicants to submit responses to the questions identified in the GI Checklist (below), as a means of providing additional supporting information. Answers provided to these questions, and any further information relevant in response to them will potentially be used by the Council as Local Planning Authority to assess how the application responds to GI. It is important to note, however, that the answers to these questions do not have to be "yes", and therefore no additional requirement is placed on developments or applicants. The responses to the questions will simply act as a prompt to applicants and ensure that GI is properly considered in weighing up the planning balance of proposals by the Council. The checklist will be used proportionately in relation to the scale and nature of the proposed development, therefore not all of the checklist questions will be relevant to each application (due to scale, site constraints etc.)

Responding to the questions in the GI Checklist should not be seen as a simple "yes" or "no" tick box exercise, but should provoke appropriate consideration by the applicant about how their application could seek to provide a positive answer.

Appendix A

Responses should be specific, not generic and supplemented with explanation and evidence of how the proposed development will or will not meet the suggestions.

Where the answer is “no” or considered to be unsatisfactory, officers will enter negotiation with the applicant to discuss whether there are opportunities for the development to respond positively.

The answers to the questions will also not be scored or given any particular weighting, although they will feed into the Council’s evaluation of the proposal under adopted planning policies. The need to answer these questions may also identify opportunities for the applicant to explore and/or the Council to look to instigate negotiation around, which would not have come forward otherwise. It will also aid the planning officer to determine whether or not, on balance, the development in question is sufficiently responding to GI and current requirements of local and national policy. The Checklist will help guide the assessment of planning applications for developments coming forward within Taunton Garden Town. It will inform pre-application discussions and assist decision-makers in ensuring GI is integrated into the proposal.

The GI checklist: questions and considerations

The following set of questions has been compiled to ensure GI is considered throughout the design and planning process. Applicants and their consultants are advised to consider GI from project inception to ensure that it is fully integrated into the proposals. The questions in the first column are intended to trigger consideration and project response. The second column sets out the drawings, reports, or other evidence that might be required to determine whether the plan meets GI requirements. A copy of this checklist should be completed by the applicant or on their behalf and submitted as part of the documentation to support planning applications that raises GI issues and are located within Taunton Garden Town.

Question:	Drawings, reports, or other evidence documents that might be required to support the design:	Application response/commentary (To be completed on behalf of the applicant)
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Appendix A

Climate change:		
<p>Has the amount of soft landscape, trees and vegetation been maximised for carbon sequestration and reducing the urban heat island effect?</p>	<ul style="list-style-type: none">• A drawing identifying the different surface type across the development site as proposed and in particular identifying the green surfaces by amount and type.• Report describing how landscape design is used to mitigate climate change (for example planting for shade and mitigating winds, noise, air pollution and similar)	
Biodiversity enhancement:		
<p>Have important biodiversity, habitats, vegetation and trees within the site been retained and incorporated into the GI proposals?</p>	<ul style="list-style-type: none">• Baseline analysis drawing that show all existing green features within and adjacent to the site boundary• A drawing that shows the existing green features that are kept and integrated within the proposed design• A report or a drawing summarising the set of measures that are required to minimise the impact of the proposed development on habitats/ecosystems	

Appendix A

<p>Have all the existing GI assets and green links located beyond the project boundary been considered?</p>	<ul style="list-style-type: none"> • Baseline analysis drawing that shows all existing green features within and adjacent to the site boundary • A drawing/report that shows how the proposed plan considers the GI elements within the site and links to GI components adjacent to the site 	
<p>Does the plan provide evidence that a 10% biodiversity net gain has been achieved together with a management and maintenance strategy that considers opportunity for stewardship in the community interest?</p>	<ul style="list-style-type: none"> • The pre-development and projected, post-development, biodiversity value. The latter to show at least a 10% net gain, based on the Defra Metric 3.0 • Management and maintenance strategies to secure the 10% net gain for a minimum of 30 years after the scheme has been completed which also considers opportunity to incorporate a stewardship approach in the interests of the community 	
<p>Have green roofs been incorporated into the design (where possible)?</p>	<ul style="list-style-type: none"> • Drawing that shows buildings with the potential to have a green roof - such as education, culture, commercial, retail, and similar • Proposed details of the green roof to include a cross-section of the structure of 	

Appendix A

	<p>the roof to ensure an adequate substrate depth (full and reserved matters applications)</p>	
<p>Water management:</p>		
<p>Have SuDS been incorporated into the scheme drainage plan as a way to attenuate water close to source? And have SuDS been designed to be multifunctional considering opportunities for biodiversity enhancement and recreation?</p>	<ul style="list-style-type: none"> • A plan that shows how sustainable drainage components are integrated within the landscape plan to drain and capture runoff. To include surface water flow direction, SuDS drainage components and SuDS storage components 	
<p>Has analysis and calculation been carried out to determine the potential for on-site runoff/rainwater catchment, and has this opportunity been maximised when compared with the amount of runoff flowing into the public drainage system?</p>	<ul style="list-style-type: none"> • Assessment of potential attenuation storage volumes within SuDS components 	
<p>Public health:</p>		

Appendix A

<p>Has the design proposed opportunities for local food growing such as via allotments and community orchards?</p>	<ul style="list-style-type: none"> • Drawing/report showing the provision and size of allotment and community orchard land compared with the number of new dwellings 	
<p>Has the development site been designed in a multifunctional way integrating GI features with sustainable active transport and recreational links both within and adjacent to it?</p>	<ul style="list-style-type: none"> • Drawing that shows the hierarchy of sustainable active transport and recreational routes within, and/or adjacent to the site, how they connect to the town's walking and cycling network, and how GI components have been integrated into their design 	
<p>Cultural Services:</p>		
<p>Does the plan provide the required amount of open space and play areas, and does it meet the needs of all relevant age groups and consider accessibility for all?</p>	<ul style="list-style-type: none"> ▪ A drawing/report that includes the following: <ul style="list-style-type: none"> ○ Provision of open spaces and play areas, including the type of open space and its distance from new dwellings ○ Calculation of open spaces and play areas in square meters for two or more beds dwelling units within the proposed site 	

Appendix A

<p>Have open spaces and play areas been designed in a multifunctional way, balancing social, environmental and place-making functions</p>	<ul style="list-style-type: none">▪ Hard and soft landscape plans that describe the type of uses within the public realm	
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