# Melton Climate Change Study

## Document D: Water and Waste

## Melton Borough Council

**Final report**

Prepared by LUC

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# Chapter 1
# Water

## Introduction

**1.1** Climate change and water are inextricably linked. Climate change is exacerbating both water scarcity and water-related hazards (such as floods and droughts), as rising temperatures disrupt precipitation patterns and the entire water cycle **[See reference 1]**.

**1.2** The impacts on water will be dependent on the level of global warming. Limiting global warming to 1.5°C compared to 2°C would approximately halve the proportion of the world population expected to suffer water scarcity, although there is considerable variability between regions **[See reference 2]**. Therefore, recommendations in this report to mitigate climate change (through reducing emissions from buildings and transport and supporting renewable energy developments) are also important in relation to protecting water supplies and water quality and reducing flooding and droughts.

**1.3** As outlined in Document A, the general pattern of climate change in the UK is towards warmer and wetter winters, as well as hotter and drier summers. This trend is also predicted to occur within Melton borough. Wetter winters and more extreme storm events are likely to result in more frequent flooding. Despite the wetter winters, there may also be more periods of increased water demand, including drought conditions, experienced due to the hotter and drier summers, which can have significant impacts on water resources.

**1.4** Water quality is also affected by climate change, as higher water temperatures and more frequent floods and droughts are projected to exacerbate many forms of water pollution – from sediments to pathogens and pesticides **[See reference 3]**.

**1.5** Climate change, population growth and increasing water scarcity will put pressure on food supply **[See reference 4]** as most of the freshwater used, about 70 per cent on average, is used for agriculture (it takes between 2,000 and 5,000 litres of water to produce a person's daily food) **[See reference 5]**.

**1.6** This chapter discusses the potential ways the Local Plan can help to reduce the impacts of flooding, increase water efficiency in new and existing development, and ensure development is designed to be more resilient to higher rainfall, more frequent and severe storms, and drought.

# Reducing flooding

## Context

**1.7** Melton borough is at flood risk from a variety of flooding sources including fluvial, pluvial, groundwater, sewers, canal and reservoir, as shown by the 2015 Strategic Flood Risk Assessment (SFRA) **[See reference 6]**. Since extreme rainfall events are expected to become more frequent in Melton borough due to climate change, the risk of all types of flooding is likely to increase. This can negatively affect people, communities, buildings and result in disruption or loss of local infrastructure and services, with potentially significant implications for economic activity, societal equity, health and wellbeing.

**1.8** Residents' lives can be endangered at times of flooding and homes can be directly impacted. The associated stress can have long-lasting negative impacts on mental health. Flood waters can also increase the risk of infectious diseases. Building fabric can be affected by damp due to flooding and intense rain, which can cause harm to occupant health and wellbeing and create repair costs.

**1.9** There may also be indirect effects even where buildings are above flood level, if access routes are cut off, which can leave vulnerable people at more risk if unable to access healthcare services. Older people can be more vulnerable to flooding, as their ability to prepare and respond may already be constrained

because of, for example, ill health, restricted mobility, or lack of finances. In 2021, people aged 65 and over accounted for almost a quarter (23.5%) of Melton borough's population **[See reference 7]**; this is projected to increase to almost a third (32.7%) by 2043 **[See reference 8]**, thereby increasing susceptibility to flood risk.

**1.10** Flooding may present structural problems for non-residential buildings and other infrastructure (such as roads, railways, bridges) in the Borough, depending on their design, use and layout. Water infrastructure, including pipelines and treatment plants are also at risk from increases in the frequency and intensity of surface water flooding.

**1.11** Finally, as a result of more extreme weather within Melton borough, flooding may also impact agricultural productivity due to the impacts on plant growth and animal welfare, as well as the risk of water-borne diseases.

## National policy and legislation

**1.12** The NPPF states at paragraph 158 that "plans should take a proactive approach to mitigating and adapting to climate change, taking into account the long-term implications for flood risk". The NPPF at paragraph 159 also states that "Inappropriate development in areas at risk of flooding should be avoided by directing development away from areas at highest risk (whether existing or future). Where development is necessary in such areas, the development should be made safe for its lifetime without increasing flood risk elsewhere. Strategic policies should be informed by a strategic flood risk assessment, and should manage flood risk from all sources. They should consider cumulative impacts in, or affecting, local areas susceptible to flooding, and take account of advice from the Environment Agency and other relevant flood risk management authorities, such as lead local flood authorities and internal drainage boards. All plans should apply a sequential, risk-based approach to the location of development – taking into account all sources of flood risk and the current and future impacts of climate change – so as to avoid, where possible, flood risk to people and property."

**1.13** Managing flood risk involves a range of approaches to minimise flood risk from all sources including surface water. This includes steering new development away from current and future flood risk areas, implementing flood resistance and resilience design measures in new and existing buildings/developments, implementing sustainable drainage techniques and ensuring best practice guidance has been adhered to (for example the Code of Practice for Property Flood Resilience, 2021 **[See reference 9]**).

**1.14** Sustainable drainage systems (SuDS) use nature-based approaches to slow, store or infiltrate rainwater that would otherwise risk overwhelming sewers, causing flooding and sewage pollution. SuDS try to mimic natural drainage systems and retain water on or near the site, reducing the rate of surface water run-off even at times of peak rainfall. Unlike a pipe, SuDS can provide a raft of benefits locally such as, managing flood risk, filtering and cleaning contaminated water, increasing nature habitat in urban areas (note the link to mandatory biodiversity net gain), providing shading from heatwaves (such as where trees form part of the scheme), helping recharge water resources, and improving local air quality. Depending on how 'nature-based' the sustainable drainage system design is, and the extent to which it incorporates natural flood management measures (such as swales, balancing ponds, rain gardens etc.), SuDS can not only reduce local flood risk but also provide wider benefits for human health, amenity and biodiversity.

**1.15** In 2023, the Government announced it would implement Schedule 3 of the Flood and Water Management Act 2010 **[See reference 10]**, which includes a mandatory requirement for SuDS in new development. This legislation will ensure sustainable drainage systems are designed to reduce the impact of rainfall on new developments by using features such as soakaways, grassed areas, permeable surfaces and wetlands. This will reduce the overall amount of water that ends up in the sewers and storm overflow discharges. Implementing Schedule 3 requires a consultation on the national standards for sustainable drainage systems, however, the consultation has yet to take place.

## Local policy

**1.16** The relevant policies within the adopted Local Plan which already provide a strong foundation for flood risk management in Melton borough are Policy EN11 – Minimising the risk of flooding and Policy EN12 – Sustainable Drainage Systems.

**1.17** Policy EN11 is lengthy and incorporates fairly detailed guidance (some of which repeats national level policy and guidance) for all development proposals within different flood zones and those that require site level flood risk assessments. It already refers to all sources of flooding, including the Grantham Canal. Policy EN12 relates to major development proposals only and requires them to demonstrate through a surface water drainage strategy that properties will not be at risk from surface water flooding allowing for climate change effects. It also states that "Surface water management should be undertaken, wherever practicable through the utilisation of appropriate SuDS techniques…"

**1.18** The requirements for managing flood risk in Melton borough could be updated to take into account the updated SFRA, national policy and guidance, and could be strengthened with regard to the SuDS requirements. This has already been acknowledged in the Local Plan Update Issues & Options Consultation document, which set out an option to add new elements of national policy to EN11 (such as the 'Avoid-Control-Mitigate-Manage' hierarchy) and another option to limit Policy EN11 to an overall strategic approach to planning for flooding and leave the detailed requirements for national and technical guidance published from time to time. With respect to Policy EN12, there was an option to incorporate additional requirements to Policy EN12 (for long term maintenance of SuDS, multifunctional SuDS design and to justify the form of SuDS used).

**1.19** The SFRA is used by MBC in decision making and to inform decisions on the location of future development in the Local Plan as well as the preparation of sustainable policies for the long-term management of flood risk. It is currently being updated to take into account latest flood risk information to identify the areas of highest risk of flooding in the Borough from all potential sources of flooding, including fluvial, pluvial, surface water and groundwater. It will also include an updated assessment of the potential increase in flood risk due to climate change.

# Policy options for reducing risks associated with flooding

**1.20** Opportunities exist for local planning policies to reduce flood risk, including by steering new development away from current and future flood risk areas, using the correct application of the Sequential Test and Exception Test, implementing flood defences and natural flood management techniques and ensuring good practice design guidance is adhered to. Policy can also provide strong support for sustainable drainage systems in new development.

**1.21** The adopted Local Plan policies EN11 and EN12 already comprehensively address flood risk management, as do the proposed new draft policies being considered by MBC following the Issues and Options consultation. Therefore, only the following additional options have been considered for Local Plan policies addressing flood risk management:

- Update Policy EN11 (and site allocation policies) to reflect the latest SFRA.
- Strengthen Policy EN12 to incorporate the drainage hierarchy, to require all developments to use SuDS (at an appropriate scale) and for all SuDS to be designed as part of wider green infrastructure (GI) objectives.

## Policy option 1: Update Policy EN11 (and site allocation policies) to reflect the latest SFRA

**1.22** MBC could update Policy EN11 to reflect the latest SFRA, but also ensure that the latest SFRA recommendations relating to site options are drawn on when selecting sites for allocation in the Local Plan, and specifying flood management requirements within the relevant site allocation policies. The proposed new draft policy EN11 incorporates flexibility regarding any changes to national policy and guidance through the proposed footnote “In accordance with the National Planning Policy Framework and Planning Practice Guidance or any subsequent statement of national planning policy”.

### Evaluation

**1.23** As this update to Policy EN11 would not fundamentally change the requirements for development proposals with respect to flood risk management, it is assumed that it should continue to help to avoid development located in areas of flood risk and reduce the likelihood of flooding elsewhere. It is also not expected that there will be any additional cost to developers, MBC or the Lead Local Flood Authority (LLFA), which is Leicestershire County Council for Melton borough, associated with this policy option.

## Policy option 2: Strengthen Policy EN12

**1.24** MBC could strengthen Policy EN12 to incorporate the drainage hierarchy, to require all (not just major) developments to use SuDS (at an appropriate scale) and for all SuDS to be designed as part of wider GI objectives, such as including clear references to biodiversity and amenity provision within SuDS designs.

**1.25** The proposed new draft policy EN12 already refers to the drainage hierarchy and the need to take account of the role of SuDS in creating multifunctional benefits including recreation, biodiversity net gain, heritage and beauty by integrating it into the overall layout and design of the development. However, it is still only requiring major development proposals to incorporate SuDS. The policy could require any development proposal to incorporate SuDS, unless it is proven that SuDS are not appropriate. This is the approach taken in Policy CC1 of the Harrogate Local Plan **[See reference 11]** and Policy EE13 of the Runnymede Local Plan **[See reference 12]**.

**1.26** The SuDS policy could also provide more detail about how to achieve multifunctional benefits in a similar way to the recently adopted **Cornwall Climate Emergency DPD** includes **Policy CC4: Sustainable Drainage System Design** **[See reference 13]** which states:

Sustainable Drainage Systems (SuDS) proposals shall prioritise the use of above non-buried SuDS, including retrofit SuDS and where feasible within existing town centres, commercial and retail areas, and redevelopment projects and shall be designed to achieve the following criteria:

- 1) Maximise the benefits to the sense of place, amenity and biodiversity; and
- 2) Reduce the overall level of flood risk on the site and the surrounding areas; and
- 3) Provide attractive, biodiverse and non-buried systems; and
- 4) Incorporate SuDS within greenspace, blue and green infrastructure, amenity, and biodiversity schemes to manage surface water flows, improve water quality, educate and improve the wellbeing of communities; and
- 5) Where built into public green or open space have sufficient room to provide a safe, naturalised system without the need for fencing or barriers; and
- 6) Provide for simple and straightforward maintenance, including the provision of a plan and mechanism for on-going maintenance.

## Evaluation

**1.27** Requiring all development proposals to incorporate SuDS could pre-empt the possible mandatory requirement for SuDS to be used in minor developments (the former Conservative government announced it would implement Schedule 3 of the Flood and Water Management Act 2010 but the implementation timeline is currently unclear).

**1.28** Extending requirements for SuDS to all scales of development will extend the benefits for the Borough especially for sites with insufficient land but where flood risk remains high. Where developers for minor developments seek to implement

SuDS, this can be achieved through small-scale SuDS such as green roofs, permeable paving and rain gardens, which are potentially applicable to a wide range of schemes.

**1.29** A study **[See reference 14]** investigated the implementation of small-scale SuDS in London, proving that, distributed at scale across a catchment, small-scale SuDS will collectively maximise flood risk reduction.

**1.30** Prioritising nature-based SuDS and the role of SuDS in creating multifunctional benefits will take advantage of the cross-cutting nature of climate adaptation measures, regarding protecting, planting and enhancing habitats and tree canopy cover, thereby increasing the resilience of the natural environment to climate change while providing additional benefits for avoiding flood risk. The Government's National Adaptation Programme **[See reference 15]** recognises this interrelationship and the importance of using green infrastructure and nature-based solutions that can help protect homes and communities from extreme heat and surface water flooding, while enhancing space for nature.

**1.31** It is assumed that MBC officers are familiar with assessing major development proposals incorporating SuDS, and the smaller-scale nature of SuDS on minor developments should not require any additional technical expertise. However, the LLFA currently only reviews planning applications for major developments that may impact on flood risk and also reviews their SuDS schemes, and it may not have the resources to provide a technical review of all development proposals in relation to SuDS (such as minor applications as well).

**1.32** Consideration of SuDS at an early stage in the design process is key to maximising benefits and minimising costs. Although costs will vary depending on the size of the development or scope of works associated, the cost for the planning and design of SuDS are typically 15% of the eventual capital costs of implementing the SuDS **[See reference 16]**.

**1.33** The maintenance required for SuDS and the responsibilities for that maintenance are often cited as deterring developers from installing SuDS. HR Wallingford’s work for the DTI on whole life costing for SuDS components

suggested that annual operational and maintenance costs as a proportion of construction costs ranged from just 0.5% to 10% for all components with the exception of an infiltration trench for which a 20% figure was cited as a maximum **[See reference 17]**.

**1.34** The National Planning Practice Guidance makes clear that where cost is a reason put forward by a developer for not including sustainable drainage systems, they should provide information to enable comparison with the lifetime costs of a conventional public sewer connection **[See reference 18]**.

## Recommendations for flood risk management policies

**1.35** It is recommended that MBC should continue its proposed approach to simplifying Policy EN11 to provide more of an overall strategic approach to planning for flooding. This should include some specific local flooding issues highlighted, and just refer to the detailed requirements for national and technical guidance, acknowledging that this will be updated from time to time. It is also recommended that any conclusions or recommendations in the updated SFRA be reflected. In particular, the updated SFRA should be referred to when making decisions on the most appropriate sites to allocate in the Local Plan.

**1.36** For Policy EN12, it is recommended that MBC require all development proposals to incorporate SuDS at an appropriate scale and unless it is proven that SuDS are not appropriate (which should not just relate to cost).

# Achieving water efficiency

## Context

**1.37** Water is a precious resource, and the impacts of climate change will place pressure on the demands for water and its quality. A reduction in public water supplies due to increasing periods of water scarcity is one of the climate change risks in England that has a high future magnitude score, meaning more action is required now to address this issue **[See reference 19]**.

**1.38** The Environment Agency's national framework for water resources states that if no action is taken between 2025 and 2050, around 3,435 million extra litres of water per day will be needed in England for public water supply **[See reference 20]**. The framework identifies how pressures on water supplies could be alleviated, including:

- reducing demand for water; and
- new infrastructure, such as reservoirs, desalination plants and water transfers.

**1.39** On average, a person in England currently uses 141 litres of water per day and consumption figures have begun to rise over the last few years **[See reference 21]**. The Environmental Improvement Plan (2023) **[See reference 22]**, published under the previous government, therefore sets national targets for reducing water use in England, including:

- to reduce household water use to 122 litres per person per day (l/p/d), reduce leakage by 37% and reduce non-household (for example, business) water use by 9% by 31 March 2038; and
- to achieve 110 l/p/d household water use, a 50% reduction in leakage and a 15% reduction in non-household water use by 2050.

**1.40** Since the adoption of the current water efficiency standards in the Buildings Regulations in 2016 (see below), new homes are required to achieve a maximum water use of 125 l/p/d (which is still higher than the national targets required to be achieved by 2038 and 2050 above). New dwellings offer the most cost effective and practical way to achieve water use reductions, as they can be designed to do so from the outset.

**1.41** However, as noted above, the overall average domestic water use is even higher than the targets, at 141 l/p/d, and this is because older homes are not as water efficient as new homes. Around 80% of the homes that will exist in 2050 have already been built **[See reference 23]** and therefore it is essential that these older homes are retrofitted with more efficient bathroom and kitchen fittings in order to reduce the overall average domestic water consumption.

**1.42** The water supply for Melton borough comes mainly from Severn Trent Water, with a small part to the east of the Borough by Anglian Water. Across the Severn Trent catchment, around 70-75% of water supply is used by households and 25-30% by non-household uses (e.g. agriculture, retail, industry) **[See reference 24]**. It is expected that the percentage of non-domestic water use will be higher in Melton borough as the local economic profile includes significant agricultural and food and drinks production sectors which are among the highest sectors for water demand.

**1.43** Therefore, while there is an urgent need to address water efficiency in residential buildings, it is also necessary to consider how the Local Plan could help to increase water efficiency in non-residential development.

**1.44** To add to this urgency, Melton borough was classified as an area in serious water stress by the Environment Agency in 2021 **[See reference 25]**. The Environment Agency's document explains that 'water stress' applies both to the natural environment and to public water supplies. Both will be affected by climate change. Public water supplies are under pressure from reductions in abstraction to make them more environmentally sustainable. There is also a need to make public water supplies more resilient to droughts and meet additional demands associated with development and population growth. The determination of an area as being in

serious water stress shows where the Environment Agency believes there are or, are likely to be, environmental impacts caused by public water supplies or the need for major water resources developments. Importantly, the Environment Agency's document notes that local authorities can use the water stress determination to inform whether they can require the tighter standard of 110 litres per head per day in new developments.

## National policy and legislation

**1.45** The National Planning Policy Framework (NPPF) states that new developments should be planned in ways that avoid the range of increasing impacts from climate change and help reduce greenhouse gas emissions. Paragraph 158 of the NPPF states that "Plans should take a proactive approach to mitigating and adapting to climate change, taking into account the long-term implications for flood risk, coastal change, water supply, biodiversity and landscapes, and the risk of overheating from rising temperatures". Any local requirements for the sustainability of buildings should reflect the Government's policy for national technical standards.

**1.46** The Building Regulations Part G sets out the current standards for water efficiency in buildings in England, as stated in the box below. The 'approved documents' accompanying the Building Regulations provide practical guidance on how to meet the requirements of the legislation **[See reference 26]**.

> The Building Regulations Part G requires new homes to limit water use to 125 l/p/d or achieve the optional standard of 110 l/p/d, where there is a clear local need and it is imposed as part of the process of granting planning permission.

**1.47** The Part G guidance provides a water efficiency calculator and methodology for estimating water consumption (Appendix A) as well as targets for maximum fitting consumption, where a fittings approach is used as an alternative to calculating water consumption. The Planning Practice Guidance (PPG) states that Local Planning Authorities (LPAs) can set additional technical standards for

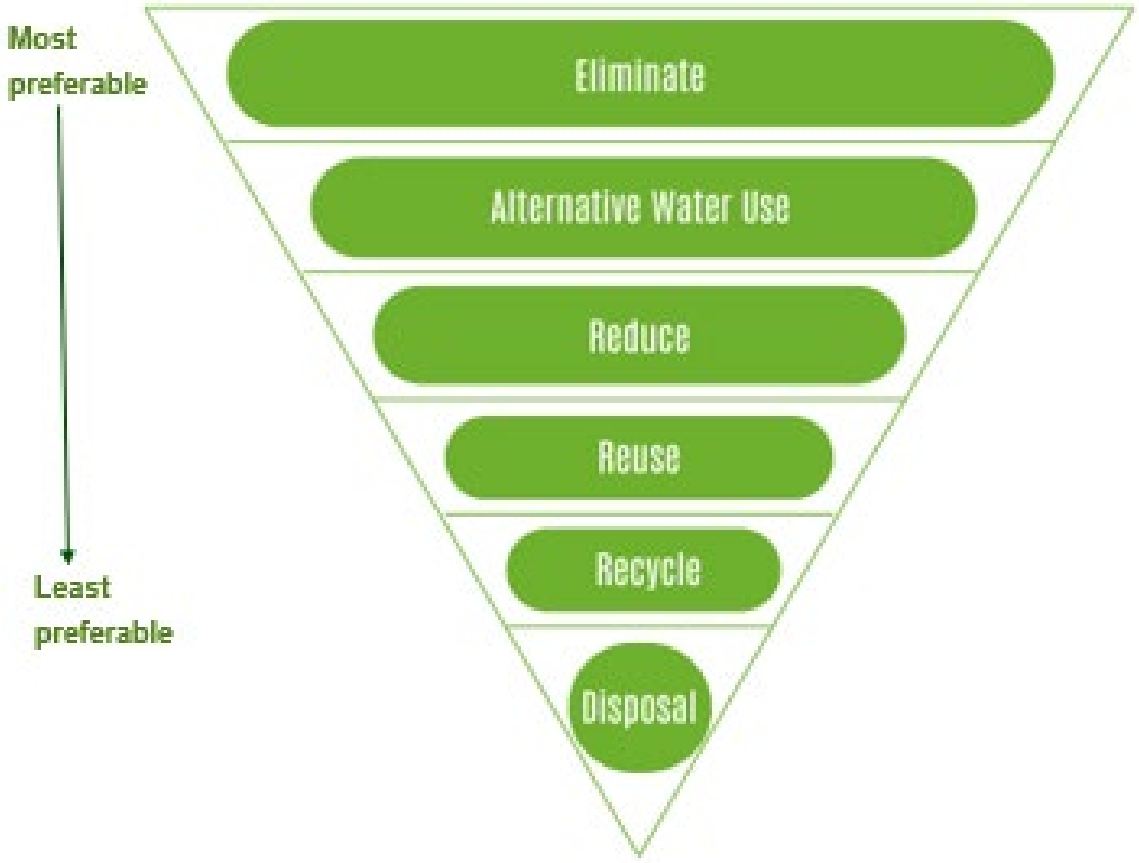
housing beyond those of the Building Regulations in respect of certain issues, including water efficiency **[See reference 27]**. This is discussed further in the policy options section below.

**1.48** The targets of the Environment Improvement Plan align with the requirements of the Building Regulations. Additionally, a 2021 Written Ministerial Statement (WMS) on reducing demand for water **[See reference 28]**, encouraged local authorities to adopt the optional building standard of 110 litres per person per day in all new homes where there is a clear local need, such as in water stressed areas. The WMS also stated that the government (under the previous Conservative Party leadership), would develop a roadmap towards greater water efficiency in new developments and retrofits, including the exploration of revised building regulations and how the development of new technologies can contribute to meeting these standards.

**1.49** Although not in national policy or legislation, the water management hierarchy is a recognised framework for prioritising the most preferable options for water management and efficiency in the following order and illustrated in Figure 1.1 below **[See reference 29]**:

- reduce water use through efficient practices and fixtures;
- reuse water potentially through rainwater and greywater harvesting;
- recycle water for uses; and
- discharge water efficiently into the environment.

## Figure 1.1: The water management hierarachy




**1.50** The water management hierarchy provides a useful guide to good practice in terms of water management policies. It supports reducing water use before other measures such as reuse and recycling of water, which mirrors the approach to energy and carbon saving, with a focus on a ‘fabric first’ approach emphasising efficiency and largely passive measures (such as efficient water fittings). Efficient water management also has the potential to result in cost savings for residents/building occupiers.

## Local policy

**1.51** Policies within Melton borough's adopted Local Plan support measures to reduce demand on water resources, however, there is no specific policy or target for water efficiency.

**1.52** Policy EN9 – Ensuring Energy Efficient and Low Carbon Development of the local plan states that:

> "Major development proposals will be required to demonstrate how the need to reduce carbon emissions has influenced the design, layout and energy source used, subject to viability. A design and access statement will need to consider the following: Development proposals, including refurbishment, will be supported where they demonstrate the following, subject to viability…4. Water efficient measures to reduce demand on water resources, including through the use of efficient appliances, rainwater recycling, water butts and underground storage tanks, where technically feasible…".

**1.53** It should be noted that the above consideration for water efficiency applies to major developments only. In addition, the supporting text for Policy EN8 – Climate Change, which encourages sustainable design and construction in accordance with Policy EN9, states that "*All major development proposals will be expected to be accompanied by a proportionate statement of their sustainability. The statement will show how these considerations have been considered and explain what sustainable features are proposed as part of the development. Examples may include renewable energy, water saving measures and green roof systems along with other climate change adaptations*".

**1.54** The requirements for achieving water efficiency in Melton borough could be strengthened to be more specific and provide clarity to developers on water efficiency standards. This has already been acknowledged in the Local Plan Update Issues & Options Consultation document, which sets out an option to

refocus Policy EN9 into new individual policies with specific standards, including a new separate policy to consider water efficiency, to reflect the evidence on local water scarcity and introduce specific water use standards for different types of developments.

## Policy options for achieving water efficient development

**1.55** Given that new residential development already needs to meet the national Building Regulations standard of limiting water use to 125 p/l/d, the following options have been considered for the Melton Local Plan policy that seeks to achieve water efficiency in development:

- require new residential development to meet the optional higher standard in the Building Regulations (110 l/p/d);
- require new residential development to go beyond the optional standard (80-85 l/p/d);
- require non-residential development to meet water efficiency standards through BREEAM;
- secure water efficiency improvements to existing residential and non-residential buildings via retrofitting.

### Policy option 1: Require new residential development to meet the optional Building Regulations standard

**1.56** As noted above, the Building Regulations Part G include an optional, more stringent standard for water use in new residential development of 110 l/p/d where this is required by a planning condition. The Planning Practice Guidance advises that this more stringent standard can be set out in Local Plan policies where there

is a clear local need **[See reference 30]**. The local planning authority has to establish a clear need based on:

- existing sources of evidence;
- consultations with the local water and sewerage company, the Environment Agency and catchment partnerships;
- consideration of the impact on viability and housing supply of such a requirement.

**1.57** The 2021 Written Ministerial Statement on reducing demand for water **[See reference 31]** also encouraged local authorities to adopt the optional building standard of 110 litres per person per day in all new builds where there is a clear local need, such as in water stressed areas.

**1.58** The Environment Agency's 2021 re-classification of the Severn Trent Water company area as 'seriously water stressed' (in addition to the Anglian Water company area which was already classified as seriously water stressed) **[See reference 32]** is a key source of evidence for Melton borough demonstrating a clear need for requiring tighter water efficiency measures in new development.

**1.59** Severn Trent Water's draft Water Resource Management Plan (dWRMP) 2024 is a statutorily required plan that should demonstrate that a water company has long-term plans in place to balance water supply and demand. It should also show plans for accommodating the impacts of population growth, drought, environmental obligations and climate change uncertainty. The dWRMP also supports their being a need for tighter water efficiency measures in Melton borough as it states for water efficiency that its preferred plan is based around the company's commitments to halve leakage by 2045 and to roll out a universal household metering programme by 2035, accompanied by enhanced water efficiency activities that will help customers reduce their consumption to 110 l/p/d by 2050 **[See reference 33]**.

**1.60** Therefore, since the current Melton Local Plan was adopted, there is now a clear need for the new Local Plan to include a specific water efficiency policy that as a minimum requires new residential development to achieve the optional

Building Regulations standard of 110 l/p/d water use. The optional standard needs to be secured in new developments via a condition in the planning permission, which would then be implemented through Building Regulations compliance inspections.

**1.61** There are examples of the optional building regulations being implemented within numerous other local plans. A consultation by Defra in 2019 on measures to reduce personal water use revealed that the optional building standard had already been implemented in around 100 local planning authorities **[See reference 34]**. Locally, a number of local planning authorities in Leicestershire have or are proposing to include the optional standard for new homes within their Local Plan policies, including Harborough's Adopted Local Plan **[See reference 35]**, Leicester City's Submitted Local Plan **[See reference 36]** and Charnwood District's Main Modifications Local Plan **[See reference 37]**. Therefore, there is precedent for successful inclusion of the optional standard requirement in Local Plan policy locally and nationally.

**1.62** Research undertaken by and for the Government has shown that meeting the optional standard has negligible impact on development costs, with studies suggesting a range between £0 to £10 per dwelling **[See reference 38]**. The 110 l/p/d standard is therefore not considered to impact viability of new housing development nor impact its delivery.

## Evaluation

**1.63** As the options standard would be secured through a condition placed on planning permissions and implemented via compliance inspections by Building Inspectors, there would be minimal impact on MBC resources to implement and monitor the new policy requirement.

**1.64** The optional building regulations standard has the benefit of being achievable with cost-effective water efficient fixtures and fittings, and therefore would result in negligible additional costs to developers. Indeed, there is a potential for cost

savings for new home residents from reduced water bills due to reduced water usage.

**1.65** However, it is noted that a fittings-based approach that is compliant with the optional building standard upon construction of the new homes could be altered by residents during the operational period of the new development (i.e. by inserting new, less efficient taps or showerheads). This may be less likely in future as water meters are installed as standard in new homes and specific usage monitored by water companies, along with the proposed Mandatory Water Efficiency Labelling Scheme, which the Government is due to introduce from 2025. When in place, the labelling scheme will provide consumers with a ready way of understanding the water efficiency performance of fittings and appliances **[See reference 39]**.

**1.66** While including the optional standard as a requirement in a policy within the new Local Plan would be easy to justify as discussed above, it is widely considered to be not ambitious enough, as it will not achieve the necessary reductions in water use by 2050 discussed in the Context section above since it only applies to new homes, and will not help to improve water usage in the approximately 80% of existing homes that will still be occupied in 2050 and are the least water efficient. In addition, the optional standard does not apply to non-residential developments, which make up approximately 30% of water users in the Borough given the level of agriculture and food and drink manufacturing.

**1.67** Therefore, options for requiring higher standards in new residential development, as well as in non-residential development and via retrofitting of existing development are discussed below.

## Policy Option 2: Require new residential development to go beyond the optional standard (e.g. 80-85 l/p/d)

**1.68** MBC could introduce even stricter policy requirements for new residential developments that set a maximum water consumption standard of 85 l/p/d.

However, there are not many examples of adopted Local Plans that include the stricter requirement, and it tends to be being pursued by local planning authorities in areas where serious water stress has been identified as a limitation to new housing supply (such as in Cambridgeshire) and/or where water neutrality is required to avoid adverse effects on nature conservation sites, such as in Southern Water's Sussex North Water Resource Zone.

**1.69** Water neutrality means that for every new development, total water use in the region after the development must be equal to or less than the total water-use in the region before the new development. This needs to be achieved by first ensuring that development is highly water efficient (which uses a maximum of 85 l/p/d), and secondly by ensuring that the additional demand arising from development is offset within the region.

**1.70** The Future Homes Hub report to inform the government's roadmap for water efficient new homes recommends that standards for water usage in litres per person per day go lower than the optional standard in non-water stressed areas (105 l/p/d by next year), and even lower in seriously water stressed areas as shown in the text in green box below **[See reference 40]**. The report shows the potential cost implications of meeting the more stringent standards, and notes that 105 l/p/d can be achieved using a water fittings approach, without the need to install water reuse measures and is considered to be achievable with no or limited impact on costs for volume house building, without significantly impacting the consumer experience.

## Future Homes Hub roadmap for future standards for litres per person per day (LPPPD):

**2025**

- 105 litres per person per day, achieved through fittings approach
- 100 litres per person per day, in water stressed areas

- 90 litres per person per day, in seriously water stressed areas to enable sustainable growth

**2030**

- 100 litres per person per day, achieved through fittings approach and innovation
- 90 litres per person per day, in water stressed areas
- To be determined in seriously water stressed areas to enable sustainable growth

**2035**

- 90 litres per person per day, achieved through fitting approach and further innovation
- 80 litres per person per day, in water stressed areas
- To be determined in seriously water stressed areas to enable sustainable growth

**1.71** The Future Homes Hub report found that achieving the higher levels of water efficiency (90 l/p/d and 80 l/p/d) will be likely to require rainwater harvesting and/or greywater reuse in addition to installing more efficient fixtures and fittings.

**1.72** Rainwater harvesting is an efficient way to use water where harvested rainwater is:

- collected from roofs and other above ground surfaces
- collected via a system of above ground pipes and tanks
- isolated from inland waters or groundwater
- used for potable and non-potable uses (additional features such as filtration and treatment units may also be required depending upon the intended end use for the harvested water)

**1.73** Greywater recycling involves reusing wastewater from sources like showers, baths, and sinks for reuse in non-potable purposes.

## Evaluation

**1.74** An independent review of the costs and benefits of rainwater harvesting and grey water recycling options in the UK found that capital and operational costs for rainwater harvesting were lower than greywater recycling systems **[See reference 41]**. Costs will vary depending on whether systems are being installed in a new development or retrofitted to an existing building, the siting of the storage tank (above versus below ground) and scale/complexity of the system; the greater number of components required, such as pipes, pumps and water treatment devices typically the higher the cost. A small-scale domestic rainwater harvesting system can cost from between £2,500 and £6,000 depending on the size of the storage tank. In general, installing rainwater harvesting systems in new builds is easier and cheaper than retrofit because of excavation required for installation of the tank and changes required to the existing plumbing arrangement. However, installing simple rainwater harvesting (e.g. water butts) to capture rainwater for non-potable uses such as irrigating gardens could cost as little as approximately £60-350 per dwelling depending on the capacity and style **[See reference 42]**.

**1.75** Greywater reuse systems are more complex, and the independent review found capital and operational costs ranged from £45,000 to £100,000 for small to large households up to £170,000 for multi-unit dwellings to £270,000 for larger, high-rise blocks of flats **[See reference 43]**.

**1.76** While setting a higher target (such as 85 litres per person per day) might be beneficial in terms of reducing pressure on water resources, this might run the risk of being challenged at examination unless MBC has a strong supporting evidence base. For example, the Local Plans for Crawley Borough Council, Chichester District Council, and Horsham District Council have required substantial evidence gathering due to Natural England (NE) concerns regarding abstraction (and any increase in abstraction required to serve any development) within Southern Water's Sussex North Water Resource Zone (WRZ) that is likely to have an adverse impact on the ecological integrity of various SAC, SPA and SSSIs due to

a reduction in water supply and deterioration of habitat. NE advised the relevant LPAs that development in the Sussex North WRZ region must not add to this potential adverse effect. A study by JBA Consulting was undertaken on behalf of the three authorities **[See reference 44]** and outlined a strategy to achieve water neutrality within the Sussex North WRZ, throughout the timeframe covered by the Local Plans up to 2038/39.

**1.77** The JBA Study concluded that while achieving 85 l/p/d could be possible with a 'fittings-based' approach (such as specifying water efficient fixtures and fittings in the building design such as low flow showers and taps, dual flush toilets), feedback from housebuilders identified a risk that the consumer experience may lead to those fittings being replaced early with less water efficient goods, and the benefit being lost. More certainty in achieving 85l/p/d could be gained by requiring greywater recycling on all housing. However, (in line with the independent review findings above) this would increase the cost significantly. In addition to the more stringent standard for residential development, the JBA study recommended that non-residential development also needed to include a specific target for water efficiency (see policy option below), and that all development within the Sussex North WRZ would need to demonstrate water neutrality through meeting the water efficiency targets and offsetting of any net additional water use of the development.

**1.78** The 2024 Crawley Borough Local Plan Main Modifications document **[See reference 45]** includes an example of a Water Neutrality policy developed by one of the authorities in the Sussex North WRZ. The offsetting requirement within the policy was developed from the recommendation of the JBA study, referred to above. It involves a local authority and South Downs National Park Authority-led Offsetting Scheme that requires an operating body that will administer it, collect funding, pay offset providers and monitor results. Potential offsetting measures that were considered and assessed in the JBA study included the use of flow restrictors retrofitted to existing properties, water efficiency in schools, non-household rainwater harvesting, alternative sources of water for irrigation of golf courses or supply of other recreational facilities such as sports grounds, swimming pools and leisure centres.

**1.79** Another example of the evidence required to pursue a more stringent water efficiency target is the work undertaken to support the Greater Cambridge Local Plan. The Greater Cambridge Integrated Water Management Study **[See reference 46]** identified that the current level of water abstraction from the chalk aquifer is acknowledged by all stakeholders to be too high and results in poor groundwater and river health, unless abstraction rates are reduced significantly to safeguard natural river flow. In recognition of the acute pressure on water resources in Greater Cambridge the Greater Cambridge Local Plan – First Proposals (Regulation 18) proposes a policy targeting water efficiency in new residential and non-residential developments **[See reference 47]**.

**1.80** MBC's partial update of the Local Plan does not include additional housing allocations (and therefore new demand for water). Although it is in an area of serious water stress, it has not yet been demonstrated that water scarcity is inhibiting the adoption of Local Plans or the granting of planning permission for homes. Therefore, it is likely to be challenging to justify a need to go beyond the optional standard in the new Melton Local Plan.

## Policy Option 3: Require non-residential development to meet water efficiency standards through BREEAM

**1.81** While the Government's Environmental Improvement Plan sets a national level target reduction of 9% by 2038 and 15% by 2050 on non-household water use, unlike for new homes, there is no national Building Regulations standard to support more water efficient non-residential development.

**1.82** Voluntary sustainable building accreditation systems such as BREEAM do set out water efficient development standards and have been used in some local plan policies to support water efficient non-residential development.

**1.83** BREEAM assessments are carried out by certified third-party assessors based on a scoring system with nine criteria covering energy, land use and

ecology, water, health and wellbeing, pollution, transport, materials, waste, and management. Each of the criteria is scored and then multiplied by a weighting. To earn BREEAM certification a building must meet a certain number of credits in each category based on the type and size of the building. The credits are awarded based on the performance of the building in each category, and the final score is translated into one of the BREEAM ratings; unclassified, pass, good, very good, excellent or outstanding. Two stages of assessment and certification are typically carried out:

- a design stage assessment resulting in an interim certificate being issued (this stage is optional);
- a post-construction assessment resulting in a final certificate being issued and a rating awarded **[See reference 48]**.

**1.84** The aims of the BREEAM water consumption standard (WAT 01) are to reduce potable water demand through the installation of energy efficient sanitary fittings, rainwater collection and water recycling systems**.** For WAT 01, BREEAM has minimum standards and at least 1 credit must be scored to achieve Good, Very Good or an Excellent rating. Two credits must be achieved for an Outstanding rating **[See reference 49]**.

**1.85** Examples of other Local Plan policies requiring some level of BREEAM achievement for non-residential development include:

- South Cambridgeshire Local Plan Policy CC/4: Water Efficiency **[See reference 50]** requires non-residential development to achieve a minimum standard for water efficiency through BREEAM. The policy states that:

> Proposals for non-residential development must be accompanied by a water conservation strategy, which demonstrates a minimum water efficiency standard equivalent to the BREEAM standard for 2 credits for water use levels unless demonstrated not practicable.

- Cambridge Local Plan 2018, Policy 28: Carbon reduction, community energy networks, sustainable design and construction, and water use **[See reference 51]** requires:

> "Full credits to be achieved for category Wat 01 of BREEAM" for new non-residential developments.

**1.86** The recent study by JBA Consulting on behalf of Crawley Borough Council, Chichester District Council, and Horsham District Council **[See reference 52]** also recommended non-household development should achieve a score of three credits within the water issue category (WAT 01 Water Consumption) for the BREEAM New Construction Standard, achieving 40% reduction compared to baseline standards.

## Evaluation

**1.87** This policy option could be suitable for MBC as it does not require significant staff resource and/or capacity from MBC to scrutinise water efficiency measures stated in applications. MBC could rely on the BREEAM water use ratings achieved (which the developer would need to demonstrate in its planning application). The water use BREEAM standard (WAT 01 Water Consumption) has been implemented in a number of Local Plan policies currently being developed/ examined.

**1.88** The additional cost of building to BREEAM Very Good standard has been found to be negligible in research by BRE. The additional costs of BREEAM Excellent standard ranges from just under 1% and 5.5%, depending on the nature of the scheme with offices being a little under 2%. Therefore, if new non-residential development is constructed to meet the BREEAM Excellent standard, this increases the construction costs by approximately 2-5%, while achieving a higher BREEAM rating such as "Outstanding" could add an additional 5% to 10.1%. However, it was also found that in many instances, the additional cost of the

BREEAM Assessment is likely to be paid back through a reduction in operating costs in utility savings within 2-5 years **[See reference 53]**.

**1.89** Third-party accreditation schemes such as BREEAM are periodically updated to align with Building Regulations, which ensures that credits are not awarded to sub-standard buildings as regulations evolve.

## Policy option 4: Secure water efficiency improvements to existing residential and non-residential buildings via retrofitting

**1.90** As discussed in Document B: Buildings and built form, it is important to address the water efficiency of existing building stock in Melton borough as well as new buildings. The overall average domestic water use in existing homes is much higher than the optional building regulations standard, at 141 l/p/d, and this is because older homes are not as water efficient as new homes. Around 80% of the homes that will exist in 2050 have already been built **[See reference 54]** and it is therefore essential that these older homes are retrofitted with more efficient bathroom and kitchen fittings in order to reduce the overall average domestic water consumption.

**1.91** The options for addressing water efficient retrofitting, are the same as the options for energy-efficient retrofitting of existing buildings discussed in Document B: Buildings and built form, i.e.:

- develop guidance to encourage water efficient retrofitting of existing buildings to reduce water use;
- prioritise retention and retrofit over demolition and rebuild to reduce embodied emissions.

**1.92** For both of these options, guidance and requirements relating to water efficient measures could be included as well as energy efficiency measures within the same guidance or policy option that MBC chooses.

## Develop guidance to encourage water-efficient retrofitting of existing buildings to reduce operational emissions

**1.93** MBC could provide guidance on water efficient retrofitting, either by signposting to existing guidance or through the creation of a Supplementary Plan.

**1.94** There is some guidance available on water efficiency in retrofitting that MBC could promote to developers and building owners, although most of the focus in retrofitting guidance is on energy efficiency. Examples include:

- LETI's Climate Emergency Retrofit Guide (focuses on hot water demand, such as energy for heating water) **[See reference 55]**
- Waterwise's guide on Water Efficiency Retrofitting **[See reference 56]**
- Historic England's guidance on resilient rainwater systems **[See reference 57].**

**1.95** Another option would be for MBC to develop their own guidance on retrofitting. This guidance could cross-reference requirements in the Building Regulations but seek to go beyond them.

**1.96** The discussion of deliverability and viability of this option is set out in Document B: Buildings and built form, and as it covers retrofitting of existing buildings quite generally, the same information applies to water efficient retrofitting, so is not repeated here. However, the summary of pros and cons is repeated in the below evaluation for ease of reference in the below evaluation.

## Evaluation

**1.97** Benefits:

- Signposting existing guidance or developing new guidance on retrofitting should help to support more retrofitting activity and thus reduce operational emissions (and water use) from the existing building stock.

- This can be achieved at low cost to MBC and would not impact development viability.

**1.98** Limitations:

- The availability of appropriate financial incentives (such as Government grants and loans) is ultimately the key driver of retrofit activity.
- Policies that would increase the cost of householder extensions may be politically challenging to implement.

**1.99** The retention advice given in document B is relevant and beneficial for water efficiency too, with water use reduced through the reduction of construction waste through demolition and the production of new construction materials.

## Wider benefits of water efficiency

**1.100** Water efficiency measures achieved through demand management in new developments can be used to reduce the demand for water. This addresses water scarcity and reduces greenhouse gas emissions, through reduced heated water consumption and reduced energy needed for water abstraction, treatment and distribution. Therefore, there are wider benefits of improving water efficiency as set out below:

- **Reduce energy demand:** Energy is used in preparing water for use, including is collection, treatment and transportation. Given that much of the water we use is heated, more efficient water use has an additional benefit of reducing energy use. According to the Energy Savings Trust about 12% of a typical gas heated household's energy bill is from heating the water for showers, baths and hot water from the tap **[See reference 58]** and heating water for use in our homes makes up about 5% of the UK's total carbon dioxide emissions **[See reference 59]**. It also delivers economic benefits, as water saving measures can help people save money on both their energy and water bills (particularly if connected to a water meter, as all new homes are).

- **Benefit the natural environment:** Reducing water use also offers potential environmental benefits, as it helps to minimise the need to take additional water resources out of rivers and aquifers, especially in a context of increasing demand and the impacts of climate change which is likely to increase periods of drought. Therefore, reducing water use can help to protect water resources and the biodiversity within them. Using less water can help to protect and enhance water quality, as it can reduce the risk of storm overflow discharge of wastewater into local rivers and its potential impacts, an increasing concern given the increased risk of more frequent intense rainfall as a result of climate change.
- **Reduce operational emissions and impacts:** Increasing water efficiency does not only reduce demand for water, it can also reduce the resources required and greenhouse gas emissions associated with water abstraction, treatment, transport, use and disposal. Operational emissions from the water industry account for nearly 1% of the UK's total carbon emissions **[See reference 60]** (locally estimated to be around 1% of all greenhouse gas emissions in Melton borough, BEIS data). This is because water treatment is energy and chemical intensive and transporting water requires pumping. Reducing water use will also help to limit water treatment and the greenhouse gas emissions and wider impacts associated from them. Using water efficiently can reduce the need for new infrastructure and reduce pressure on existing infrastructure, reducing the embodied emissions associated with its provision. More widely, increasing water-use efficiency by repairing leaking water distribution systems, using less thirsty crops and investing in new technology, results in more sustainable food and industrial production systems.

## Recommendations for achieving water efficient development

**1.101** MBC has provided a proposed new draft policy EN9a specifically covering water efficient development. The proposed policy already includes a requirement for all new residential development to achieve as a minimum the optional building regulations standard of 110 l/p/d, and this is recommended, as it is supported by

the evidence set out above. The evidence also provides a number of reasons why a policy requiring the more ambitious water efficiency standard (80-85 l/p/d) is unlikely to be viable, or very effective in the Borough's Local Plan update (given the higher cost to achieve this standard and no new houses to be allocated).

**1.102** Given the importance of increasing water efficiency in existing homes and buildings, the second criterion of the proposed policy EN9a Water Efficient Development is also supported, as it encourages water efficient measures to be included in refurbishment of existing dwellings. As was set out in Document B: Buildings and built form, it is also recommended that Melton Borough Council should:

- Make guidance on energy and water efficient retrofitting readily available, either by signposting existing guidance or by creating a 'Local Guidance' document.

**1.103** The third criterion of the proposed policy EN9a relates to improving water efficiency of non-residential development, which is also recommended. However, as currently drafted, it only requires demonstration of compliance with BREEAM Very Good water efficiency standard (WAT01) (or equivalent). However, based on the evidence above, in particular that the overall cost increases of are likely to be less than 5% for meeting the Excellent water efficiency standard, it is recommended that the requirement should be more ambitious, increasing to at least Excellent BREEAM rating.

**1.104** The fourth criterion seeks to incorporate more water collection and reuse systems within development, through the provision of water butts for all new dwellings with a garden, but also through rainwater and greywater harvesting systems to be included in the proposed plans for major residential and non-residential development. The provision of water butts to all new dwellings is supported as it could be delivered at a low cost (and potentially in conjunction with Severn Trent Water). However, rainwater and greywater harvesting systems are quite complicated and as discussed above, can be very costly to integrate into the design and installation of new buildings, especially greywater recycling. It is therefore considered that this requirement may not be viable and difficult for MBC to achieve.

**1.105** It is recommended instead that MBC continue with the water resource assessment required for major developments in the paragraph at the end of the proposed policy, as this would place the onus on the developer to flexibly decide how they will achieve water efficiency in the least costly and most efficient manner. This is preferable to specifying mechanisms for developers to use more specific mechanisms, like greywater and rainwater mechanical systems, which may be inappropriate or even excessive for certain developments. The water resource assessment should be required for major residential developments as well and could refer to high water uses like swimming pools.

**1.106** In order to inform any future review of the Local Plan, it is recommended that MBC commissions a Water Cycle Study, which should help to identify joined up and cost-effective solutions that are resilient to climate change for the lifetime of the development (as required by the NPPF). Water Cycle Studies tend to consult the Environment Agency, Water Companies, the County Council and Natural England during development of the study and to gain support for the findings.

## Designing for a changing climate

**1.107** MBC's existing design SPD assists developers in meeting the design quality requirements of the Local Plan. It promotes the use of design features such as green roofs to support climate change adaptation and promotes 'making room for water', the use of sustainable urban drainage (SuDS) to manage surface water and also provide additional habitats. It also includes references to:

- providing green roofs/walls for water management and insulation;
- trees for solar shading/air quality/intercepting rainwater;
- use of GI to create attractive routes that encourage active travel;
- it encourages the use of green roofs for biodiversity and to capture rainwater;
- it includes requirements to retain natural assets including trees on a development site wherever possible, and to integrate SuDS as natural assets into development.

**1.108** In addition, the SuDS section above and Document C: Green infrastructure and Sustainable transport already include policy recommendations relating to requiring SuDS in all new developments, planting more street trees, increasing tree canopy cover, and requiring green roofs/walls. These recommendations are also relevant here, because all of these GBI features will help to adapt to a changing climate that includes periods of extreme temperatures, drought, warmer and wetter winters with more frequent and intense storms resulting in large volumes of surface water runoff.

# Chapter 2
# Waste

## Introduction

**2.1** In Melton borough, approximately 6% of greenhouse gas emissions come from waste **[See reference 61]**. This is mainly methane emitted from bio-degradable waste in landfill (80% of total) and emissions from the treatment of wastewater.

**2.2** Melton borough's adopted Climate Change Strategy **[See reference 62]** highlights waste and the use of resources in line with the waste hierarchy and a more circular economy as a key delivery theme. It recognises this as having a significant influence in addressing climate change impacts at a local level. MBC identifies several actions it intends to take to reduce waste in its climate change strategy which largely focus on awareness raising, education and behaviour change.

**2.3** Responsibility for minerals and waste planning for the Borough lies with Leicestershire County Council through the preparation of the Minerals and Waste Local Plan **[See reference 63]**. This specifically includes the identification of potential waste management facilities, including recycling centres and landfill and lays out the development management policies for these sites. Furthermore, the Leicestershire Resources and Waste Strategy **[See reference 64]** **describes the recycling and waste management services which will be delivered up to 2050** and identifies actions to reduce the amount of municipal waste generated by households, businesses and commerce. The current Minerals and Waste Local Plan identifies that during the plan period (2020 – 2031) capacity for waste management facilities for different types of waste will be required across the County, as shown in Table 2.1. Policy W4 states that planning permission will be granted for new non-strategic waste facilities, including extensions to existing waste facilities within or close to certain urban areas, including Melton Mowbray.

## Table 2.1: Waste facilities required in Leicestershire

| Type of waste | Number and capacity (tonnes per annum) |
|---|---|
| Recycling of commercial and industrial waste | 1 of 51,000 |
| Recovery of local authority collected waste and commercial and industrial waste, based on operational capacity | 1 of 100,000 |
| Landfilling of construction and demolition waste | 4 of 100,000 |
| Hazardous waste | 1 of 2,000 |
| Agricultural waste | 1 of 650 |

**2.4** Waste from households and businesses makes up around a third of all waste produced nationally, however, construction, demolition and excavation waste is the largest waste stream, comprising the remaining two thirds **[See reference 65]**. This breakdown is mirrored at the local level across England. Constructing buildings creates large amounts of waste. Most of the materials used in construction activities come from non-renewable sources. England generated 63 million tonnes of construction and demolition waste in 2022, a 3.1% increase from the previous year **[See reference 66]**. Furthermore, it has been estimated that more than 10% of construction materials delivered to site are wasted without being used **[See reference 67]**. The Leicestershire Minerals and Waste Local Plan estimates that approximately 580,000 tonnes of construction waste is produced per annum across the County. Despite efforts to recycle and recover construction and demolition materials, landfill space is currently required for 530,000 tonnes of this waste per annum.

**2.5** While overall responsibility for minerals and waste planning for the Borough lies with the County Council, MBC can have influence over the amount of construction waste produced through Local Plan policy and design guidance. Avoiding and reducing waste should be prioritised. However, the use and reuse of

sustainable construction materials will also help to minimise waste. This would place less demand on natural and virgin resources.

**2.6** This chapter focuses on two areas where the Melton Local Plan could help to minimise waste from new development:

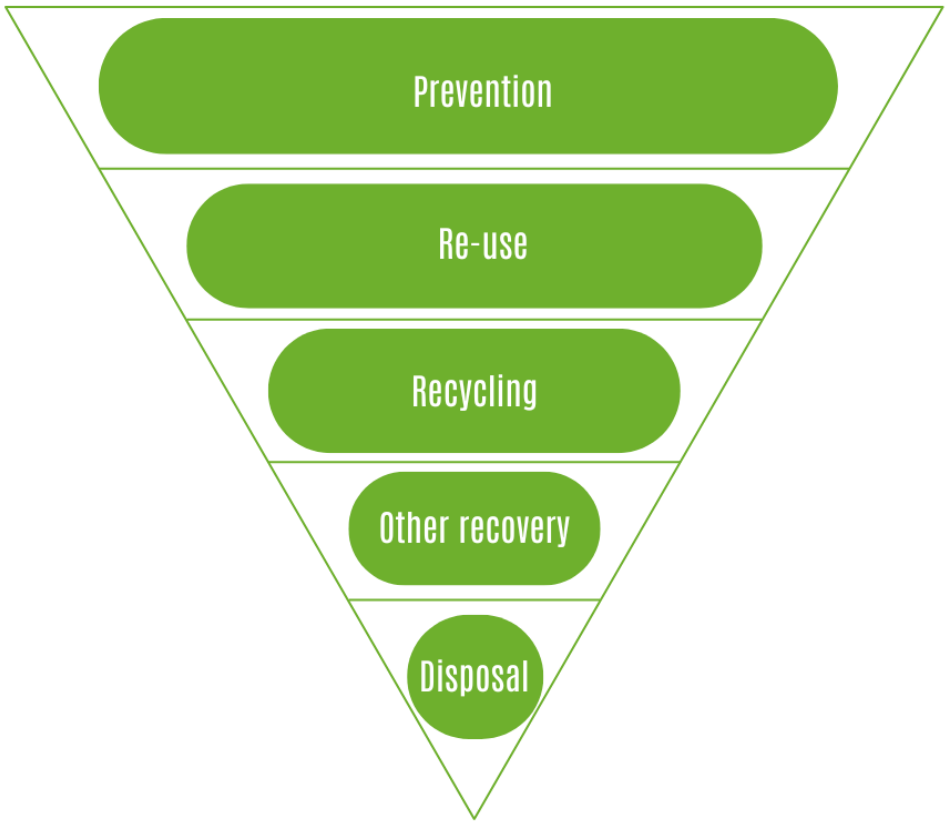
- Integrating the waste hierarchy and circular economy principles into policy.
- Encouraging the use of sustainable construction materials.

## The waste hierarchy and circular economy

**2.7** The waste hierarchy and the circular economy model for waste provide useful frameworks for the management of construction waste.

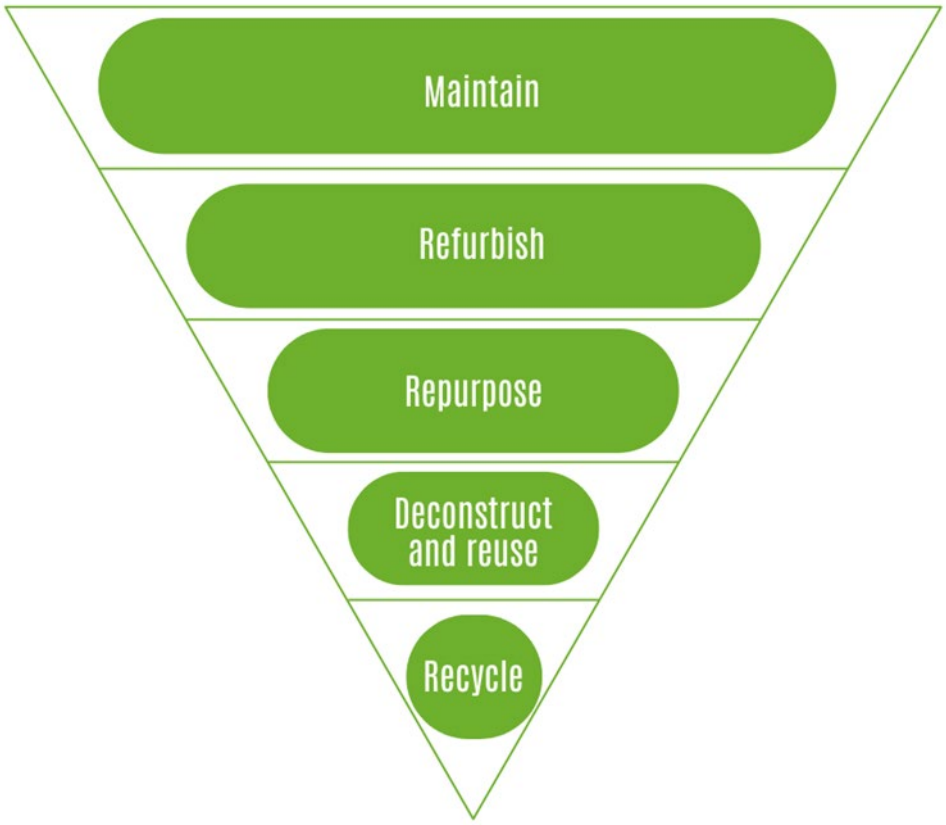
**2.8** The waste hierarchy ranks waste management options according to what is best for the environment. It prioritises prevention of waste in the first place. When waste is produced it states re-use should be prioritised before recycling or other recovery. Only when these options have been exhausted should waste be disposed of **[See reference 68]**.

### Figure 2.1: The waste management hierarchy




**2.9** The circular economy is a system where materials are kept in circulation through different processes. The circular economy model was established with the aim to assist in tackling global challenges including climate change through sharing, leasing and reusing existing materials and products for as long as possible. In short this implies reducing waste to a minimum **[See reference 69]**. The below diagram shows the prioritisation of reuse processes within the circular economy model. Firstly, materials should be maintained as a priority. Once this is no longer possible, materials should be refurbished or repurposed. The deconstruction and reuse of materials is the next option and finally any residual waste from these processes should be recycled.

## Figure 2.2: The prioritisation of waste reuse processes




**2.10** Integrating the waste hierarchy more explicitly into policy and setting more ambitious waste reduction and circular economy targets would provide a clear steer for developers to take key decisions on handling construction waste in the Borough.

**2.11** The adopted Local Plan policy EN9 already asks major development proposals to consider the waste hierarchy to a certain extent within design and access statements, and a site waste management plan. To strengthen MBC's current approach, the following additional options have been considered for integrating the waste hierarchy and circular economy principles into policy:

- Strengthen Policy EN9 (and site allocation policies) to clearly demonstrate that waste minimisation, re-use and recycling of materials should take place during demolition and construction. This should also emphasise the initial use of sustainable materials in construction.

- Provide design guidance within any future refreshed or new design guidance to provide clarity for developers on how to integrate the waste hierarchy and circular economy principles into development of new and refurbishment of homes and buildings.

**2.12** This section sets out the policy context, presents the above policy options with examples and provides an evaluation of these options. Due to the mutuality of the policy options the evaluation of them is provided together.

# Context

## National policy and legislation

**2.13** MBC's approach to strengthening planning policy for waste must consider several national policies and legislation.

**2.14** The Environment Act 2021 aims to tackle waste among other environmental improvements. It emphasises the important role the planning system has in improving waste and resource efficiency.

**2.15** One of the three overarching objectives of the NPPF for achieving sustainable development is "an environmental objective to protect and enhance our natural, built and historic environment; including making effective use of land, improving biodiversity, using natural resources prudently, minimising waste and pollution, and mitigating and adapting to climate change, including moving to a low carbon economy". National planning policy for waste **[See reference 70]** sets out the government's detailed waste planning policies.

**2.16** The waste prevention programme for England sets out the Government's priorities for waste prevention and moving to a more resource efficient economy. Key actions for Central Government include: setting a clear direction, leading by

doing, driving innovation, and ensuring that information regarding waste prevention is available to all.

**2.17** The Resources and Waste Strategy (RWS) for England **[See reference 71]** is driven by the waste hierarchy. It aims to preserve material stock by minimising waste, promote resource efficiency towards a circular economy, minimise damage to the environment, and eliminate avoidable waste, including plastic waste, by 2050.

**2.18** The Circular Economy Package (CEP) **[See reference 72]** policy statement introduces a revised legislative framework. It identifies steps for the reduction of waste and establishes an ambitious and credible long-term path for waste management and recycling.

**2.19** The Building Regulations set out the current standards for buildings in England. The 'technical requirements' are the key legal requirement to which all building work must meet to comply with the Building Regulations. Current regulations focus heavily on energy efficiency and emissions, such as Building Regulations (Part L), which sets energy standards for dwellings (volume 1) and buildings other than dwellings (volume 2), for building fabric (such as insulation and double or triple glazing), energy use and $CO_2$ emissions. Consequently, current regulations do not strongly promote designing buildings for adaptability, reuse or deconstruction at the end of their lifecycle and while there are some incentives, regulations do not mandate or significantly push for the reuse of materials from old structures or buildings. There is also little attention to the end-of-life phase, such as demolition and material recovery, which is critical to the circular economy model.

**2.20** Part Z is an industry-proposed amendment to the UK Building Regulations that aims to introduce mandatory carbon emissions reporting in the built environment. If enacted, Part Z would mandate the assessment of whole life carbon and set limits on embodied carbon. Such a change would provide a great incentive to integrate recovered materials or components in new builds, a move linked to a shift towards a circular economy. The need to introduce carbon regulation is supported by industry leaders and called for by the Climate Change

Committee. It is hoped that Part Z will be seen as an 'easy win' for the UK's roadmap to Net Zero. The previous Government committed to "consult on approach to measuring and reducing embodied carbon in new buildings" **[See reference 73]**. In 2022, a Private Members' Bill (the Carbon Emissions (Buildings) Bill) was debated in parliament with Labour support at the time **[See reference 74]**. The Authors of Part Z are seeking by 2026 a requirement to report of whole-life carbon emissions for all projects with a gross internal area of more than 1000m2 or that create more than 10 dwellings; and by 2028 to introduce initial legal limits on the upfront embodied carbon emissions of such projects **[See reference 75]**.

**2.21** A site waste management plan (SWMP) is a comprehensive document that outlines how waste will be managed throughout the lifecycle of a construction project, they align strongly with the waste management hierarchy. Between 2008 and 2013 they were a requirement for some construction projects, however The Site Waste Management Plan (SWMP) Regulations (2008) were revoked in 2013 and they are no longer a legal requirement. Despite this, SWMPs are still considered to be good practice. They are designed to encourage better waste management practices, improve environmental performance, and reduce the cost of waste disposal. They are sometimes required by local planning authorities and are required for BREEAM compliance.

# Local policy

**2.22** The Leicestershire Resources and Waste Strategy 2022–2050 outlines the recycling and waste management services to be delivered by the Leicestershire Waste Partnership (LWP) during this period. The strategy's vision is to work towards a circular economy and contribute to achieving net zero carbon by 2050 in Leicestershire. The strategy states the intention to fully embrace the waste hierarchy by preventing waste and keeping resources in circulation for as long as possible. To deliver this, the strategy sets out nine objectives. Those of most relevance to the circular economy model include:

- Objective 1: Manage materials in accordance with circular economy principles, except where costs are prohibitive, or where the environmental consequences can be demonstrated to be negative.
- Objective 2: As local authorities, set an example by preventing, reducing, reusing, recycling and composting our own waste and use our buying power to positively encourage sustainable resource use.
- Objective 4: Consider the whole life financial, social and environmental impact, and deliver quality services designed to allow flexibility, innovation and improvement.
- Objective 5: Promote the economic and employment opportunities of sustainable waste management where this is consistent with circular economy principles. Consider local/regional supply chain and markets for recycled and other secondary raw materials.

**2.23** The Leicestershire Minerals and Waste Local Plan (2019) provides the spatial vision, strategy, strategic objectives and core policies which set out the key principles to guide the future form of waste management development in the County. The plan reflects the balance between protecting the environment, providing residential amenity and ensuring sufficient waste management provision to meet identified needs. The Plan allocates one site in the Borough for landfill, close to Brooksby. It identifies several site-specific planning requirements which will reduce the environmental and recreational impact of the landfill area.

**2.24** Although MBC is not directly responsible for addressing waste management or the allocation of sites for waste facilities, one of the environmental objectives of the adopted Melton Local Plan is to ensure that the reuse and recycling of waste is maximised when planning and delivering new residential and commercial developments. As noted in the Introduction, Melton Borough Council's Climate Change Strategy aims to ensure waste management, and the use of resources are in line with the waste hierarchy and a more circular economy.

**2.25** Policy EN9 – Ensuring Energy Efficient and Low Carbon Development requires major development proposals to demonstrate how reducing carbon emissions has influenced the design, layout and energy source used, subject to

viability. The policy states that a design and access statement is needed to consider, subject to viability: “How effective use has been made of materials that have been reused, recycled, are renewable, locally sourced, have been transported in the most sustainable manner, and have low embodied energy.” The policy extends to the refurbishment of existing buildings in Melton borough.

**2.26** Policy EN9 also states that “A site waste management plan which emphasises waste minimisation, re-use and recycling during demolition and construction will be required for major development proposals”.

## Policy Option: Strengthen Policy EN9

**2.27** As noted above, the current Building Regulations fall short in promoting a circular economy. While the potential introduction of Part Z would enhance the enforcement of circular economy principles, MBC has the opportunity to go further by strengthening policy wording in the Local Plan update to meet its sustainability goals.

**2.28** Setting more ambitious waste reduction and circular economy requirements within Policy EN9, which exceed current Building Regulations, would help MBC achieve its Climate Change Strategy aims. This proactive approach can also mitigate potential delays in the strengthening of existing Building Regulations standards. Aligning with MBC’s goal of fostering a circular economy, these measures should be pursued where feasible and viable.

**2.29** The policy should require all development to evidence how they have minimised construction waste using the waste management hierarchy through the provision of a sustainability statement for the development. This could form part of the design and access statement.

**2.30** For major developments, the policy could also require the provision of a circular economy strategy which sets out how the development has been designed to maximise resource efficiency and the use of sustainable materials within development in line with the principles of the circular economy.

**2.31 Policy 2: Designing for the Climate Emergency in the North East Cambridge Area Action Plan** (Regulation 19) **[See reference 76]** is a good example of what the updated policy EN9 in MBC's Local Plan could state:

The principles of sustainable design and construction must be clearly integrated into development proposals within North East Cambridge. All proposals shall be accompanied by a Sustainability Statement as part of the Design and Access Statement and an Energy Strategy, demonstrating how their proposal meets the following requirements:

*[a) to c) cover net zero, climate change adaptation and water management]*

**d) Site waste management**

Development must be designed to reduce construction waste, integrate the principles of Design for Deconstruction, and address the requirements of the RECAP Waste Management Design Guide or successor documents **[the Melton Design of Development SPD could be referred to here]**. Provision should also be made for innovative approaches to the storage and collection of waste post-construction which integrate waste management into the development and support high levels of recycling.

**e) Use of materials**

Residential developments of 150 homes or more and non-residential development of 1,000m$^2$ or more should calculate whole life carbon emissions through a nationally recognised Whole Life Carbon Assessment and demonstrate actions to reduce life-cycle carbon emissions and prioritise materials with low embodied carbon where practicable (for example engineered timber). Development must be designed to maximise resource efficiency and identify, source and use environmentally and socially

responsible materials, giving consideration to circular economy principles and design for deconstruction, which should be set out in a Circular Economy Strategy.

**2.32** The UK Green Building Council provides some best practice approaches for circular economy principles in the built environment that MBC could promote within policy, including:

- reducing material used where appropriate;
- designing buildings for disassembly/deconstruction;
- aiming to reuse and/or recycle material where possible such as demolition material, offcuts, and other products, as well as utilising excavation material within the landscape, processing to cob or rammed earth construction, resulting in a cheap building material with very low embodied carbon.

**2.33** To strengthen policy requirements further and as a way for developers to demonstrate compliance, MBC could also use the BREEAM (Building Research Establishment Environmental Assessment Method) standards.

**2.34** The 'waste' requirement on the BREEAM standards focuses on the promotion of schemes to bring about the reduction of waste during the construction phase of a build and having measures in place to avoid waste being sent to landfill during its operational life. This includes:

- reuse the waste where possible;
- the sustainable management of waste generated during construction, operation and through maintenance and repair;
- efforts to reduce construction waste and future waste.

# Policy Option: Provide additional design guidance

**2.35** Reference to available guidance or the development of local guidance on the principles of the circular economy and the waste hierarchy will help to strengthen Policy EN9 in the Melton Local Plan. This guidance could be added into the existing Design of Development SPD.

**2.36** The current SPD only refers to providing adequate waste storage for household waste and recycling. This could be strengthened by the introduction of a new discussion of sustainable design and construction, including the use of sustainable materials, and how to minimise waste in new buildings and refurbishments.

**2.37** Examples can be taken from the **London Plan Circular Economy Statement Guidance** **[See reference 77]** which explains how to prepare a Circular Economy Statement to comply with Policy SI 7 'Reducing waste and supporting the Circular Economy in the London Plan. It also includes guidance on how the design of new buildings, and prioritising the reuse and retrofit of existing structures, can promote Circular Economy outcomes, requiring buildings that can more easily be dismantled and adapted over their lifetime. It treats building materials as resources rather than waste, and puts in place a clear hierarchy, prioritising the retention of existing structures above demolition, where this is the more sustainable and appropriate approach. In addition to the guidance document, the London Plan guidance webpage also provides a Circular Economy Statement template, in the form of an Excel spreadsheet, which should be used by planning applicants to fulfil the requirements of the London Plan Policy SI 7. It should be noted that this guidance applies to major developments in London, however boroughs are encouraged to apply the principles for smaller developments. Therefore, it could still be useful and relevant in the Melton borough context.

**2.38** MBC could incorporate examples from the London Plan Circular Economy Statement Guidance for Melton borough, developing a potentially slimmed down template for developers of all development types to complete as part of their sustainability statement to show that they have considered ways to avoid, minimise, reuse and recycle waste.

**2.39** To complement the incorporation of the waste hierarchy and circular economy into existing guidance, MBC should ensure that guidance on sustainable materials is also included. To further enhance the design guidance, reference could be made to modern methods of construction. Modern methods of construction (MMC) refers to a collective term for a wide range of non-traditional building processes focusing on the use of sustainable materials and off-site manufacturing, including modular construction where units are fully fitted out off site, panelised systems (such as timber or light-steel frames), site-based MMC such as thin-joint blockwork and sub-assemblies and components (such as prefabricated chimneys, porches etc.) **[See reference 78]**.

**2.40** Replacing typical construction materials with low carbon materials will reduce emissions associated with embodied carbon and reduce the overall carbon footprint of new developments. Timber is a good example of this being a carbon negative building material which could be promoted through design guidance supporting Local Plan policy.

**2.41** MBC's existing design guidance promotes the use of timber for windows over uPVC alternatives. This could be extended to other construction materials. Traditional building materials such as stone or slate often have less embodied carbon than materials such as glass or concrete.

**2.42** Encouraging the use of traditional materials in design guidance will reduce embodied carbon but also assist in maintaining the historic character and local distinctiveness of Melton borough's settlements, reflected in local materials. MBC can directly reference local materials within design guidance or place the onus to identify these onto developers. The case study below from the Lake District demonstrates how these requirements could be set out by MBC.

## Case study

The Lake District Design Code SPD, adopted in September 2023 **[See reference 79]**, places a strong emphasis on using local materials in new developments, stating:

"To minimise the carbon generated through construction and development, new development must:

- Re-use and adapt existing buildings and building materials, especially traditional buildings and materials that contribute to local distinctiveness such as locally quarried stone and slate;
- Use locally sourced and/or low carbon building materials such as:
- Sustainably sourced timber;
- Locally quarried building stone and aggregate;
- Locally quarried slate; and
- Natural lime for mortars, renders and limewashes.
- Minimise the use of building materials that require large amounts of energy and resources to produce and/or cannot be readily recycled:
- Concrete and cement, including in render and other finishes; and
- uPVC, aluminium and steel-framed glazing, windows, and doors (aluminium is preferred to uPVC).
- Avoid synthetic materials such as artificial roof tiles or cladding.

# Evaluation

**2.43** Strengthening policy EN9 within MBC's Local Plan would provide developers with greater certainty on the requirements from them in regard to waste minimisation and management during construction, and would ensure greater consideration of this during the design process.

**2.44** Updating the existing design guidance will require minimal resource from MBC and will provide the necessary advice and reassurance to developers seeking to satisfy policy prioritising waste management through the waste management hierarchy and the circular economy. The application of circular economy principles to the built environment would help to minimise waste

generation by ensuring that buildings are designed for adaptation, reconstruction, and deconstruction. This would extend the useful life of buildings and allow for the salvaging of building components and materials for reuse or recycling at the end of their life. This would reduce the extraction of raw materials for new building components and reduce emissions associated with this.

**2.45** Requiring developers to consider the principles of circular economy and the waste hierarchy is not expected to add significant costs to developers. Minimising waste in construction can largely be achieved through a design approach by using materials already in common use within construction. As such, it is technically feasible, although completing a sustainability statement and/or Circular Economy Statement may require some more time and resource than currently needed to demonstrate compliance with EN9.

**2.46** Low carbon materials have lower embodied energy, leading to a reduction in overall greenhouse gas emissions. Many low carbon materials, like wood and straw, are renewable and recyclable materials. In addition, buildings constructed with low carbon materials often have better insulation properties, leading to reduced energy consumption for heating and cooling **[See reference 80]**. However, sustainable materials may have limitations in applicability in terms of strength and durability, requiring additional treatments or reinforcements. As such, developers will need to ensure that appropriate consideration is given to the applicability of sustainable material considered.

**2.47** The key consideration is to ensure that each material is chosen only where it is optimal at performing the function it is required to perform with the lowest whole life carbon impact. Wherever possible, local reclaimed materials should be used as this also reduces packaging and transport emissions from delivery to site.

**2.48** Using sustainable materials to lower the embodied carbon of new buildings will require both material and procurement innovations. Sustainable materials may have higher upfront costs compared to traditional materials; however, they often prove to be economically viable over the lifecycle of a building **[See reference 81]**.

**2.49** The British Assessment Bureau states that when compared to regular methods, sustainable construction brings about an increase in upfront costs of about 2%. This would, on average, pay for itself, with a life cycle saving of 20% of total construction costs, which is more than ten times the initial investment **[See reference 82]**.

# Recommendations

**2.50** It is recommended that MBC integrates the waste hierarchy and principles of the circular economy into Local Plan policy. The principles should be laid out in the introductory text to the policy.

**2.51** MBC should update policy EN9 to require all new development to provide evidence of how they been designed to reduce construction waste (in line with the waste management hierarchy) within a sustainability statement.

**2.52** MBC should consider incorporating a requirement for major development to provide a circular economy strategy or statement within their planning application which sets out how they have followed circular economy principles to reduce waste and prioritise the use of sustainable materials.

**2.53** To support the strengthening of policy EN9, MBC should update their current design guidance to include further guidance on waste management, how to integrate the principles of the waste hierarchy and circular economy and prioritise the use of sustainable materials in construction. Updated local design guidance could also provide an example template for the sustainability statement and/or circular economy strategy/statement if required in the updated policy.

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