

CHAPTER FIVE

A CITY THAT UTILISES ITS
RESOURCES WITH CARE, PROTECTS
THE AIR, WATER AND SOIL, AND
AIMS FOR NET ZERO CARBON



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INTRODUCTION AND WIDER CONTEXT

- 5.1 The other theme with relevance to the environmental pillar of sustainability, but also to the economic and social pillars, is that of being a city that utilises its resources with care and protects the air, water and soil, and is working towards achieving net zero carbon. It is underpinned by four underlying objectives which are as follows:
- Ensuring that resources including land, air, soil, water, and raw materials are used prudently and with consideration of replenishment and renewal
 - Air quality and its impacts upon public health is improved
 - Protecting the quality of land, water and soil from development and ensuring human health is safeguarded
 - Ensuring the city is ready for a zero carbon future.
- 5.2 Success under this theme will mean that the environment in Oxford, including air, water and land has been protected and improved as the city develops. It will mean that public health is not negatively impacted by reductions in air quality because of new development and that the air quality in the city has actually improved by 2040. Equally, where development is occurring, this will be happening in a way that is considerate of the natural resources used to construct buildings and infrastructure so that our impacts on the local environment, as well as the wider planet, are minimised. In recognition of the climate emergency, our success will also be guided by our actions on reducing carbon emissions in the city, ensuring not only that new buildings are net zero, but also that existing buildings are securing reductions in carbon emissions so that Oxford can achieve its target of becoming a net zero carbon city by 2040.
- 5.3 The options for policies in this section are divided into two groups:
- Mitigating climate change
 - Natural resources

AIMING FOR NET ZERO CARBON

- 5.4 Oxford has set itself an ambitious target of being a net zero carbon city by 2040 as part of its declaration of a climate emergency, meanwhile, the UK has a national target of becoming net zero by 2050. Recommendations published as part of the UK's most recent carbon budget⁹, which sets out the total greenhouse gas emissions the UK can emit before compromising on its carbon reduction commitments, highlight the pressing need for driving a shift to low and zero carbon technologies across a range of systems including transport, power and heating, as soon as possible. Whilst the Local Plan has limited influence over highways and transport systems, there are policy options that seek to enable people to adopt more sustainable/active transport choice. A greater area that the Local Plan can directly influence is how new buildings are constructed and used, which is the focus of the following sets of options.
- 5.5 A significant proportion of the city's current carbon footprint is caused by the buildings that comprise our built environment, as is shown in Figure 5-1, predominantly these emissions come from the ways we use energy and heat. Almost every new building constructed under the Local Plan 2040 can be expected to still be in operation long after the net zero target dates as outlined above. It means that we need to ensure that any new buildings are designed to be net zero carbon, or net zero carbon ready at the minimum, to avoid the need for retrofitting later and exacerbating our existing carbon footprint. A range of technologies and advances in construction processes mean that this is an achievable goal for most developments.

⁹ <https://www.theccc.org.uk/publication/sixth-carbon-budget/>



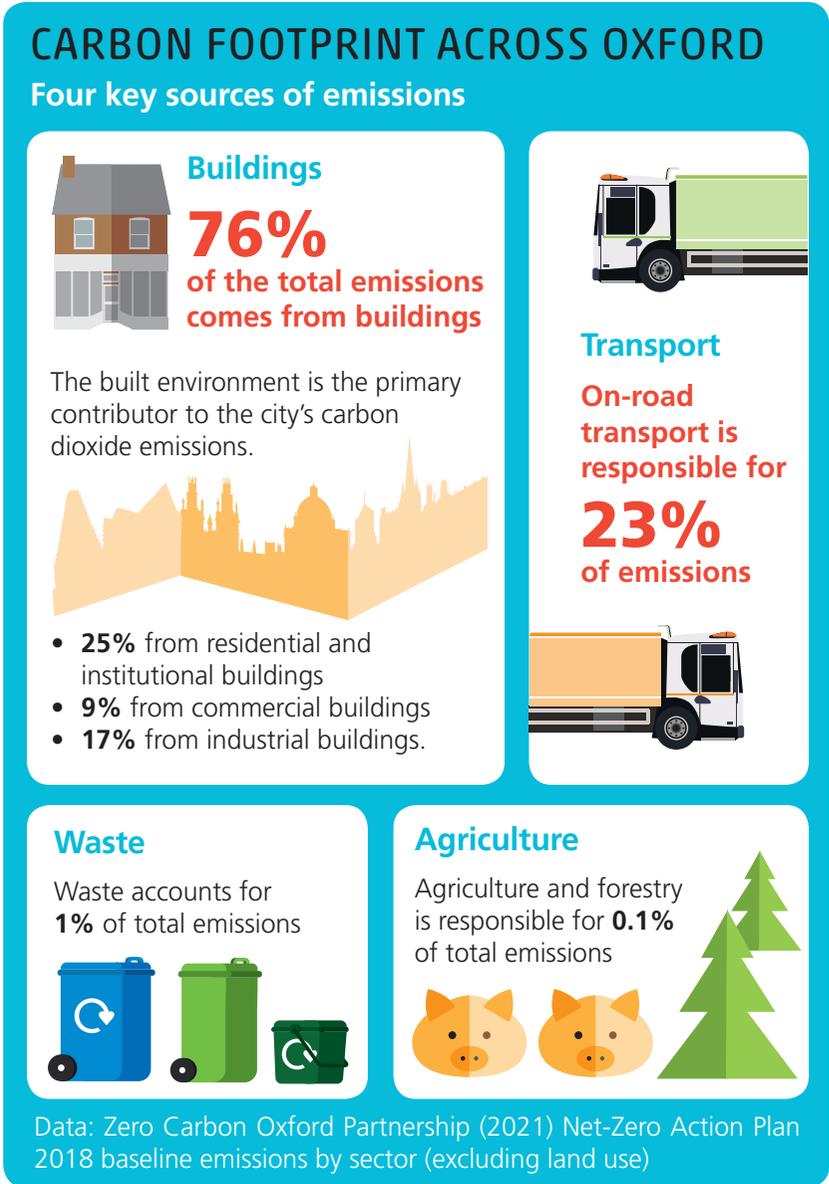


Figure 5-1: Infographic on carbon footprint/sources of emissions in Oxford

5.6 Of course, it is also important to recognise that there is a significant need for retrofitting existing buildings. The Local Plan has much less direct influence here, unless retrofit projects come forward that require planning permission in future, but our policies can still play an important role in positively supporting such measures where these arise. It should also be acknowledged that there are likely to be significant levels of carbon embedded within the existing building stock, meaning that reuse of existing stock is often the most carbon-efficient approach, even where the current stock is less energy-efficient than a new building would be.

NET ZERO BUILDINGS IN OPERATION

5.7 We propose that all developments should follow the principles of the energy hierarchy as set out in Figure 5-2. This would help to ensure buildings are as efficient as possible from the ground up, in that energy use is minimised in the first instance wherever possible. This has added benefits for reducing demand on national grid (challenges around power supply are discussed more in the sites and infrastructure chapter). The carbon reduction background paper gives more detail about the hierarchy, as well as the other elements of the options below.

5.8 As set out earlier, it is imperative that new development is net zero carbon from the adoption of the new Local Plan because it will, in most instances, be around for many decades to come. There are varying definitions of net zero carbon, but in the context of these options we mean that it is net zero carbon in operation, i.e. that the amount of carbon emissions associated with the building's operational energy is zero or negative and that energy needs are met from renewable sources (ideally these would be generated on site wherever possible), or at the very minimum, net zero-carbon ready, i.e. it does not rely on burning of fossil fuels for energy and is instead powered electrically from the grid (which we expect to continue to decarbonise in the coming years, though an exact timescale on complete decarbonisation cannot be certain), without the need for further retrofit in future. The development will also need to enable occupants to limit the carbon footprint associated with their daily lives, including the way they travel

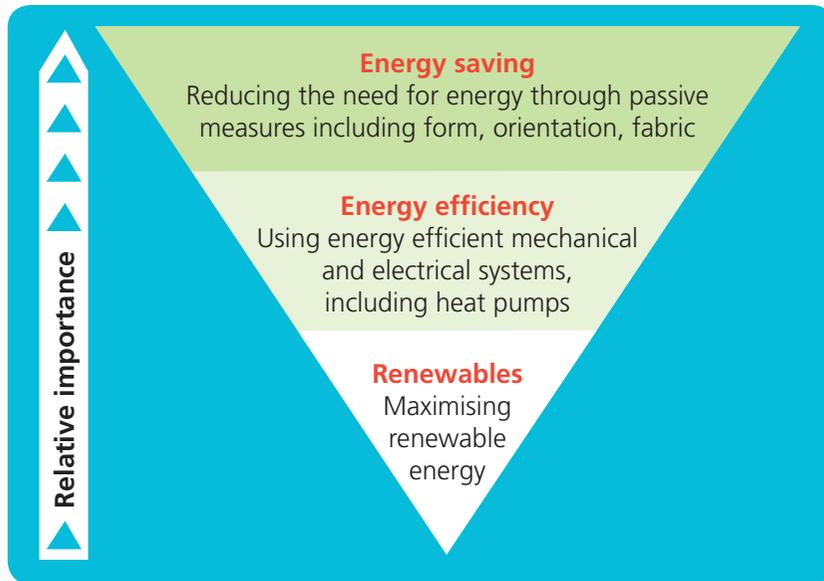


Figure 5-2: A diagram illustrating the principles of the energy hierarchy (National Design Guide 2019)

around the city, the way they deal with their waste and recycling, as well as to reduce the energy use associated with the way they use their buildings beyond heating, lighting and cooking.

- 5.9 However, there are decisions to be made as to the scope of our policies which will need to consider the feasibility and capability of delivering different levels of net zero development. One option is to continue to tackle only regulated energy sources (see Figure 5-3), requiring that all regulated energy demands are net zero carbon from the local plan adoption (in the current LP2036, zero carbon is from 2030). Understanding around addressing net zero regulated energy is now well developed and this seems achievable. Another option is to go further and require net zero unregulated energy also, which should ultimately deliver total operational energy that is net zero carbon (the current LP2036 only addresses regulated energy and not unregulated energy). However, as is explored in the background paper, unregulated

Regulated energy

“Regulated energy is building energy consumption resulting from the specification of controlled, fixed building services and fittings including space heating and cooling, hot water, ventilation, fans, pumps and lighting”

Designing Buildings 2020

Unregulated energy

“Unregulated energy is building energy consumption resulting from a system of process that is not controlled, i.e. energy consumption from systems in the building on which the building regulations do not impose a requirement e.g. IT equipment, lifts, escalators, laptops etc”

Designing Buildings 2020

Energy use intensity (EUI)

“The relative efficiency of a building’s energy usage. The EUI combines all energy sources and divides them by the square footage of the building”

Entech Engineering, 2022

Figure 5-3: Definitions for regulated and unregulated energy and energy use intensity

energy use is much more challenging for policy to address and for applicants to design for, particularly because it is difficult to plan for the behaviour of occupants once the building is in use. We will need to conduct further feasibility work to understand whether this is an option that is achievable in the city and whether there are only certain thresholds/types of development to which this can be applied.



POLICY OPTION SET R1: NET ZERO BUILDINGS IN OPERATION (INCLUDING CHANGE OF USE, CONVERSION AND EXTENSION WHERE APPROPRIATE)

a **Option for policy approach**
Specify design in accordance with energy hierarchy principles. Mandate net zero operational regulated energy **from adoption of the Plan**. Measure performance using Energy Use Intensity (EUI) as the primary calculation. Permit no fossil fuel use.

Related options, conclusion
Option

+ **Potential positive consequences of the approach**
Designing in accordance with the energy hierarchy will help to ensure buildings are as efficient as possible from the ground up.

Regulated energy use is a well understood area of operational energy consumption and there is good understanding about how to decarbonise it.

Assessing net zero using an Energy Use Intensity (EUI) calculation would measure energy use as recorded at the meter and is more reflective of performance. Measuring via EUI instead of traditional carbon % reduction targets allows for better comparisons of performance between buildings also.

Preventing any additional fossil fuel combustion heating systems will help to reduce the need for retrofit later. This could also ensure that new development does not contribute further to air pollution, including NO₂ levels, but also Particulate matter levels (PM) in the city.

- **Potential negative/neutral consequences of the approach**
A more prescriptive policy, with specific targets could limit innovation and become outdated more quickly, whilst also making for an overly technical policy.

It may be difficult to set targets that are realistic for the range of building types that could come forward under non-residential development (e.g. schools, offices, warehouses etc).

Measuring performance through energy use and banning fossil fuel heating (e.g. gas boilers) in policy would divert from government legislation, however it is considered that the ambition of the Plan, and local/national climate objectives cannot be achieved in the absence of this approach, thus this approach seems justified. In addition, the policy process takes several years by which national policy should have been further developed around net zero and it is expected that this policy would be in line with the direction of travel required nationally.

This option would not require unregulated energy need to be met through onsite energy generation (which would be the first preference in demonstrating net zero energy on a site). This could have implications for power grid capacity considering expected increasing demands on electricity nationally with the shift to net zero.

Ultimately, this option could risk the city not meeting its targets in addressing climate change, or achieving local (2040) or national (2050) net zero goals, particularly where national grid takes longer to decarbonise.

- b Option for policy approach**
Specify design in accordance with energy hierarchy principles. Mandate net zero total operational (regulated **and** unregulated) energy **from adoption of the Plan**. Measure performance using Energy Use Intensity (EUI) as primary calculation. Permit no fossil fuel use.

+ Potential positive consequences of the approach
Similar positives to option a, however, option b would resemble a more reaching policy encapsulating decarbonising of unregulated energy sources also. Unregulated energy can be a significant component of the total operational energy use of a building and it will need to be decarbonised in the same way as regulated energy in order to meet future net zero targets.

This option would seek to ensure unregulated energy needs are met through on-site generation wherever possible, potentially reducing demands on the main power grid.

- Potential negative/neutral consequences of the approach
Similar negatives to option a, however, option b is likely to be much more challenging.

An element of unregulated energy use is determined by occupant behaviour within the building once in operation, something that planning policy and the design/ construction process has limited influence on.

More constrained sites and/or certain buildings (e.g. with limited roof space) may struggle to meet unregulated energy demands through on site renewables and may be pushed towards other forms of off-setting.

Further work will be needed to understand the feasibility of meeting net zero unregulated energy, including feasibility of onsite generation meeting all unregulated needs, as the local plan develops.

Related options, conclusion

Option



C Option for policy approach
Specify design in accordance with energy hierarchy principles. Mandate 'net zero ready' buildings in line with the definitions set out in the Future Homes/Buildings Standard. Measure compliance with submission of SAP/SBEM calculations demonstrating carbon reduction over notional buildings prescribed in Building Regulations.

Permit no fossil fuel use.

Encourage net zero unregulated energy through sufficient on-site renewables to meet total operational energy needs and for this to be demonstrated via Energy Use Intensity calculations.

+ Potential positive consequences of the approach

This approach represents a less advanced one to options a and b but would be closer to the direction of travel outlined by central government in its consultations on the Future Homes/Buildings Standard (FH/BS). It would mandate the requirement for net zero ready homes from the Local Plan's adoption, even if the national standards are delayed or watered down and would seek to ensure that no further retrofit is needed to new developments in the future to bring them to net zero as the national grid decarbonises.

As with options a and b, the policy would ban fossil fuels, which is considered in line with government's future direction of travel.

Recognising that the proposals set out in FH/BS do not currently address unregulated emissions, this policy would encourage developers to address unregulated energy through ensuring sufficient on-site renewable energy generation and to demonstrate this via submission of EUI calculations.

- Potential negative/neutral consequences of the approach

Net zero ready development as currently set out in the FH/BS does not address total operational energy of buildings and would omit emissions associated with unregulated energy.

Development built to this standard would not be net zero in terms of regulated energy until the national grid has fully decarbonised either, thus would be responsible for continued emissions.

Encouraging net zero unregulated energy through the policy would not be as strong of a requirement as requiring it.

Ultimately, this option could risk the city not meeting its targets in addressing climate change, or achieving local (2040) or national (2050) net zero goals, particularly where national grid takes longer to decarbonise.

Related options, conclusion

Option



d Option for policy approach

Accept offsetting of unmitigated carbon emissions associated with operational energy use **as a last resort**, where measures to reduce carbon on site have been exhausted and with strict principles for how/when this would be accepted.

+ Potential positive consequences of the approach

Due to the constrained nature of many sites in the city, it may be difficult to incorporate technologies such as renewables onsite (or find spaces offsite) to balance out energy use, thus offsetting may be necessary. It could be an option where all other approaches are exhausted.

Collection of an offset fund could potentially create a pot of money which could be utilised to deliver carbon reduction measures elsewhere in the city (e.g. existing buildings in need of retrofit).

- Potential negative/neutral consequences of the approach

There is evidence from elsewhere that offsetting could be more attractive than delivering onsite measures leading to poorer performing buildings.

Offsetting shifts the problem of carbon emissions elsewhere and does not address the real need to deliver truly net zero buildings from the beginning.

Offsetting projects would need to be identified, resources would need to be found to monitor their delivery, manage the fund, and ultimately ensure a 1-to-1 offset in carbon emissions between the project and the contributing development.

Related options, conclusion

Option

e Option for policy approach

No local policy on net zero carbon. Rely on national guidance and the upcoming Future Homes/Building Standard which is envisaged to deliver 'net zero ready' development from 2025 onwards.

+ Potential positive consequences of the approach

This option would mean greater consistency for developers building in Oxford than elsewhere and less complexity in the planning application process. At the design stage, regulated emissions are the primary area that can be influenced thus Building Regs process could achieve this. There is potential for future updates to national policy/ Building Regs that would address unregulated emissions and embodied carbon.

- Potential negative/neutral consequences of the approach

This approach ignores the local context of Oxford including challenges that constrained sites face and realistic types of development that may come forward. Previous updates to Building Regs have been slow historically, and Future Homes/Buildings Standard is not yet guaranteed. Even when in place, the updated building regs will not deliver net zero carbon until the grid is decarbonised, it will also not address unregulated/embodied carbon (in its current proposed form). Ultimately, this option would be even more likely (than other options) to risk the city not meeting its targets in addressing climate change or achieving local (2040) or national (2050) net zero goals, particularly where national grid takes longer to decarbonise.

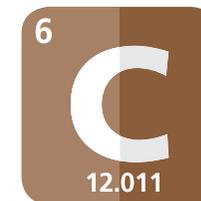
Related options, conclusion

Option (considered detrimental)



EMBODIED CARBON

- 5.10 The carbon associated with buildings in operation is not the only source of emissions that will need to be addressed, however. There is an embodied carbon cost to the materials used in the built environment and the construction, maintenance, redevelopment and demolition processes. As operational energy becomes zero carbon, the embodied carbon cost of new development will become the primary source of emissions that need to be addressed and it is crucial we begin to tackle this issue directly in the new Local Plan.
- 5.11 Embodied carbon is an even more challenging and complex aspect of zero carbon design to address than unregulated energy and it is one that the Local Plan 2040 may not be able to influence fully because it is still an area of evolving understanding. But there are opportunities to do more than at present, and to begin to lay the foundations of policies that can be further developed in future years as industry knowledge on the subject matures. It will also be important to ensure that the policy remains flexible to the introduction of national standards that may make local requirements redundant.
- 5.12 There is an opportunity to lay out some key principles for addressing embodied carbon, (which are explored within the net zero background paper and will need to be fleshed out further as we develop a draft policy). For example, encouraging locally produced, natural materials where possible; stressing the importance of thinking about the lifecycle of the building and designing for easy adaptation at end of operational life; as well as the need for minimising site waste and maximising recycling (demonstrating through informed construction waste management plans). Equally, that demolition of existing buildings should be a last resort, and that reuse wherever possible would be preferable in order to retain existing embodied carbon on a site (unless the new design can be demonstrated to be a more sustainable choice). On larger developments, we could go further and require applicants to assess and demonstrate how embodied carbon has been reduced through submission of a Whole Life Cycle Carbon Assessment, however, this may be more challenging for smaller scale proposals. Currently our proposed threshold for requiring this type of assessment would be major applications.





POLICY OPTION SET R2: EMBODIED CARBON

- a Option for policy approach**
Include high level principles for limiting embodied carbon, including the importance of retaining existing buildings where possible. Guidance would be expanded upon in accompanying technical advice note (TAN).

+ Potential positive consequences of the approach
A strong set of principles for addressing embodied carbon (an area where industry guidance/learning is more limited at present) would ensure the issue is not ignored, whilst leaving flexibility for applicants to respond in the most suitable way per application.

Providing more detailed guidance in an accompanying TAN would allow for expectations to be expanded upon and guidance to be regularly updated considering evolving knowledge/guidance which is less developed than for addressing operational energy.

- Potential negative/neutral consequences of the approach
This is an area of evolving guidance and understanding and broad principles could be difficult to formalise in policy. Equally, principles need to retain a level of flexibility to enable innovation and adaptation to specific context of individual sites and schemes.

Related options, conclusion

Preferred Option

- b Option for policy approach**
Unless superseded by future updates to Building Regulations (or other national policy). Set more specific requirements for major development requiring a measurement of embodied carbon during construction through a recognised methodology and demonstrating actions taken to reduce this as much as possible (e.g. completion and submission of Whole Life Cycle Carbon Assessment demonstrating how embodied carbon has been quantified and reduced).

+ Potential positive consequences of the approach
Requiring larger development to measure embodied carbon at the construction stage will allow for improved understanding of the embodied carbon problem. It will enable a more informed approach to addressing the issue and requiring applicants to demonstrate how they have taken action to reduce it will be an important step forward in delivering net zero construction. This could be expanded upon in future iterations of the local plan as national guidance and understanding on this issue grows.

- Potential negative/neutral consequences of the approach
Assessment methods for measuring embodied carbon in construction can be resource intensive and could be challenging for some smaller scale major development – setting an alternative/appropriate threshold for where these would be required may require further consideration.

Demonstrating actions to reduce embodied carbon in major schemes is less prescriptive than setting a fixed maximum target for embodied carbon admittedly. However, specific targets could be challenging to apply considering the complexities of accounting for it in construction processes and the evolving nature of guidance/industry knowledge on this issue.

Related options, conclusion

Option (in combination with a)

- C Option for policy approach**
Do not include any principles in relation to embodied carbon.

- + Potential positive consequences of the approach**
There is potential for future updates to national policy/ Building Regs that would address embodied carbon, which may render reference in the plan unnecessary.

- Potential negative/neutral consequences of the approach**
Previous updates to Building Regs have been slow historically, and Future Homes/Buildings Standard is not yet guaranteed. Even when in place, the updated building regs will not deliver net zero carbon until the grid is decarbonised, it will also not address unregulated/ embodied carbon.

Related options, conclusion

Alternative Option (considered detrimental)

RETROFITTING EXISTING BUILDINGS INCLUDING LISTED BUILDINGS

- 5.13 There is a significant need to retrofit the existing built environment to address its impact on the climate, i.e. to add energy saving measures that were not part of the original build. Many older buildings also have potential to be improved and adapted before considering demolition (which has an embodied carbon cost). Existing buildings that rely on fossil fuels for heating, often coupled with poorer energy efficiency than modern standards require, are a considerable source of Oxford's carbon emissions and adapting our buildings to meet the challenges of climate change will need to be addressed if we are to achieve net zero and mitigate our impacts on the changing climate. Equally, retrofitting has a role in facilitating adaptation of buildings to the changing climate and building in resilience to impacts like flooding and heatwaves to protect the health and wellbeing of occupants.
- 5.14 The Zero Carbon Oxford Partnership's Zero Carbon Action Plan contains a roadmap which sets out a series of ambitious targets for retrofitting existing buildings in the city. Following the energy hierarchy, fabric efficiency measures that can help reduce energy demand should be the first intervention when it comes to retrofitting. The roadmap also includes various targets for the incorporation of renewable energy generation technologies like solar panels and heat pumps. It will take a variety of tools and systems to help occupants and owners to upgrade their buildings so that such targets can be achieved. The Local Plan has limited powers in directly driving retrofitting of existing buildings, equally, many retrofit measures can be undertaken without the need for planning permission (permitted development). However, where planning permission is required for such works, it will be important to ensure that we positively support and facilitate these changes where appropriate.
- 5.15 Historic buildings and heritage assets (such as listed buildings and conservation areas) come with an additional set of considerations which need to be carefully thought about and that relate to the preservation of their unique features and styles which contribute to the historic character that makes Oxford so special. The message, however, is that despite these additional challenges, retrofitting can be carried out sensitively and successfully whilst preserving their unique historic character and the City Council will support this wherever possible. In the new Local Plan there is an opportunity to strengthen this message through incorporating a specific policy which addresses retrofit of existing buildings, including historic ones. We see this as a chance to bring greater certainty to applicants who wish to pursue such measures, potentially by providing clarity on what measures would be more/less harmful to historic buildings and heritage assets to enable the most appropriate forms of retrofit for their historic context. Listed building consent may also be required where retrofitting is being considered on listed buildings and this will need to be pursued alongside a planning application.



POLICY OPTION SET R3: RETROFITTING EXISTING BUILDINGS INCLUDING HERITAGE ASSETS

- a** **Option for policy approach**
Include a presumption in favour of retrofit measures for all existing buildings that are not heritage assets or in the setting of, subject to certain conditions, where these measures secure demonstrable carbon reduction/energy efficiency/climate adaptation.

+ Potential positive consequences of the approach

This policy recognises the high priority afforded to the retrofit need in the city and seeks to ensure that retrofit measures that require planning permission will be supported wherever possible – particularly where demonstrable benefits for climate (mitigation or adaptation) can be evidenced.

It highlights that as a starting point, such measures are presumed to be acceptable on planning grounds. This additional certainty is intended to support and encourage more occupants to pursue retrofit projects.

- Potential negative/neutral consequences of the approach

The local plan has limited direct influence on retrofitting of existing properties unless they need planning permission (many small-scale improvements are considered permitted development and would not). Any such policy can only be supportive, as and when such measures do require planning permission.

Whilst this policy would highlight the importance which we assign to supporting retrofitting measures in existing buildings, there will be other material considerations which have to be weighed up against this policy and could still ultimately be determined to outweigh this presumption in favour.

Related options, conclusion

Preferred Option (in combination with b)

- b** **Option for policy approach**
In relation to designated heritage assets and historic buildings, or proposals within conservation areas, set out that carbon reduction/energy efficiency/climate adaptation measures will be considered as benefits that may outweigh harm.

Be explicit in setting out a set of key principles to follow, potentially flagging which measures would be more or less likely to cause harm (e.g. permanent versus temporary), and how levels of harm would be assessed against public benefit.

+ Potential positive consequences of the approach

This option addresses the retrofit need in the context of historic buildings and heritage assets and recognises the particular challenges present in the need to balance heritage considerations.

Same benefits as option a, however, this option would seek to provide further certainty for how retrofit of heritage assets will be considered through the planning application process. It would provide clarity on what measures are more appropriate versus those that would be viewed as more harmful in a heritage context; as well as how various levels of harm would be balanced with the benefits (e.g. carbon reduction/climate adaptation) in the decision-making process.

– Potential negative/neutral consequences of the approach

Same negatives as for option a as well as the following:

Identifying a strict list of measures that cause less harm will be challenging when the character and value of heritage assets and their setting varies. Ultimately, decisions will still have to be made on a case-by-case basis.

Listed buildings and other heritage assets are afforded statutory protection which is over and above that given through planning controls. Great weight is given to preserving or not harming the significance of these heritage assets, and this must be borne in mind when considering measures of change to buildings or retrofitting measures to combat or mitigate the impacts of climate change. In supporting retrofitting of older buildings, a policy will have to take account of the protection afforded to heritage assets and the need to preserve their values.

Related options, conclusion

Preferred Option (in combination with a)

Ⓒ Option for policy approach

Do not include policy addressing retrofitting of existing buildings and/or heritage assets.

+ Potential positive consequences of the approach

The local plan has limited direct influence on retrofitting of existing properties unless they need planning permission (many small-scale improvements are considered permitted development and would not).

Any such policy can only be supportive, as and when such measures do require planning permission. It would also be limited by the need for balancing other relevant planning issues in the decision-making process (such as any potential harm to protected heritage features).

– Potential negative/neutral consequences of the approach

This would ignore the significant need for pursuing retrofit projects on existing buildings in the city to reduce our carbon footprint.

Any policy in the plan is likely to have limited effect in directly driving retrofit measures, however, by highlighting that such measures would be supported and providing clarity on what is most appropriate where, this could help to avoid the planning system being seen as a barrier to uptake where such measures are planned and require planning permission.

Related options, conclusion

Alternative Option (considered detrimental)



EFFICIENT USE OF LAND

- 5.16 Because of the shortage of developable land in Oxford, it is important that options consider the best way to use that land. Setting minimum densities for housing development helps to ensure land is used efficiently.

POLICY OPTION SET R4: EFFICIENT USE OF LAND

- a Option for policy approach**
Have a policy requiring that development proposals make the best use of site capacity, in a way that is compatible with both the site itself and the surrounding area, with building heights and massing at least equivalent to the surrounding area, and bearing in mind that larger-scale proposals will be suitable in many situations.

+ Potential positive consequences of the approach

This approach would enable applications to be refused if they do not make efficient use of land. However, it also acknowledges that proposals should make an individual design response to site-specific circumstances and surroundings, and that capacity will be guided by the appropriate use for the site.

- Potential negative/neutral consequences of the approach

If density requirements are not set, it may be difficult to demonstrate that best use is not made of the land, hence this option is in combination with b.

Related options, conclusion

Preferred Option
(in combination with b)

- b Option for policy approach**
Have minimum density requirements for district centres and the city centre only.

+ Potential positive consequences of the approach

This helps meet the NPPF requirement that should include the use of minimum density standards for city and town centres and other locations that are well served by public transport. These standards should seek a significant uplift in the average density of residential development within these areas, unless it can be shown that there are strong reasons why this would be inappropriate.

- Potential negative/neutral consequences of the approach

This does remove some ability for there to be an individual response to surroundings that suggests a lower density than the minimum. It may be argued that this does not fully meet the NPPF requirement.

Related options, conclusion

Preferred Option
(in combination with a)

- c Option for policy approach**
Have minimum density requirements to cover the whole city, for various types of location such as suburban, gateway, district and city centre.

+ Potential positive consequences of the approach

This would fully meet NPPF requirements. It gives a very good starting point for ensuring efficient use of land and resisting applications that do not achieve it. This approach makes it very clear in terms of what's expected.

- Potential negative/neutral consequences of the approach

A suitable density may have very local variables which cannot be reflected in broad minimum densities. This means densities may need to be set lower than is necessary in most cases, to avoid having too many applications that need to depart from this approach.

Related options, conclusion

Alternative Option



AIR QUALITY

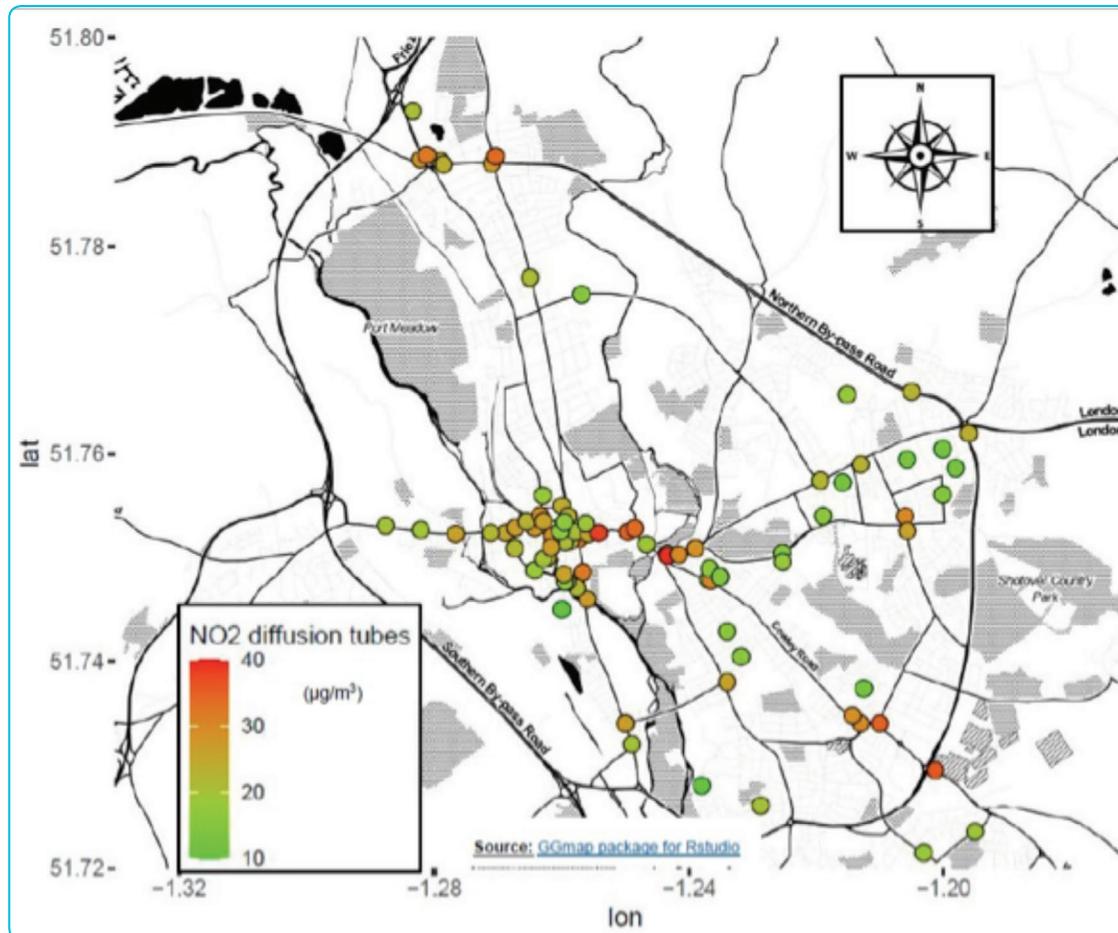


Figure 5-4: Oxford Air Quality monitoring locations and levels of Nitrogen Dioxide levels (NO_2) recorded 2021

5.18 The issue of air pollution has a variety of causes, which include tail pipe emissions from transport caused by the burning of fossil fuels, the wearing of tyre and brake pads, and emissions from heating sources within buildings. The pollutants arising from these sources are comprised of various substances including nitrogen dioxide, ozone, and particulate matter (small particles of solids like soot and dust). It is commonly accepted that no level of air pollution is healthy, and the presence of pollutants have a variety of short- and long-term health implications, including causing or exacerbating chronic conditions such as cardiovascular and respiratory diseases, as well as lung cancer, leading to reduced life expectancy and even death. The health concerns are particularly severe for the more vulnerable including the young and the elderly.

5.19 The entire city was declared an Air Quality Management Area (AQMA) in September of 2010 in response to the issues around air pollution, and there are also known hotspots where this is a particular problem in the city as highlighted in the map below. In January 2021, the City Council

¹⁰ Air Quality Action Plan (2021-25) https://www.oxford.gov.uk/download/downloads/id/7428/air_quality_action_plan_2021-2025.pdf



POLICY OPTION SET R5: AIR QUALITY ASSESSMENTS AND STANDARDS

adopted the most recent iteration of its Air Quality Action Plan (AQAP)¹⁰ which sets an ambitious target of meeting a local annual mean NO₂ (Nitrogen Dioxide) target of 30µg/m³ by 2025, as well as other targets for addressing air quality issues. The options set out in this table related to air quality assessments and standards are supported by the Natural Resources background paper. Reducing emissions generally, particularly through reducing the need to travel by car, is also important to air quality and is at the heart of much of the spatial strategy proposed elsewhere in this document.

5.20 It will be important for us to include a policy in the new Local Plan that ensures proposals for new development assess local air quality in certain circumstances, and the development's own impact on air quality. Where there is the potential for negative impact, an appropriate mitigation strategy should be put in place before it can proceed. There is a clear link here with the policy options set out for zero carbon buildings which would prohibit fossil fuel heating (e.g. gas boilers) in new development, restricting these types of systems will help to limit additional air pollution including NO₂ and particulate matter, which contribute to poor air quality.

a Option for policy approach

Air Quality Assessments (AQAs) will be required for all major developments, or any other development considered to have a potentially significant impact on air quality.

Any resultant significant impacts on air quality inside an AQMA must be mitigated. The AQA must consider all the different sources of air pollution during operational and construction phases (including but not limited to: transport, heating, dust generated from construction activities, etc).

+ Potential positive consequences of the approach

Improving local air quality, mitigating the impact of development on air quality and reducing exposure to poor air quality across Oxford is key to safeguarding public health and the environment.

The whole of the city was declared an AQMA in September 2010.

A policy in the Oxford Local Plan can influence and seek improvements in air quality at both a local and strategic level. For example, the encouragement of active travel options reduces dependence upon use of private cars, the majority of which are currently non electric vehicles (EVs).

The Air Quality Action Plan (AQAP) has been produced as part of the City Council's statutory duties and it outlines actions to be taken to improve air quality in Oxford 2021-2025. Key objective is to bring NO₂ emissions into legal compliance as soon as possible and to go beyond legal compliance.

- Potential negative/neutral consequences of the approach

Additional assessment/modelling requirements for applicants which adds to the information they would need to submit with a planning application.

Related options, conclusion

Preferred Option (in combination with b)

- b Option for policy approach**
Require all new major developments within the city's AQMA to comply with the local air quality standard for Nitrogen Dioxide (NO₂) set out in the city's most up-to-date air quality action plan (AQAP) (currently a target of 30µg/m³) and contribute to achieving compliance with the national air quality objectives. This is an additional standard to the requirements in the current local plan. The standard would be tied to any subsequent updates to the target set in the AQAP where this is superseded.

+ Potential positive consequences of the approach
This target would set a high standard for accepted Nitrogen Dioxide emissions from all new development in recognition of the rigorous target the City Council has set locally within its Air Quality Action Plan. The standard required in the policy would follow the AQAP and where tighter standards are opted for in future, would be mirrored here. The target is currently 10ug/m³ lower than the UK's current annual mean limit value for this pollutant.

- Potential negative/neutral consequences of the approach
A more stringent target will set a higher standard for new development in the city which could be considered more onerous for applicants.

Related options, conclusion

Preferred Option (in combination with a)

- c Option for policy approach**
Do not include a policy about air quality assessments but rely on other regulatory regimes.

+ Potential positive consequences of the approach
-

- Potential negative/neutral consequences of the approach
This option is not considered to be reasonable due to the poor air quality across the city. Relying upon national legislation ignores the Oxford context and the city's ambition to go beyond national targets.

Related options, conclusion

Alternative Option (considered detrimental)



WATER QUALITY

- 5.21 Oxford has a complex water environment, sitting at the confluence of a variety of water bodies of different scales. The issues of water quality include not only the availability of clean drinking and bathing water, but also the fact that some of our most sensitive ecological sites also have a particularly important relationship to water, relying on a consistent hydrological environment that is easily impacted by changes in water levels or water quality.
- 5.22 New development has the potential for directly introducing a range of pollutants into water bodies where it is not appropriately mitigated, equally, once in operation, its users can influence nearby water quality through increased demand on water supplies as well as through output of pollutants which can be particularly harmful where this happens close to sensitive catchments. As such, the Local Plan should include requirements that aim to ensure that sensitivities to water are assessed, and that impacts from development are appropriately mitigated. Because water quality can be addressed through a variety of means, we propose to include requirements as part of a couple of key policies located elsewhere in the document (managing impacts of development, resilient design and construction, and sustainable drainage systems principally), as opposed to having a separate water quality policy.

POLICY OPTION SET R6: WATER QUALITY

- a** **Option for policy approach**
Set out a policy approach that incorporates issues around water quality into policies about managing the impacts of development, as well as requiring measures to limit water use (resilient design and construction) and measures to capture surface water runoff and clean this via introduction of Sustainable Drainage Systems (SuDs).

+ Potential positive consequences of the approach
This approach ensures that due consideration is given to maintaining water quality without the need for a separate policy. Water quality is addressed in policy through ensuring water use is limited to certain standards in new development through resilient design and construction, the use of SuDS in development and the provision of evidence in any planning application submitted which demonstrates that there would not be a negative impact on water quality.

- Potential negative/neutral consequences of the approach
This approach means that due consideration of water quality must be secured through a range of other (albeit interlinked) policies. There is potential for this approach to result in this issue being overlooked.

Related options, conclusion

Preferred Option

- b** **Option for policy approach**
Include a bespoke policy on water quality.

+ Potential positive consequences of the approach
Ensures that water quality is addressed separately in any development.

- Potential negative/neutral consequences of the approach
This could result in unnecessary replication in the Local Plan and additional information being prepared for a proposal that would have already been undertaken as part of the SuDs design and would have already been considered in assessing any potential impacts of the proposal on water quality. A separate policy could cause confusion and result in lack of clarity and additional burdens which are not necessarily achieving the desired outcomes.

Related options, conclusion

Alternative Option (considered detrimental)

SOIL/LAND QUALITY

- 5.23 Oxford is a small city with a tightly drawn administrative boundary and contains several physical and policy constraints. This means that developable land is at a premium. It is therefore important to ensure that what land is available is used in the most efficient way possible, while ensuring that there is no harm to the city's natural environment, human health and well-being.
- 5.24 Due to Oxford's long history of development, there are areas of the city which are likely to be affected by poor soil quality and the presence of contaminants that could be harmful for human health. It will therefore be important to ensure that the quality of our soils and the stability of the land is protected as well as ensuring that people are not brought into contact with harmful contaminants that may arise from the land we build on, particularly in instances where historic land uses may have left contamination behind. The policy options below are intended to address this risk.

POLICY OPTION SET R7: LAND QUALITY

- a Option for policy approach**
Include a policy approach that requires the submission of details of investigations of any site suspected to be contaminated and details of remedial measures which must then be carried out.

+ Potential positive consequences of the approach

This would be a continuation of the existing policy (currently set out in policy RE9). This approach ensures that there will be no threat to the health of future users or occupiers and no adverse impact on the quality of local groundwater or surface water quality.

- Potential negative/neutral consequences of the approach

Such an approach could limit innovation for land remediation when required.

Related options, conclusion

Preferred Option

- b Option for policy approach**
Do not include a policy about land quality but rely on national planning policy and other regulatory regimes.

+ Potential positive consequences of the approach

-

- Potential negative/neutral consequences of the approach

This option is not considered to be optimal as there are many sites with contaminated land across the city and relying on national legislation ignores the local context.

Related options, conclusion

Alternative Option (considered detrimental)





AMENITY AND ENVIRONMENTAL HEALTH IMPACTS OF DEVELOPMENT

- 5.25 Beyond impacts on water, soil and air, new development has the risk of creating a range of wider environmental impacts particularly during the construction process. In a constrained city like Oxford, where new development can be happening near neighbours, amenity impacts can be particularly problematic. Issues arising from new development can range from noise and vibration to the generation of dust and other contaminants. Transportation methods bringing materials to and from site can cause further disturbance. Once in operation, certain types of plant equipment and other ancillary facilities can have noise impacts that need to be fully assessed and mitigated to ensure that new development does not inflict upon future amenity of nearby residents.
- 5.26 Our proposal is to include a policy that would seek to ensure that the amenity of communities, occupiers and neighbours is protected. The policy would also ensure that new development does not have unacceptable transport impacts affecting people and the existing transport network; and where the risk of this arises, that the design provides mitigation measures where necessary. Equally, the policy would seek to ensure that noise and vibration from new development is managed and mitigated where necessary, whilst setting out the need for proposals to have carefully considered the existing noise environment, and presence of potentially noise sensitive sites so that risks of conflict are minimised and mitigated.



POLICY OPTION SET R8: AMENITY AND ENVIRONMENTAL HEALTH IMPACTS OF DEVELOPMENT

- a Option for policy approach**
Require that new proposals do not result in unacceptable impacts on amenity as a result of noise, nuisance from light, dust, fumes etc. Continue to require that impacts of developments must be mitigated to ensure that the amenity of communities, occupiers and residents are protected.

+ Potential positive consequences of the approach
This approach ensures that any potential threat to the residents, future occupants and existing communities from the development are assessed and mitigated appropriately. This is not a prescriptive policy but one that ensures that the impacts of development are comprehensively considered and mitigated where applicable. This option should provide greater protection to the health and wellbeing of the population.

- Potential negative/neutral consequences of the approach
If this policy were to go beyond the regulations it could be considered an unreasonable administrative burden upon developers and the delivery of new development.

Related options, conclusion

Preferred Option



- b Option for policy approach**
Do not include a policy but rely on national planning policy and other regulatory regimes.

+ Potential positive consequences of the approach
-

- Potential negative/neutral consequences of the approach
This option is not considered to be optimal as the impacts of development must be properly considered and assessed to ensure that the health and quality of life of all those who live and work or visit the city are safeguarded.

Related options, conclusion

Alternative Option (considered detrimental)

